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Original Research Article

Clinico-Epidemiological Profile and Burden of Dermatological Disorders among OPD Patients in a Tertiary Care Hospital: A Retrospective Analysis

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Abstract:

Background: Dermatological disorders are among the most prevalent health problems worldwide and contribute significantly to morbidity and impaired quality of life. Their pattern varies with demographic and environmental factors, particularly in resource-limited settings.

Aim: To assess the clinico-epidemiological profile and burden of dermatological disorders among OPD patients in a tertiary care hospital.

Methodology: A retrospective, cross-sectional study was conducted in the Department of Skin and VD at Bhagwan Mahavir Institute of Medical Sciences, Pawapuri, Bihar. Medical records of 96 new OPD patients over six months were analyzed. Data regarding age, gender, and diagnosis were categorized into infective and non-infective dermatoses and analyzed using descriptive statistics.

Results: Of 96 patients, 53.13% were males and 46.87% females. The majority (58.75%) were aged 21–40 years. Non-infective dermatoses (52.08%) slightly outnumbered infective dermatoses (47.92%). Scabies (13.54%) and dermatophytosis (11.46%) were the most common infective conditions, while eczema (15.63%) and acne vulgaris (8.33%) predominated among non-infective disorders.

Conclusion: Dermatological disorders impose a considerable burden, particularly among young adults. Both infective and non-infective dermatoses remain prevalent, underscoring the need for early diagnosis, preventive strategies, and strengthened dermatological services.

Keywords: Dermatological disorders, Clinico-epidemiology, OPD, Infective dermatoses, Non-infective dermatoses, Tertiary care hospital.

Introduction

Dermatology is a division of medicine dealing with the diagnosis and treatment of skin, hair and nail disorders. Within the last several decades, it has become one of the fastest growing specialties due to the growing prevalence and awareness of a broad range of skin diseases [1]. As the largest and the most visible organ of the human body, the skin is the main barrier against mechanical damage, invasion by microbes, and insults of the environment. Other than its protective functions, the skin is an indicator of the internal health of the body, and a majority of systemic diseases are manifested through characteristic cutaneous signs. As a result, dermatological conditions are not only a considerable clinical phenomenon themselves but also a valuable manifestation of systemic illness [2].

Practically, every person has a dermatological condition in his or her life. Such conditions can be mild and self-limiting (e.g. acne or scabies), or severe and potentially fatal, (e.g. StevensJohn syndrome, toxic epidermal necrolysis and purpura fulminans) [3]. The spectrum of skin diseases can be simple infectious and inflammatory diseases to chronic autoimmune and neoplastic diseases. Most of these diseases are known to be related to great morbidity and psychological torture; however, they are usually related to low mortality rates as compared to other systemic disorders. However, some acute dermatological emergencies may also lead to huge morbidity and mortality unless timely diagnosed and managed. Thus, early detection and proper response is essential in both acute and chronic dermatological diseases [4].

Various determinants affect the size and pattern of skin diseases. The socioeconomic status, level of literacy, environment and climatic factors, industrialization, urbanization and availability of health services are key determinants of epidemiological

profile of dermatological diseases in various regions. The diversity in disease patterns is also enhanced by religious practices, ritual habits, professional exposures, and cultural practices. To illustrate, a community may be predisposed to infectious skin diseases because of overcrowding and poor hygiene, but the occurrence of contact dermatitis and other environmentally induced dermatoses may rise because of industrialization and urban pollution. In this way, the clinico-epidemiological trend of dermatological disorders differs significantly across different geographic locations [5].

Skin diseases are some of the health issues affecting the largest population in the world and have a significant cost on the quality of life. These impact people of all ages, sexes and socioeconomic classes. Genetic predispositions aside, exposure to the environment, and so many other factors indicate the distribution, prevalence, and severity of dermatological disorders [6]. There are over 1,000 different skin and skin-related disorders in the International Classification of Diseases (ICD), which highlights the enormous level of diversity and scope of dermatological pathology. Although such high prevalence is present, dermatological conditions have been underreported and poorly treated, especially in resource constrained contexts.

Skin diseases remain common globally because of the inequality in access to healthcare, quality and the type of medical services, and, most importantly, awareness of the general population about early diagnosis and treatment. According to surveys, it is revealed that about 73 percent of patients who are affected with skin disorders fail to seek medical consultation [7]. It is an important indication of a huge disparity between the occurrence of the disease and the healthcare use that can give rise to chronicity, complication, and further transmission of communicable dermatoses. The load of dermatological diseases is even greater in developing nations, in which the healthcare system might be underdeveloped, and the general awareness stays below the expected level [8].

Skin diseases have a multifactorial etiology. Dermatological diseases can be infectious diseases which include bacteria, fungi, viruses, or parasites, or non-infectious diseases include allergic responses, hypersensitivity, autoimmune, and damage caused by physical or chemical factors. Poor hygiene, overcrowding, malnutrition, and the lack of access to clean water make infectious dermatoses still especially common in developing countries. They include mild skin conditions like acne and scabies, to such serious disorders as Stevens-Johnson syndrome, toxic epidermal necrolysis, and purpura fulminana [9]. Even though skin conditions are typically considered to be highly morbid and comparatively low in mortality, their influence on physical comfort, cosmetics, psychological comfort, and social activity is quite high.

The skin conditions can be used as evidence of underlying systemic illnesses, and so the dermatological tests are part of the total patient care. Skins can give a clue to early diagnosis of metabolic disorders, infectious diseases, hematological abnormalities, and autoimmune disorders. Thus, timely diagnosis and proper management not only minimize morbidity and avoid mortality but also contribute to the spread of communicable skin disorders control [10] . Both personal hygiene and improved environmental sanitation, public health education, and proper nutrition have been established to have a significant effect of reduction in the incidence and prevalence of dermatological conditions in communities.

Although dermatological diseases are globally recognised as critical issues in the health of people, limited epidemiological data on the same is still lacking in most developing nations. Although many studies have been conducted to assess the trend of skin diseases in various regions across the globe, the geographical differences have required localized data to know the specific trend and healthcare requirements. Studies conducted in a hospital setting, especially tertiary care, present valuable information about the range and the burden of dermatological diseases among a specific population. These data are necessary to organize preventive measures, to distribute healthcare resources, as well as creating specific intervention programs.

The tertiary care hospitals are referral centers, and they attend patients whose geographic and socioeconomic status varies. In the outpatient department (OPD) of dermatology, there is a high variety of skin disorders that occur both in the community-acquired dermatoses and complex cases referred to the leader of primary and secondary care. The retrospective examination of OPD records can hence give useful data on the frequency of the diseases, age and gender distribution, season effects and relative burden of the different dermatological diseases. Knowledge of clinico-epidemiological profile of dermatological disorders in such settings can be used to contribute to priorities of intervention and reinforce dermatological services.

Given the growing weight of skin illnesses and the low data of the epidemiology of those diseases in the area, the current study was designed as an insight to the occurrence and prevalence of the dermatological disorders that were most frequently experienced by the patients in OPD in tertiary care hospital. Through the retrospective data analysis, the proposed research is expected to outline the clinico-epidemiological profile and determine the overall burden of skin diseases in our framework. It is assumed that the findings would lead to improved knowledge of local disease trends, resources distribution, and

determine the public health strategies to decrease the morbidity of dermatological diseases.

Methodology

Study Design: This study was a retrospective, cross-sectional, hospital-based epidemiological study conducted to evaluate the clinico-epidemiological profile and burden of dermatological disorders among patients attending the outpatient department (OPD). The study involved review and analysis of previously recorded patient data to assess patterns of skin diseases and their distribution across different demographic groups.

Study Area: The study was carried out in the Department of Skin and VD at Bhagwan Mahavir Institute of Medical Sciences, Pawapuri, Nalanda, Bihar, India.

Study Duration: The study was conducted over a period of six months from March 2025 to August 2025.

Sample Size: A total of 96 patients were included in the study. The sample comprised all eligible new OPD cases recorded during the six-month study duration who fulfilled the inclusion criteria and had complete medical records available for analysis.

Study Population: The study population consisted of all new patients of all age groups and both genders who attended the Dermatology and Venereology OPD during the study period. Only those patients who were diagnosed with dermatological disorders and whose records were complete were considered for inclusion in the study analysis.

Data Collection: Data were collected retrospectively from OPD registers and individual patient case records maintained in the Department of Skin and VD. Information extracted included demographic details such as age, sex, and residence; clinical features; duration of illness; and final diagnosis. All diagnoses had been made by qualified dermatologists based on detailed medical history and thorough clinical and cutaneous examination. In cases where clinical diagnosis required confirmation, investigations such as potassium hydroxide (KOH) preparation for fungal infections, slit skin smear for acid-fast bacilli, Tzanck smear, Wood's lamp examination, VDRL test, skin biopsy, and culture were performed as per standard protocols. For analytical purposes, dermatological conditions were categorized into infective and non-infective dermatoses.

Inclusion Criteria

- All new OPD patients attending the Department of Skin and VD during the 6-month study period
- Patients with a confirmed clinical diagnosis of dermatological disorder
- Complete and accessible medical records

Exclusion Criteria

- Patients suffering from HIV infection
- Patients with incomplete or missing medical records
- Cases in which diagnosis was uncertain and required highly complex diagnostic procedures not available in routine records

Procedure: OPD registers and case records corresponding to the six-month study period were retrieved and reviewed. Eligible cases were screened according to the predefined inclusion and exclusion criteria. Relevant demographic and clinical information was systematically recorded using a structured data collection proforma. The collected data were verified for completeness and accuracy before being entered into a Microsoft Excel spreadsheet for organization and further statistical analysis.

Statistical Analysis: The collected data were entered into Microsoft Excel and subsequently analyzed using Statistical Package for the Social Sciences (SPSS) software (IBM SPSS version XX). Descriptive statistical methods were used to summarize the data. Categorical variables were expressed as frequencies and percentages, while continuous variables were presented as mean and standard deviation. Where applicable, the Chi-square test was used to assess associations between categorical variables. A p-value of less than 0.05 was considered statistically significant."

Result

Table 1 shows the distribution of infective skin diseases among the study population, with a total of 46 cases (47.92%). Males accounted for 30 cases and females for 16 cases. The most common infection was scabies, observed in 13 cases (13.54%), followed by tinea infection (dermatophytosis) in 11 cases (11.46%). Pyoderma was seen in 5 cases (5.21%). Pityriasis versicolor, candidiasis, and warts each accounted for 3 cases (3.13%). Sexually transmitted diseases (STD) were reported in 3 cases (3.13%), all in males. Herpes zoster occurred in 2 cases (2.08%), while herpes simplex, TB skin, and Hansen's disease were each noted in 1 case (1.04%). Overall, infective dermatoses were more common in males, with scabies and dermatophytosis being the predominant conditions.

Table 1: Infective Skin Diseases (N = 46)				
Diagnosis	**Male**	**Female**	**Total**	**Percentage (%)**
Scabies	8	5	13	13.54
Tinea Infection (Dermatophytosis)	7	4	11	11.46
Pityriasis Versicolor	2	1	3	3.13
Candidiasis	1	2	3	3.13
Pyoderma	3	2	5	5.21
Herpes Zoster	1	1	2	2.08
Herpes Simplex	1	0	1	1.04
Warts	2	1	3	3.13
STD	3	0	3	3.13
TB Skin	1	0	1	1.04
Hansen's Disease	1	0	1	1.04
Total	**30**	**16**	**46**	**47.92%**

Table 2 presents the distribution of non-infective skin diseases among 50 cases (52.08% of total cases), with females (29 cases) more commonly affected than males (21 cases). Eczema was the most frequent condition, accounting for 15 cases (15.63%), followed by acne vulgaris in 8 cases (8.33%) and urticaria in 7 cases (7.29%). Melasma was observed in 4 cases (4.17%). Psoriasis and alopecia each accounted for 3 cases (3.13%), while vitiligo, drug eruptions, and lichen planus were each seen in 2 cases (2.08%). Chronic bullous diseases and collagen disorders were the least common, with 1 case each (1.04%). Overall, non-infective dermatoses were slightly more prevalent than infective conditions, with eczema being the predominant diagnosis and a higher occurrence among females.

Table 2: Non-Infective Skin Diseases (N = 50)				
Diagnosis	**Male**	**Female**	**Total**	**Percentage (%)**
Eczema	6	9	15	15.63
Acne Vulgaris	3	5	8	8.33
Urticaria	3	4	7	7.29
Melasma	1	3	4	4.17
Psoriasis	2	1	3	3.13
Vitiligo	1	1	2	2.08
Alopecia	1	2	3	3.13
Drug Eruptions	1	1	2	2.08
Lichen Planus	1	1	2	2.08
Chronic Bullous Diseases	0	1	1	1.04
Collagen Disorders	1	0	1	1.04
Miscellaneous	1	1	2	2.08
Total	**21**	**29**	**50**	**52.08%**

Table 3 shows the gender distribution of the study population (N = 96). Males comprised 51 participants (53.13%), while females accounted for 45 participants (46.87%). Overall, there was a slight male predominance in the study sample, although both genders were almost equally represented.

Table 3: Gender Distribution of Study Population (N = 96)		
Gender	**Number**	**Percentage (%)**
Male	51	53.13
Female	45	46.87
Total	**96**	**100%**

Table 4 presents the age-wise distribution of patients (N = 96). The majority of patients were in the 21–30 years age group, accounting for 24 cases (25%), followed by 31–40 years with 18 cases (18.75%) and 11–20 years with 15 cases (15.63%). Patients aged 41–50 years constituted 14 cases (14.58%), while 51–60 years accounted for 10 cases (10.42%). The extremes of age included 0–10 years with 8 cases (8.33%) and those above 60 years with 7 cases (7.29%). Overall, most patients (58.75%) were between 21 and 40 years of age, indicating a predominance of young adults in the study population.

Table 4: Age-wise Distribution of Patients (N = 96)		
Age Group (Years)	**Number**	**Percentage (%)**
0–10	8	8.33
11–20	15	15.63
21–30	24	25
31–40	18	18.75
41–50	14	14.58
51–60	10	10.42
>60	7	7.29
Total	**96**	**100%**

Discussion

The current retrospective analysis of the clinico-epidemiological characteristics of dermatological diseases in OPD patients of a tertiary care hospital showed a slight male preponderation (53.13%) over females (46.87%). This result compares with previous research studies conducted in India which have found that there is a male preponderance in dermatology outpatient services, especially in areas where men are typically exposed and do outdoor jobs (Dayal and Gupta, 1977; Jaiswal and Singh, 1999) [4, 5]. Nevertheless, there are studies of the region that have shown equality of genders or rather the preponderance of females and this indicates that sociocultural, health seeking behaviour and access to healthcare have a significant role to play in the patterns of OPD attendance (Nair et al., 1999; Agarwal et al., 2011) [6,10]. The minor male bias in our study could be explained by the increased exposure of the occupation to environmental irritants and infectious agents and an increased case of the lower socioeconomic occupational groups of laborers and farmers as observed in past epidemiology (Rook et al., 1987) [1]."

The infective dermatoses were the leading cause of 47.92% in our research, which is in line with previous Indian statistics that indicated a huge prevalence of infectious skin diseases in tropical and subtropical environments (Mehta, 1962; Gangadharan et al., 1976) [2,3]. A study by Bundelkhand and Kerala has also documented a range of 40 to 60 percent infectious dermatoses, which also agrees with our results (Dayal and Gupta 1977; Gangadharan et al. 1976) [4,3]. The issue of predisposition to infective conditions has remained with overcrowding, lack of hygiene and humid climate, which have been noted in classical dermatology epidemiology textbooks (Rook et al., 1987) [1]. The same has not been observed in some semi-urban and urban studies which have revealed a slow epidemiological shift to non-infectious dermatoses with betterment in socioeconomic conditions (Karanti, 1984; Das, 2003) [8,9].

The prevalence of scabies as the most frequent infective dermatosis in our study was 13.54 percent. This finding is similar to the rural and semi-urban Indian settings, where scabies has been present among 10 to 20% of the dermatology OPD cases (Kuruvilla et al., 2000; Agarwal et al., 2011) [7,10]. It is common due to the proximity between the interpersonal contacts, overcrowding, and hostel conditions among students as observed in past studies in the region. The second most prevalent infective condition Tinea infections (11.46) were reported to be consistent with the rising trend of dermatophytosis reported in recent Indian literature with prevalence rates ranging between 8 and 15 percent (Agarwal et al., 2011; Das, 2003) [10,9]. Compared to older cohorts, Pyoderma (5.21%) in our cohort was relatively lower in comparison with the figure, in the economically underprivileged regions of bacterial infection in pediatric and adult dermatoses (Gangadharan et al., 1976) [3].

In our study, the proportion of non-infective to infective dermatoses was only marginally less than that of infective conditions (52.08 vs. 21), though females were predominant (29 vs. 21). This is similar to the results of Trivandrum and Uttarakhand in which more than half of dermatological consultations were non-infective (Nair et al., 1999; Agarwal et al., 2011) [6,10]. The prevalent non-infective dermatosis in our population was eczema (15.63%). Other studies have also recorded similarly high rates of eczema of between 12 and 20 percent in various studies in India (Karanti, 1984; Kuruvilla et al., 2000) [8,7]. The particular issue has been contacting dermatitis, which in most cases has been related to occupational contact with chemicals, cement and agricultural products, in favor of the results of earlier regional studies (Dayal and Gupta, 1977) [4].

Acne vulgaris was responsible to 8.33% cases most of which were those found among younger people. This is in line with epidemiological findings that acne is prevalent in adolescents and young adults particularly in urbanizing populations (Rook et al., 1987) [1]. Urticaria comprised 7.29 per cent of cases, and this is in comparison with the reported frequencies of 5-10 per cent OPD (Griffiths et al., 2016) [11]. In our study, melasma (4.17%) was female-predominant, which correlates with hormone impacts as noted in other studies, where endocrine hormones, including estrogen and progesterone, have an important etiological impact (Mehmood et al., 2011) [12]. The prevalence of psoriasis (3.13) and vitiligo (2.08) in our study fell within the range of prevalence of psoriasis among patients in the

OPD in Indian tertiary care facilities, where psoriasis prevalence ranges between 2 and 5 percent (Das, 2003; Agarwal et al., 2011) [9,10].

The distribution in terms of age in our study showed the highest rate of cases in 2130 years age group (25 percent) and then 31 40 age group (18.75 percent). This youthful majority has also been noted in literature research in Kerala, Kashmir and Central India, where the age bracket of economic productivity in the dermatology OPD was mostly represented by young adults (Jaiswal & Singh, 1999; Noorbala, 2010) [5,13]. This decrease in the percentage of elderly patients (>60 years, 7.29) could be attributed to decreased healthcare-seeking behavior or decreased prevalence of some communicable dermatoses in elderly patients. Pediatrics (010 years) was comparatively lower than some of the preceding studies that gave higher cases of childhood dermatoses which were mostly infectious diseases (Dayal and Gupta, 1977) [4].

Comprehensively, our study results support as well as disagree with earlier Indian and other international statistics. Although the infective dermatoses still persist with a significant burden, an epidemiological shift towards non-infective and lifestyle-related diseases can be observed in tertiary care facilities. The presence of differences in the patterns of prevalence in various regions highlights the role played by climatic, socioeconomic, cultural, and occupational determinants. The similar tendencies in previous landmark research (Mehta, 1962; Nair et al., 1999) [3,6] confirm our findings and the necessity to have region-specific public health approaches. The reinforcement of health education, sanitation, personal hygiene, and promptness to dermatologic care are the key measures to decrease disease burden and improve the quality of life.

Conclusion

The current retrospective case study on the clinico-epidemiological characteristics of the dermatological conditions of OPD patients in a tertiary care hospital shows that skin diseases represent a considerable burden in all age groups, although with a minor male bias and a greater proportion of cases in young adults. Dermatoses with no infection slightly surpassed that with infection, which shows a shift in the disease patterns, but nonetheless, infectious skin disease still constitutes a significant number of cases. Among infective disorders, parasitic and fungal infections were most frequent, whereas eczema and acne vulgaris predominated among non-infective conditions. The distribution across genders and age groups highlights the influence of environmental, occupational, and lifestyle factors in disease occurrence. Overall, the findings emphasize the need for strengthened preventive strategies, early diagnosis, patient education, and comprehensive dermatological services at tertiary care centers to effectively reduce the clinical and epidemiological burden of skin disorders.

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