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Frequency of Scabies in Dhaka City: Survey in a Tertiary Care Hospital

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Abstract

Background: Scabies is a neglected tropical disease affecting over 565 million people annually, with high prevalence in low- and middle-income countries. In Bangladesh, up to 77% of children have experienced scabies, yet it remains underdiagnosed and poorly understood.

Objectives: To determine the frequency of scabies among patients at a tertiary care hospital, Bangladesh and identify associated risk factors, environmental characteristics in Bangladesh.

Methods: A cross-sectional study was conducted in the Dermatology and Venereology outpatient department of Ashiyan Medical College Hospital from January to December 2023, enrolling 120 patients with skin diseases.

Results: The study revealed an overall scabies prevalence of 34.2%, with the highest occurrence among individuals aged 19-36 years and a notably higher rate among males (40.0%) compared to females (28.3%). The majority of cases were mild in severity (73.2%), with moderate cases accounting for 24.4% and severe cases representing just 2.4%. Anatomically, the most frequently affected sites were hands (80.5%), interdigital spaces (78.0%), and wrists (63.4%), demonstrating the characteristic distribution of scabies lesions. Environmental and demographic factors played a crucial role in disease transmission, with 93.3% of participants living in crowded conditions and 84.2% exposed to dust. Winter emerged as a significant season for scabies transmission, with 72.5% of cases occurring during colder months. Family history of skin infections was prevalent in 71.7% of participants, suggesting a potential genetic or environmental predisposition. Hygiene-related factors were particularly noteworthy, with 81.7% of participants sharing sleeping spaces and 53.3% sharing bedding or clothing. Statistical analysis revealed significant associations between scabies occurrence and sleeping arrangements, bathing frequency, and the presence of pruritus in close contacts.

Conclusion: The study highlights the substantial burden of scabies in urban Bangladesh, emphasizing the need for targeted public health interventions addressing living conditions, hygiene practices, and community awareness.

Keywords: Scabies: Prevalence: Epidemiology: Risk factors: Bangladesh: Tropical disease

Introduction

Scabies is a prominent neglected tropical illness that is mostly seen in lower- and middle-income nations in South-East Asia and sub-Saharan Africa. Over 565 million people worldwide are afflicted with this illness each year [1]. It significantly affects the expense of therapy, missed job or school, and psychological effects [2]. Nearly 4.84 million disability-adjusted life years are caused by this illness [1]. Scabies affect more than 300 million individuals every year, which equals 2.8% of the world's population [3.] Epidemiological data from different parts of the world indicate that the prevalence of scabies can range from 0.2% to 71% [4]. The Pacific region and Latin America have shown the highest prevalence [5]. Geographically, areas with tropical

weather, developing countries, and little access to water have higher rates of scabies infections [6]. Scabies was listed as a neglected tropical disease by the World Health Organization (WHO) [7]. The infestation affects hundreds of millions of individuals in impoverished urban and rural communities worldwide [3]. People who live in cramped, unsanitary settings are more susceptible to a variety of infectious illnesses. Acute watery diarrhea, fever, skin conditions, acute respiratory infections, and cough and cold with or without pneumonia are the most common infectious disorders [8]. Recently, scabies, caused by Sarcoptes scabiei var. hominis, a parasitic mite, have emerged as one of the most common afflictions within the FDMN community [9]. This illness is spread by using contaminated personal items or by coming into close, continuous contact with infected skin [10]. Itching and scratching are the most common clinical manifestations, followed by bacterial infection-related consequences such as cellulitis, impetigo, and abscesses, as well as a breakdown of the skin's barrier function [11]. A report from Medicine Sans Frontieres (MSF) claims that an environment that is favourable to fast mite transmission is created by overcrowding in shelters, poor access to water, and intimate physical contact between residents [12]. Social attitudes, migration, access to healthcare services, housing circumstances, hygienic conditions, and crowding all have an impact on the spread of scabies. Overcrowding, sleeping together, sharing clothing and towels, poor hygiene, malnourishment, and visiting scabies epidemic regions are all considered to be common risk factors for scabies [13,14]. Furthermore, close proximity and frequent physical contact facilitate the rapid spread of the mite [10]. According to a Brazilian research, violent conflicts, homelessness, congestion, and sharing of clothing, bedding, and pillows are all associated with high frequency and re-infestations in endemic areas [15]. Another research of Cameroonian detainees revealed that sharing a bed or clothing and having less education were risk factors for scabies [14]. According to research in Poland, Scabies was more common among those who lived in unhygienic and unsanitary environments [16]. However, scabies remains one of the major under-recognized global health concerns, especially in the lower-income and middle-income countries. For example, nearly 77% of children in Bangladesh have had scabies, according to the most recent study available [17]. While the burden of non-communicable illnesses is increasing and Bangladesh is undergoing an epidemiological shift, the general prevalence of scabies is nearly unchanged in a few specific populations, such as residential religious schools and urban slums [18]. Despite this huge burden of disease, scabies often remains underdiagnosed and untreated in these resource-poor communities. Understanding the epidemiology and risk factors of scabies infection among this larger population group might guide development of further prevention strategies. Therefore, to determine the frequency of scabies among the tertiary care hospital in Bangladesh was the objective of the present study.

Methods

This cross-sectional study was conducted in the outpatient department of Dermatology and Venereology in Ashiyan Medical College Hospital Bangladesh from January 2023-December 2023. In total 120 skin diseases patients attended the OPD of the mentioned hospital were included as the study population. According to the inclusion criteria of this study, patients of several age either male or female suffering from any kind of skin disease for at least one month were included as the study subjects. This study was approved by the ethical committee of the mention hospital. Proper written consents were taken from all the participants before data collection. Proper diagnosis from reputed and government registered diagnostic centres were performed. Cases with doubtful diagnosis were excluded from the study. The socio-demographic profiles and diseases pattern were recorded in a data sheet. A predesigned questioner was used in data collection. All data were collected, processed and analyzed by using MS Office and SPSS version 25 programs as per need.

Results

Scabies is a disease of poverty affecting predominantly from low socioeconomic condition. The initial suspicion of the increasing trend of scabies infection among different age groups has been revealed in this study. Individuals aged 19-36 highest prevalence rates. This observation aligns with earlier research that identified elevated scabies rates within this age group [19]. Numerous elements, including heightened social connections among young individuals and weakened immune systems in the elderly, may be involved in this correlation [20]. The gender-specific patterns in scabies prevalence did not achieve statistical significance despite the study population having almost equal proportions of males and females. In the current study, Married people had a greater frequency of scabies than single people, according to our findings of an interaction between marital status and scabies infection. This research suggests that the social actions and living environment of married individuals may make scabies more likely to spread. FDMN people typically get married early and have children within a year or two of getting married, which encourages their families to grow quickly [21]. Our research uncovered that a majority of these individuals originate from large families. However, the escalating pace at which their families are growing surpasses their housing’s capacity to expand concurrently [22]. Scabies are more common among illiterate people, highlighting the connection between literacy and health. This agrees with the results of an Egyptian study that revealed that the level of education of both the participants and their

parents affected the severity of scabies symptoms [23]. People who live in congested areas share more beds, clothing, and other everyday conveniences with bigger families than with smaller ones. It is well known that scabies spreads swiftly in crowded places when people come into close touch with one another [20]. According to the results, people who had previously acquired scabies were far more likely to contract the disease again than people who had never contracted it.

***Table 1**: Distribution of the respondents according to Sociodemographic characteristics (n = 120).*

variables	Categories	Total (%)
Gender	Female	58 (48.3)
	Male	62 (51.7)
Age in years	Below 18	28 (23.3)
	19–36	60 (50.0)
	37–55	25 (20.8)
	56–70	7 (5.8)
Education	Illiterate	91 (75.8)
	Literate	29 (24.2)
Marital Status	Married	94 (78.3)
	Unmarried	26 (21.7)

***Table 2**: Distribution of the respondents according to environmental characteristics (n = 120).*

variables	n	%
Previous Scabies Infection	No	64 (53.3)
	Yes	56 (46.7)
Previous Skin Infection	No	69 (57.5)
	Yes	51 (42.5)
Family History of Scabies	No	70 (58.3)
	Yes	50 (41.7)
Family History of Skin Infection	No	34 (28.3)
	Yes	86 (71.7)
Family Size	1–5 members	60 (50.0)
	6–10 members	49 (40.8)
	More than 11 members	11 (9.2)
Crowding Index	Not Crowded	8 (6.7)
	Crowded	112 (93.3)
Floor Type	Soil	32 (26.7)
	Cemented	88 (73.3)
Contact with Street Animals	No	65 (54.2)
	Yes	55 (45.8)
Dust Exposure	No	19 (15.8)
	Yes	101 (84.2)
Season	Summer	33 (27.5)
	Winter	87 (72.5)

***Table 3**: Distribution of the respondents according to hygiene practice (n = 120).*

variables	Overall, n (%)	Scabies Yes, n (%)	Scabies No, n (%)	P-value
Gender				
Female	58 (48.3)	17 (28.3)	43 (71.7)	<0.001

Male	62 (51.7)	24 (40.0)	36 (60.0)	
Sleeping place				
On bed	67 (55.8)	18 (26.9)	49 (73.1)	<0.001
On floor	53 (44.2)	23 (43.4)	30 (56.6)	
Number of baths				
At least once daily	104 (86.7)	33 (31.7)	71 (68.3)	<0.001
Less than once daily	16 (13.3)	8 (50.0)	8 (50.0)	
Sleep with others				
No	22 (18.3)	6 (27.3)	16 (72.7)	0.033
Yes	98 (81.7)	35 (35.7)	63 (64.3)	
Share bedding, clothes, or toilet stuff				
No	56 (46.7)	17 (30.4)	39 (69.6)	0.069
Yes	64 (53.3)	24 (37.5)	40 (62.5)	
Use soap for baths				
No	3 (2.5)	1 (33.3)	2 (66.7)	0.602
Yes	117 (97.5)	40 (34.2)	77 (65.8)	
Fingernail always cut short				
No	26 (21.7)	7 (26.9)	19 (73.1)	0.041
Yes	94 (78.3)	34 (36.2)	60 (63.8)	
Iron clothes and beddings				
No	80 (66.7)	24 (30.0)	56 (70.0)	0.004
Yes	40 (33.3)	17 (42.5)	23 (57.5)	
Pruritus in the close entourage				
No	72 (60.0)	15 (20.8)	57 (79.2)	<0.001
Yes	48 (40.0)	26 (54.2)	22 (45.8)	

***Table 4**: Distribution of the respondents according to the site and characteristics of scabies.*

Variable	n	%
Overall prevalence	41	34.2
Gender		
Female	17	28.3
Male	24	40.0
IACS criteria		
Clinical scabies (B1/B2/B3)	11	26.8
Suspected scabies (C1/C2)	30	73.2
Severity		
Mild	30	73.2
Moderate	10	24.4
Severe	1	2.4
Site of lesions		
Interdigital spaces	32	78.0
Hands	33	80.5
Wrists	26	63.4
Arms	20	48.8
Elbows	15	36.6
Axillae	10	24.4
Legs	20	48.8
Feet	15	36.6

Abdomen	17	41.5
Thorax	12	29.3
Mamilla and peri mamillar area	7	17.1
Back	14	34.1
Buttock	12	29.3
Genital and inguinal area	18	43.9
Head, scalp, neck, and face	7	17.1
IACS, International Alliance for the Control of Scabies.		

Compared to people who had never had scabies before, they had a more than fourfold chance of getting it again. This finding suggests that prior exposure to scabies might confer susceptibility or vulnerability to sub- sequent infestations. As indicated by the research findings, the significant association of the family history of scabies and other skin infections with it raises intriguing questions about the potential underlying mechanisms responsible for this association. One possible explanation for the observed correlation is a genetic predisposition within family members [24]. Our research indicates that a number of environmental variables have been connected to scabies infestation. Scabies was linked to dust exposure and living in crowded locations. These findings are consistent with previously identified risk factors for scabies infection, which include close physical contact and poor hygiene conditions [20,25]. Interestingly, the incidence of scabies infection in the current study was substantially correlated with the type of floor material, with a greater prevalence seen in residences with dirt floors compared to those with cemented floors. Previous evidence from an African nation also suggested that house type and structure the result reveals a significant association between seasonal variation and scabies prevalence. Throughout the winter, People spend more time indoors during, which encourages deeper relationships between family members and household members. Scabies mites can more easily transfer from one person to another because of this close proximity. Additionally, the reduced frequency of bathing and infrequent clothing changes during colder months may lead to the accumulation of scabies mites on the skin. Conversely, warmer seasons often prompt people to engage in outdoor activities, resulting in reduced contact and fewer opportunities for scabies mites to spread. Several studies conducted across different countries have illuminated how seasonal changes impact scabies [26,27]. Despite being one of the major tropical diseases contributing to deteriorated quality of life, scabies remained neglected in context of research and prevention policies. In Bangladesh, there is still lack of any national strategy for prevention of scabies at community level like other tropical diseases including tuberculosis, malaria and dengue. In the present study, we have used the clinical diagnostic criteria of the IACS Criteria for scabies. In this regard, subjective clinical skill and expertise of the examining physician might be an influencing factor of diagnosing scabies. Finally, we looked for signs of scabies on the restricted body parts. This might have an impact on accurately diagnosing and classifying the severity of scabies, thereby underestimating the incidence and severity of scabies. To mitigate the spread of scabies, Education on personal cleanliness habits should be a key component of public health initiatives, especially for people with a family history of scabies. Scabies outbreaks might also be avoided by taking steps to improve living conditions and lessen interaction with street animals, especially in the winter. These risk factors should be the main focus of public health initiatives in order to increase awareness, encourage early identification, and eventually lessen the prevalence of scabies in impacted populations. To properly treat the scabies burden, cooperation between medical professionals, aid groups, and local people is essential.

Conclusion

Scabies remains a significant public health challenge in Bangladesh, with our study revealing a prevalence rate that underscores the disease's persistent impact. The research highlights critical risk factors including crowded living conditions, seasonal variations, and poor hygiene practices, particularly affecting young adults and males. The findings emphasize the urgent need for comprehensive public health strategies that address social determinants of health, focusing on education, improved living conditions, and community-based interventions. By recognizing scabies as more than a medical issue but a complex social health challenge, we can develop more effective prevention and control approaches. Future research should continue to explore targeted interventions that can meaningfully reduce scabies transmission in resource-limited settings.

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