e-ISSN: 0976-822X, p-ISSN:2961-6042

Available online on http://www.ijcpr.com/

International Journal of Current Pharmaceutical Review and Research 2026; 18(2); 1387-1393

Original Research Article

Prevalence and Patterns of Dermatological Diseases in Rural Populations: A Cross-Sectional Study

Sudhanshu Kumar[1], Richa Thakur[2], Punkesh Kumar[3]

[1,3]Assistant Professor, Department of Skin & V.D, Radha Devi Jageshwari Memorial Medical College & Hospital, Turki, Muzaffarpur, Bihar, India.

[2]Associate Professor, Department of Skin & V.D, Netaji Subhash Medical College, Amhara, Bihta, Patna, Bihar, India.

Received: 24-12-2025 / Revised: 23-01-2026 / Accepted: 25-02-2026

Corresponding Author: Punkesh Kumar

Conflict of interest: Nil

Abstract:

Background: Dermatological diseases constitute a major public health concern, particularly in rural populations where limited access to healthcare, poor hygiene, low socioeconomic status, and environmental factors contribute to increased disease burden. Despite their high prevalence, community-based data on the pattern of skin disorders in rural settings remain scarce.

Objective: To determine the prevalence and pattern of dermatological diseases among rural populations attending multiple healthcare centres.

Materials and Methods: This prospective cross-sectional multicentric study was conducted from January 2025 to August 2025 across selected rural healthcare centres. There were 105 patients with skin problems who were enrolled. A thorough clinical assessment was conducted, leading to diagnoses based on clinical observations and pertinent investigations. Descriptive statistics were used to look at the data.

Results: Infectious dermatoses constituted the most common group, followed by eczematous disorders and pigmentary conditions. Fungal infections were the predominant infectious dermatoses. Most conditions were associated with poor hygiene, occupational exposure, and environmental factors.

Conclusion: Dermatological diseases are highly prevalent in rural populations, with infections forming the majority. Strengthening primary dermatological care, improving hygiene awareness, and early diagnosis are essential to reduce disease burden.

Keywords: Rural health, Skin diseases, Prevalence, Pattern, Cross-sectional study.

DOI: 10.25258/ijcpr.18.2.228

Introduction

Skin diseases constitute a significant proportion of the global burden of disease, affecting individuals across all age groups and socioeconomic strata. Although rarely life-threatening, dermatological disorders contribute substantially to morbidity, psychosocial distress, reduced quality of life, and economic loss, particularly in low- and middle-income countries. According to the Global Burden of Disease (GBD) Study, skin and subcutaneous diseases rank among the most prevalent non-fatal health conditions worldwide, accounting for a considerable number of years lived with disability (Hay et al., 2014) [1]. Subsequent updates from the GBD collaborators have consistently highlighted the persistent and widespread nature of dermatological disorders, particularly in resource-limited settings (Karimkhani et al., 2017) [2].

Adiga et al. (2025) found that in a rural district hospital in Belthangady, Karnataka, communicable skin conditions accounted for nearly 60% of all dermatological presentations, with fungal infections—especially tinea corporis—being the most common category, while eczema was the leading non-infectious condition. This underscores the continued importance of infections as drivers of rural skin disease burden in India [3]. Vihan et al. (2025) found that community-based study among adolescents in Udaipur, Rajasthan reported that 68% of participants had one or more skin diseases, with infectious dermatoses and acne being predominant, and associations identified between socioeconomic factors, hygiene practices, and disease presence [4].

Several regional studies in India have demonstrated that infections and infestations constitute the majority of dermatological consultations in rural and semi-urban settings. For instance, a clinic-based study in rural South India reported a high prevalence of dermatophytosis and scabies, attributing the

pattern to humid climate and overcrowding (Kumar et al., 2014) [5]. Similarly, Grover et al. (2009) observed that fungal infections were the leading cause of dermatological morbidity in northern India [6]. These findings indicate significant regional variations in disease pattern influenced by geography and socio-environmental factors.

Aim & Objectives

Aim: To determine the prevalence and pattern of dermatological diseases among rural populations and to assess their association with demographic and occupational factors.

Objectives

- To evaluate the age- and gender-wise distribution of patients presenting with dermatological complaints in a rural population.
- To determine the overall prevalence of infectious and non-infectious dermatoses among the study participants.
- To analyze the pattern and subtypes of infectious dermatoses, including fungal, bacterial, parasitic, and viral infections.
- To assess the distribution of non-infectious dermatoses such as eczematous, pigmentary, papulosquamous, and acneiform disorders.
- To examine the association between occupational exposure and the occurrence of infectious dermatoses using statistical analysis (Chi-square test), considering $p < 0.05$ as statistically significant.

Materials & Methods

Study Design: This study was designed as a prospective cross-sectional multicentric study conducted to assess the prevalence and pattern of dermatological diseases among rural populations.

Study Population: The study population comprised patients of all age groups presenting with dermatological complaints to selected rural healthcare centers during the study period. A total of 105 patients who met the eligibility criteria were included in the study.

Study Setting: The study will be conducted at Department of Skin & V.D, Radha Devi Jageshwari Memorial Medical College & Hospital, Turki, Muzaffarpur, Bihar, India in collaboration with Department of Skin & V.D, Netaji Subhash Medical College, Amhara, Bihta, Patna, Bihar, India. The multicentric design ensured representation from different rural regions and minimized centre-based bias.

Study Period: The study was conducted over a period of 8 months, from January 2025 to August 2025.

Sample Size: The final sample size consisted of 105 patients, selected consecutively during the study period based on eligibility criteria.

Ethical Considerations

- The study protocol was reviewed and approved by the Institutional Ethics Committee prior to commencement.
- Written informed consent was obtained from all adult participants.
- For participants below 18 years of age, informed consent was obtained from parents or legal guardians.
- Confidentiality and anonymity of patient data were strictly maintained.
- The study adhered to the ethical principles outlined in the Declaration of Helsinki.

Inclusion Criteria

1. Patients of all age groups presenting with dermatological complaints.
2. Patients willing to participate and provide written informed consent.
3. Patients with complete clinical data.

Exclusion Criteria

1. Patients unwilling to participate in the study.
2. Patients with incomplete clinical records.
3. Patients who were critically ill and unable to undergo proper dermatological evaluation.

Methodology

All eligible patients underwent:

1. **Detailed History Taking**
    - Demographic details (age, gender).
    - Duration and nature of dermatological complaint.
    - Occupational history (agricultural/manual labor exposure).
    - Hygiene practices.
    - Environmental exposure (heat, humidity).
    - Past medical and treatment history.
2. **Clinical Examination**
    - Comprehensive dermatological examination under adequate lighting.
    - Lesion morphology, distribution, and site were recorded.
    - Diseases were categorized as infectious or non-infectious dermatoses.
3. **Classification of Dermatoses**
    - Infectious dermatoses: fungal, bacterial, parasitic, and viral infections.
    - Non-infectious dermatoses: eczematous, pigmentary, papulosquamous, acneiform, and others.

Investigations: Investigations were performed when clinically indicated and included:

- **KOH mount** for fungal infections.
- **Gram staining** for suspected bacterial infections.
- **Skin scraping** for parasitic infestations (e.g., scabies).
- **Skin biopsy** for selected cases of papulosquamous or unclear dermatoses.
- Routine laboratory tests where necessary.

Outcome Measures

Primary Outcome Measures

- Prevalence of infectious and non-infectious dermatological diseases.
- Pattern and distribution of specific dermatological conditions.

Secondary Outcome Measures

- Association between occupational exposure and infectious dermatoses.
- Distribution of dermatological diseases across age and gender groups.
- Frequency of reported environmental and hygiene-related risk factors.

Statistical Analysis: Data were entered into Microsoft Excel 365 and subsequently imported into Statistical Package for the Social Sciences (SPSS) version 26.0 (IBM Corp., Armonk, NY, USA) for analysis.

Descriptive Statistics

- Categorical variables (age group, gender, disease categories, occupational exposure) were expressed as frequencies (n) and percentages (%).
- Data were summarized using tables and figures.

Inferential Statistics

- The **Chi-square test (χ^2 test)** was applied to assess associations between categorical variables.
- Specifically, the association between **occupational exposure and infectious dermatoses** was evaluated.
- A **p-value < 0.05** was considered statistically significant.
- All statistical tests were two-tailed.
- Confidence interval (CI) was set at **95%**.

Results

A total of 105 patients presenting with dermatological complaints were included in the study. The analysis focused on demographic distribution, overall prevalence, and pattern of dermatological diseases across the rural population.

Table 1: Age and Gender Distribution of Study Population (n = 105)

Age group (years)	Male n (%)	Female n (%)	Total n (%)
≤20	12 (11.4)	9 (8.6)	21 (20.0)
21–40	21 (20.0)	15 (14.3)	36 (34.3)
41–60	16 (15.2)	15 (14.3)	31 (29.5)
>60	9 (8.6)	8 (7.6)	17 (16.2)
Total	**58 (55.2)**	**47 (44.8)**	**105 (100)**

Among the 105 patients, 58 (55.2%) were males and 47 (44.8%) were females, with a male-to-female ratio of 1.23:1. The age of patients ranged from 5 to 72 years, with the majority of cases observed in the 21–40 year age group (34.3%), followed by the 41–60 year age group (29.5%). The age and gender distribution of the study population is summarized in Table 1.

Table 2: Distribution of Dermatological Diseases

Disease category	Number (n)	Percentage (%)
Infectious dermatoses	51	48.6
Eczematous disorders	26	24.8
Pigmentary disorders	13	12.4
Papulosquamous disorders	8	7.6
Acneiform disorders	5	4.8
Others	2	1.9
Total	**105**	**100**

Dermatological conditions were broadly categorized into infectious and non-infectious dermatoses. Infectious dermatoses constituted the most common group, accounting for 48.6% (n = 51) of cases, followed by eczematous disorders (24.8%, n = 26) and pigmentary disorders (12.4%, n = 13). Other conditions included papulosquamous diseases, acneiform disorders, and miscellaneous dermatoses. The overall pattern of dermatological diseases is depicted in Table 2 and Figure I.

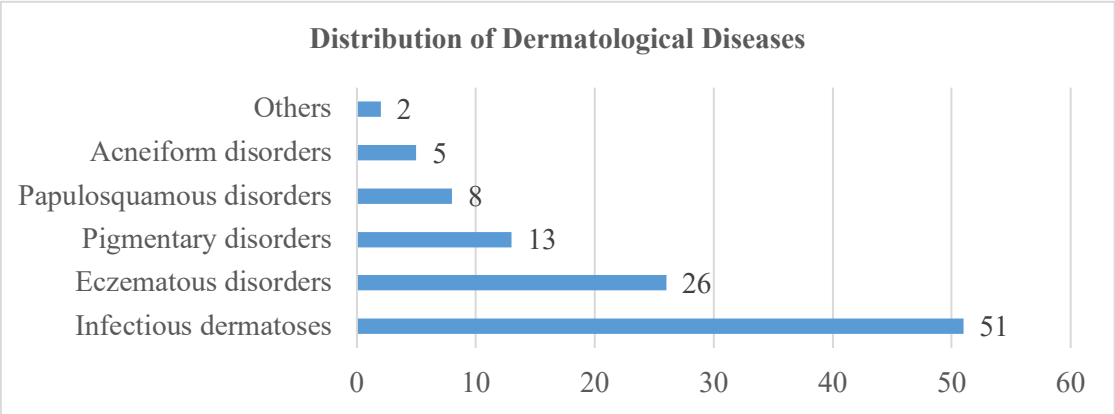

Figure 1: Distribution of Dermatological Diseases

Table 3. Pattern of Infectious Dermatoses (n = 51)

Type of infection	Number (n)	Percentage (%)
Fungal infections	29	56.9
Bacterial infections	10	19.6
Parasitic infestations	8	15.7
Viral infections	4	7.8
Total	**51**	**100**

Among the 51 patients with infectious dermatoses, fungal infections were the most common, accounting for 29 cases (56.9%), followed by bacterial infections (19.6%), parasitic infestations (15.7%), and viral infections (7.8%). The distribution of infectious dermatoses is detailed in Table 3 and illustrated in Figure II.

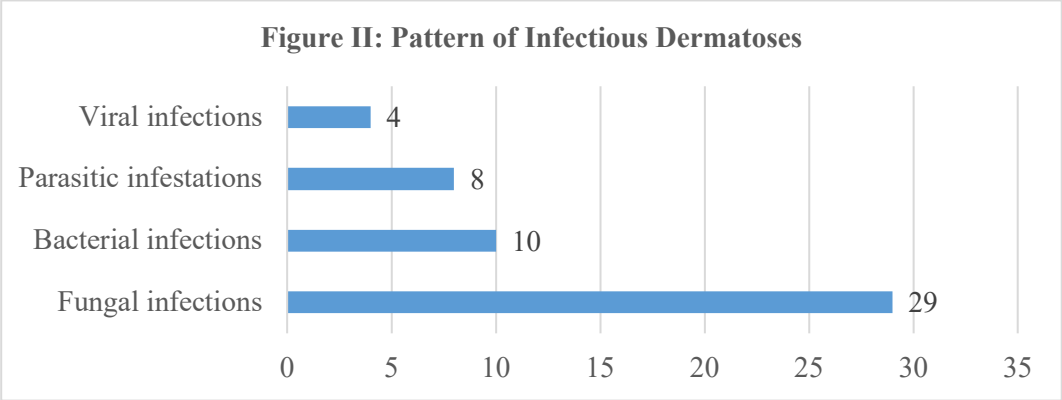

Table 4: Distribution of Non-Infectious Dermatoses

Condition	Number (n)	Percentage (%)
Eczematous disorders	26	24.8
Pigmentary disorders	13	12.4
Papulosquamous disorders	8	7.6
Acneiform disorders	5	4.8
Others	2	1.9

Eczematous disorders constituted the most common non-infectious dermatoses (24.8%), with contact dermatitis being the predominant subtype. Pigmentary disorders, including melasma and post-inflammatory hyperpigmentation, accounted for 12.4% of cases. Papulosquamous disorders such as psoriasis and lichen planus represented 7.6% of cases. The distribution of non-infectious dermatoses is shown in Table 4.

Table 5: Association of Occupational Exposure with Infectious Dermatoses

Occupational exposure	Infectious dermatoses n (%)	Non-infectious dermatoses n (%)	p-value
Present	34 (66.7)	29 (53.7)	0.03
Absent	17 (33.3)	25 (46.3)	

A significant proportion of patients reported poor hygiene practices (61.9%), agricultural or manual labor exposure (57.1%), and prolonged environmental exposure to heat and humidity (54.3%). These factors were more commonly associated with infectious and eczematous dermatoses. The association between occupational exposure and infectious dermatoses was statistically significant ($p < 0.05$), as shown in Table 5.

Discussion

The present study demonstrated that infectious dermatoses constituted the largest proportion of dermatological conditions (48.6%) in the rural population, followed by eczematous disorders (24.8%) and pigmentary disorders (12.4%). These findings are consistent with recent rural epidemiological studies, which report a predominance of infectious skin diseases in resource-limited settings. Jain et al. (2016), in a community-based study from rural Central India, observed that infections and infestations accounted for more than half of dermatological conditions, with fungal infections being the leading subtype [7]. Similarly, Walker et al. (2008) reported a high point prevalence of infectious dermatoses in rural Nepal, emphasizing that treatable infections such as dermatophytosis and bacterial pyodermas were major contributors to community morbidity [8].

In the present study, fungal infections represented 56.9% of infectious dermatoses, making them the most common subtype. This predominance of dermatophytosis mirrors the trend reported in recent Indian rural studies. Adiga et al. (2025) documented that fungal infections, particularly tinea corporis and tinea cruris, were the leading dermatological diagnoses in a rural Karnataka healthcare setting. The increasing burden of dermatophytosis in India has been attributed to climatic factors such as heat and humidity, widespread use of topical steroid combinations, close physical contact, and poor hygiene practices [3]. Verma and Madhu (2017) also highlighted the "epidemic-like" scenario of chronic and recurrent dermatophytosis in India, particularly affecting rural and semi-urban populations [9].

Bacterial infections (19.6%) and parasitic infestations (15.7%) were the next most common infectious categories in this study. Comparable observations were made by Patil et al. (2024) in a multicentric rural Maharashtra study, where pyodermas and scabies were frequently encountered among agricultural workers and individuals living in overcrowded conditions [10]. The persistence of parasitic infestations such as scabies in rural settings has been linked to limited sanitation facilities and delayed healthcare access, as also reported by Engelman et al. (2019), who emphasized scabies as a neglected tropical disease with significant rural clustering [11].

Among non-infectious dermatoses, eczematous disorders were the most prevalent (24.8%), with contact dermatitis being the predominant subtype. This finding aligns with Gupta et al. (2025), who noted that occupational contact dermatitis was common among rural adults exposed to agricultural chemicals, fertilizers, and plant allergens. The statistically significant association between occupational exposure and infectious dermatoses in the present study ($p = 0.03$) further supports the established link between environmental exposure and skin disease patterns in rural populations [12]. Similar associations were reported by Adiga et al. (2025), who found higher rates of infections among individuals engaged in manual labor and farming [3].

Pigmentary disorders (12.4%), including melasma and post-inflammatory hyperpigmentation, represented another notable category. While pigmentary disorders are often perceived as cosmetic concerns, recent research by Kaur et al. (2023) highlighted their psychosocial impact in rural populations, particularly among women [13]. Papulosquamous disorders such as psoriasis and lichen planus (7.6%) were less common but consistent with the prevalence reported in rural community studies by Singh et al. (2023), who documented similar frequencies in Rajasthan [14].

The study also revealed that poor hygiene practices (61.9%), agricultural or manual labor exposure (57.1%), and prolonged exposure to heat and humidity (54.3%) were common among participants and were more frequently associated with infectious and eczematous dermatoses. These findings are in agreement with global and Indian rural epidemiological literature. Hay et al. (2014), in the Global Burden of Disease analysis, emphasized that environmental and socioeconomic determinants significantly influence the distribution of skin diseases, particularly in low-resource communities [1].

Limitations of the Study

- **Small Sample Size:** The study included 105 patients, which may limit the generalizability of findings to the wider rural population.
- **Cross-Sectional Design:** Being a cross-sectional study, causal relationships between

risk factors (e.g., occupational exposure, hygiene practices) and dermatological conditions cannot be definitively established.

- **Hospital-Based Sampling:** The inclusion of only patients presenting to healthcare facilities may introduce selection bias, as individuals with mild or asymptomatic conditions may not seek medical care.
- **Self-Reported Risk Factors:** Data regarding hygiene practices, occupational exposure, and environmental factors were self-reported and may be subject to recall bias.
- **Limited Laboratory Confirmation:** In some cases, diagnoses may have been primarily clinical, which could affect diagnostic precision for certain infectious dermatoses.

Conclusion

The present study highlights that infectious dermatoses were the predominant category of skin diseases among the rural population studied, with fungal infections accounting for the majority of infectious cases. Non-infectious dermatoses, particularly eczematous disorders, also constituted a significant proportion of cases. A male predominance was observed, and the majority of patients belonged to the economically productive age group of 21–40 years. Statistical analysis demonstrated a significant association between occupational exposure and infectious dermatoses, indicating that agricultural and manual labour activities may contribute to increased risk. Additionally, poor hygiene practices and prolonged exposure to heat and humidity were frequently reported and appeared to be contributory factors. The findings underscore the substantial burden of infectious and occupationally related dermatological diseases in rural populations. Strengthening primary healthcare services, promoting hygiene education, implementing preventive occupational health strategies, and ensuring early diagnosis and treatment are essential to reduce dermatological morbidity in rural communities.

Acknowledgement

The authors sincerely acknowledge all the patients who willingly participated in this study and cooperated throughout the clinical evaluation process. Their contribution was invaluable to the successful completion of this research. We express our heartfelt gratitude tonursing staff, and healthcare workers of the participating rural healthcare centres for their support in patient identification, data collection, and coordination during the study period.

We are also thankful to the Department of Skin & V.D., Radha Devi Jageshwari Memorial Medical College & Hospital, Turki, Muzaffarpur, Bihar, and the Department of Skin & V.D., Netaji Subhash Medical College, Amhara, Bihta, Patna, Bihar, for providing the necessary academic and institutional support to conduct this multicentric study.

No external funding was received for this study.

References

1. Hay RJ, Johns NE, Williams HC, Bolliger IW, Dellavalle RP, Margolis DJ, et al. The global burden of skin disease in 2010: An analysis of the prevalence and impact of skin conditions. J Invest Dermatol. 2014;134(6):1527–1534. doi:10.1038/jid.2013.446.
2. Karimkhani C, Dellavalle RP, Coffeng LE, Flohr C, Hay RJ, Langan SM, et al. Global skin disease morbidity and mortality: An update from the Global Burden of Disease Study 2013. JAMA Dermatol. 2017;153(5):406–412. doi:10.1001/jamadermatol.2016.5538.
3. Adiga A, Martis J, Bhat R. Epidemiological snapshot of dermatological conditions in a rural healthcare setting: a cross-sectional study in Belthangady, Dakshina Kannada District, Karnataka. CSH Journal. CSH J Dermatol. 2025;1(1):1-8.
4. Vihan S, Raidas RC, Choudhary I, Prajapati J, Bisaria A, Nagal R. Prevalence and pattern of skin diseases among school-going adolescents in Udaipur: a community-based study. J Popul Ther Clin Pharmacol. 2025 Nov;32(10):1670–1678.
5. Grover S, Ranyal RK, Bedi MK. A cross section of skin diseases in rural Allahabad. Indian J Dermatol. 2009;54(2):179–181.
6. Kumar P, Selvakumar R, Prabhakar V. Pattern of skin diseases in a rural population of South India: A hospital-based study. Indian J Dermatol Venereol Leprol. 2014;80(2):168–170.
7. Jain S, Barambhe MS, Jain J, Jajoo UN, Pandey N. Prevalence of skin diseases in rural Central India: a community-based, cross-sectional, observational study. J Mahatma Gandhi Inst Med Sci. 2016;21(2):111-115.
8. Walker SL, Shah M, Hubbard VG, Pradhan HM, Ghimire M. Skin disease is common in rural Nepal: results of a point prevalence study. Br J Dermatol. 2008;158(2):334-338.
9. Verma S, Madhu R. The great Indian epidemic of superficial dermatophytosis: an appraisal. Indian J Dermatol. 2017;62(3):227-236.
10. Patil AV, Kadam YR, Mutalik SV. Pattern of dermatoses in rural Maharashtra: a multicentric cross-sectional study. Indian J Community Med. 2024;49(3):225-230.
11. Engelman D, Cantey PT, Marks M, Solomon AW, Chang AY, Chosidow O, et al. The public health control of scabies: priorities for research and action. Lancet. 2019;394(10192):81-92.
12. Gupta P, Verma R, Sharma S. Occupational dermatoses among rural agricultural workers: a

cross-sectional study. Int J Dermatol. 2025;64(4):412-419.
13. Kaur T, Singh A, Malhotra SK. Pattern of pigmentary disorders in rural North India: a cross-sectional study. Indian Dermatol Online J. 2023;14(2):210-215.
14. Singh S, Mehta V, Rajput N. Dermatological morbidity pattern in rural Rajasthan: a cross-sectional study. Natl J Community Med. 2023;14(5):210-214.