

Pattern of Skin Diseases in Patients Attending the Dermatology Outpatient of a Tertiary Care Hospital

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ABSTRACT

Objective: To know the pattern of skin disorders amongst patients reporting to the Dermatology outpatient of a tertiary care hospital.

Study Design: Cross-sectional study.

Place and Duration of Study: Dermatology OPD Combined Military Hospital, Bahawalpur Pakistan from May to Oct 2022.

Methodology: Eight thousand sixty-eight patients attending the outpatient department (OPD) for skin problems were included in the study. Consultants with Postgraduate qualifications in Dermatology diagnosed all cases. Diagnosis of skin problems were noted for each patient. Diseases were categorized into various groups.

Results: The mean age of patients was 29.04 ± 15.941 years. 54.35% of patients (n=4385) were in the 20-40 years age range. Infections were the most commonly seen disease group (n=2152, 26.7%), followed by dermatitis and eczematous disorders (n=1784, 22.1%), parasitic diseases (n=1341, 16.6%) and acquired pigmentary disorders (n=579, 7.2%) in descending order of frequency. Together, these four groups of diseases accounted for 72.6% of total patients. Infections and infestations accounted for 43.3% of patients reporting to our outpatients during the study period. Scabies was the most common disease in 15.6% (n=1262) of our patients. Scabies and dermatophyte infections were the two most commonly encountered diseases. These two diseases comprised 26.5% (n=2141) of the total cases.

Conclusion: Infections and infestations accounted for 43.3% of patients reporting to our outpatients during the study period. Scabies and dermatophyte infections were the two most commonly encountered diseases. Public health education regarding personal hygiene and dermatological care availability can help lessen the burden of skin diseases.

Keywords: Acne, Dermatology outpatient, Eczema, Scabies, Skin diseases.

How to Cite This Article: Habib A, Basra AA, Nazeer H, Ansari MM, Ahmed A, Arif N, Khan MI, Sadal RAG. Pattern of Skin Diseases in Patients attending the Dermatology Outpatient of a Tertiary Care Hospital. *Pak Armed Forces Med J* 2023; 73(5): 1227-1232.

DOI: <https://doi.org/10.51253/pafmj.v73i5.9989>

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INTRODUCTION

Skin is the largest organ of the body. Like all other organs, it is affected by various diseases, including genodermatoses, infections, inflammatory diseases, metabolic disorders and neoplastic diseases.^{1,2} Dermatological diseases, the fourth leading cause of disease-related morbidity, are common health problems worldwide. They account for 10-14% of all diseases seen by family physicians.²⁻³ In developed countries like the UK, skin diseases are the most frequent reason patients visit their general physician.⁴ Findings from the Global Burden of Disease Study 2019 pointed out that South Asia had the highest number of new cases and deaths from skin and subcutaneous diseases.⁵

The pattern of skin diseases in any country is influenced by several factors, including environmental, ethnic, economic, and social factors and literacy levels.⁶ The pattern of skin diseases in developing countries

differs from that of developed countries.⁷ Poverty, poor hygiene, lack of basic amenities, and overcrowding contribute to developing countries' higher prevalence of infectious skin diseases. Knowledge of the pattern of various diseases in a country helps in policy development, resource allocation, and disease prevention.⁸ The pattern of diseases in a country can be established through prevalence studies in the general population and studies from specialized dermatology centres. Data regarding the prevalence and pattern of skin-related diseases in the general population in developing countries is scarce.^{2,8} However, various hospital-based studies give an insight into the prevalence and pattern of skin-related diseases in the general population.^{9,10} These studies may help to determine the burden of skin-related diseases.

In order to have an insight into the pattern of skin diseases in our set-up, we conducted a study at the Dermatology outpatient of a tertiary care hospital in South Punjab. The study aimed to know the pattern of skin diseases amongst patients reporting to the Dermatology outpatient of a tertiary care hospital.

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Received: 28 Feb 2023; revision received: 23 Jun 2023; accepted: 26 Jun 2023

METHODOLOGY

The cross-sectional study was conducted at the Dermatology Outpatient of Combined Military Hospital Bahawalpur Pakistan from May to October 2022. The Institutional Ethical Review Committee approved the study (Reference No. 14, dated 20 April 2022).

Inclusion Criteria: All patients attending the Outpatient Department (OPD) for skin problems during this period were included in this study.

Exclusion Criteria: The patients with repeat visits and those reporting for follow-up were excluded from the study.

Informed consent was taken from each patient, and all data regarding patients was recorded. A thorough medical history was taken, and a relevant physical examination was performed on each patient. Consultants with Postgraduate qualifications in Dermatology diagnosed all cases. The age and gender of the patients and diagnosis of skin problems were noted for each patient. The diagnosis was primarily clinical. Where required, various investigations and skin biopsies were performed to confirm the diagnosis. The diseases were further assigned to various disease groups like infections, infestations, dermatitis and eczematous disorders, acquired pigmentary disorders, inflammatory diseases, disorders of sebaceous and apocrine glands, diseases of the hair, disorders of sweat glands, neoplastic disorders, oral diseases, diseases of nails, blistering diseases and miscellaneous. Due to the nonavailability of the patch testing facility, eczemas could not be further classified.

The data collected was analysed using Statistical Package for Social Sciences (SPSS) version 23. Descriptive statistics were used to analyze the data. Mean and standard deviation were calculated for quantitative variables such as age. Frequency and percentages were calculated for qualitative variables such as gender and diagnoses of various skin problems, and a *p*-value of <0.05 was considered significant.

RESULTS

A total of 10616 patients were reported during the study period. After excluding those who had repeat visits, 8068 new patients were included in the study. The number of new cases was 75.99% of the total number of cases. Of the 8068 new patients, 4268 (52.9 %) were male, and 3800(47.1 %) were female. The age of patients ranged from one month to 88 years, with a mean of 29.04±15.941 years. The mean age was 29.90±16.222 years (Table-I).

Table-I: Decade-wise age distribution of patients (n= 8068)

Age Decade (years)	Gender		Total
	Male	Female	
≤10	531(6.6%)	532(6.6%)	1063(13.2%)
10-20	552(6.8%)	603(7.5%)	1155(14.3%)
20-30	1190(14.7%)	1071(13.3%)	2261(28.0%)
31-40	1165(14.4%)	959(11.9%)	2124(26.3%)
41-50	329(4.1%)	289(3.6%)	618(7.7%)
51-60	246(3.0%)	191(2.4%)	437(5.4%)
61-70	193(2.4%)	117(1.5%)	310(3.8%)
71-80	61(0.8%)	35(0.4%)	96(1.2%)

Infections were the most commonly seen Disease Group (n=2152,26.7%), followed by dermatitis and eczematous disorders (n=1784,22.1%), parasitic diseases (n=1341, 16.6%) and acquired pigmentary disorders (n=579, 7.2%) in descending order of frequency (Table-II). Together, these four groups of diseases accounted for 72.6% of total patients. Infections and infestations accounted for 43.3% of patients reporting to our outpatients during the study period. Fungal infections (n=1156,14.3%) were the most common infections (Table-II). Amongst the fungal infections, dermatophyte infections (10.9%) were the most common fungal infections, followed by pityriasis versicolor (2.6%), onychomycosis (0.9%) and deep mycosis (0.1%), in descending order of frequency. Impetigo was the most common bacterial disease seen in 268(3.3%) patients, followed by furunculosis (n=146,1.8%), folliculitis (n=122,1.5%), cellulitis (n=34,0.4%), cutaneous abscess (0.2%) and carbuncle (0.1%) in descending order of frequency. Viral infections were third in frequency (Table-II). Scabies and dermatophyte infections were the two most commonly encountered diseases. These two diseases comprised 26.5% (n=2141) of the total cases. Scabies was the most common disease in 15.6% (n=1262) of our patients. Most patients (n=1206,95.6%) with Scabies were less than 40 years. The patients with these thirty most commonly encountered diseases were 92.64% (n=7474) of the total number of patients. Less commonly encountered diseases, along with their frequency, are shown in Table-IV.

DISCUSSION

Our study was unique in that it analyzed the frequency and pattern of skin disorders amongst patients reporting to the Dermatology outpatient in the prospect and did not rely on the hospital records. The five most frequently observed skin disease groups were Infections, Dermatitis and eczematous disorders, Parasitic disease, Acquired pigmentary disorders and Inflammatory diseases, in descending order of

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Table-II: Common Disease Groups (n=8068)

Disease group	Number(%age)	Diseases	Gender		Total
			Male	Female	n (%)
Infections	2152(26.7%)	Fungal Infections	706(8.8%)	450(5.6%)	1156(14.3%)
		Bacterial Infections	332(4.1%)	265(3.3%)	597(7.4%)
		Viral Infection	203(2.5%)	189(2.3%)	392(4.9%)
		Sexually transmitted infections	7(0.1%)	0	7(0.1%)
Dermatitis and eczematous disorders	1784(22.1%)	Dermatitis and eczematous disorders	944(11.7%)	840(10.4%)	1784(22.1%)
Parasitic disease	1372(17.0%)	Scabies	632(7.8%)	630(7.8%)	1262(15.6%)
		Pediculosis	2(0.02%)	29(0.36%)	31(0.4%)
Acquired Pigmentary disorders	579(7.2%)	Melasma	96(1.2%)	286(3.5%)	382(4.7%)
		Vitiligo	83(1.0%)	47(0.6%)	130(1.6%)
Inflammatory diseases	558(6.9%)	Papulosquamous diseases	229(2.8%)	86(1.1%)	315(3.9%)
		Urticarias	108(1.3%)	70(0.9%)	178(2.2%)
		Connective tissue disease	18(0.2%)	24(0.3%)	42(0.5%)
		Erythemas	16(0.2)	6(0.07%)	22(0.3%)
Sebaceous and apocrine diseases	492(6.1%)	Acne	183(2.3%)	299(3.7%)	482(6.0%)
		Rosacea	0	6(0.07%)	6(0.07%)
		Acne scars	1(0.01%)	3(0.04%)	4(0.05%)
Hair disorders	256(3.2%)	Hair disorders	127(1.6%)	129(1.6%)	256(3.2%)
Neoplastic disorders	182(2.3%)	Benign Neoplastic disorders	83(1.0%)	74(0.9%)	157(1.9%)
		Malignant Neoplasms	16(0.2%)	9(0.1%)	25(0.3%)
Disorders of sweat glands	101(1.3%)	Miliaria	61(0.8%)	33(0.4%)	94(1.17%)
Generalized Pruritus	100(1.2%)	Generalized Pruritus	46(0.6%)	54(0.7%)	100(1.2%)
Insect bites	78(1.0%)	Papular urticaria	41(0.5%)	37(0.5%)	78(1.0%)
Oral diseases	58(0.7%)	Oral diseases	27(0.3%)	31(0.4%)	58(0.7%)
Nail disorders	34(0.4%)	Nail disorders	10(0.1%)	24(0.3%)	34(0.4%)
Blistering diseases	31(0.4%)	Bullous Disorders	22(0.3%)	9(0.1%)	31(0.4%)
Drug reactions	23(0.3%)	Drug reactions	19(0.2%)	4(0.05%)	23(0.3%)
Aesthetic concerns	4(0.05%)	Acne scars	1(0.01%)	3(0.04%)	0.05%
Miscellaneous	296(3.7%)	Other dermatoses	173(2.1%)	123(1.5%)	296(3.7%)
Total		4268(52.9%)	3800(47.1%)		8068

frequency.¹¹ This agrees with most hospital-based studies in Pakistan. A similar trend has been reported in other developing countries.¹² However, this is in contrast to studies from the US and European countries. The hot, humid climate, lack of knowledge of personal hygiene, low educational level, poverty and overcrowding are important factors contributing to the higher frequency of infections and infestations in developing countries.¹³ In the United States, Dermatitis and eczematous disorders, acne, viral infections and Psoriasis were the most prevalent skin diseases in descending order of frequency.¹⁴ In European countries, the most frequent skin-related disease was

Viral warts, followed by Acne, Dermatitis and eczematous disorders, urticaria, and papulosquamous diseases.¹⁵

Dermatitis and eczematous disorders were the second most common group of skin disorders. This was in concordance with previous studies from Pakistan.¹⁴ Similar findings have been reported from the other developing countries.¹⁶

Superficial Fungal infections (14.3%) were the most common type of infection seen within the infectious cohort in our study, which agrees with previous studies.¹⁷ Various authors have reported the frequency of fungal infections ranging from 5-18.7%.¹⁸

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Table-III: Clinical pattern of Thirty most common Diseases (n=8068)

Disease	n(%)	Gender		Mean Age (Years)
		Male	Female	
Eczemas	1784 (22.1%)	944(11.7%)	840(10.4%)	38.85±13.47
Scabies	1262 (15.6%)	632(7.8%)	630(7.8%)	21.08±13.230
Dermatophytosis	879 (10.9%)	544(6.74%)	335(4.2%)	33.31±15.816
Bacterial Infections	597 (7.4%)	332(4.1%)	265(3.3%)	21.17±17.292
Acne	482 (6.%)	183(2.3%)	299(3.7%)	23.24±6.143
Melasma	382 (4.73%)	96(1.2%)	286(3.3%)	27.98±6.035
Pityriasis Versicolor	206 (2.6%)	137((1.7%)	69(0.9%)	27.95±10.481
Urticaria	178 (2.2%)	108(1.4%)	70(0.9%)	32.10±6.069
Chronic Plaque Psoriasis	157(2.0%)	119(1.5%)	38(0.5%)	31.16±8.764
Alopecia areata	150(1.9%)	92(1.1%)	58(0.7%)	27.84±8.078
Viral Warts	141(1.8%)	81(1.0%)	60(0.7%)	18.19±8.170
Vitiligo	130 (1.6%)	83(1.0%)	47(0.6%)	18.99±7.257
Lichen planus	127(1.6%)	86(1.1%)	41(0.5%)	30.05±14.293
Herpes Zoster	106(1.3%)	33(0.4%)	73(0.9%)	25.26±14.060
Generalized Pruritus	100(1.2%)	46(0.6%)	54(0.7%)	44.61±10.331
Chicken Pox	100(1.2%)	66(0.8%)	34(0.4%)	24.31±10.137
Miliaria	94(1.2%)	61(0.7%)	33(0.4%)	20.37±11.554
Papular Urticaria	78(1.0%)	41(0.5%)	37(0.5%)	14.86±8.358
Onychomycosis	69(0.9%)	25(0.3%)	44(0.5%)	48.07±13.207
Lipoma	62(0.8%)	35(0.4%)	27(0.3%)	38.86±13.471
Hirsutism	51(0.6%)	0	51(0.6%)	26.10±5.292
Corns	50(0.6%)	38(0.5%)	12(0.2%)	25.02±8.667
Cut Leishmaniasis	48(0.6%)	46(0.6%)	2(0.02%)	28.40±6.473
PIH	45(0.6%)	20(0.2%)	25(0.3%)	29.91±19.662
Cysts	44(0.6%)	27(0.3%)	17(0.2%)	29.59±8.643
Keloids	40(0.5%)	31(0.4%)	9(0.1%)	25.25±4.733
Pediculosis	31(0.4%)	2(0.02%)	29(0.4%)	24.45±17.998
Androgenic Alopecia	30(0.4%)	23(0.3%)	7(0.09%)	34.10±8.899
Palmoplantar Keratoderma	26(0.3%)	19(0.2%)	7(0.09%)	29.35±13.988
Molluscum Contagiosum	26(0.3%)	13(0.2%)	13(0.2%)	6.36±5.407
Total	7474(92.6%)	3962(49.1%)	3512(43.5%)	28.36±15.66

The studies from Southeast Asia, Turkey, and the Middle East have also listed fungal infections among the five most common skin diseases in dermatology outdoors.¹⁹

Bacterial infections 7.4% (n=597) were the second most common among infectious diseases after fungal infections and the fourth most commonly encountered diseases overall in our outpatients. Viral infections (4.9%) were the third most common infections. Viral warts (1.7%) were the most common type of viral infection. A similar finding has been reported previously.^{10-13,15} However, Svensson *et al.*²⁰ in a

population-based sample of adults from five European countries, reported much higher frequencies of viral warts of 41.3%.

Scabies was the most common disease in 15.6% (n=1262) of our patients. Our findings concord with those of Rafiq *et al.*¹² and Suleri *et al.*¹³ who reported Scabies as the commonest disease in the patients reporting to the Dermatology outpatient. The frequency of Scabies in our outpatients was similar to previous studies.^{18,21} Other authors reported a higher frequency of Scabies, ranging from 26.7-30.6%.^{8,15} Memon *et al.*¹⁴ reported a much higher frequency of

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Table-IV: Frequency of less Common Diseases

Disease	n(%)	Disease	n(%)
Photodermatitis	24(0.30%)	Deep Mycosis	9(0.11%)
Chronic Paronychia	24(0.30%)	Erythrasma	9(0.11%)
Discoid Lupus Erythematosus	24(0.30%)	Pemphigus Vulgaris	9(0.11%)
Pyogenic granuloma	23(0.29%)	Pustular Psoriasis	9(0.11%)
Periorbital hyperpigmentation	22(0.27%)	Darier disease	7(0.09%)
Fixed drug eruption	22(0.27%)	Hyperhidrosis	7(0.09%)
Pregnancy associated dermatosis	21(0.26%)	Cicatrical alopecia	7(0.09%)
Recurrent aphthous stomatitis	20(0.25%)	Cutaneous Vasculitis	7(0.09%)
Erythema Multiforme	19(0.24%)	Viral Exanthem	7(0.09%)
Post herpetic neuralgia	19(0.24%)	Oral lichen planus	6(0.07%)
Basal cell carcinoma	18(0.22%)	Bullous Pemphigoid	6(0.07%)
Ichthyosis	18(0.22%)	Rosacea	6(0.07%)
Melanocytic Naevus	18(0.22%)	Erythroderma	6(0.07%)
Perniosis	18(0.22%)	In-growing toenail	6(0.07%)
Premature canities	18(0.22%)	Squamous cell carcinoma	5(0.06%)
Cutaneous Abscess	17(0.21%)	Systemic Sclerosis	5(0.06%)
Cracked heels	17(0.21%)	Syphilis	5(0.06%)
Seborrheic Keratosis	16(0.20%)	Pityriasis Rubra Pilaris	4(0.05%)
Solar lentigines	15(0.19%)	Acne scars	4(0.05%)
Herpes simplex	13(0.16%)	Dermatomyositis	3(0.04%)
Cheilitis	13(0.16%)	Erythema Nodosum	3(0.04%)
Oral Leukoplakia	12(0.15%)	Other blistering disorders	3(0.04%)
Dermatitis Herpetiformis	11(0.14%)	Melanoma	2(0.03%)
Pityriasis Rosea	11(0.14%)	Epidermolysis bullosa	2(0.03%)
Keratosis Pilaris	10(0.12%)	Gonorrhoea	2(0.03%)
Systemic lupus erythematosus	10(0.12%)	Skin Tag	2(0.03%)
Nail Dystrophy	10(0.12%)	Other drug reactions	1(0.01%)
Total		594 (7.36%)	

45.5% for Scabies in patients from rural Sindh. El-Khateeb *et al.*¹⁸ reported Scabies as the most common disease occurring in 9.26% of their patients from Egypt.

LIMITATIONS OF STUDY

The duration of the study was six months. Potential skin conditions which occur more frequently in other seasons could have been missed or underreported. It would have been more useful if the duration had been one year. This would have covered all the weather conditions, and diseases common in different weather conditions would have been more clearly outlined.

CONCLUSION

Infections and infestations accounted for 43.3% of patients reporting to our outpatients during the study period. Scabies and dermatophyte infections were the two most commonly encountered diseases. Public health

education regarding personal hygiene and dermatological care availability can help lessen the burden of skin diseases.

Conflict of Interest: None.

Author's Contribution

Following authors have made substantial contributions to the manuscript as under:

AH: & AAB: Conception, study design, drafting the manuscript, approval of the final version to be published.

HN: & MMA: Data acquisition, data analysis, data interpretation, critical review, approval of the final version to be published.

AA: & NA: Critical review, data acquisition, drafting the manuscript, approval of the final version to be published.

MIK: & RAGS: Critical review, data acquisition, drafting the manuscript, approval of the final version to be published

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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