



Distribution of childhood skin diseases according to age and gender, a single institution experience

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Abstract

Aim: Studies on pediatric skin diseases in Turkey are not yet sufficient. It was aimed to characterize the prevalence of skin diseases, age and gender distribution in children living in the Erzincan region.

Material and Methods: 10,115 children aged 0-16 years who reached to our outpatient clinic between 01.11.2014 and 30.11.2016 were included in the study. The frequency, age and gender distribution of the skin diseases were examined. The cases were divided into 4 groups; infantile period (0-2 years), preschool period (3-5 years), school period (6-11 years) and adolescence period (12-16 years). Skin diseases were categorized in 10 groups. A total of 148 skin diseases were identified.

Results: 5376 of the patients were female (%53.14) and 4739 were male (%46.86). The most common disease groups are; infectious di-

seases (24.62%), eczema (21.95%), acne&follicular diseases (18.45%) and allergic skin diseases (11.02%). The most common diseases were acne vulgaris (17.82%), warts (10.03%) and irritant contact dermatitis (9.42%). The most common skin diseases in regard of different age groups are; contact dermatitis in the 0-2 years and 3-5 years age groups, warts in the 6-11 years age group, and acne vulgaris in 12-16 years age group.

Conclusion: Most common diseases in our study are diseases that can be reduced by preventive health care and health education programs. There is a need for broad-based epidemiological studies in this area to establish preventive health care policies and to develop education programs.

Keywords: Childhood, epidemiology, skin diseases

Introduction

Studies related with childhood skin diseases date back to the recent past. Epidemiologic studies need to be conducted in this area because of factors including the geographic and cultural variety of Turkey, gradually increasing number of children, and altered demographic structure due to the increase in immigrant refugees. In this study, our aim was to cast light on the dermatologic problems of children by investigating the prevalence and age and sex distribution of childhood skin diseases in our region, and provide insight in relation with childhood skin diseases observed in our country.

Material and Methods

Ninety thousand seven hundred eighty patients presented to the dermatology outpatient clinic of our hos-

pital between January 11th, 2014, and November 30th, 2014. A total of 10,115 children aged between 0 and 16 years presented to our outpatient clinic in Erzincan where three dermatologists worked, an area in which no other private or public dermatology clinic existed. Ten thousand one hundred fifteen patients were examined retrospectively in the hospital automation file system and all were included in the study. Approval for the study was obtained from Erzincan University Ethics Committee (Decision number 3/303; 04.04.2017).

The subjects were divided into four groups including infancy (0-2 years), preschool period (3-5 years), school period (6-11 years), and adolescence (12-16 years) to compare diseases according to the different age groups and for a comparison with different studies based on the age groups considered in epidemiologic studies in the literature (1-3)

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related with pediatric dermatology. Dermatologic diseases were categorized into 10 groups. Each group was classified within itself and 148 diseases were defined. Age and sex distributions of skin diseases were examined.

Statistical Analysis

Statistical analyses were conducted using STATA (version 13) program. Data obtained by counting are expressed as numbers and percentages, and data obtained by measurement are expressed as median and 25th and 75th percentile values.

Results

Five thousand three hundred seventy-six subjects (53.14%) were female and 4739 (46.86%) were male. The mean age was 10.22±4.88 years. The mean age of the girls was 10.52±4.79 (median 12, lower quartile median 7, upper quartile median 15) and 9.89±4.96 (median 11, lower quartile median 6, upper quartile median 15) for the boys. Nine hundred thirty-five patients were in the 0–2-year age group (422 girls, 513 boys), 1293 patients were in the 3–5-year age group (656 girls, 637 boys), 2963 patients were in the 6–11-year age group (1552 girls, 1411 boys), and 4924 patients were in the 12–16-year age group (2746 girls, 2178 boys).

The most common disease groups included infectious diseases (24.62%), eczemas (21.95%), and acne and follicular diseases (18.45%). The most common diseases included acne vulgaris (17.82%), verrucas (10.03%), and irritant contact dermatitis (9.42%). These three diseases were the most commonly observed diseases in both sexes (Figure 1).

The distribution of the disease groups by sex was as follows: acne and follicular diseases and hair and nail disease were observed more frequently among the girls, whereas infectious skin diseases and allergic skin diseases were more common in boys (Figure 1).

The distribution of the disease groups by age groups was as follows: the most common disease groups observed in the 0–2-year age group included eczemas (36.58%), allergic skin diseases (24.28%), and infectious diseases (15.94%) (Table 1). The most commonly observed diseases among these included contact dermatitis (25.88%), atopic dermatitis (20.10%), and impetigo (4.59%), respectively.

The most commonly observed disease groups in the 3–5-year age group included eczemas (29.31%), in-

fectious diseases (26.06%), and allergic skin diseases (11.68%) (Table 1). The most commonly observed diseases among these included contact dermatitis (16.86%), atopic dermatitis (9.12%), and verrucas (6.80%), respectively.

The most commonly observed disease groups in the 6–11-year age group included infectious diseases (31.99%), eczemas (26.49%), and allergic skin diseases (11.68%) (Table 1). The most commonly observed diseases among these included verrucas (14.88%), contact dermatitis (13.63%), xeroderma (5.80%), and insect bite (4.58%).

The most commonly observed disease groups in the 12–16-year age group included acne and follicular diseases (35.44%), infectious diseases (21.47%), and eczemas (14.52%) (Table 1). The most commonly observed diseases among these included acne vulgaris (35.23%), verrucas (9.72%), and contact dermatitis (5.95%).

Among infectious diseases, viral infections led the way with 1495 subjects (14.78%) and bacterial infections were found in 441 subjects (4.35%), superficial fungal infections were found in 436 subjects (4.31%), and parasitic infections were found in 164 subjects (1.62%). The most common viral infection was verruca, the most common bacterial infection was impetigo, the most common superficial fungal infection was pityriasis versicolor, and the most common parasitic infection was pediculosis capitis. Among all the infectious diseases, verrucas (10.03%), impetigo (1.48%), and herpes simplex infection (1.30%) were found most commonly.

Among eczemas, irritant contact dermatitis was found most commonly (9.42%). Contact dermatitis, which includes irritant contact dermatitis, allergic contact dermatitis, and diaper dermatitis was observed with a rate of 11.43% among all diseases, whereas seborrheic dermatitis and pityriasis alba were observed with rates of 4.30% and 2.21%, respectively.

Acne vulgaris, which is the most common disease in the acne and follicular diseases group was observed most commonly in the 12–16-year age group and in girls.

Among allergic skin diseases, atopic dermatitis was observed most commonly (4.03%). It was observed most commonly in boys and in the 0–2 and 3–5-year age groups. This was followed by urticaria (3.04%) and insect bite (3.02%).

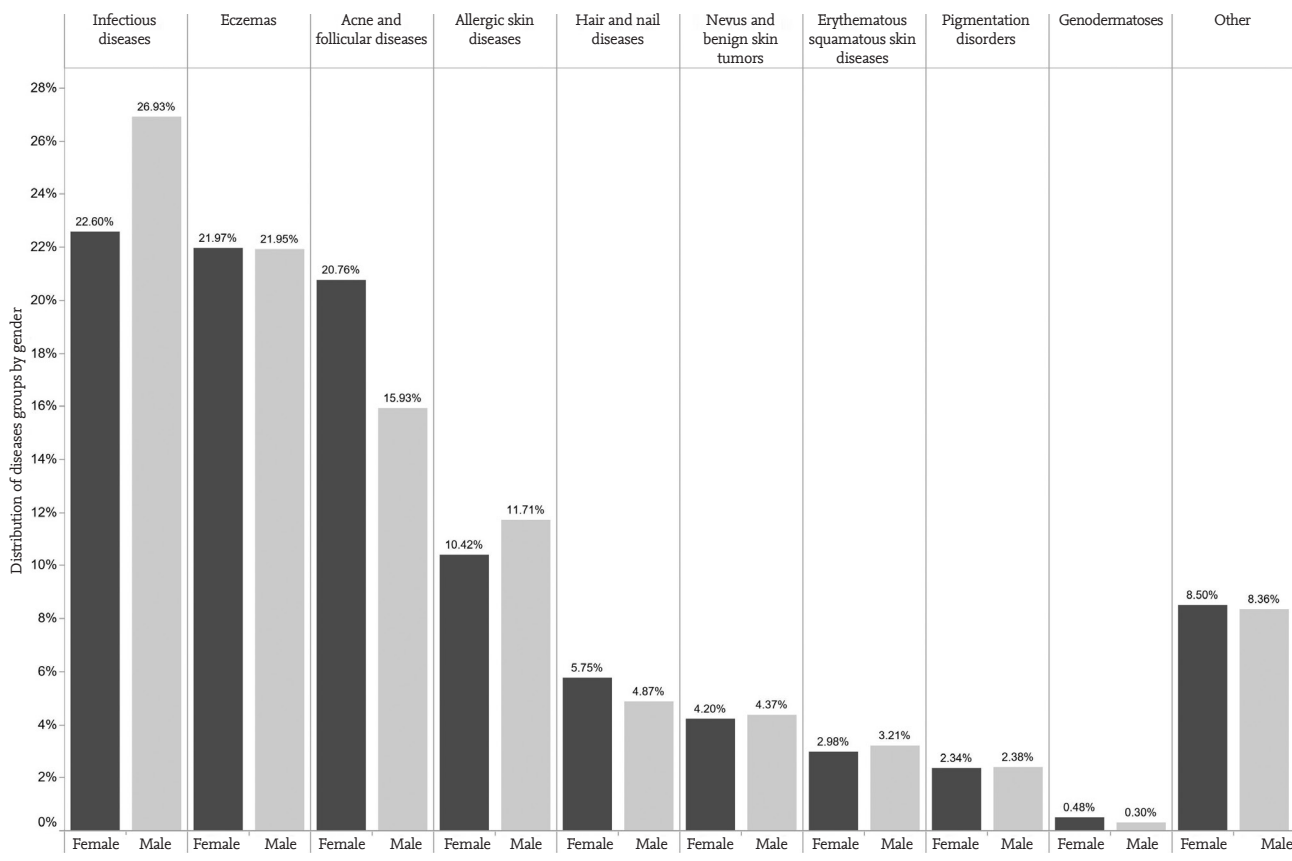


Figure 1. Distribution of disease groups by sex

Table 1. Classification of disease groups by age groups

| Disease group | Age groups | | | | TOTAL |
|----------------------------------|-------------------|-------------------|--------------------|---------------------|----------------|
| | 0-2 age group (%) | 3-5 age group (%) | 6-11 age group (%) | 12-16 age group (%) | |
| Infectious diseases | 149 (15.94%) | 337 (26.06%) | 948 (31.99%) | 1 057 (21.47%) | 2 491 (24.63%) |
| Eczemas | 342 (36.58%) | 379 (29.31%) | 785 (26.49%) | 715 (14.52%) | 2 221 (21.96%) |
| Acne and follicular diseases | 41 (4.39%) | 20 (1.55%) | 65 (2.19%) | 1 745 (35.44%) | 1 871 (18.50%) |
| Allergic skin diseases | 227 (24.28%) | 227 (17.56%) | 346 (11.68%) | 315 (6.40%) | 1 115 (11.02%) |
| Hair and nail diseases | 35 (3.74%) | 67 (5.18%) | 175 (5.91%) | 263 (5.34%) | 540 (5.34%) |
| Nevus and benign skin tumors | 33 (3.53%) | 43 (3.33%) | 125 (4.22%) | 232 (4.71%) | 433 (4.28%) |
| Erythematous squamous dermatoses | 3 (0.32%) | 19 (1.47%) | 131 (4.42%) | 159 (3.23%) | 312 (3.08%) |
| Pigmentation disorders | 30 (3.21%) | 31 (2.40%) | 75 (2.53%) | 103 (2.09%) | 239 (2.36%) |
| Genodermatoses | - | 6 (0.46%) | 17 (0.57%) | 17 (0.35%) | 40 (0.40%) |
| Other/Unclassified group | 75 (8.02%) | 164 (12.68%) | 296 (9.99%) | 318 (6.46%) | 853 (8.43%) |
| Total | 935 (100%) | 1293 (100%) | 2963 (100%) | 4924 (100%) | 10,115 (100%) |

Among hair diseases, alopecia areata was found with a higher rate in the boys and in the 6-11-year age group (Table 2).

Melanocytic nevi were observed most commonly in the 12-16-year age group (Table 2).

Xeroderma, which was found in 373 subjects (3.68%), was most commonly observed in girls in the 6-11-year age group.

Among erythematous and squamous diseases, which were found in 312 subjects (3.08%), psoriasis (1.34%) and pityriasis rosea (1.27%) were observed most commonly. These two diseases were observed most commonly in the 12-16-year age group (Table 2).

Pigmentation disorders were observed in 239 subjects and 80 (0.79%) of these were constituted by lentigos and 75 (0.74%) were constituted by vitiligo.

Table 2. Classification of diseases by age groups

| Disease groups | 0-2 age group (%) | 3-5 age group (%) | 6-11 age group (%) | 12-16 age group (%) | TOTAL (100%) |
|------------------------------|-------------------|-------------------|--------------------|---------------------|--------------|
| Infectious diseases | 149 (5.98%) | 337 (13.53%) | 948 (38.06%) | 1 057 (42.43%) | 2491 (100%) |
| Verrucas | 7 (0.69%) | 88 (8.67%) | 441(43.75%) | 479 (47.19%) | 1015 |
| Other viral diseases | 38 (8.73%) | 80 (18.39%) | 177(40.68%) | 140 (35.18%) | 435 |
| Pityriasis versicolor | 1 (0.82%) | 0 (0%) | 16 (13.11%) | 105 (86.07%) | 122 |
| Other fungal diseases | 19 (6.05%) | 37 (11.78%) | 91 (28.98%) | 167 (53.18%) | 314 |
| Impetigo | 43 (28.67%) | 45 (30%) | 45 (30%) | 17 (11.33%) | 150 |
| Other bacterial diseases | 28 (9.72%) | 69 (23.95%) | 105(36.45%) | 86 (29.86%) | 288 |
| Scabies | 9 (14.29%) | 6 (9.52%) | 18 (28.57%) | 30 (46.62%) | 63 |
| Pediculosis | 1 (0.99%) | 12 (11.88%) | 55 (54.46%) | 33 (32.67%) | 101 |
| Eczemas | 342 (15.40%) | 379 (17.06%) | 785 (35.34%) | 715 (32.19%) | 2221 (100%) |
| Irritant contact dermatitis | 153 (16.05%) | 200 (20.99%) | 356 (37.36%) | 244 (25.60%) | 953 |
| Allergic contact dermatitis | 5 (4.24%) | 16 (13.56%) | 48 (40.68%) | 49 (41.53%) | 118 |
| Seborrheic dermatitis | 40 (9.20%) | 35 (8.05%) | 105 (24.14%) | 255 (28.62%) | 435 |
| Pityriasis alba | 10 (4.46%) | 50 (22.32%) | 132 (58.93%) | 32 (14.29%) | 224 |
| Nummular dermatitis | 21 (16.67%) | 36 (28.57%) | 46 (36.51%) | 23 (18.25%) | 126 |
| Diaper dermatitis | 84 (97.67%) | 2 (2.33%) | 0 (0%) | 0 (0%) | 86 |
| Other | 29 (%10.39) | 40 (%14.33) | 98 (%35.12) | 112 (%40.14) | 279 |
| Acne and follicular diseases | 41 (2.19%) | 20 (1.07%) | 65 (3.47%) | 1745 (93.27%) | 1 871 (100%) |
| Acne vulgaris | 7 (0.39%) | 9 (0.50%) | 52 (2.88%) | 1735 (96.23%) | 1803 |
| Other | 34 (50%) | 11 (16.17%) | 13 (19.11%) | 10 (14.70%) | 68 |
| Allergic skin diseases | 227 (20.36%) | 227 (20.36%) | 346 (31.03%) | 315 (28.25%) | 1115 (100%) |
| Atopic dermatitis | 188 (46.08%) | 118 (28.92%) | 84 (20.59%) | 18 (4.41%) | 408 |
| Urticaria | 18 (5.84%) | 43 (13.96%) | 105 (34.09%) | 142 (46.10%) | 308 |
| Insect bite | 21 (6.86%) | 66 (21.57%) | 136 (44.44%) | 83 (27.12%) | 306 |
| Drug eruption | 0 (0%) | 0 (0%) | 7 (13.21%) | 46 (86.79%) | 53 |
| Other | 0 (0%) | 0 (0%) | 14 (35%) | 26 (65%) | 40 |
| Hair and nail diseases | 35 (6.48%) | 67 (12.41%) | 175 (32.41%) | 263 (48.70%) | 540 (100%) |
| Alopecia areata | 1 (0.65%) | 17 (10.97%) | 77 (49.68%) | 60 (38.71%) | 155 |
| Telogen effluvium | 1 (0.68%) | 6 (4.08%) | 37 (25.17%) | 103 (70.07%) | 147 |
| Other hair diseases | 2 (6.66%) | 1 (3.33%) | 4 (13.33%) | 23 (76.66%) | 30 |
| Nail dystrophy | 23 (16.20%) | 39 (27.46%) | 49 (34.51%) | 31 (21.83%) | 142 |
| Onyxis | 8 (13.33%) | 3 (5.00%) | 6 (10.00%) | 43 (71.67%) | 60 |
| Other nail diseases | 0 (0%) | 1 (16.66%) | 2 (33.33%) | 3 (50%) | 6 |
| Nevus and benign skin tumors | 33 (7.62%) | 43 (9.93%) | 125 (28.87%) | 232 (53.58%) | 433 (100%) |
| Melanocytic nevus (MN) | 1 (0.70%) | 6 (4.23%) | 40 (28.17%) | 95 (66.90%) | 142 |
| Congenital MNa | 9 (64.29%) | 4 (28.57%) | 1 (7.14%) | 0 (0%) | 14 |
| Epidermal cyst | 3 (4.23%) | 7 (9.86%) | 22 (30.99%) | 39 (54.93%) | 71 |
| Callus | 0 (0%) | 1 (2.56%) | 8 (20.51%) | 30 (76.92%) | 39 |
| Keloid scar | 0 (0) % | 5 (22.73%) | 8 (36.36%) | 9 (40.91%) | 22 |

Table 2. Classification of diseases by age groups (continued)

| Disease groups | 0-2 age group (%) | 3-5 age group (%) | 6-11 age group (%) | 12-16 age group (%) | TOTAL (100%) |
|------------------------------------|-------------------|-------------------|--------------------|---------------------|---------------|
| Nevus flammeus | 3 (15%) | 4 (20%) | 9 (45%) | 4 (20%) | 20 |
| Spider angioma | 0 (0%) | 4 (25%) | 10 (62.50%) | 2 (12.50%) | 16 |
| Other | 16 (14.81%) | 12 (11.11%) | 30 (27.77%) | 50 (46.29%) | 108 |
| Erythematous squamous dermatoses | 3 (0.96%) | 19 (6.09%) | 131 (41.99%) | 159 (50.96%) | 312 (100%) |
| Pityriasis rosea | 0 (0%) | 7 (5.43%) | 52 (40.31%) | 70 (54.26%) | 129 |
| Psoriasis vulgaris | 2 (2.78%) | 3 (4.18%) | 26 (36.11%) | 41 (56.94%) | 72 |
| Guttate psoriasis | 0 (0%) | 5 (7.81%) | 33 (51.56%) | 26 (40.63%) | 64 |
| Liken planus | 0 (0%) | 0 (0%) | 4 (40%) | 6 (60%) | 10 |
| Other | 1 (2.70%) | 4 (10.81%) | 16 (43.24%) | 16 (43.24%) | 37 |
| Pigmentation disorders | 30 (12.55%) | 31 (12.97%) | 75 (31.38%) | 103 (43.10%) | 239 (100%) |
| Lentigos | 0 (0%) | 2 (2.50%) | 27 (33.75%) | 51 (63.75%) | 80 |
| Vitiligo | 12 (16%) | 10 (13.33%) | 26 (34.67%) | 27 (36%) | 75 |
| Pi. hyperpigmentation ^b | 2 (6.25%) | 4 (12.50%) | 10 (31.25%) | 16 (50%) | 32 |
| Pi. hypopigmentation ^c | 2 (18.18%) | 3 (27.27%) | 6 (54.55%) | 0 (0%) | 11 |
| Other | 14 (34.14%) | 12 (29.26%) | 6 (14.63%) | 9 (21.95%) | 41 |
| Genodermatoses | 0 (0%) | 6 (15%) | 17 (42.50%) | 17 (42.50%) | 40 (100%) |
| Keratosis pilaris | 0 (0%) | 3 (8.82%) | 15 (44.12%) | 16 (47.06%) | 34 |
| Other | 0 (0%) | 3 (50%) | 2 (33.33%) | 1 (16.66%) | 6 |
| Other/Unclassified group | 75 (8.79%) | 164 (19.23%) | 296 (34.70%) | 318 (37.28%) | 853 (100%) |
| Xeroderma | 41 (10.99%) | 113 (30.29%) | 172 (46.11%) | 47 (12.60%) | 373 |
| Non-specific pruritus | 13 (6.37%) | 28 (13.73%) | 61 (29.90%) | 102 (50%) | 204 |
| Atrophic striae | 0 (0%) | 0 (0%) | 1 (2.63%) | 37 (97.37%) | 38 |
| Burn | 13 (34.21%) | 9 (23.68%) | 11 (28.95%) | 5 (13.16%) | 38 |
| Localized hyperhidrosis | 0 (0%) | 0 (0%) | 7 (21.88%) | 25 (78.13%) | 32 |
| Stomatitis | 1 (3.85%) | 1 (3.85%) | 6 (23.08%) | 18 (69.23%) | 26 |
| Recurrent oral aphthous ulcers | 0 (0%) | 0 (0%) | 9 (42.86%) | 12 (57.14%) | 21 |
| Petechiae/Purpura | 0 (0%) | 0 (0%) | 5 (26.32%) | 14 (73.68%) | 19 |
| Other | 7 (6.86%) | 13 (12.74%) | 24 (23.52%) | 58 (56.86%) | 102 |
| Total | 935 (9.24%) | 1293 (12.78%) | 2 963 (29.29%) | 4 924 (48.68%) | 10,115 (100%) |

^aCongenital melanocytic nevus ^bPostinflammatory hyperpigmentation ^cPostinflammatory hypopigmentation

Discussion

Childhood is a long time period during which growth and development periods are experienced. Skin characteristics and diseases may vary in parallel with the child's growth and development process in terms of both biologic and psychosocial aspects.

The most common childhood skin diseases were reported to be atopic dermatitis (31.3%), verrucas (13%),

and alopecia areata (6.2%) in the study conducted by Nanda et al. (4), in which 10,000 subjects were examined; infectious diseases (36%), diaper dermatitis (16%), and atopic dermatitis (9%) in the study by Hayden (5); atopic dermatitis (25.9%), pigmented nevi (9.1%), and verrucas (5%) in the study of Wenk et al. (1); and infectious diseases (47.15%) and eczemas (26.95%) in the study conducted by Sardana et al. (6) in India, in which 30,078 subjects were examined. In our study, acne vul-

garis (17.82%), contact dermatitis (11.43%), and verrucas (10.03%) were found most commonly.

In our study, infectious diseases were the most commonly found disease group with a rate of 24.62%. Infectious diseases were reported to be the most commonly observed disease group with a rate of 47.15% among all subjects in the study by Sardana et al. (6) in India. Again, a study conducted in Northern India reported infectious diseases to be the most common disease group with a rate of 11.4% (8). Additionally, epidemiologic studies conducted in Ethiopia and Brazil reported infectious diseases to be the most common disease group (9, 10). The high frequency of infectious diseases may be explained by crowded environments, inadequate hygiene, and low socioeconomic level in underdeveloped or developing countries. In our country, infectious diseases were reported to be the most commonly observed disease group with a rate of 27.87% by Kaçar et al. (11) in Afyon, with a rate of 27.6% in the study conducted by Gül et al. (12) in Ankara, and with a rate of 18.16% by Inanır et al. (13) in two socioeconomically different primary schools in Manisa, one of which was in the city center and the other was outside the city center. In addition, studies conducted in cities including Izmir, Istanbul, Ankara, and Zonguldak reported that the most common disease group was eczemas, followed by infectious diseases (2, 3, 14, 15). This variance in different cities in the same country, similar to differences found between countries, may be explained with different environmental and socioeconomic factors found in different cities.

In our study, viral infections were found to be the most common disease group (14.78%) among infectious diseases. This finding is compatible with other studies in the literature, which reported that viral infections constituted the most commonly observed infectious skin diseases (4, 7, 12, 14). On the other hand, the literature also includes Ethiopian and Brazilian studies in which parasitic infestations were found most commonly, and an Indian study in which bacterial infections were found most commonly among the infectious diseases in children (6, 9, 10). However, our study is compatible with the study of Tamer et al. (16) in which verrucas were found with a rate of 9.5% and the study of Afşar (7) in which verrucas were found with a rate of 10.3% in children. There are also other studies from Turkey in which verrucas were reported with a rate of 4.3% and 8.7% (2, 3). In our study, viral infections were most commonly observed in the school age and adolescence periods. This finding may be explained by the fact that infectious diseases can easily be transmitted in crowded settings.

In our study, pediculosis capitis was found with a rate of 1% and scabies was found with a rate of 0.62% among ectoparasitic diseases. In different studies, pediculosis capitis and scabies were found with rates of 0.3% and 0.4%, respectively, in the study of Afşar (7), with rates of 0.1% and 0.2% in the study of Can et al. (2), with a rate of <0.01% in the study of Kaçar et al. (11), and with a rate of 0.02% in the study of Akbaş et al. (3). These studies were conducted in tertiary care centers, similar to our study. In addition, pediculosis capitis was found with a rate of 1.3% and scabies was found with a rate of 0.8% in the study of Özcan et al. (17) in which skin diseases were investigated in patients who presented to a primary care center in 2003. Inanır et al. (13) found pediculosis capitis with a rate of 9.4% and scabies with a rate of 2.2% in the previously mentioned study they conducted in two primary schools. Although the results found in our study were in contrast with those of Inanır et al. (13) in which pediculosis and scabies were found with high rates in a school with a low socioeconomic level, they were compatible with the study conducted by Özcan et al. (17) conducted in a primary care center, and higher compared with the other studies conducted in tertiary care centers (2, 3, 7, 11). The difference of our study compared that of Inanır et al. (13) may be explained with the high prevalence of ectoparasitic infections in crowded environments where the socioeconomic level is low.

In previous studies conducted in our country, eczemas were found as the most common disease group with rates of 32.7% in the study by Can et al. (2) in Istanbul, 29.4% by Özer et al. (18) in Hatay, 26% by Saçar et al. (15) in Izmir, 25.9% by Tekin et al. (14) in Zonguldak, 17.9% by Oruk et al. (19) in Ankara, and 25.8% Akbaş et al. (3), also in Ankara. In our study, eczemas were found to be the second most common disease group with a rate of 21.95%.

In our study, contact dermatitis was found with a high rate in the 6-11 and 12-16-year age groups. Although it was reported that the rate of sensitization in children and adolescents was similar to adults by Heine et al. (20), the increased frequency found in these age groups may be explained by increased contact with irritants or allergic substances with increasing age.

Acne vulgaris is observed commonly in adolescence. However, it has been proposed that it occurs earlier due to early onset of puberty and is most commonly observed between the ages of 14 and 17 years and with a rate of 40% in girls (21). In the study by Tamer et al. (16), it was reported that acne vulgaris was the most common skin disease among

the subjects who presented to the pediatric outpatient clinic between 2004 and 2006. In another prevalence study in which 8298 subjects were included, acne vulgaris was reported with a rate of 36.5% (22). In this aspect, our study is generally compatible with the literature.

Atopic dermatitis has been observed with a gradually increasing frequency in recent years and air pollution, exposure to house dust mites, changing lifestyle, increasing hygiene, decreased breastfeeding, and additives in foods have been proposed as causative factors (23). The frequency of atopic dermatitis has been reported to range between 10% and 20% in developed countries, though it varies by studies (24). In our study, the frequency of atopic dermatitis was found as 4.03%. In the literature, the frequency of atopic dermatitis was reported as 31.3% in the study conducted by Nanda et al. (4), 25.9% by Wenk et al. (1), 18.5% by Afşar (7), 13% by Can et al. (2), 10.5% by Tekin et al. (14), 7.3% by Akbaş et al. (3), 7.11% by Kaçar et al. (11), 6.8% by İnanir et al. (13), and 4.55% in the study conducted by Gül et al. (12).

In the study by Afşar (7), it was stated that Turkey was in a place between developed countries where allergic skin diseases were prevalent and underdeveloped countries where contagious skin diseases are prevalent. When the regions of our country were examined, the frequency of atopic dermatitis was found as 10% in studies conducted in the Western part of Turkey, and below 10% in studies conducted in Middle Anatolia, and in the present study, which we conducted in South Eastern Anatolia (2, 3, 7, 11, 12, 14). The frequency of atopic dermatitis in our study is lower compared with both developed countries and the studies conducted in the western part of our country. This finding may be explained by changing lifestyle between rural life and city life and different environmental and socioeconomic factors found in different countries and the different cities of our country. Atopic dermatitis was found more commonly in boys in the study conducted by Tamer et al. (16) similar to our study. It is generally thought that the prevalence of atopic dermatitis decreases with increasing age (25). In our study, atopic dermatitis was observed most commonly in the 0-2 and 3-5-year age groups and its prevalence decreased with increasing age.

Seborrheic dermatitis was found with a rate of 5.2% in the study conducted by Tekin et al. (14), 7.1% by Saçar et al. (15), 6.4% by Can et al. (2), 4.5% by Afşar (7), and 4.3% in the study by Akbaş et al. (3). In our study, the frequency of seborrheic dermatitis was found as 4.30%, which was generally compatible with the literature. Erythem-

atous-squamatus dermatoses were found with rates of 9.9% in the study by Saçar et al. (15), 7.7% by Tekin et al. (14), 5.5% by Can et al. (2), 4.33% by Kaçar et al. (11), 8.8% by Akbaş et al. (3), and 5% in the study by Afşar (7). In our study, this rate was found as 3.08%. In most of these studies, seborrheic dermatitis was evaluated in the disease group of erythematous-squamatus diseases. We evaluated seborrheic dermatitis as eczemas. When this point was considered, it was observed that the prevalence of erythematous-squamatus dermatoses in our study was compatible with the literature. In our study, psoriasis was observed with a rate of 1.34%. Psoriasis was found with rates of 2% by Wenk et al. (1), 1.3% by Akbaş et al. (3), 1.8% by Afşar (7), 2.5% by Can et al. (2), 4.7% by Tekin et al. (14), and 2.52% by Kaçar et al. (11). This finding in our study was also compatible with the literature.

In one study, it was reported that vitiligo started between 8 and 12 years in 51% of the patients (26). Vitiligo, which was found with a rate of 0.74% in our study was mostly observed in the 6-11 and 12-16-year age groups. Vitiligo was reported with rates of 1.7% in the study by Afşar (7), 2.2% by Can et al. (2), 1.7% by Kaçar et al. (11), 2% by Tekin et al. (14), 1.8% by Gül et al. (12), and with a rate of 0.8% in the study by Wenk et al. (1).

Seasonal changes may affect the occurrence of some diseases (16). For example, atopic dermatitis, xeroderma, contact dermatitis, seborrheic dermatitis, pruritus, callus, and bacterial and fungal infections were found more commonly in autumn and winter months, whereas acne vulgaris, urticaria, contact dermatitis, insect bite, verruca, and miliaria were found more commonly in spring and summer months in our study.

The limitation of our study was that it was a single-center study with retrospective design. Although our study encompassed the whole province, it included only patients who presented to the outpatient clinic. Although the number of patients was high, multi-center, large-scale studies are needed in terms of the epidemiology of childhood skin diseases in our country.

In conclusion, we think that our study is valuable in terms of reflecting the epidemiology of childhood skin diseases in this region in that it encompassed all pediatric patients with dermatosis who presented to the outpatient clinic in Erzincan, as well as being the first study related with childhood dermatoses in the region. Most of the diseases found with a high frequency in our study can be minimized with preventive health and health education programs. In this aspect, the results

we obtained may contribute to the development of regional health and health education policies. Although our study reflected a small portion of the community, it also gives an idea related with childhood skin diseases observed in Turkey because of the high number of patients. We think that large-scale, countrywide epidemiologic studies are needed in order to present childhood skin problems in detail, constitute appropriate preventive health policies, and develop education programs.

Ethics Committee Approval: Ethics committee approval was received for this study from the local ethics committee of Erzincan University (04.04.2017/3/03).

Informed Consent: Informed consent was not obtained due to retrospective nature of this study.

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