



Comparison of Dermatological Diseases in Prison and General Dermatology Outpatient Clinics: A Retrospective Study

Candan Celik¹, Mehmet Semih Celik²

1 Malatya Training and Research Hospital, Department of Dermatology, Malatya, Türkiye

2 University of Health Sciences, Diyarbakır Gazi Yaşargil Training and Research Hospital, Department of Dermatology, Diyarbakır, Türkiye

Received: 10.06.2026; Revised: 12.08.2026; Accepted: 14.08.2026

Abstract

Background and Objective: Dermatological diseases may vary depending on environmental conditions, hygiene, psychosocial stress, and access to healthcare. Data comparing the distribution of dermatological diseases between prison populations and the general population are limited. This study aimed to compare the frequency of dermatological diseases observed in patients admitted to prison dermatology outpatient clinics and general dermatology outpatient clinics.

Methods: This retrospective observational study included 442 patients, of whom 200 were admitted to a prison dermatology outpatient clinic and 242 to a general dermatology outpatient clinic. Demographic characteristics and dermatological diagnoses Data were collected from medical records and analyzed using Jamovi software. Continuous variables were compared with the Mann-Whitney U test, and categorical variables with the chi-square or Fisher's exact test.

Results: Viral warts, scabies, alopecia areata, telogen effluvium, and seborrheic Dermatitis was observed significantly more often in patients admitted to the prison dermatology outpatient clinic. In contrast, dermatitis (eczema group, including atopic dermatitis, contact dermatitis, nummular dermatitis,]) was significantly more common in the general dermatology outpatient clinic. The two groups did not differ significantly with respect to acne, dermatophytosis, or psoriasis.

Conclusion: Several infectious and stress-related dermatological diseases were more prevalent among prisoners, whereas dermatitis was more frequent in the general population. These results indicate that environmental conditions and psychosocial factors may influence the distribution of dermatological diseases and highlight the importance of targeted dermatological care in prison settings.

Keywords: Prison health, dermatological diseases, viral warts, scabies; alopecia areata

DOI: 10.5798/dicletip.2036942

Correspondence / Yazışma Adresi: Candan Celik, Malatya Training and Research Hospital, Department of Dermatology, Malatya, Türkiye e-mail: drcandancelik0123@gmail.com

Cezaevi ve Genel Dermatoloji Polikliniklerinde Dermatolojik Hastalıkların Karşılaştırılması: Retrospektif Bir Çalışma

Öz

Amaç ve Giriş: Dermatolojik hastalıklar; çevresel koşullar, hijyen, psikososyal stres ve sağlık hizmetlerine erişim gibi faktörlere bağlı olarak değişkenlik gösterebilir. Cezaevi nüfusu ile genel nüfus arasında dermatolojik hastalıkların dağılımını karşılaştıran veriler sınırlıdır. Bu çalışma, cezaevi dermatoloji polikliniğine ve genel dermatoloji polikliniğine başvuran hastalarda gözlenen dermatolojik hastalıkların sıklığını karşılaştırmayı amaçlamıştır.

Yöntemler: Bu retrospektif gözlemsel çalışmaya, 200'ü cezaevi dermatoloji polikliniğine ve 242'si genel dermatoloji polikliniğine başvuran toplam 442 hasta dahil edilmiştir. Demografik özellikler ve dermatolojik tanılara ait veriler tıbbi kayıtlardan elde edilmiş ve Jamovi yazılımı kullanılarak analiz edilmiştir. Sürekli değişkenler Mann-Whitney U testi ile, kategorik değişkenler ise ki-kare veya Fisher'in kesin testi ile karşılaştırılmıştır.

Bulgular: Viral siğiller, uyuz, alopesi areata, telogen effluvium ve seboreik dermatit, cezaevi dermatoloji polikliniğine başvuran hastalarda anlamlı derecede daha sık gözlenmiştir. Buna karşılık, dermatit (egzama grubu, atopik dermatit, kontakt dermatit ve numuler dermatiti içeren egzema grubu) genel dermatoloji polikliniğinde anlamlı olarak daha yaygındır. Akne, dermatofitoz veya psoriasis açısından iki grup arasında anlamlı fark saptanmamıştır.

Sonuç: Enfeksiyöz ve stresle ilişkili bazı dermatolojik hastalıklar mahkumlar arasında daha yaygınken, dermatit genel popülasyonda daha sık görülmüştür. Bu bulgular, çevresel koşulların ve psikososyal faktörlerin dermatolojik hastalıkların dağılımını etkileyebileceğini göstermekte ve cezaevi ortamlarında hedefe yönelik dermatolojik bakımın önemini vurgulamaktadır.

Anahtar kelimeler: Cezaevi sağlığı, dermatolojik hastalıklar, viral siğiller, uyuz, alopesi areata.

INTRODUCTION

Dermatological diseases constitute a significant proportion of outpatient clinic visits worldwide, and their prevalence is influenced by biological, environmental, and psychosocial factors¹. Living conditions, hygiene habits, access to healthcare services, and stress levels play a decisive role in the emergence and clinical course of many skin diseases².

The prison population represents a special group with unique health risks. Overcrowded living conditions, limited hygiene facilities, restricted access to healthcare services, and high levels of psychosocial stress may lead to a higher prevalence of infectious and stress-related dermatological diseases among inmates³. Previous studies have reported that certain skin diseases, particularly scabies, are observed at higher rates when compared to the general community^{4,5}. In the literature, the number of studies directly comparing the distribution of dermatological diseases among

patients attending prison dermatology outpatient clinics with those attending general dermatology outpatient clinics is limited. A better understanding of dermatological disease patterns in the prison population will contribute to the planning of preventive and therapeutic healthcare services tailored to this special group⁶. Therefore, the objective of this study was to compare the frequency of dermatological diseases observed in patients attending prison dermatology outpatient clinics with those attending general dermatology outpatient clinics.

METHODS

Study Design and Population

The study was carried out in compliance with the Declaration of Helsinki. Ethical approval was granted by the Clinical Research Ethics Committee of Gazi Yasargil Training and Research Hospital (727/2025). The study was

approved unanimously, and no ethical concerns were identified for the conduct of this retrospective study.

This retrospective observational study was carried out in the dermatology outpatient clinics of a prison hospital and a general dermatology outpatient clinic. Medical records of patients who applied to the dermatology outpatient clinics during the study period were reviewed retrospectively.

A total of 442 participants were enrolled in the study, including 200 patients from the prison dermatology outpatient clinic and 242 patients from the general dermatology outpatient clinic. Patients lacking complete medical records or essential demographic or diagnostic information were excluded from the study.

Data Collection

Demographic data, including age and sex, were recorded for all patients. Dermatological diagnoses were obtained from outpatient clinic records and classified according to clinical diagnoses made by dermatologists. The dermatitis (eczema) group included patients with [atopic dermatitis, contact dermatitis, nummular dermatitis,], while seborrheic dermatitis was evaluated separately as an individual diagnostic category. The frequencies of common dermatological diseases were analyzed and contrasted between the two groups

Statistical Analysis

Statistical analyses were carried out using Jamovi software (version 2.3). The normality of continuous variables was assessed with the Shapiro–Wilk test. Depending on their distribution, continuous data were reported as mean $\pm$ standard deviation or as median with minimum and maximum values. Categorical variables were presented as frequencies and percentages.

Group comparisons between patients attending the prison dermatology outpatient clinic and those attending the general dermatology outpatient clinic were performed using the Chi-square test for categorical variables. When expected cell counts were low, Fisher's exact test was utilized. A two-tailed p-value of less than 0.05 was considered indicative of statistical significance.

RESULTS

A total of 442 patients were included in the study, of whom 200 were admitted to the prison dermatology outpatient clinic and 242 to the general dermatology outpatient clinic. The mean age of patients was 34.4 ± 11.1 years in the prison group and 36.0 ± 16.0 years in the general outpatient clinic. Age distribution was non-normal in both groups according to the Shapiro–Wilk test ($p < 0.001$).

The prison group consisted predominantly of male patients (176/200, 88.0%), whereas female patients constituted the majority in the general dermatology outpatient clinic (165/242, 68.2%). The difference in sex distribution between the two groups was statistically significant ($p < 0.001$). Demographic characteristics of the study population are summarized in Table 1.

Table 1: Demographic characteristics of patients admitted to the prison and general dermatology outpatient clinics

Variable	Prison clinic (n = 200)	General clinic (n = 242)	p value
Age (years), mean $\pm$ SD	34.4 ± 11.1	36.0 ± 16.0	—
Age (years), median	32.0	31.5	
Age (years), min–max	18–76	18–75	
Male, n (%)	176 (88.0%)	77 (31.8%)	<0.001
Female, n (%)	24 (12.0%)	165 (68.2%)	

Viral warts were significantly more frequent in the prison group (35/200, 17.5%) compared to the general outpatient clinic (2/242, 0.8%) ($\chi^2 = 39.7$, $p < 0.001$). Alopecia areata was also observed more frequently among prison inmates than in the general outpatient clinic (19/200, 9.5% vs. 3/242, 1.2%; $\chi^2 = 15.8$, $p < 0.001$).

Similarly, scabies (18/200, 9.0% vs. 7/242, 2.9%; $\chi^2 = 7.65$, $p = 0.006$), telogen effluvium (15/200, 7.5% vs. 5/242, 2.1%; $\chi^2 = 7.48$, $p = 0.006$), and seborrheic dermatitis (32/200, 16.0% vs. 21/242, 8.7%; $\chi^2 = 5.56$, $p = 0.018$) were significantly more prevalent in the prison dermatology outpatient clinic. In contrast,

dermatitis (eczema group) was significantly more common in the general dermatology outpatient clinic than in the prison group (64/242, 26.4% vs. 20/200, 10.0%; $\chi^2 = 19.2$, $p < 0.001$). No significant differences were observed between the two groups regarding acne (41/200, 20.5% vs. 56/242, 23.1%; $\chi^2 = 0.446$, $p = 0.504$), dermatophytosis (18/200, 9.0% vs. 16/242, 6.6%; $\chi^2 = 0.88$, $p = 0.348$), or psoriasis (9/200, 4.5% vs. 9/242, 3.7%; $\chi^2 = 0.171$, $p = 0.679$). Other less frequent dermatological conditions did not show statistically significant differences between the groups and were therefore not analyzed individually (Table 2).

Table II: Comparison of dermatological diagnoses between prison and general dermatology outpatient clinics

Diagnosis	Prison clinic (n=200)	General clinic (n=242)	χ^2	p value	OR (95% CI)
Viral warts	35 (17.5%)	2 (0.8%)	39.7	<0.001	25.45 (6.04–107.30)
Alopecia areata	19 (9.5%)	3 (1.2%)	15.8	<0.001	8.36 (2.44–28.69)
Scabies	18 (9.0%)	7 (2.9%)	7.65	0.006	3.32 (1.36–8.12)
Telogen effluvium	15 (7.5%)	5 (2.1%)	7.48	0.006	3.84 (1.37–10.77)
Seborrheic dermatitis	32 (16.0%)	21 (8.7%)	5.56	0.018	2.00 (1.12–3.60)
Dermatitis (eczema group)	20 (10.0%)	64 (26.4%)	19.2	<0.001	0.31 (0.18–0.53)
Acne	41 (20.5%)	56 (23.1%)	0.446	0.504	0.86 (0.54–1.35)
Dermatophytosis	18 (9.0%)	16 (6.6%)	0.88	0.348	1.40 (0.69–2.82)
Psoriasis	9 (4.5%)	9 (3.7%)	0.171	0.679	1.22 (0.47–3.13)

DISCUSSION

In this retrospective study, the distribution of dermatological diagnoses among patients attending the prison dermatology outpatient clinic and those attending the general dermatology outpatient clinic was compared. Our findings revealed that viral warts, scabies, alopecia areata, telogen effluvium, and seborrheic dermatitis were observed at significantly higher rates in the prison group compared with the general outpatient group. In contrast, dermatitis (eczema group) was detected more frequently in patients attending the general dermatology outpatient clinic than in the prison group. No significant differences were observed between the groups with respect to acne, dermatophytosis, or psoriasis. These

results suggest that infectious diseases and stress-related dermatoses may be more prominent under prison conditions, whereas some common dermatoses may follow a course that is relatively independent of environmental conditions.

In our study, viral warts, scabies, alopecia areata, telogen effluvium, and seborrheic dermatitis were found to be more prevalent among patients attending the prison dermatology outpatient clinic compared with those attending the general dermatology outpatient clinic. These findings are consistent with previous studies reporting a high prevalence of infectious and stress-related skin diseases in prison settings. In particular, scabies and other infectious dermatoses have been

associated with prison-related factors such as overcrowded living environments, inadequate hygiene conditions, and increased risk of close contact (for example, scabies prevalence has been reported to be high among inmates). Moreover, the frequent occurrence of infectious dermatoses in prisons represents not only an individual health problem but also a significant risk factor for public health and outbreak control^{7,8}. In this context, environmental factors such as inadequate hygiene, limited access to shower facilities, and irregular cleaning practices have been reported in the literature to facilitate the spread of infections^{9,10}.

In this study, the higher frequency of alopecia areata, telogen effluvium, and seborrheic dermatitis among patients attending the prison dermatology outpatient clinic compared with those attending the general outpatient clinic suggests an effect of psychosocial stress on dermatological diseases. The prison environment constitutes a unique living setting that can influence individuals' neuroimmune responses due to factors such as restriction of freedom, social isolation, uncertainty, and chronic stress. Recent studies have shown that chronic stress may adversely affect the hair cycle and inflammatory processes through activation of the hypothalamic-pituitary-adrenal axis and alterations in cytokine responses^{11,12}. Alopecia areata and telogen effluvium have been reported to be sensitive to stress-related triggering factors and to occur more frequently, particularly in situations of prolonged psychological stress¹³. Similarly, the clinical course of seborrheic dermatitis is thought to be associated with stress levels, and stress may increase disease activity¹⁴.

In this study, no significant differences were found between the prison dermatology outpatient clinic and the general dermatology outpatient clinic with respect to acne, dermatophytosis, and psoriasis. In the pathogenesis of acne vulgaris, hormonal factors,

sebaceous gland activity, and genetic predisposition play a primary role, and it is known that environmental and socioeconomic conditions have a limited impact on disease prevalence¹⁵. Likewise, the frequency of dermatophytosis is influenced by multiple factors such as individual hygiene habits, climatic conditions, and the level of social contact, and therefore may not show a marked difference between prison and general populations¹⁶. Psoriasis is a chronic, immune-mediated inflammatory disease in which genetic predisposition and immunological mechanisms play a fundamental role in disease development. For this reason, the prevalence of psoriasis has been reported to be more closely related to individual biological factors than to environmental conditions, and similar prevalence rates may be observed across different living environments¹⁷. Our findings are consistent with current knowledge regarding the pathogenesis of these diseases and are important in demonstrating that the prison environment does not constitute an increased risk for all dermatological conditions.

Strengths, Limitations, and Conclusion

One of the main strengths of this study is that patients attending the prison dermatology outpatient clinic and the general dermatology outpatient clinic were evaluated under the same institutional conditions, and that dermatological diagnosis distributions were compared across a large patient population. Nevertheless, the study has several limitations. These include its retrospective design, reliance on outpatient clinic records, and the absence of histopathological confirmation of clinical diagnoses. In addition, the inability to objectively measure variables such as psychosocial stress levels, hygiene conditions, and lifestyle habits limits the establishment of causal relationships. Another important limitation is the marked difference in sex distribution between the two groups, with a

predominance of males in the prison group and females in the general dermatology outpatient group. As the prevalence of certain dermatological conditions may differ by sex, this imbalance may have influenced the observed differences in disease frequencies between the groups. Additionally, because multiple dermatological diagnoses were compared between the groups, the possibility of an increased Type I error due to multiple comparisons should be considered when interpreting the findings.

Despite these limitations, the findings indicate that infectious and stress-related dermatological diseases may be more frequently observed in the prison environment, whereas some common dermatoses may exhibit similar prevalence rates in prison and general populations. These results highlight the importance of dermatological screening, early diagnosis, and preventive approaches within prison healthcare services, and they may serve as a guide for future prospective and multicenter studies.

Funding

This research did not receive any financial support or external funding from public, commercial, or non-profit organizations.

Conflict of Interest Statement

The authors declare that there are no financial or non-financial interests that could have influenced the conduct, interpretation, or reporting of this study.

Author Contributions

All authors made substantial contributions to the conception and execution of the study. CC was responsible for the study design, data collection, statistical analysis, interpretation of results, and drafting of the initial manuscript. MSC contributed to data collection, interpretation of findings, and critically revised the manuscript for significant intellectual content. All authors reviewed and approved the final manuscript prior to submission.

Note: Odds ratios were calculated using the general dermatology outpatient clinic as the reference group. OR, odds ratio; CI, confidence interval.

Ethical Approval: This study was conducted in accordance with the principles of the Declaration of Helsinki. Ethical approval was obtained from the Clinical Research Ethics Committee of Gazi Yasargil Training and Research Hospital (Approval No. 727; November 7, 2025). Given the retrospective design and use of anonymized data, the requirement for informed consent was waived by the ethics committee.

Data Availability: All relevant data supporting the findings of this study are included in the manuscript. Additional data may be made available by the corresponding author upon reasonable request.

Conflict of Interest: The author(s) declare that there is no financial conflict of interest related to this article.

Financial Disclosure: The authors have stated that no financial support was provided for this study.

REFERANSLAR

1. Hay RJ, Johns NE, Williams HC, et al. The global burden of skin disease in 2010: an analysis of the prevalence and impact of skin conditions. *J Invest Dermatol.* Haziran 2014;134(6):1527-34.
2. Karimkhani C, Dellavalle RP, Coffeng LE, et al. Global Skin Disease Morbidity and Mortality: An Update From the Global Burden of Disease Study 2013. *JAMA Dermatol.* 2017;153(5):406-12.
3. Fazel S, Baillargeon J. The health of prisoners. *Lancet Lond Engl.* 2011;377(9769):956-65.
4. Ferris M, Islam RK, Huynh TN, et al. An international review of skin conditions in incarcerated persons. *JAAD Rev.* 2024;2:113-26.
5. Delie AM, Bogale EK, Anagaw TF, et al. Global prevalence and predictors of scabies among prisoners: systematic review and meta-analysis. *BMC Public Health.* 2024;24:1894.
6. Bick JA. Infection control in jails and prisons. *Clin Infect Dis Off Publ Infect Dis Soc Am.* 2007;45(8):1047-55.

7. Ferris M, Islam RK, Huynh TN, et al. An international review of skin conditions in incarcerated persons. *JAAD Rev.* 2024;2:113-26.
8. Bogino EA, Woldegeorgis BZ, Wondewosen L, et al. Scabies prevalence and its associated factors among prisoners in southern Ethiopia: An institution-based analytical cross-sectional study. *PLoS Negl Trop Dis.* 2023;17(12):e0011826.
9. Tounkara TM, Soumah MM, Keita M, et al. Dermatological pathology in an African prison environment: Guinean experience. *Dermatol Asp.* 2017;5(1):1.
10. Seth D, Cheldize K, Brown D, et al. Global Burden of Skin Disease: Inequities and Innovations. *Curr Dermatol Rep.* 2017;6(3):204-10.
11. Peters EMJ, Arck PC, Paus R. Hair growth inhibition by psychoemotional stress: a mouse model for neural mechanisms in hair growth control. *Exp Dermatol.* 2006;15(1):1-13.
12. Thom E. Stress and the Hair Growth Cycle: Cortisol-Induced Hair Growth Disruption. *J Drugs Dermatol.* 2016 ;1;15(8):1001-4.
13. Rajabi F, Drake LA, Senna MM, et al. Alopecia areata: a review of disease pathogenesis. *Br J Dermatol.* 2018;179(5):1033-48.
14. Misery L, Touboul S, Vinçot C, et al. [Stress and seborrheic dermatitis]. *Ann Dermatol Venereol.* 2007;134(11):833-7.
15. Vasam M, Korutla S, Bohara RA. Acne vulgaris: A review of the pathophysiology, treatment, and recent nanotechnology based advances. *Biochem Biophys Rep.* 2023; 23;36:101578.
16. Havlickova B, Czaika VA, Friedrich M. Epidemiological trends in skin mycoses worldwide. *Mycoses.* 2008;51 Suppl 4:2-15.
17. Gonçalves MBS, Fonseca M, Mascarenhas-Melo F, et al. Advancing insights into psoriasis: from pathogenesis to current and emerging therapies. *Int Immunopharmacol.* 2025;165:115429.