

Epidemiological Evaluation of Scabies Cases Presenting to a Tertiary Healthcare Facility Over a Five-year Period

Üçüncü Basamak Bir Sağlık Kuruluşuna Başvuran Skabiesli Olguların Beş Yıllık Süreçte Epidemiyolojik Olarak Değerlendirilmesi

✉ Necip Enis Kaya, ✉ Emine Çölgeçen

Yozgat Bozok University Faculty of Medicine, Department of Dermatology, Yozgat, Türkiye

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ABSTRACT

Objective: This study aimed to evaluate the demographic characteristics and annual trends of scabies cases before, during, and after the coronavirus disease-2019 pandemic.

Methods: All patients diagnosed with scabies at the Dermatology Outpatient Clinic of Yozgat Bozok University between January 2019 and December 2023 were retrospectively analyzed. Demographic data, including age, sex, nationality, and admission date, were retrieved from the hospital database.

Results: Two thousand ten of 50,887 patients (3.9%) were diagnosed with scabies during the five-year study period (2019-2023). The frequencies of scabies from 2019 to 2023 were 1.66%, 2.9%, 3.12%, 5.99%, and 5.82%, respectively, and a statistically significant difference was observed across the years ($p<0.001$). Males represented 54.5% of the total cases. The lowest frequency was in the second quarter of 2019, and the highest in the first quarter of 2023 (1.31% and 7.84% respectively). The fourth quarter exhibited the highest overall case count ($p<0.001$). The patient's mean age was 29.4 ± 21.9 years, with significant annual variation ($p=0.002$). The prevalence of scabies was significantly higher among foreign patients than among Turkish nationals ($p<0.001$). Treatment failure and reinfestation peaked in 2020. Scabies was present in 1.71% (257/14,989) of patients prior to the pandemic, compared to 3% (261/8,687) during the pandemic ($p<0.001$).

Conclusion: The incidence of scabies has increased gradually since 2019, with a marked rise observed in 2022, coinciding with the post-pandemic period. This may be linked to treatment resistance, poor compliance, limited healthcare access during the pandemic, and the lifting of restrictions thereafter. Reinfestation rates fell to their lowest level once oral ivermectin became available in early 2023. Public education and effective treatment strategies are essential for outbreak control.

Keywords: Scabies, epidemiology, outbreak, COVID-19

ÖZ

Amaç: Çalışmamızda koronavirus hastalığı-2019 pandemisi öncesi, pandemi dönemi ve pandemi sonrası skabies olgularının demografik özellikleri ve yıllara göre değişimlerinin değerlendirilmesi amaçlandı.

Yöntemler: Ocak 2019 ve Aralık 2023 tarihleri arasında Yozgat Bozok Üniversitesi Dermatoloji Kliniği'nde skabies tanısı alan tüm hastalar retrospektif olarak değerlendirilerek çalışmaya alındı. Yaş, cinsiyet, vatandaşlık ve başvuru tarihleri hastane veri tabanından elde edildi.

Bulgular: Beş yılda (2019-2023) polikliniğe başvuran toplam 50887 hastanın 2010'u (%3,9) skabies tanısı aldı. 2019-2023 yıllarındaki skabies sıklığı sırasıyla %1,66, %2,9, %3,12, %5,99 ve %5,82'di. Yıllar arasındaki skabies sıklığı farkı anlamlıydı ($p<0,001$). Çalışmaya dahil edilen hastaların %54,5'ü erkekti. Skabies sıklığının en düşük olduğu dönem 2019 yılının 2. çeyreklik dilimiyken, en yüksek olduğu dönem 2023 yılının 1. çeyreklik dilimiydi (%1,31'e karşı %7,84). Fakat toplamda en sık 4. çeyrekte hasta izlendi ve bu fark diğer çeyreklere göre anlamlıydı. Yaş ortalaması $29,4\pm 21,9$ yıl olup, yıllara göre yaş ortalamalarında anlamlı fark mevcuttu ($p=0,002$). Yabancı uyruklu hastalarda skabies görülme oranı Türk vatandaşlarına göre anlamlı derecede yüksekti ($p<0,001$). Tedavi başarısızlığı ve reinfestasyon oranı 2020 yılında en yüksek seviyeye ulaştı. Reinfestasyon oranları 2023 yılında en



Address for Correspondence/Yazar Adresi: Asst. Prof. Necip Enis Kaya, Yozgat Bozok University, Department of Dermatology, Yozgat, Türkiye

E-mail/E-Posta: dr.eniskaya@gmail.com **ORCID ID:** orcid.org/0000-0001-9530-6325

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düşük seviyede izlendi. COVID-19 pandemisi öncesinde toplam 14.989 hastanın 257'si (%1,71) skabies iken, pandemi döneminde başvuran 8.687 hastanın 261'i (%3) skabiesti ve bu fark anlamlı saptandı ($p < 0,001$).

Sonuç: Skabies sıklığı, 2019'dan itibaren kademeli olarak artmış ve pandemi sonrası döneme denk gelen 2022'de belirgin bir artış göstermiştir. Bu artışın tedavi uyumsuzluğu, tedavi direnci, pandemi nedeniyle tedaviye ulaşamama, pandemi sonrası sosyal kısıtlamaların kalkmasına bağlı olabileceği değerlendirilmiştir. 2023 yılının başında oral ivermektinin ülkemizde ruhsat almasıyla reinfestasyon oranları bu yılda düşük seviyede izlenmiştir. Skabies epidemisinin kontrolü için toplumun bilgilendirilmesi ve etkili tedavi stratejileri önemlidir.

Anahtar Kelimeler: Skabies, epidemiyoloji, salgın, COVID-19

INTRODUCTION

Scabies is an infestation characterized by nocturnal pruritus and polymorphic eruptions. Transmission primarily occurs through direct skin-to-skin contact, with occasional indirect transmission via contaminated fomites. Contributing factors include migration, inadequate healthcare, communal living, and poor hygiene. The incidence frequently increases during the fall and winter. Scabies is caused by an obligate parasite that completes its life cycle on humans, surviving outside the body for 2-3 days (1-5).

Symptoms typically manifest 3-6 weeks post-infestation. Clinically, patients present with nocturnal pruritus, particularly around the abdomen, genital region, wrists, and ankles, but sparing the interscapular and facial areas. This pruritus represents a hypersensitivity reaction to mite proteins and feces. Dermatological examination reveals non-specific lesions such as excoriated papules, secondary infections, and eczematization, together with specific findings such as burrows and vesicle perles (6).

The diagnosis is usually clinical, based on typical presentation, nocturnal pruritus, and the presence of a household scabies infection (7). In 2020, the International Alliance for the Control of Scabies (IACS) established diagnostic criteria involving three main levels: confirmed (A), clinical (B), and suspected (C), which are further divided into eight subcategories. Level A involves the observation of mites, eggs, or feces via microscopy (A1), high-magnification devices (A2), or dermoscopy (A3). Level B includes scabies burrows (B1), typical male genital lesions (B2), or typical lesions with a typical distribution and two history features (B3). Level C involves either a typical clinical distribution with one history feature (C1) or an atypical lesion or distribution with two history features (C2). History features include pruritus and close contact (8).

Scabies is a significant public health concern due to its outbreak potential, treatment costs, and impact on patient quality of life (4). Recent Turkish epidemiological studies suggest a correlation between an increased incidence and the coronavirus disease-2019 (COVID-19) pandemic (9,10). This study evaluated the frequency of scabies and the demographic characteristics of cases in our region over a five-year period spanning pre-pandemic, pandemic, and post-pandemic phases.

METHODS

Patients who presented to the Yozgat Bozok University Research and Training Hospital Dermatology Clinic, Türkiye, between January 1, 2019, and December 31, 2023, and who were diagnosed with scabies (ICD-10 code B86) according to the International Classification of Diseases, 10th revision (ICD-10) were included in the study. All were diagnosed according to IACS criteria (levels A, B, or C), with the majority classified as level A. Diagnosis was based on patient history, clinical examination, dermoscopic observation

of mites, feces, or eggs, and, in selected cases, light microscopy. Dermoscopy was the most commonly used diagnostic tool, particularly in level A cases. Demographic data such as age, gender, nationality, and admission dates were anonymized and retrieved from the electronic registration database. Patients diagnosed with scabies outside the dermatology clinic were excluded. All patients diagnosed with scabies were enrolled, and no exclusion criteria were applied. However, repeat visits occurring within 10 days were considered clinically insignificant and therefore excluded. Recurrent presentations between 10 and 30 days were regarded as treatment failures, whereas those occurring after 31 days were considered reinfestation. Approval for the study was obtained from the Yozgat Bozok University Faculty of Medicine Ethics Committee (decision no: 2025-GOKAEK-2510_2025.05.21_460, date: 21.05.2025). Due to the retrospective nature of the study, written informed consent could not be obtained from patients. However, the research was conducted in accordance with the principles of the Declaration of Helsinki.

Statistical Analysis

All statistical procedures were conducted using SPSS version 27.0 for Windows. The annual distributions of scabies diagnoses and of patients' gender and age were analyzed using frequency and percentage distributions. Mean and standard deviation were used to describe age. Where appropriate, categorical variables were analyzed using Pearson's chi-square test. For chi-square tests with degrees of freedom greater than 1, post-hoc analyses were performed using the z-test. Once the normality of the scale variables had been confirmed with the Kolmogorov-Smirnov test, independent samples were compared using appropriate significance tests (the Kruskal-Wallis H and Mann-Whitney U tests). Two-sided p-values < 0.05 were considered statistically significant. A Bonferroni correction for alpha inflation was applied post-hoc after the Kruskal-Wallis H and chi-square tests.

RESULTS

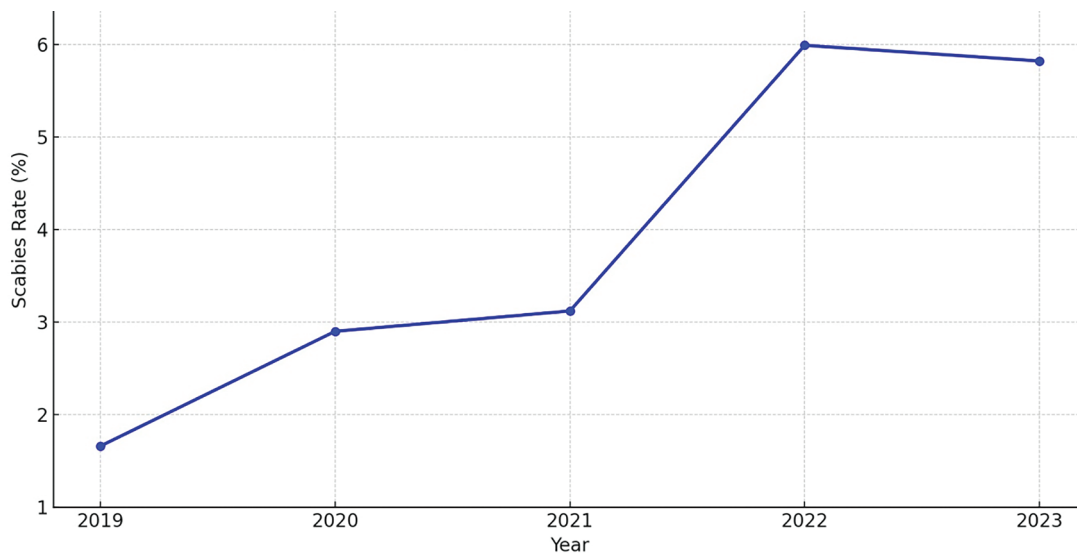
Two thousand ten (3.9%) out of 50,887 dermatology clinic outpatient cases between 2019 and 2023 were diagnosed as scabies. Table 1 shows the quarterly proportions of scabies cases among the total admissions. The frequency increased progressively from 2019 to 2022 (1.66%, 2.9%, 3.12%, and 5.99%) before declining slightly in 2023 (5.82%) (Figure 1). The frequency also exhibited a statistically significant difference across the years ($p < 0.001$), with no significant differences observed between 2020 and 2021 or between 2022 and 2023.

The lowest frequency was in the second quarter of 2019 (1.31%), and the highest in the first quarter of 2023 (7.84%). All quarters exhibited significant interannual variation ($p < 0.001$) (Table 1). The distribution across quarters was 25% in the first, 21.7% in the second, 22% in the third, and 31.2% in the fourth (Figure 2). The differences among the quarters were significant ($p < 0.001$),

Table 1. Frequency distribution of scabies according to years and quarters

		2019	2020	2021	2022	2023	p
Quarter 1	Scabies n (%)	43 (1.35)	45 (2.04)	52 (2.18)	152 (6.36)	211 (7.84)	p<0.001
	All outpatients n	3196	2208	2390	2391	2691	
Quarter 2	Scabies n (%)	40 (1.31)	47 (4.01)	59 (3.36)	129 (5.1)	161 (5.64)	p<0.001
	All outpatients n	3042	1173	1755	2530	2854	
Quarter 3	Scabies n (%)	63 (1.89)	38 (2.58)	84 (3.21)	124 (4.64)	134 (4.73)	p<0.001
	All outpatients n	3337	1473	2620	2673	2831	
Quarter 4	Scabies n (%)	66 (2.06)	66 (3.48)	83 (3.86)	246 (7.50)	167 (5.23)	p<0.001
	All outpatients n	3205	1897	2148	3280	3193	
Total	Scabies n (%)	212 (1.66)	196 (2.9)	278 (3.12)	651 (5.99)	673 (5.82)	p<0.001
	All outpatients n	12780	6751	8913	10874	11569	

Quarter 1: January-March, Quarter 2: April-June, Quarter 3: July-September, Quarter 4: October-December. Data were expressed as the number of patients (percentage). The chi-square test was used, followed by a Bonferroni correction as a post-hoc analysis. Significant values are shown in bold

**Figure 1.** Frequency distribution of scabies by year

except between the first and second quarters and between the second and third quarters. In 2020, the frequency of scabies in the first quarter was significantly lower than in the second and fourth quarters ($p<0.001$ and $p=0.004$, respectively).

Males represented 1,096 (54.5%) of the scabies cases and females represented 914 (45.5%); the difference was significant ($p<0.001$). Although a male predominance was observed in all five years, the difference was not significant in 2019 or 2021 ($p=0.68$, $p=0.01$, $p=0.905$, $p=0.002$, and $p=0.028$, respectively). The overall gender distribution did not differ significantly across the five years of the study ($p=0.26$) (Table 2).

The mean age of the scabies patients was 29.43 ± 21.90 years. Yearly mean ages from 2019 to 2023 were 35.79 ± 24.04 , 27.11 ± 19.72 , 28.32 ± 21.28 , 28.69 ± 21.49 , and 29.28 ± 22.16 years, respectively. A significant difference was found in both overall mean age and female mean age across the years ($p=0.002$ and $p=0.001$, respectively). Although females were significantly older in 2019 than in other years, the male age distribution exhibited no significant variation over time ($p=0.48$). Females were significantly older than males in 2019 and 2023 ($p=0.005$ and $p=0.023$, respectively) (Table 2).

Patients were categorized into six age groups: infants (0-1), preschool (1-6), school-age (7-14), young adults (15-44), middle-aged (45-65), and elderly (65+). Scabies was present in all groups, but was significantly more frequent among preschool boys than girls ($p=0.002$). A significant difference in age group distribution was observed across the years ($p=0.003$), principally due to the higher proportion of elderly patients in 2019 ($p<0.0004$). No significant changes were noted in other age groups (Table 2).

Ninety-nine (13%) of the 725 (1.4%) foreign nationals were diagnosed with scabies. The incidence was significantly higher among foreign patients ($p<0.001$). Overall, 4.9% of scabies patients were foreign nationals; the highest rate (11.7%) was observed in 2020 ($p<0.001$).

Three hundred forty-one (69.9%) of the 488 patients with recurrent visits underwent two consultations for scabies, while 147 (30.1%) were treated more than twice. The number of recurrent visits differed significantly across years ($p=0.002$). Foreign nationals with scabies exhibited higher recurrence rates than Turkish citizens ($p=0.008$). The overall rate of recurrent visits among scabies patients peaked in 2020 at 36.7%. Treatment failure, as a proportion of total visits, also exhibited significant

annual variation ($p=0.022$), with the highest level occurring in 2020 (7.1%), although pairwise year comparisons revealed no significant differences. Reinfestation rates also varied significantly ($p<0.001$), reaching 29.6% in 2020 and dropping to 15.2% in 2023, which was significantly lower than in 2019, 2020, and 2021 (Table 2).

Because this study covered the COVID-19 pandemic, frequencies of scabies were compared between the pre-pandemic period (before April 2020) and the pandemic period (April 2020-July 2021). Scabies was diagnosed in 1.71% (257/14,989) of patients before the pandemic and in 3% (261/8,687) during the pandemic, a significant increase ($p<0.001$).

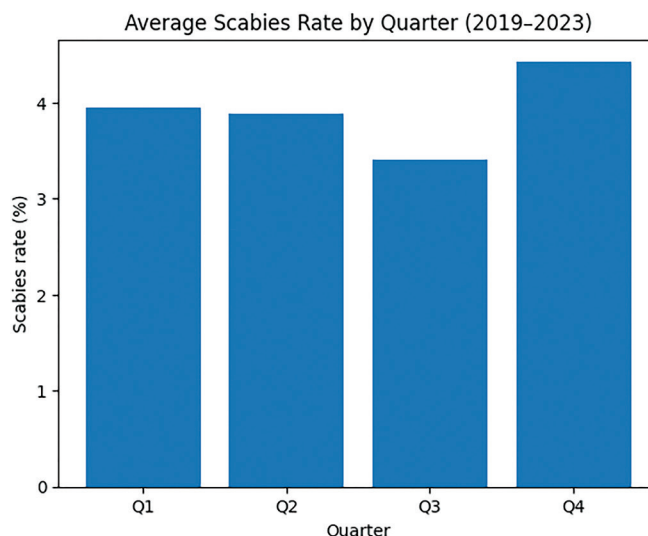


Figure 2. Frequency distribution of scabies according to quarters

Q1: January-March, Q2: April-June, Q3: July-September, Q4: October-December

	2019 (n=212)	2020 (n=196)	2021 (n=278)	2022 (n=651)	2023 (n=673)	Total (n=2010)	P
Age	35.79±24.04	27.11±19.72	28.32±21.28	28.69±21.49	29.28±22.16	29.43±21.90	0.002
Female-age	41.07±24.35	29.33±20.24	29.67±20.38	29.71±21.56	31.25±22.40	31.47±22.12	0.001
Male-age	30.81±22.74	25.58±19.29	26.98±22.13	27.90±21.42	27.62±21.84	27.74±21.57	0.48
p	0.005	0.197	0.149	0.272	0.023		
Sex (F/M)	103/109	80/116	138/140	285/366	308/365	914/1096	0.26
Refugee n (%)	15 (7.1)	23 (11.7)	11 (4)	21 (3.2)	29 (4.3)	99 (4.9)	<0.001
Recurrent presentations n (%)							0.002
Treatment failure	6 (2.8)	14 (7.1)	7 (2.5)	30 (4.6)	18 (2.7)	75 (3.7)	0.022
Re-infestation	55 (25.9)	58 (29.6)	64 (23)	134 (20.6)	102 (15.2)	413 (20.5)	<0.001
Age groups n (%)							0.003
Infants (0-1)	7 (3.3)	18 (9.2)	18 (6.5)	33 (5.1)	43 (6.4)	119 (5.9)	0.10
Preschool children (1-6)	12 (5.7)	12 (6.1)	22 (7.9)	56 (8.6)	44 (6.5)	146 (7.2)	0.45
School children (7-14)	33 (15.6)	27 (13.8)	57 (20.5)	106 (16.3)	111 (16.5)	334 (16.6)	0.35
Young adults (15-44)	74 (34.9)	93 (47.4)	116 (41.7)	290 (44.5)	293 (43.5)	871 (43.3)	0.086
Middle-aged persons (45-65)	49 (23.1)	35 (17.9)	42 (15.1)	111 (17.1)	118 (17.5)	355 (17.6)	0.21
Aged persons (65+)	37 (17.5)	11 (5.6)	23 (8.3)	55 (8.4)	64 (9.5)	190 (9.4)	0.0004

Data were expressed as mean ± standard deviation or patient number (percentage). Kruskal-Wallis H, Mann-Whitney U, and chi-square tests were used. Following the Kruskal-Wallis H and chi-square tests, Bonferroni correction was applied as a post-hoc analysis. Significant values are shown in bold

DISCUSSION

According to World Health Organization (WHO) data, scabies affects approximately 400 million individuals annually, with an estimated 200 million active cases worldwide and a prevalence ranging from 0.2% to 71%. The WHO classified scabies as a neglected tropical disease in 2017 (11,12). In the past two decades, more than 20 countries have reported rising prevalence, particularly in Papua New Guinea, Panama, and Fiji. Scabies remains a worldwide public health concern, affecting individuals of all ages, ethnicities, genders, and socioeconomic backgrounds, and one that primarily impairs quality of life due to severe pruritus (10,12). In Türkiye, scabies continues to represent a serious health issue. Prior to 2000, the reported prevalence ranged from 0.001% to 11.5%. After 2000, rates generally fell below 1%, and until 2018, no study reported a prevalence exceeding 1% (13-15). However, in recent years, there has been a marked rise in prevalence, consistent with the present study (1,3,6,15-18).

A Turkish-based study conducted between 2018 and 2022 reported a frequency of scabies of 3.14%, aligning with the findings of the present research, while another study covering 2019 to 2021 reported a rate of 1.99% (6,19). Notably, the upward trend in scabies incidence is not confined to the 2019-2023 period examined in the current study. Aktaş and Cebecik (1) reported that the frequency rose from 0.4% in 2013 to 1% in 2018. Similarly, a study examining 2010-2018 data noted an increase from 0.14% in 2010 to 0.91% in 2014, maintaining similar levels through 2018 (1,17). In Turan et al.'s (3) study (2017-2019), the frequency rose from 0.55% in 2017 to 0.94% in 2019. Baykal et al. (15) also identified a significant increase starting in the fourth quarter of 2018 (1.5%), which continued into 2019 (3.0%). Our 2019 rate of 1.66% is consistent with the findings of these studies.

In a study conducted in Italy, a decrease in scabies incidence was observed in 2020, followed by a progressively increasing trend through 2023, similar to the pattern identified in our study (20). In the Netherlands, a threefold increase in scabies incidence was observed between 2011 and 2021, while a study from Germany reported a ninefold increase during the period from 2009 to 2018 (21,22).

A multicenter study by Özden et al. (16) using data from 12 tertiary dermatology centers between 2014 and 2019, revealed a sevenfold increase from 2017 to 2018 and a 30-fold increase by 2019. Importantly, resistance to topical treatments was first reported in 2018; this may partially explain the sustained nationwide rise in scabies incidence reflected in the present findings through 2023 (16).

Çetinkaya et al. (7) reported 3,908 scabies cases between January 2006 and April 2017 in Kayseri and its surrounding regions. The lowest prevalence was noted in 2016, followed by a twofold increase in the first four months of 2017 compared to the previous year. In contrast to our results, a female predominance was observed in that study (7).

In a study spanning a similar timeframe to the current research, Kara et al. (19) documented a marked increase in frequency between 2018 and 2022, the highest rate being observed in 2022, a finding consistent with our own findings. Similarly, Göçer Gürok (6) reported a steady rise from 2019 to 2021, although at slightly lower frequency rates (0.95-1.66%, 1.75-2.90%, and 1.99-3.12%, respectively). The author also noted a significant time-dependent decrease in the mean age of female patients, which is

consistent with our results. Further similarities include significant differences in all quarterly comparisons and the highest case numbers occurring in the fourth quarter (6). Likewise, Turan et al. (3) observed the majority of cases in the fourth quarter, with a notable year-over-year increase during that period. International research also supports an uptick in the incidence of scabies during winter (13,18,23). The increased number of cases observed in the final quarter of this and other studies may be attributable to increased indoor contact during colder months. However, this seasonal trend is not seen in tropical regions, likely due to consistently warm climates that limit changes in daily routines and social behavior (12,24).

Studies conducted during similar periods have reported a significant decrease in the mean age of scabies patients, consistent with our findings. Aktaş and Cebecik (1) reported that the mean age decreased from 49.7 in 2013 to 31.4 in 2019. Initially, middle-aged and elderly individuals were most affected, but a notable rise in younger patients was observed over time. Other Turkish studies have also reported a downward trend in mean age (1,3,6). Consistent with the results of the present study, young adults (15-44 years) were identified as the most frequently affected group. While the prevalence of scabies in developed countries is generally low and evenly distributed across age groups, it tends to peak in infancy and school-age children in underdeveloped and developing countries (3,6,7,13). The association between a rising incidence of scabies and decreasing mean age may reflect greater social and sexual activity among younger individuals and increased transmission risk in communal settings, such as dormitories and hostels.

Gender-based frequencies have varied across studies. Some Turkish studies have reported a female predominance (1,7,17,19,25), while others, including the current research, indicate higher rates in males (3,6,26). Gender differences within specific age groups have also been observed. Turan et al. (3) reported that scabies was more common in males among young adults and infants, but more frequent in females in the middle-aged group, with no significant difference in other groups. An Ethiopian study also noted a higher, though not statistically significant, prevalence among school-aged boys. Another Turkish study observed a slight male predominance in the 0-18 age group (3,27,28). In the present study, although males exhibited a higher overall frequency, a significant difference was found only in preschool boys. These disparities may reflect population structure, lifestyle, and cultural differences. We suggest that men in our region who have more active social lives may contribute to this pattern. The higher frequency among preschool boys, despite the absence of any difference in school-aged children, might be explained by preschool boys having closer social interactions outdoors during playtime. This difference may diminish as children of different genders enter school, leading to similar social conditions.

Recent studies suggest that the increasing incidence of scabies may be due to treatment failure, drug resistance, or reinfestation. A multicenter study from Türkiye reported resistance to topical agents in 13% of patients during 2018-2019 (16), while another study reported that 42.5% of patients did not benefit from treatment. In addition to publications reporting permethrin resistance (29), some studies have proposed that treatment unresponsiveness is attributable to incorrect drug use, rather than permethrin to resistance itself (30). Turan et al. (3) also examined suspected reinfestation and treatment failure, and

reported that the failure rate rose from 3.2% in 2017 to 6.2% in 2019, although this increase was not statistically significant. Reinfestation rates were 2.2%, 2.1%, and 1.4% for 2017, 2018, and 2019, respectively (3). In the present study, recurrent visits did not exhibit a linear increase but instead peaked in 2022. The average treatment failure rate was 3.7%, increased to 7.1% in 2020 and exhibited a fluctuating pattern. A decline was observed from 4.6% in 2022 to 2.7% in 2023. In contrast, reinfestation averaged a notably high rate of 20.5%, far exceeding that reported in the study cited above. This disparity may reflect regional differences in education, awareness, treatment adherence, and household compliance. Similar to treatment failure, reinfestation declined in 2023, likely due to the introduction of oral ivermectin in January 2023. Ivermectin's ease of use may have enhanced adherence among patients and households, thereby reducing both treatment failure and reinfestation. Additionally, if permethrin resistance were present, these cases may have been managed more effectively with ivermectin.

Refugee patients have been included in numerous studies, their proportions among total scabies cases reported being as follows: Özden et al., (16) 2.42%; Baykal et al., (15) 2.94%; Göçer Gürok (6), 27.6%, 8.7%, and 7.9% in 2019, 2020, and 2021, respectively; Turan et al., (3) 4.2%, 1.7%, and 3.3% in 2017, 2018, and 2019; and Kara et al., (19) 2.9%. Both Turan et al. (3) and Kara et al. (19) found no significant difference in repeat visits between refugees and Turkish nationals. In the present study, although refugees represented only 1.4% of the total patient population, they accounted for 4.9% of all scabies cases and had significantly higher rates of repeat visits. This may be attributed to regional variations in refugee density, education levels, language barriers, crowded living conditions, and hygiene standards. In Bener's (31) 2020 study of 767 Syrian refugees, scabies was present in 16.9%. The present study determined a scabies rate of 13% among refugees, compared with 3.8% among Turkish patients, which supports the effect of these factors.

Since this study spans the pre-pandemic, pandemic, and post-pandemic periods, the relevant literature was also reviewed. A cross-sectional study from April 2021 reported a scabies prevalence of 10.9%. Kara et al. (19) reported that the frequency rose from 2.02% before the pandemic to 5.30% after it. The frequency increased from 1.71% pre-pandemic to 3% during the pandemic, which demonstrates partial alignment. Kutlu and Metin (32) reported a rise in cases from 1.23% in April 2019 to 6.23% in April 2020, representing the early pandemic onset. Similarly, the present study determined scabies frequencies of 1.31% in the second quarter of 2019 and 4.01% in the second quarter of 2020. Additionally, a multicenter study on the pandemic's impact on dermatology outpatient services observed a decline in absolute scabies cases but an increased proportion relative to total visits (1.18% vs. 2.03%, respectively) (33).

A notable increase in scabies cases had already been documented in Türkiye prior to the COVID-19 pandemic (16). Although several studies conducted during periods overlapping with the present study reported rising case numbers during the pandemic, the extent to which this increase was directly attributable to the pandemic remains debatable (9,10). A UK-based study noted that scabies cases tend to surge approximately every 20 years, and the sharp increase reported in 2018 and 2019 had already raised questions about the role of the pandemic in this trend (15,34). One Turkish study examining the effect of the pandemic

reported that although the absolute numbers of scabies cases were similar in 2019 and 2020, the frequency rose from 0.94% to 1.91% due to a significant reduction in total outpatient visits. No significant changes were observed across the first three quarters of 2020. The comparable scabies frequencies in the last quarter of 2019 (pre-pandemic) and the first quarter of 2020 (early pandemic) suggest an ongoing rise that is independent of the pandemic. However, despite a stable frequency, the sharp decline in diagnosed cases from 442 to 154 between the first and second quarters of 2020 raises questions. The authors attributed this to decreased outpatient visits due to social distancing policies or public reluctance to seek care during the initial pandemic shock (9). Similarly, Porsuk and Cerit (26) reported a peak incidence in January 2020, followed by a sharp decline in March and April. In the present study, the frequency increased significantly in the second and fourth quarters of 2020 compared to the first quarter. In 2021, the frequency rose slightly but did not reach statistical significance. During the post-pandemic phase in 2022, however, both the number and the frequency of cases surged dramatically following the easing of restrictions. These findings suggest that while scabies remained stable during the pandemic, containment measures such as social distancing may have temporarily curbed transmission.

In the study by Spaziante et al., (20) which analyzed data from 2017 to 2023, the authors suggested that the lowest number of scabies cases observed in 2020 compared with other years may be attributable to the negative impact of the COVID-19 pandemic on reporting activities. In contrast to many other studies, a Korean study covering the period from 2010 to 2021 reported a decline in scabies incidence, from approximately 50,000 annual cases in 2010 to 30,000 in 2021. The decrease persisted during the pandemic period, and it was proposed that increased social isolation and public health restrictions contributed to this decline (35).

Another study examining scabies cases between 2017 and 2022 observed a gradual time-dependent increase, with significant peaks in 2019 and 2021. The authors attributed this to close human contact under quarantine conditions and limited access to healthcare services. Considering the reported rise in sexually transmitted infections during that period, they also suggested that increased sexual activity during the COVID-19 pandemic may have contributed to the transmission of scabies (10). Conversely, another study attributed the progressively decreasing incidence observed in 2019-2020 and 2021 to social isolation and public health restrictions during the COVID-19 pandemic (35). In the present study, a notable surge was identified not during the peak of the pandemic in 2021, but rather in 2022, following the easing of pandemic restrictions. Two studies from Türkiye reported the lowest incidences of scabies during lockdowns (6,26), while another observed an increase in both scabies and COVID-19 as normalization began (9). These findings support the view that stay-at-home policies and social restrictions may have prevented—or at least reduced—the increase in incidence.

Study Limitations

The primary limitation of this study is its retrospective design. In addition, data from internal medicine, pediatric, and emergency departments and from primary healthcare centers were not included. Socioeconomic status, living conditions, household size, and treatment methods were not assessed. This study was

designed to provide a scientific explanation for the recent increase in scabies incidence in Türkiye and to serve as a guide for future research. Because of the study methodology, the results cannot be generalized to the entire country, although they provide useful insights.

CONCLUSION

Scabies remains a significant public health problem worldwide and in Türkiye, with a notable increase in incidence since 2018, which persisted during the COVID-19 pandemic. In our study, scabies rates increased gradually from 2019 onward and showed a marked surge in 2022, which corresponded to the post-pandemic period. Migration, the growing refugee population, the COVID-19 pandemic, poor adherence to topical therapies, and potential resistance to scabicide agents may have contributed to this trend. The impact of the COVID-19 pandemic on scabies epidemiology remains controversial; our data are insufficient to establish causality. However, our findings may inform future studies.

*Ethics

Ethics Committee Approval: Approval for the study was obtained from the Yozgat Bozok University Faculty of Medicine Ethics Committee (decision no: 2025-GOKAEK-2510_2025.05.21_460, date: 21.05.2025).

Informed Consent: Due to the retrospective nature of the study, written informed consent could not be obtained from patients. However, the research was conducted in accordance with the principles of the Declaration of Helsinki.

Peer-review: Internally and externally peer reviewed.

Footnotes

*Authorship Contributions

Surgical and Medical Practices: N.E.K., Concept: N.E.K., E.Ç., Design: N.E.K., E.Ç., Data Collection or Processing: N.E.K., Analysis or Interpretation: N.E.K., E.Ç., Literature Search: N.E.K., E.Ç., Writing: N.E.K., E.Ç.

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