

Prevalence of Scabies in the Out Patient Department of Skin and Venereology of a Tertiary Care Hospital in Bangladesh

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ABSTRACT

Introduction: Scabies is a contagious dermatological disorder distinguished by the manifestation of erythematous papular, vesicular, pustular, or bullous lesions accompanied by pruritus. The objective of this study was to ascertain the prevalence of scabies among the patients attending in the Outpatient Department (OPD) of Skin and Venereology at North Bengal Medical college Hospital, Sirajganj, Bangladesh. **Methods:** This cross-sectional retrospective study was carried out in the OPD of Skin and Venereology, North Bengal Medical College Hospital, Sirajganj, Bangladesh during the period of September, 2019 to August, 2023. A total of 442 patients with scabies enrolled for this study from 9713 patients suffering from various skin diseases. The diagnosis of scabies was done on the basis of the clinical presentation. Data was collected from hospital record book. Statistical analysis was done by SPSS (V-23). **Results:** Prevalence of scabies was 4.55%. Majority of the patients were children (228, 51.58%) and female (277, 62.67%). Increased rate of scabies infestation was observed in the year 2023 during the months of July and August. Eczematization and secondary skin infection were common complication of scabies. **Conclusion:** Scabies affects people of all age groups, with children being especially prone to it. It is crucial to treat both the patients and their close contacts in order to improve the cure rate, prevent infestations and avoid potential outbreaks.

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INTRODUCTION

Scabies is a highly contagious skin condition caused by female sarcoptes scabiei hominis.¹ The estimated global prevalence of scabies is reported to be 300 million infected individuals annually.^{1,2} In 2009, the World Health Organization (WHO) declared scabies as a neglected skin disease. Scabies is highly prevalent in Africa, South America, Australia and Southeast

Asia.¹ It is a major health concern in numerous developing countries like Bangladesh. In these region, various factors like diverse range of climate patterns, religious practices, socio-economic circumstances and cultural traditions are responsible for high prevalence of scabies.³ Limited access to water, inadequate hygiene practices, overcrowding and frequent interpersonal contact are also important

contributory factors for scabies infestation.⁴ It can spread rapidly from person to person through direct skin contact or by sharing clothing or bedding.⁵ Children and young adults are usually affected.⁵ This disease is more commonly found in institutional environments, such as prisons, nursing homes, daycare centers, schools, madrasa and orphanages. Outbreaks of the disease are frequently reported in these settings. The spread of this disease typically occurs during times of war, floods, earthquakes and other natural and social unfavorable events.⁶ Infested individuals must be promptly identified and treated otherwise misdiagnosis can result in outbreaks, increased morbidity and a greater economic burden.⁷ Since it is not currently feasible to completely eradicate the scabies, the only viable approach is to focus on its control program in order to minimize the impact of the disease.⁸ Early identification and prompt treatment of infested individuals are crucial. Scabies is often complicated by the development of abscesses, lymphadenopathy, and post streptococcal glomerulonephritis.⁵ Crusted scabies and eczematization are well-known complications of scabies.^{9,10}

Limited data on the prevalence of scabies despite several conducted studies in Bangladesh indicates a gap in the understanding and documentation of this health issue. So, this study aimed to determine the prevalence of scabies among patients attending OPD of Skin and Venereology in a tertiary care hospital.

METHODS

Table I: Prevalence of scabies among the patients

Variables	Total patients (n-9713)		Scabies (n-442)		Prevalence
	Frequency	Percentage	Frequency	Percentage	
Children (≤18 yrs)	1027	10.58%	228	51.58%	2.35%
Adult (>18 yrs)	8686	89.42%	214	48.42%	2.20%
Total	9713	100.0%	442	100.0%	4.55%
Gender					
Male	4073	41.93%	165	37.33%	1.70%
Female	5640	58.07%	277	62.67%	2.85%
Total	9713	100%	442	100%	4.55%

This retrospective cross sectional study was carried out in the outpatient department (OPD) of Skin and Venereology, North Bengal Medical College Hospital, Sirajganj, Bangladesh, during the period of September, 2019 to August, 2023. A total of 442 scabies patients were enrolled for this study among 9713 patients attending the OPD of Skin and Venereology. Relevant data were collected from hospital record book. Cases of scabies were diagnosed in accordance with the guidelines for the diagnosis of scabies. Scabies was diagnosed clinically based on the presence of erythematous papular, vesicular, pustular, or bullous lesions accompanied by itching. Additionally, a positive family history, meaning the presence of similar symptoms in at least one other family member, is taken into consideration. The patients underwent clinical examination to determine the presence of lymphadenopathy and secondary infection. The term "secondary infection" refers to the occurrence of pustules, suppuration or ulcers. Prior the study, approval was taken from the concern authority. Data were presented as frequency, percentage. The statistical analysis was conducted using the computer software SPSS (Version 23). The *p* value <0.5 was consider statistically significant.

RESULTS

A total of 9713 patients attended the outpatient department of skin and venereology during the last four years from September, 2019 to august, 2023. Among them 442 patients were infected with scabies and prevalence was 4.55%. Out of scabies patients (n-442), most of them were children (228, 51.58%) and female (277, 62.67%) was higher than male (Table I).

Majority of the patients suffering from scabies were children and younger adult (Table II).

Table II: Distribution of the scabies patients according to age groups (n-442)

Age (years)	Frequency	Percentage
0-18	228	51.58
19-40	129	29.19
41-60	74	16.74
61-80	11	2.49
Total	442	100.0

The prevalence of the patients suffering from scabies was around 2-4% from 2019-2022, but in 2023, it has a sharp rise (about four times) and the prevalence become 11.84% (Table III).

Table III: The distribution of the patients according to years from 2019 to 2023

Year	Total patients	Scabies patient	Prevalence
2019	719	27	3.76%
2020	1749	43	2.46%
2021	2904	66	2.27%
2022	2610	101	3.86%
2023	1731	205	11.84%

For the last two years it was observed that the number of scabies patients rises in the month of January, March and July-August (Figure 1).

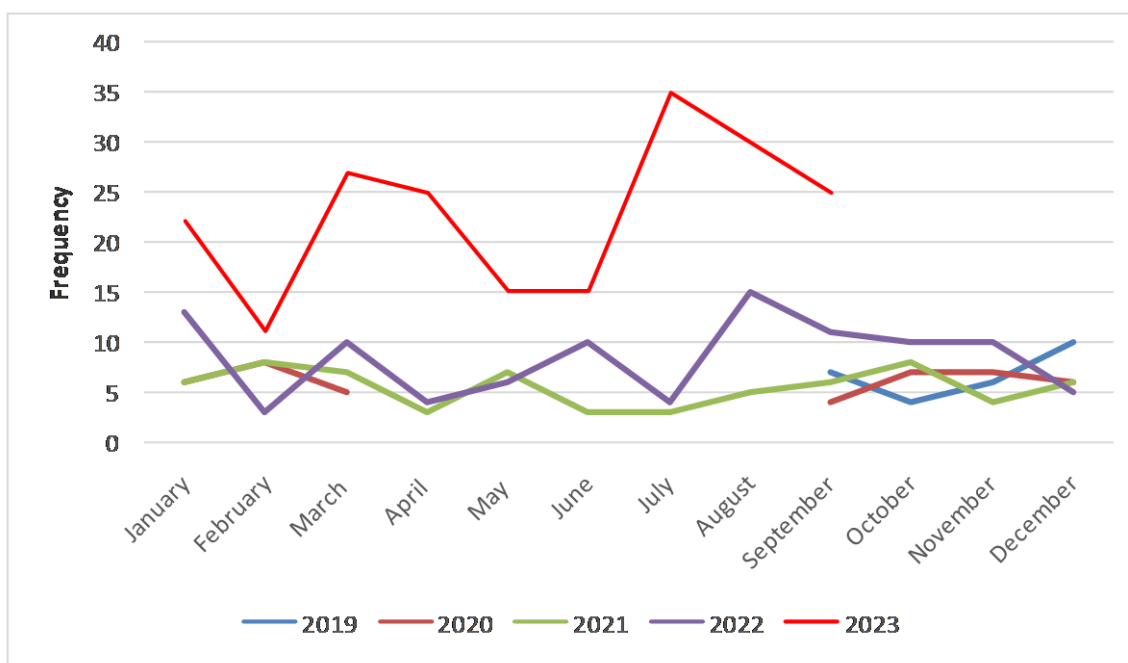


Figure 1: Distributions of the scabies patient according to months from 2019 to 2023

Among the 442 patients, 49 (11.08%) were presented with complications. Eczematization was the common complication (Figure 2).

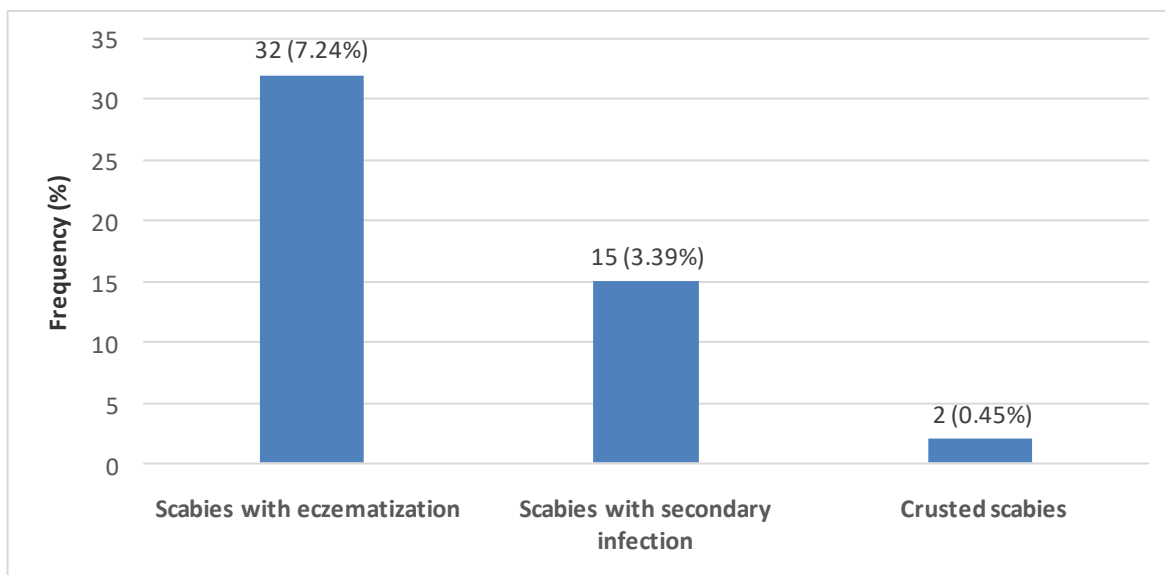


Figure 2: Complications of scabies (n-442)

DISCUSSION

Bangladesh is recognized as most densely populated nations in the world.¹¹ Geographically, environmental pollution and water cleanliness have significant influence in the prevalence of scabies within this nation. Despite the relatively low morbidity associated with scabies, it can lead to significant complications, such as glomerulonephritis, particularly when it coincides with a bacterial infection.¹² The current state of low morbidity is accompanied by a notable deficiency in public awareness pertaining to scabies. Consequently, a significant number of cases go undetected and untreated. Scabies epidemics can potentially arise due to cases that have not been discovered or treated.¹³ It is crucial to collect data, specifically in the context of institutional outbreaks.¹⁴ The majority of scabies research has been conducted in urban environments, with a primary emphasis on the prevalence and clinical characteristics of the condition.¹²

This study revealed, prevalence of scabies was 4.55% and it was higher in children (2.35%). A comparable investigation was undertaken in Faridpur by Sen et al.¹⁰ whereby they observed a significantly greater overall prevalence rate (6.9%), particularly among the pediatric population (4.21%). Karim et al.¹⁵ found that a significant percentage of children under the age of 15 were affected by scabies in six residential

madrasas. The majority of children affected with scabies were found to be attending madrasas or schools. Prevalence of scabies was more in children due to close contact, overcrowded living conditions and poor hygiene. This study documented an increase in the number of scabies patients throughout the months of January (winter season), March, and July-August during the course of the past 2022 and 2023 years. According to the findings of Sen et al.¹⁰, the highest prevalence was observed in January. The majority of epidemiological research conducted in the United Kingdom, Denmark, Turkey, Israel, India, and New Zealand consistently indicate that the prevalence of scabies infestation is elevated throughout the fall and winter seasons.¹⁶ The study conducted in Saudi Arabia revealed that there was a greater incidence of scabies recurrence over the period from May to August.¹⁷ The elevated prevalence of scabies during the autumn and winter seasons has been attributed to the hypothesis that colder temperatures may facilitate increased population density.^{18,19} This study observed about four times rise of prevalence during the year 2023 in compared with previous four years. This is due to drug resistance, poor patients compliance, lack of personal hygiene and failure of contact tracing etc. Eczematization and secondary infection were common complications of scabies. Secondary skin

infection like pyoderma and impetigo was strongly associated with scabies observed by Romani et al.²⁰ in Fiji and Trasia et al.²¹ in Indonesia. This type of complication occurs in scabies patients due to loss of integrity of skin as a result of itching.

This study was conducted within a hospital setting; hence its findings may not be representative of the broader prevalence of scabies within the population. As of hospital record review, some related data could not be collected and association could not be estimated. Nevertheless, understanding the prevalence of a certain condition can provide valuable insights for devising strategies to prevent its occurrence and effectively treat those who are affected. Scabies, a communicable illness, exhibits a significantly elevated prevalence rate in the population. However, it frequently goes undiagnosed and unreported, resulting in a lack of worldwide recognition of this contagious skin illness. Therefore, the World Health Organization (WHO) has included scabies in its Neglected Tropical Diseases (NTD) road-map for the period of 2021-2030. This strategic move is intended to address the issue of scabies being overlooked, so contributing to the achievement of Sustainable Development objective (SDG).²² It is worth noting that Bangladesh is also a signatory to this objective. The collection of such data reflecting the prevalence will contribute to the achievement of Sustainable Development Goals (SDGs) in Bangladesh.

CONCLUSION

It is concluded that, higher prevalence of scabies observed among children and younger adult. In the recent year, prevalence of scabies is outstanding which may indicate the potential for an impending outbreak. Execution of appropriate medical interventions and comprehensive health education may play a crucial role to mitigate the epidemic.

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Conflicts of interest: None.

REFERENCES

1. Micali G, Lacarrubba F, Verzi AE, Chosidow O, Schwartz RA. Scabies: Advances in Noninvasive Diagnosis. *PLoS Negl Trop Dis*. 2016; 10(6): e0004691.
2. Anderson KL, Strowd LC. Epidemiology, Diagnosis, and Treatment of Scabies in a Dermatology Office. *J Am Board Fam Med*. 2017; 30(1): 78–84.
3. Atraide DD, Akpa MR, George IO. The pattern of skin disorders in a Nigerian tertiary hospital. *J Public Health Epidemiol*. 2011; 3(4): 177–181.
4. Devi TB, Zamzachin G. Pattern of skin diseases in Imphal. *Indian J Dermatol*. 2006; 51(2): 149.
5. Gilson RL, Crane JS. Scabies. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 [cited 2023 Nov 6]. Available from: <http://www.ncbi.nlm.nih.gov/books/NBK544306/>
6. Poudat A, Nasirian H. Prevalence of pediculosis and scabies in the prisoners of Bandar Abbas, Hormozgan province, Iran. *PJBS*. 2007; 10(21): 3967–3969.
7. Swe PM, Christian LD, Lu HC, Sriprakash KS, Fischer K. Complement inhibition by *Sarcoptes scabiei* protects *Streptococcus pyogenes*-An in vitro study to unravel the molecular mechanisms behind the poorly understood predilection of *S. pyogenes* to infect mite-induced skin lesions. *PLoS Negl Trop Dis*. 2017; 11(3): e0005437.
8. Feldmeier H, Heukelbach J. Epidermal parasitic skin diseases: a neglected category of poverty-associated plagues. *Bull World Health Organ*. 2009; 87(2): 152–159.
9. Meraz Soto JM, Alvarado Motte RA, Ramírez Carrillo P, Meraz Soto AA, Bayón Villaseñor V, Cheirif Wolosky O. Crusted Hyperkeratotic Scabies: A Case Report. *Cureus*. 2023; 15(2): e34520.

10. Sen KG, Ali A, Mostofa MK, Sarkar SK, Sorcar C, Begum K. Prevalence of Scabies in Skin and VD OPD of Faridpur Medical College Hospital. *Faridpur Med Coll J*. 2015; 10(1): 17–19.
11. Bangladesh. In: *The World Factbook* [Internet]. Central Intelligence Agency; 2023 [cited 2023 Nov 11]. Available from: <https://www.cia.gov/the-world-factbook/countries/bangladesh/>
12. Rahman K, Karim S, Khan M, Hasan S, Delwer U, Rizwana K, et al. Scabies- Major Childhood Skin Infestation in Bangladesh-An Updated Review. *J Ad-din Women's Med Coll*. 2023; 10: 48–62.
13. Leppard B, Naburi AE. The use of ivermectin in controlling an outbreak of scabies in a prison. *Br J Dermatol*. 2000; 143(3): 520–523.
14. Brasholt MS, Bremmelgaard A, Danbaek L, Weismann K, Theil L. [Scabies]. *Ugeskr Laeger*. 2002; 164(21): 2748–2752.
15. Karim SA, Anwar KS, Khan MAH, Mollah MAH, Nahar N, Rahman H, et al. Socio-demographic characteristics of children infested with scabies in densely populated communities of residential madrasahs (Islamic education institutes) in Dhaka, Bangladesh. *Public health*. 2007; 121(12): 923–934.
16. Veraldi S, Schianchi R, Nazzaro G. Scabies and nocturnal pruritus: preliminary observations in a group of African migrants. *J Infect Dev Ctries*. 2021; 15(6): 889–891.
17. Ahmed AE, Jradi H, AlBuraikan DA, ALMuqbil BI, Albaijan MA, Al-Shehri AM, et al. Rate and factors for scabies recurrence in children in Saudi Arabia: a retrospective study. *BMC Pediatr*. 2019; 19(1): 187.
18. Downs AMR. Seasonal variation in scabies. *Br J Dermatol*. 2004; 150(3): 602–603.
19. Hengge UR, Currie BJ, Jäger G, Lupi O, Schwartz RA. Scabies: a ubiquitous neglected skin disease. *Lancet infect dis*. 2006; 6(12): 769–779.
20. Trasia RF. Scabies in Indonesia: Epidemiology and prevention. *Insights Publ Health J*. 2021; 1(2): 30–38.
21. Romani L, Koroivueta J, Steer AC, Kama M, Kaldor JM, Wand H, et al. Scabies and impetigo prevalence and risk factors in Fiji: A national survey. *PLOS Negl Trop Dis*. 2019; 9(3): 452.
22. El-Moamly AA. Scabies as a part of the World Health Organization roadmap for neglected tropical diseases 2021–2030: what we know and what we need to do for global control. *Trop Med Health*. 2021; 49(1): 64.