



Pattern of Complications among Scabies Patients Living in a Rural Community of Bangladesh

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Abstract

Background: Scabies is a highly contagious skin infestation that poses a significant public health burden in resource-limited settings. In rural Bangladesh, factors such as overcrowding, poor hygiene, and delayed treatment contribute to the high prevalence of scabies and its associated complications, including bacterial super-infections and systemic illnesses. Despite its burden, data on the patterns of complications among affected individuals remain scarce. **Objective:** The purpose of the present study was to assess the pattern, frequency, and types of complications associated with scabies among patients residing in a rural community of Bangladesh. **Methodology:** This community-based cross-sectional study was conducted from September 2024 to February 2025 in Dhamsona union under Ashulia thana, Savar, Dhaka, and involving 220 number of clinically diagnosed scabies patients. Data were collected using structured questionnaires, physical examinations, and relevant clinical investigations. Complications were categorized as dermatological (e.g., impetigo, cellulitis, abscess), renal (e.g., post-streptococcal glomerulonephritis), and systemic (e.g., fever, lymphadenitis). Descriptive statistics and chi-square tests were used to analyze the association between demographic factors and complication patterns. **Results:** Out of 220 scabies patients, 134 (60.9%) developed one or more complications. The most common complication was pigmentary change in skin (50%), followed by Eczematous change in skin (28%), Pyogenic infection (12%), Nodule formation (6%) & Urticaria (3%). Children under 15 years and individuals from overcrowded households had significantly higher rates of complications ($p < 0.05$). Poor personal hygiene and delayed treatment-seeking behavior were major contributing factors. **Conclusion:** Scabies remains a neglected but significant health issue in rural Bangladesh, frequently leading to serious complications due to secondary bacterial infections and delayed intervention. Early detection, public health education, and accessible treatment are essential to prevent complications and reduce disease burden. This study highlights the need for integrated community-based scabies control programs. [*Bangladesh Journal of Infectious Diseases, June 2025;12(1):57-61*]

Keywords: Scabies; complications; rural community

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Introduction

Scabies is a highly contagious parasitic skin infestation caused by *Sarcoptes scabiei* var. *hominis*, affecting people of all ages, ethnicities, and socioeconomic backgrounds. Globally, an estimated 200 million people are affected by scabies at any given time, with the burden disproportionately high in low-resource settings, particularly in tropical and subtropical regions^{1,2}. In 2017, scabies was added to the World Health Organization (WHO) list of Neglected Tropical Diseases (NTDs), reflecting its widespread impact and the need for intensified public health action³.

Bangladesh, with its dense population, warm climate, and socioeconomic disparities, remains highly susceptible to scabies outbreaks, especially in rural and overcrowded communities where hygiene and healthcare access are limited. Several community-based studies conducted in rural Bangladesh have reported scabies prevalence ranging between 5% and 10%, particularly among children, women, and the elderly^{4,5}. In these populations, scabies is not merely a skin condition—it often leads to a spectrum of secondary complications, including impetigo, post-streptococcal glomerulonephritis (PSGN), cellulitis, and systemic bacterial infections^{3,6}.

These complications, if left untreated, may result in significant morbidity and even mortality, particularly among children and immune-compromised individuals. The transmission of scabies is facilitated by prolonged skin-to-skin contact, overcrowding, shared bedding, and delayed treatment, all of which are common in rural households of Bangladesh. Furthermore, stigma, lack of awareness, and self-treatment with inappropriate or inadequate remedies contribute to disease persistence and recurrence⁷. In many rural settings, scabies is often underdiagnosed or misdiagnosed, leading to delay or inappropriate treatment and increased risk of complications.

The complications associated with scabies also represent a significant burden on the health system and economy. Secondary bacterial infections, predominantly caused by *Streptococcus pyogenes* and *Staphylococcus aureus*, can exacerbate disease severity and lead to more complex and costly management⁸. Of particular concern in the South Asian region is the potential for PSGN following streptococcal skin infections, which may have long-term renal consequences. Studies from similar socio-demographic settings have highlighted this association, underlining the need for early

intervention and targeted public health strategies⁹. Despite the well-documented burden, there is limited published data on the specific pattern and prevalence of scabies-related complications in rural communities of Bangladesh.

By exploring the types, frequency, and determinants of complications, this research will contribute to the existing body of knowledge and assist policymakers and healthcare professionals in formulating more effective prevention and management strategies for scabies and its associated morbidity. Most available studies focus on prevalence or treatment options, rather than downstream clinical outcomes. Understanding the spectrum of complications can provide insights into disease burden and guide targeted interventions such as mass drug administration, hygiene promotion, and community health education⁹⁻¹¹. This study was aimed to assess the pattern of complications among scabies patients residing in a rural community of Bangladesh.

Methodology

Study Settings and Population: This was a community-based, descriptive cross-sectional study conducted over a period of six months, from September 2024 to February 2025. The study was conducted at the Outpatient Department (OPD) of Dhaka EPZ Hospital, located in Dhamsona Union under Ashulia Thana, Savar, Dhaka. The target population included all patients presenting with symptoms suggestive of scabies during the study period. Only those fulfilling specific diagnostic criteria were included for analysis.

Sample Collection Procedure: Scabies cases were diagnosed based on the clinical criteria set by the International Alliance for the Control of Scabies (IACS) 2020. Patients categorized as Clinical Scabies (Level B)—which includes patients with typical lesions in a typical distribution and at least one history feature (e.g., pruritus, contact with affected individuals)—were enrolled in the study. Exclusion criteria included patients with atypical skin conditions, those who had already received scabies treatment within the past two weeks, and individuals unwilling to participate. Patients who fulfill the inclusion criteria were selected through purposive sampling. After obtaining verbal and written informed consent, data were collected using a structured and pre-tested questionnaire. Information included demographic details, hygiene practices, household environment, and clinical features. A thorough physical examination was conducted by trained medical personnel to identify complications associated with scabies, such as

impetigo, cellulitis, and abscess. Relevant laboratory investigations were performed for secondary bacterial infection.

Statistical Analysis: Statistical analyses was performed with SPSS software, version 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 220 patients were recruited after fulfilling the inclusion and exclusion criteria. Among them most of the patients were 26 to 35 years age group and the present complications were 72 (32.7%) (Table 1).

Table 1: Distribution of Patients According to Age Group in Relation to Complications

Age Group	Complications	
	Present	Absent
Less than 15	22(16.4%)	12(14.0%)
16 to 25 Years	28(20.9%)	11(12.8%)
26 to 35 Years	43(32.1%)	29(33.7%)
36 to 45 Years	27(20.1%)	25(29.1%)
46 to 55 Years	14(10.4%)	9(10.5%)
Total	134(60.9%)	86(39.1%)

Chi-square test was performed to see the level of significance; p-value: 0.412

Table 2: Distribution of Patients according to Gender Relation with Complications

Gender	Complications		Total
	Present	Absent	
Male	77(57.5%)	58(67.4%)	135 (61.4%)
Female	57(42.5%)	28 (32.6%)	85(38.6%)
Total	134(60.9%)	86(39.1%)	220(100%)

Chi-square test was performed to see the level of significance; p value: 0.180

The most common complication was pigmentary change in skin (51.0%), followed by eczematous change in skin (28.0%), pyogenic infection (12.0%), nodular formation (6.0%), and urticaria (3%). The reason for these main complications was due to severe itching without any treatment for a long time (Figure I).

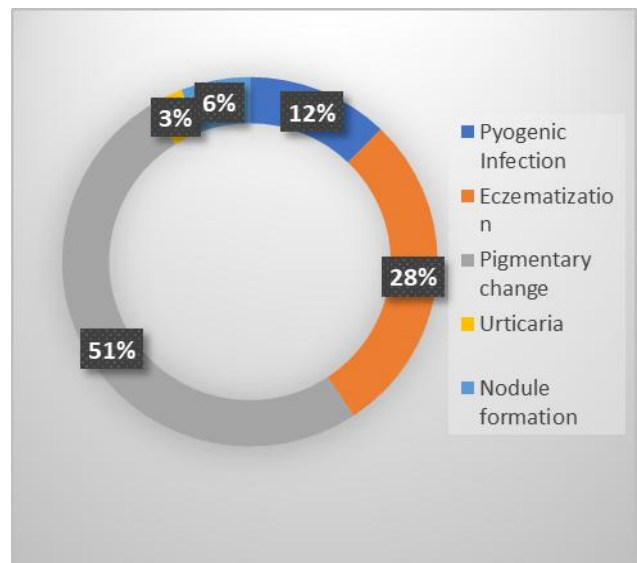


Figure 1: Showing the Study Population according to complications

Table 3: Distribution of patients according to Occupations in relation to complications

Occupations	Complications		P value
	Present	Absent	
Industrial worker	98(73.1%)	67(78.8%)	0.701
Students	16(11.9%)	6 (7.1%)	
Housewife	4(3.0%)	3(3.5%)	
Service	6 (4.5%)	2 (2.4%)	
Not employed	10(7.5%)	7 (8.2.5%)	
Total	134(60.9%)	86(39.1%)	

Chi-square test was performed to see the level of significance; p value: 0.701

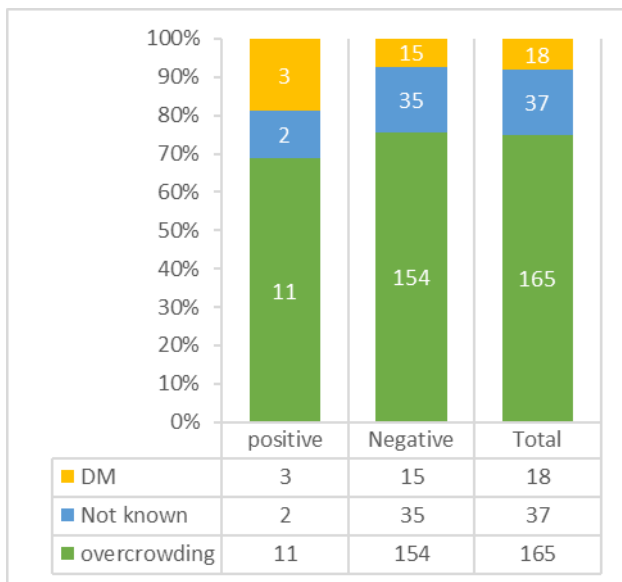


Figure II: Distribution of Patients according to Predisposing Factors in Relation with Family History

Discussion

This study aimed to assess the relationship between demographic variables and complications among patients, analyzing factors such as age, gender, occupation, and family history. The age group 26 to 35 years showed the highest number of patients with complications (32.1%), followed by the 16 to 25 and 36 to 45 years groups 20.9% cases and 20.1% cases respectively. This finding aligns with earlier studies indicating that young to middle-aged adults are more exposed to work-related or environmental risk factors leading to dermatological or infectious complications¹². Although complications were also observed in younger age groups (<15 years), the relatively lower incidence (16.4%) may be attributed to less occupational exposure or better parental care. A higher prevalence of complications among males (57.5%) compared to females (42.5%).

This could be due to higher exposure to industrial environments, where most males are engaged in labor-intensive jobs, increasing the risk of infection and skin-related complications. Previous studies have similarly noted gender differences in disease exposure and care-seeking behavior¹³⁻¹⁵. Interestingly, despite females representing 38.6% of the total population, the relative percentage with complications remained lower, possibly due to their occupation types or more frequent hygiene practices¹⁶. However, there is no genetic basis of this kind of gender discrimination. This is highly contagious.

Occupational data shows that industrial workers had the highest complication rate (73.1%), representing 75.3% of the total patient population. This finding is significant, suggesting a strong link between industrial work environments and increased risk of dermatological or infectious complications¹⁷. High humidity, chemical exposure, and crowded working conditions may contribute to this trend¹⁸. Conversely, students and housewives showed significantly lower complication rates (11.9% and 3.0%, respectively), likely due to limited exposure to such environments.

The relationship between predisposing factors and family history indicates a potential genetic or environmental clustering of complications within families. This aligns with findings from previous studies, which have shown that close contact and shared living environments can elevate the risk of transmission or related complications^{19,20}. This study emphasizes the need for early screening and preventive measures, particularly among high-risk occupational groups. Although the p-values across tables suggest varying levels of statistical significance, further analysis, such as chi-square testing, may be necessary to draw definitive associations.

Conclusion

The observed association between predisposing factors and family history suggests that both genetic and environmental components may contribute to the development and clustering of complications within families. These findings emphasize the importance of considering familial and lifestyle factors in risk assessments and public health interventions. Early identification of at-risk individuals through family history could enhance preventive strategies and reduce the overall burden of complications.

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None

Conflict of Interest

The authors declared no conflict of interest.

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Authors' contributions

Islam K, Jahan T, Yusuf MA, Kalam MA conceived and designed the study, analyzed the data, interpreted the results, and wrote up the draft manuscript. Kalam MA, Zaman MS, Nurunnabi M, Hossain MJ contributed to the analysis of the data, interpretation of the results and critically reviewing the manuscript. Islam K, Jahan T, Yusuf MA involved in the manuscript review and editing. 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 the Institutional Review Board. As this was a prospective study the written informed consent was obtained from all study participants. All methods were performed in accordance with the relevant guidelines and regulations.

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