

ORIGINAL ARTICLE

Pattern of Skin Diseases Among Patients Visiting a Private Tertiary Care Hospital in Karachi

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ABSTRACT

Objective: To determine the pattern of skin diseases among individuals who attended a private tertiary care hospital in the winter season in Karachi, Pakistan.

Methods: A descriptive cross-sectional study was conducted at the Memon Medical Institute Hospital in Karachi, where data were retrieved from a full day, free dermatology camp that was set up in the last week of December 2019. Skin diseases were classified according to the International Classification of Diseases (ICD-10). All the 283 patients included in the study were given a clinical diagnosis, based on their history, and examination. Relevant socio-demographic data and details of the diagnosis were recorded and analyzed in a predesigned performa and a detailed statistical analysis was done.

Results: Of the 100 infectious conditions, fungal and parasitic were the most common diseases, i.e., 51 (51%) and 38 (38%) respectively, while viral infections were found in 7 (7%) and bacterial in 4 (4%) of the infectious dermatosis. Of 171 non-infectious conditions, eczema was the most common disorder (n=55, 32.2%), followed by acne in (n=38, 22.2%) cases, pigmentary disorders in (n=29, 17%) cases, hair disorder in 18 (10.5%), and papulosquamous disorders in (n=13, 7.6%), whereas miscellaneous non-infectious diseases were found in 18 (10.5%) cases.

Conclusion: Our study concludes the higher prevalence of non-infectious disorders than infectious skin diseases in the winter season, with eczemas and fungal infections being predominately seen overall. Regular free dermatology camps will help in better assessment of disease pattern and awareness of skin conditions among the public.

Keywords: Skin disease pattern, Infectious, Non-infectious skin diseases.

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INTRODUCTION

Skin diseases are frequently seen in the developing countries and are a major cause of morbidity and burden on the healthcare.^{1,2} Skin disorders are considered to be the fourth leading cause of non-fatal disease burden and disability worldwide.^{3,4} Their distribution tends to differ in different countries and even varies from city to city, sometimes even within the same city.^{5,6} Patterns may differ depending on the age, gender, socioeconomic background, level of hygiene, genetics and weather conditions and even on marketing strategies.⁷

Free dermatology camps are a good way of identifying the disease pattern, the burden of skin disease, as well as the level of primary care in any community, especially in developing countries like Pakistan. They help remove the cost barrier for middle to low-income groups, in getting a proper diagnosis for their skin condition and provide the researcher a chance to have a lot more

representative data for their study.⁸

Karachi, being one of the largest metropolitan cities of Pakistan, carries its own share of the burden of skin diseases. Studies in this part of the country regarding the pattern and distribution of skin ailments are lacking, especially from the private sector hospitals. Previously, only one study has been done in a private tertiary care hospital in Karachi, hence the need for more of such studies remains.

Therefore, the objective of our study was to identify the pattern of skin diseases affecting different age groups in a private tertiary care hospital in Karachi, in order to create measures for disease prevention, as well as awareness regarding better control and management.

METHODS

A cross-sectional, retrospective study was conducted at the Memon Medical Institute Hospital, a tertiary care private hospital in Karachi, after the approval of ethical

committee. Data were retrieved and assessed from a one-day, free dermatology camp that was arranged at the hospital in the last week of December 2019. Prior publicity of the camp was done on social media, as well as banners placed one week earlier. Skin diseases were classified according to the WHO International Classification of Diseases, revision 10 (ICD 10). Infectious diseases included fungal, viral, bacterial, and parasitic infections. Non-infectious diseases included eczemas, pigmentary disorders, acne, papulosquamous disorders, hair disorders and miscellaneous conditions. All patients attending the camp, with any kind of skin complaints, irrespective of age and gender were included in the study. Whereas those patients with no skin ailments were excluded. Relevant clinical history, with skin examination aided by a magnifying glass was performed by skilled dermatologists. A clinical diagnosis was made with appropriate treatment prescribed. The demographic data and diagnosis were recorded in a predesigned performa.

Data analysis was performed using statistical packages for social sciences (SPSS) software 21.0. For categorical variables like gender, age, socio-economic status, occupation, and pattern of skin diseases, percentages and frequencies were computed. Mean \pm SD was calculated for age of the patients. Chi-square test/Fisher's Exact test was applied to explore the association between pattern of skin diseases with gender, age groups, socio-economic status, and occupation. p-value of ≤ 0.05 taken as significant.

RESULTS

A total of 283 participants were screened during the one-day camp. Of these, 162 (57.2%) were females and 121 (42.8%) were males. The mean age of the patients was 28.04 ± 15.67 years. The majority of the population was in the age group of 18-40 years with 136 cases (48.1%), followed by 40 – 70 years group with 54 cases (19.1%), <12 years group with 47 cases (16.5%), 12 – 18 years group with 46 cases (16.3%).

Among 283 patients, non-infectious skin disease pattern (n=171, 61%) exceeded the prevalence of infectious skin diseases (n=100, 35%) and both infectious and non-infectious skin diseases (n=12, 4%). (Figure1)

Of the 100 infectious conditions, fungal and parasitic were the most common diseases, i.e., 51 (51%) and 38 (38%) respectively, while viral infections were found in 7 (7%) and bacterial in 4 (4%) of the infectious dermatosis. Of 171 non-infectious conditions, eczema was the most common disorder (n=55, 32.2%), followed by acne in

(n=38, 22.2%) cases, pigmentary disorders in (n=29, 17%) cases, hair loss in 18 (10.5%), and papulosquamous disorders in (n=13, 7.6%), whereas miscellaneous non-infectious diseases were found in 18 (10.5%) cases. (Table1)

The comparison of the pattern of skin disease with baseline characteristics showed significant association of pattern of disease with age (p-value <0.001) and socioeconomic status (p-value <0.001). (Table 2)

In infectious dermatosis, there was a significant association found between parasitic infection and age groups (p-value <0.001), socio-economic status (p-value <0.001). Amongst the non-infectious dermatosis, pigmentary diseases showed significant association with age (p-value <0.001) and gender (p-value <0.001), acne and papulosquamous diseases showed significant association with age (p-value <0.001), hair disorders showed significant association with gender (p-value=0.031), while the miscellaneous non-infectious diseases showed significant association with age (p-value <0.001) and socioeconomic status (p-value <0.001).

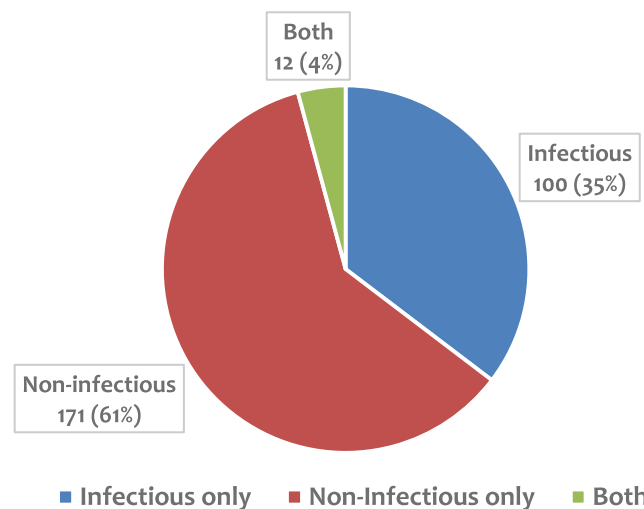


Figure 1: Distribution of pattern of skin diseases among patients attending the free dermatology camp (n=283)

DISCUSSION

This study was conducted in a private tertiary care hospital with the aim to assess the pattern of skin diseases among patients who attended a free dermatology camp. The study was conducted during winter season. There was a female preponderance seen in our study, which was similar to the studies done by Grover et al, Kuruvilla et al, Shahbaz et al.^{9,11} This is probably due to the reason that females are more conscious about their physical appearance than males

Table 1: Frequency and proportion of skin diseases among patients attending the free dermatology camp (n=283)

Infectious Diseases (n=100)	n (%)	Non-Infectious Diseases (n= 171)	n (%)	Both (n=12)	n (%)
Fungal (n=51)		Eczema (n=55)			
Tinea Cruris	18 (35.3)	Nummular eczema	07 (11.7)	Fungal/Hair fall	4 (33.3)
Tinea Corporis	15 (29.4)	Hand eczema	12 (21.8)	Parasitic/Acne	1 (8.3)
Tinea Capitis	04 (7.9)	Atopic dermatitis	03 (5.0)	Fungal/Hair fall/Acne	1 (8.3)
Tinea Pedis	02 (3.9)	Seborrhoeic dermatitis	12 (21.8)	Parasitic/Pigmentary	1 (8.3)
Tinea Mannum	01 (2.0)	Contact dermatitis	14 (25.3)	Fungal/Parasitic/Pigmentary	1 (8.3)
Candidiasis	02 (3.9)	Pityriasis alba	04 (7.2)	Parasitic/Eczema	1 (8.3)
Pityriasis versicolor	03 (5.9)	Stasis eczema	01 (1.8)	Viral/Pigmentary	1 (8.3)
Onychomycosis	06 (11.7)	Lichen simplex chronicus	03 (5.4)	Parasitic/hair fall	1 (8.3)
Bacterial (n=4)		Pigmentary (n=29)		Fungal/eczema	1 (8.3)
Folliculitis	01 (25)	Vitiligo	07 (24.1)		
Furunculosis	02 (50)	Melasma	21 (72.4)		
Abscess	01 (25)	Post inflammatory hyperpigmentation	01 (3.5)		
Viral (n=7)		Acne (n=38)			
Warts	07 (100)	Acne Vulgaris	38 (100)		
Parasitic (n=38)		Papulosquamous disorders (n=13)			
Scabies	34 (89.5)	Psoriasis	04 (30.8)		
Pediculosis capitis	04 (10.5)	Lichen planus	07 (53.8)		
		Pityriasis rosea	01 (7.7)		
		Exfoliative dermatitis	01 (7.7)		
		Hair disorders (n=18)			
		Telogen effluvium	10 (55.5)		
		Alopecia areata	05 (27.8)		
		Androgenetic alopecia	03 (16.7)		
		Miscellaneous diseases (n=18)			

and therefore tend to seek treatment more.¹² The most common age group affected in our study was the 18-40 years group, which was like several previous studies.^{9,13,14} Due to the prior marketing done on social media, most of the people attending the camp were from middle class background, in contrast to other studies where patients from the poor socioeconomic class formed the majority.¹⁵ The prevalence of infectious dermatoses

was lesser than that of non-infectious dermatoses. This contrasted with other studies where the infectious dermatoses were found to be in higher number.^{9,10,16} Since the camp was conducted in the winter season, when eczemas are prevalent, this likely explains why the non-infectious dermatosis were more in number compared to the infectious dermatoses, that tend to flourish in the hot, humid climate.¹⁷

Table 2: Comparison of pattern of skin diseases with baseline characteristics (n=283)

	Total	Pattern of skin disease			p-value
		Infectious (n=100) n (%)	Non-Infectious (n=171) n (%)	Both (n=12) n (%)	
Gender					
Male	162	50 (30.9)	106 (65.4)	6 (3.7)	0.130 [^]
Female	121	50 (41.3)	65 (53.7)	6 (5.0)	
Age, years					
<12	47	29 (61.7)	16 (34.0)	2 (4.3)	<0.001 *~
12 – 18	46	13 (28.3)	31 (67.4)	2 (4.3)	
18 – 40	136	38 (27.9)	90 (66.2)	8 (5.9)	
40 – 70	54	20 (37.0)	34 (63.0)	0 (0.0)	
Socio-economic status					
Poor	93	53 (57.0)	35 (37.6)	5 (5.4)	<0.001 *~
Middle class	178	46 (25.8)	126 (70.8)	0 (0.0)	
Upper middle class	12	1 (8.3)	1 (8.3)	10 (83.4)	
Occupation					
Employed	29	12 (41.4)	16 (55.2)	1 (3.4)	0.820 [^]
Unemployed [#]	254	88 (34.6)	155 (61.1)	11 (4.3)	

[#]Unemployed includes students, housewife, retired

~Fisher's Exact Test applied, [^]chi-square test applied, *p-value ≤ 0.05

Amongst the infectious dermatoses, fungal infections outnumbered other infections, which were seen mostly in adults, of which tinea cruris formed the largest group. This was consistent with several studies.^{17,18} Parasitic infections were seen to be significantly associated with less than 12 years age group, and as well as in those belonging to the poor socioeconomic class. This contrasted with the study done in Central Iran, where dermatophytoses were the most common infection seen in this age group.¹⁹ Bacterial and viral infections were not much prevalent in our study, probably due to the small sample size. Despite the cold weather, fungal infections were still found to be the greatest number of infections due to the poor hygiene and overcrowding in homes.¹² The most common non-infectious disorder was eczema, in which contact dermatitis was predominantly seen, reason being the common use of household detergents by females. This was in accordance with the study by Jain et al.²⁰ In contrast, in the study done by Grover et al, nummular eczema formed the largest group.⁹ Whereas a study by Maryam et al and a study done in the Hail region of Saudi Arabia, shows atopic eczema to be the commonest eczema seen.^{21,22}

Pigmentary disorders, which were significantly found in the 18-40 years females, accounted for 15.1% of the cases, where melasma formed the greater proportion of cases. This was in contrast to the study by Grover et al where vitiligo was the most frequently seen pigmentary disorder.⁹

Hair disorders were significant in adult females, where telogen effluvium topped the list of hair problems.

Acne and papulosquamous disorders were significantly associated with the 18-40 year age group. Of the papulosquamous disorders, lichen planus was most commonly seen, which was in contrast to several other studies where psoriasis was the commonest papulosquamous disorder.^{23,24}

The strength of this study is that it is only the second study done in Karachi from a private sector hospital assessing skin disease pattern. Since data from private hospitals are usually not reported, therefore, the pattern of skin diseases there and their relevance remain unassessed. Hence, more of such research studies are needed in the future. Another strength of this study is that this study was carried out in the winter season, whereas most of the previous studies done in Pakistan are from the summertime.

The limitations of the present study are its small sample size, as well as it being a single centered study which may not rightly represent the overall disease pattern of the city. Also, since the data was collected in a single day of winter, rather than throughout the winter months, it may not be a true reflection of the season's disease pattern. Another limitation was the lack of laboratory investigations for further confirmation of the diagnosis, as it was a free medical camp with limited resources.

CONCLUSION

Our study concludes the higher prevalence of non-infectious disorders than infectious skin disorders in the winter season, with eczemas and fungal infections being predominately seen overall. This study stresses on the importance of conducting free and regular dermatological camps in order to assess the pattern of skin diseases as well as to encourage public awareness on it and the need to receive treatment. The pattern of skin diseases seen in this study was similar to those done earlier with a few differences. There is a requirement in future for further studies, done on a larger sample size, as well as in multiple centers, both private and public, for a better assessment on the different variations in the pattern of skin diseases in Pakistan.

ETHICAL APPROVAL: This study was approved by Institutional Review Board of the Memon Medical Institute Hospital Karachi, Pakistan.

AUTHORS' CONTRIBUTION: SS: Article writing, Data analysis, and designing data collection. MM: Data collection and critical analysis. FF & EA: Critical analysis.

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