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Pattern of Skin Diseases among Rural Adult Patients Attending at Dermatology OPD in a Tertiary Care Hospital of Bangladesh

Kamrul Islam[1], Md. Imranul Islam[2], Tarana Jahan[3], Md. Abdullah Yusuf[4], Sayema Hussain Chowdhury[5], Fatima Tuj Zohora[6]

[1]Associate Professor, Department of Dermatology & Venereology, Monno Medical College, Manikganj, Bangladesh; [2]Assistant Professor, Department of Dermatology & Venereology, Monno Medical College, Manikganj, Bangladesh; [3]Assistant Professor, Department of Microbiology, Monno Medical College, Manikganj, Bangladesh; [4]Associate Professor, Department of Microbiology, National Institute of Neurosciences & Hospital, Dhaka, Bangladesh; [5]Registrar, Department of Dermatology & Venereology, Monno Medical College, Manikganj, Bangladesh; [6]Medical officer, Department of Dermatology & Venereology, Monno Medical College, Manikganj, Bangladesh

Abstract

Background: Skin diseases are common health problem in developing countries however they are not usually perceived to be a significant health concern. Skin diseases and their complications have remarkable effects on patient's quality of life. **Objective:** The purpose of the present study was to observe the pattern of skin diseases and assess the relation of socio- demographic factors among rural adult patients attending the dermatology OPD at a tertiary care hospital Bangladesh. **Methodology:** A cross-sectional observational study was carried out in the department of Dermatology & Venereology of Monno Medical College & Hospital in Manikganj, Bangladesh from January 2022 to December 2022 for period of one year. Patients who were attending the dermatology OPD for skin problem during this period were included in this study. Dermatological diagnosis was done by qualified dermatologists from the outpatient department. A thorough medical history, clinical feature and detailed cutaneous examination was performed on each patient and diagnosis were made on the basis of clinical findings and some relevant investigations. **Results:** A total number of 2162 patients were recruited after fulfilling the inclusion and exclusion criteria. Among them majority patients aged between 18 to 30 years which was 1186 (54.9%), female patients were predominant 1276 (59.0%). In this study majority patients were house wife which was 797 (36.86%) followed by student 607(28.08%). The most common Pattern of dermatological disease was Infections and Infestation 915(42.32%) followed by Dermatitis and Eczema 420(19.43%), Acne Vulgaris 285 (13.18%) and Psoriasis 206(9.53%). Noninfectious dermatoses were more than infectious group 1247(57.68%) and 915(42.32%) respectively. Among dermatological infection and infestation, the most common was dermatophytosis which were 451(49.30%) and the second highest group was Scabies 204(22.30%). Among the infective conditions, fungal infections was the most common disorder which was 531(58.03%) followed by parasitic infestations, bacterial infections and viral infections which were 209(22.84%), 104(11.36%) and 71(7.76%) respectively. **Conclusion:** The frequency of skin diseases are increasing day by day. The pattern of skin diseases serves as an indicator of community development and the quality of available healthcare.

Keywords: pattern of skin diseases; rural area; Adult person; dermatology OPD

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Introduction

Skin diseases are associated with high morbidity but relatively low mortality. Dermatological conditions make up a significant portion of cases in major hospitals. Factors such as environment, economic conditions, literacy levels, racial backgrounds, and social customs all play a role in influencing skin diseases. The pattern of these diseases varies between countries and even across different regions within the same country[1]. According to WHO, the high prevalence figures for skin diseases was reported 21-87% among the general population in developing

Correspondence: Dr. Kamrul Islam, Associate Professor, Department of Dermatology & Venereology, Monno Medical College, Manikganj, Bangladesh;
Email: drkamrulislamm29derma@gmail.com;
Cell No.:+880960805386;
ORCID: https://orcid.org/0009-0002-8493-9148

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countries[2]. In developing country like Bangladesh there are many predisposing factors like hot and humid climate, low hygiene, high interpersonal contact and household overcrowding which usually influence to produce various skin diseases. There are four fairly distinct seasons instead of six: A relatively cool winter, a hot humid summer, a rainy monsoon, and a post monsoon season. It is largely influenced by education, economy, occupation, and also genetic backup of the patients[1].

Common skin infections are may be caused by various microbes such as bacteria, fungi or viruses. The main pathogenesis is break in the skin integrity, particularly those that inoculate pathogens into the dermis, frequently cause or exacerbate skin infections. Bacterial skin infections caused by Corynebacteria include erythrasma, trichomycosis axillaris and pitted keratolysis. Staphylococci may cause impetigo, ecthyma and folliculitis. Streptococcal skin infections include impetigo and erysipelas[3]. Human papilloma virus skin infections present as several different types of warts, depending on the surface infected and its relative moisture, and the patterns of pressure[4]. The many skin infections caused by fungi or yeasts include tinea capitis, tinea barbae, tinea cruris, tinea manus, tinea pedis and tinea unguium (onychomycosis). Candidal infections occur in moist areas, such as the vulva, mouth, penis, skinfolds and diaper area[5]. The skin, with the largest surface area of any organ in the body, is also the most exposed. While it serves as a highly effective barrier against external threats, skin infections are still a frequent issue seen in many family practices. The skin has the largest surface area of all of the body organs and is the most exposed organ. Although the skin is remarkably effective in providing protection against the external environment, skin infections are nevertheless a common presentation in most family practices[3].

Skin diseases causes harm in different ways and can have a profound impacted on both the individual and the community. Early identification of skin diseases is important for treating patients as well as preventing the spread of communicable diseases. Morbidity is significant through disfigurement, disability or symptoms such as intractable itch, as is the reduction in quality of life, even social isolation and economic burden.6 Mortality rare but still seen from metastatic skin cancer. Many times, dermatological manifestations may give some clue to the presence of benign or malignant systemic diseases in individual. Although certain skin diseases are highly prevalent in developing countries, they have not yet been considered a major health concern in the formulation of public health strategies. To reduce the incidence of skin disorders it is important to improve the environmental sanitation, education of general public and good nutrition[7]. Considering all these factors this study was carried out with the pattern of skin diseases among the patients attending the skin OPD and assess the relation of socio- demographic factors with the type of dermatological disorders.

Methodology

Study Settings and Population: A hospital based cross-sectional observational study was carried out in the department of Dermatology & Venereology of Monno Medical College & Hospital in Manikganj, Bangladesh. Data were collected from January 2022 to December 2022 for period of one year. Purposive type of none probability sampling technique was followed in this study. Patients who were aged 18 years to 60 years, irrespective of gender and occupation attending the dermatology OD for skin problem during this period and were willing to participate constituted the study population. In case of Patients who had doubtful diagnosis was excluded from the study population. Informed verbal consent was taken from the interviewed patients.

Sample Collection Procedure: Data were collected in the predesigned, pretested, semi-structured schedule by exit interview. The study was based mainly on clinical basis of first visit. Dermatological diagnosis was done by qualified dermatologists from the outpatient department. A thorough medical history, clinical feature and detailed cutaneous examination was performed on each patient; diagnosis were made on clinical examination. Laboratory investigations such as Gram staining, skin scraping for fungus and skin biopsy for histopathology were also carried out if required for confirmation of diagnosis.

Statistical Analysis: Statistical analyses was performed with SPSS software, versions 22.0 (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.). Continuous data that were normally distributed were summarized in terms of the mean, standard deviation, median, minimum, maximum and number of observations. Categorical or discrete data were summarized in terms of frequency counts and percentages. When values are missing, the denominator was stated. Chi-square test was used for comparison of categorical variables. Every effort was made to obtain missing data. A two-sided P value of

less than 0.05 was considered to indicate statistical significance.

Ethical Clearance: All procedures of the present study were carried out in accordance with the principles for human investigations (i.e., Helsinki Declaration) and also with the ethical guidelines of the Institutional research ethics. Formal ethics approval was granted by the IRB of Monno Medical College. Participants in the study were informed about the procedure and purpose of the study and confidentiality of information provided. All participants consented willingly to be a part of the study during the data collection periods. All data were collected anonymously and analyzed using the coding system.

Results

A total number of 2162 patients were recruited after fulfilling the inclusion and exclusion criteria. Among them majority participants aged between 18 to 30 years which was 1186 (54.9%) followed by 31 to 40 years, 41 to 50 years and 51 to 60 years which were 483(22.3%), 271(12.5%) and 222(10.3%) respectively (Table 1).

Table 1: Showing distribution of patients according to Age group (n=2162)

Age groups	Frequency	Percent
18-30 years	1186	54.9
31-40 years	483	22.3
41-50 years	271	12.5
51-60 years	222	10.3
Total	**2162**	**100.0**

Among 2162 patients, female patients were predominant than male which was 1276 (59.0%) and 886 (41.0%) respectively. Figure I showed the frequency distribution of participants according to gender.

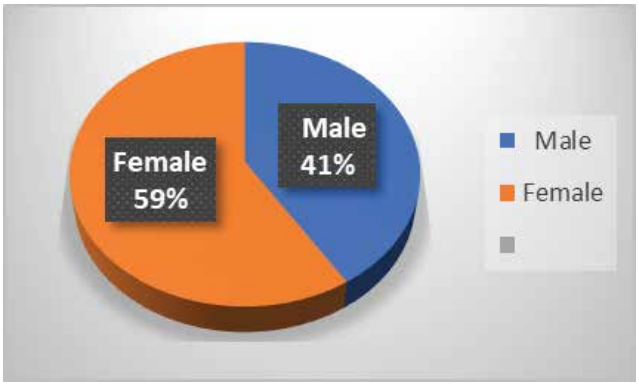

Figure I: The frequency distribution of patients according to gender

In this study majority patients were house wife which was 797 (36.86%) followed by student 607(28.08%), service holder 364 (18.83%) and minimum patients were Farmer and others which was 140 (6.48%) and 254 (11.75%) respectively. (Figure II)

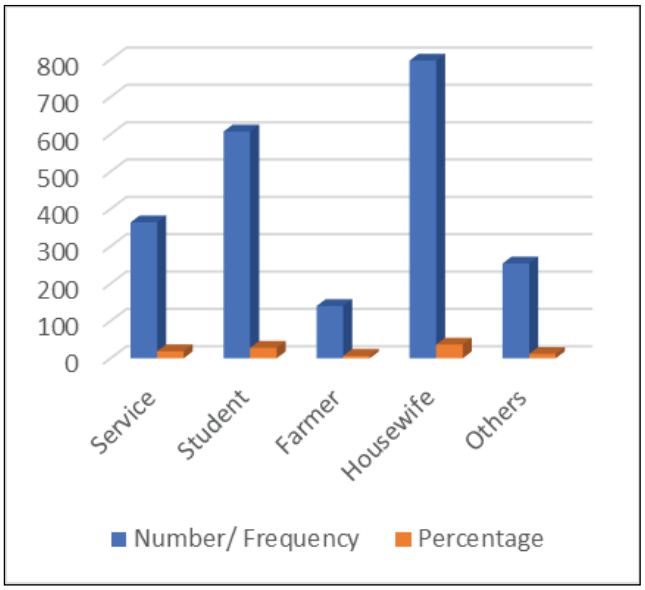

Figure II: showed the frequency distribution of patients according to occupation.

The most predominant Pattern of dermatological diseases was Infections and Infestation 915 (42.32%) followed by Dermatitis and Eczema 420 (19.43%), Acne Vulgaris 285 (13.18%) and Psoriasis 206 (9.53%) (Table 2).

Table 2: The frequency distribution of patients according to Pattern of dermatological diseases

Dermatoses	Frequency	Percent
Infections and Infestation	915	42.32
Dermatitis and Eczema	420	19.43
Acne Vulgaris	285	13.18
Psoriasis	206	9.53
Pigmentary Disorder	59	2.73
Urticaria	55	2.54
Hair Disorder	47	2.17
PPK (NOS)*	43	2.00
Benign Tumerous Cond.	38	1.75
Papulo Squamous Disease (NOS)*	33	1.53
Drug Reaction	17	0.79
Miliaria	10	0.46
Nutritional disorder	08	0.37
Genodermatoses	07	0.32
Hypertridroaia	05	0.23
Connective tissue dermoses	04	0.19
Miscellaneous	10	0.46
Total	**2162**	**100.0**

*PPK (NOS)= palmoplantar keratoderma (Not otherwise specified)

Noninfectious dermatoses were more than infectious group 1247 (57.68%) and 915 (42.32%) respectively. (Figure III)

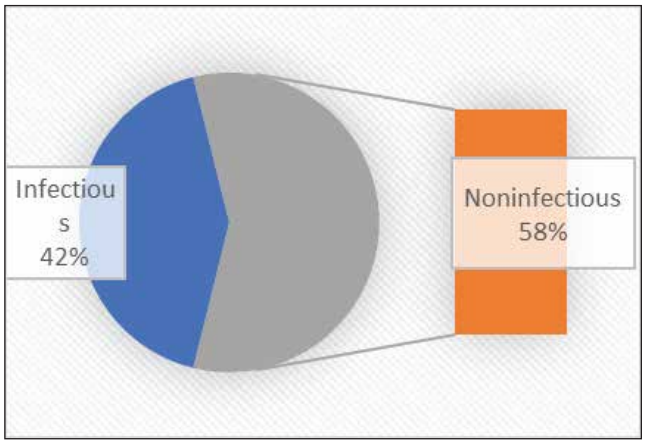

Figure III: showed the frequency distribution of patients according to infectious and noninfectious dermatoses

Among dermatological infection and infestation (n=915) the most common was Dermatophytosis which were 451(49.30%) and the second highest group was Scabies 204 (22.30%).

Table 3: The frequency distribution of patients according to pattern of dermatological infections and infestation

Name of infection & infestation	n (%)
1.Bacterial infections	**104 (11.36)**
Bacterial infections (except leprosy)	101 (11.04)
Leprosy	03 (0.32)
2. Fungal infections	**531 (58.03)**
Dermatophytosis	451(49.30)
Pityriasis versicolor	43(4.69)
Candidiasis	37(4.04)
3. Parasitic infestations	**209 (22.84)**
Scabies	204 (22.30)
Pediculosis	05 (0.54)
4. Viral infections	**71 (7.76)**
Viral warts	24 (2.62)
Herpes zoster	22 (2.40)
Hand Foot & Mouth Disease	09 (0.98)
Chicken pox	06 (0.66)
Herpes labialis	04 (0.44)
Viral exanthem (non-specific)	03 (0.33)
Gainotti Crosty syndrome	02 (0.22)
Molluscum contagiosum	01 (0.11)
Total	**915 (100)**

Among the infective conditions, fungal infections was the most common disorder which was 531(58.03%) followed by parasitic infestations, bacterial infections and viral infections which were 209 (22.84%), 104 (11.36%) and 71 (7.76%) respectively. (Figure IV)

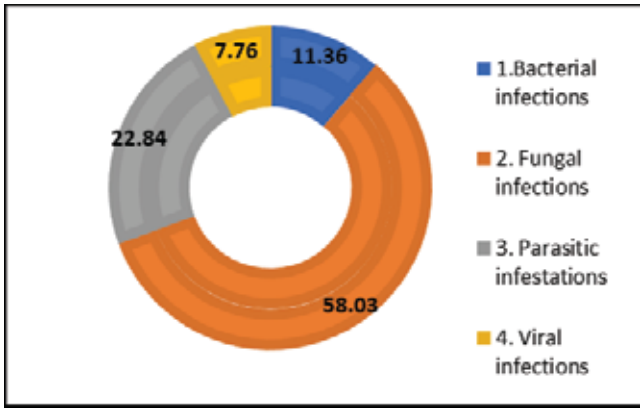

Figure III: showed the frequency distribution of patients according to infectious and noninfectious dermatoses

Discussion

Apart from environmental factors, skin diseases are mostly depending on occupation, socio economic status, and age of the patients. To observe the pattern of skin diseases among adult patients attending the dermatology outpatient department of Monno Medical College and Hospital 2162 patients has been selected according to inclusion and exclusion criteria. Among them majority participants aged between 18 to 30 years which was 1186 (54.9%). A study conducted on dermatology OPD of a tertiary care hospital in Kolkata, India has been reported that most of the patients were from below < 44 years age group[8]. Another study conducted in a private clinic of India has been found that Age group 21-30 had the maximum number (32.7%) of patients followed by 11-20 (23.7%) and 31-40 (17.3%) age groups, respectively[9].

In this study 1276 (59.0%) patients were female showing female preponderance as shown by most of the other similar studies[8,10] but some studies also reported male preponderance[9]. In this study majority patients were house wife which was 797 (36.86%) followed by student 607(28.08%), service holder 364 (18.83%) and minimum patients were Farmer and others which was 140 (6.48%) and 254 (11.75%) respectively. Similar type of findings were also reported that one-fourth (25.8%) of the study population were housewives, closely followed by students (23.5%) unskilled worker were 14.7%[8].

The most common Pattern of dermatological diseases

was Infections and Infestations 915(42.32%) followed by Dermatitis and Eczema 420(19.43%), Acne Vulgaris 285(13.18%) and Psoriasis 206(9.53%). Noninfectious group were more than infectious group which was 1247 (57.68%) and 915 (42.32%) respectively. This result almost similar to other study that was Non Infectious dermatoses were more than Infectious group (54.3% vs. 45.7%)8; (58.07% vs 41.93%)[11]; (62.7% vs 37.3%)[10]. The prevalence of infective disorders has outstripped that of non-infective disorders in some studies, varying from 42.7% to 89.7% cases[12].

Among the infective conditions, fungal infections was the commonest disorder in most of studies including this which was 531(58.03%), varying in prevalence from 12.8% to 46.25% cases[10,13]. The study in the tertiary care hospital in Kerala, India, found Fungal infection (18.74%), Bacterial (6.74%), Parasitic (4.31%) were commonly found among Infectious skin disorder[14]. In this study on dermatological infections and infestations (n=915), dermatophytosis was identified as the most prevalent condition, affecting 451(49.3%) cases. The second most common condition was scabies, with 204(22.3%) cases. These findings closely align with data from neighboring India, where dermatophytosis accounts for 45.69% and scabies for 29.38% of similar cases[15].

Conclusion

The pattern of skin disorders is an index of community development and the quality of available health care. The frequency of skin disorders is rising steadily, with a higher prevalence among female patients than male. Skin infections and infestations are the most commonly observed skin disorders, followed closely by Dermatitis and eczema. Among infectious conditions, fungal infections are the most frequent. Dermatologists now face the growing challenge of preventing and managing these skin diseases, which pose a significant healthcare burden and greatly impact quality of life.

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Conflict of Interest
All authors declared no conflict of interests.

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Authors' contributions
Islam K, Islam MI, Jahan T, Yusuf MA conceived and designed the study, analyzed the data, interpreted the results, and wrote up the draft manuscript, contributed to the analysis of the data. Chowdhury SH, Zohora FT helped in data collection. Islam MI, Jahan T, Yusuf MA critically reviewed and edited the manuscript. Jahan T, Yusuf MA involved in the manuscript review. All authors read and approved the final manuscript.

Data Availability
Any inquiries regarding supporting data availability of this study should be directed to the corresponding author and are available from the corresponding author on reasonable request.

Ethics Approval and Consent to Participate
Ethical approval for the study was obtained from local ethics committee. All methods were performed in accordance with the relevant guidelines and regulations.

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ORCID
Kamrul Islam: https://orcid.org/0009-0002-8493-9148
Md. Imranul Islam: https://orcid.org/0009-0002-2885-2347 .
Tarana Jahan: https://orcid.org/0000-0002-9405-6990
Md. Abdullah Yusuf: https://orcid.org/0000-0002-8551-7185
Sayema Hussain Chowdhury: https://orcid.org/0009-0008-9914-7163
Fatima Tuj Zohora: https://orcid.org/0009-0004-4789-4280

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