

RESEARCH ARTICLE

Epidemiology of Scabies among Resident School and Madrasah Children: An Observational Study

Dr. Nahida Islam¹, Dr. Mohammad Imdadul Hoque Shakil²

¹Associate Professor and Head of Department Dermatology and Venereology, Community Based Medical College Hospital, Bangladesh.

²Junior Consultant, Department of Orthopedic, Mymensingh Medical College Hospital, Bangladesh.

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Corresponding Author: Dr. Nahida Islam, Associate Professor and Head of Department Dermatology and Venereology, Community Based Medical College Hospital, Bangladesh.

Abstract

Background: Scabies are prevalent parasitic skin diseases, especially in densely populated environments like resident schools and madrasahs, where close contact facilitates transmission. Factors such as overcrowding, inadequate hygiene, and shared personal items significantly contribute to outbreaks. This study investigated the epidemiology, features, and demographic distribution of scabies among resident school and madrasah children.

Methods: This cross-sectional study was conducted at the Department of Dermatology and Venereology, Community Based Medical College Hospital, Bangladesh from January 2023 to December 2023. A total of 1131 resident school and madrasah children from several schools and madrasahs of both genders were enrolled purposively. Patient data were collected by using a predesigned questionnaire. The MS Office tools were used for data analysis.

Results: The study found a 21% prevalence of scabies. The highest prevalence was in children aged 7-12 years (48.10%). Most cases were from rural areas (70.0%). Regarding parental education, 52.70% of fathers had illiterate or primary education, while 65.8% of mothers were also in this category. The majority of fathers (67.9%) were unemployed or manual workers, and 84.0% of mothers were housewives. The primary stage was the most frequent (63%), and a portion of children had animals inside the house (31.3%) or interacted with them (28.8%). The majority experienced severe itching (99.2%) and night-time symptoms (98.4%).

Conclusion: The study found a 21% scabies prevalence, highest in children aged 7-12 years, mainly from rural areas. Many parents have low education, with fathers often unemployed or manual workers. Severe itching, night symptoms, and animal contact are common.

Keywords: Epidemiology, Madrasah, Resident Children, School, Scabies among, Skin.

1. Introduction

Scabies is a significant neglected tropical disease affecting over 565 million people annually worldwide, with children being the most affected group [1]. The disease imposes a substantial burden, including treatment costs, work or school absenteeism, and psychological effects [2]. It accounts for approximately 4.84 million disability-adjusted life-years globally [1].

Factors such as social attitudes, migration, healthcare access, housing, hygiene, and overcrowding influence scabies transmission. Common risk factors include overcrowded living spaces, close sleeping arrangements, sharing clothing or towels, poor hygiene practices, malnutrition, and travel to areas with scabies outbreaks [3,4]. Children from lower socioeconomic backgrounds, particularly those living in unhygienic

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and overcrowded environments such as urban slums and boarding schools, are highly susceptible to scabies. The infestation spreads rapidly among these children due to close contact and overcrowding in their living spaces [4,5]. Treatment challenges in these groups include limited healthcare access, delayed diagnosis, poor treatment adherence, malnutrition, associated allergic and bacterial infections, and insufficient follow-up care [6]. A World Bank survey (2008) reported that Madrasahs account for 14% of rural primary school enrollment and 22% of rural secondary school enrollment, with 87% of qawmi and 19% of aliyah Madrasahs providing some form of residential facilities [7]. The living conditions in most of these facilities are substandard, characterized by overcrowded and unhygienic residences, which leave the residents highly susceptible to scabies. A recent study revealed that nearly 61% of children residing in Madrasah facilities are affected by scabies [8]. Despite the significant disease burden, scabies frequently go underdiagnosed and untreated in these resource-limited communities [9]. Gaining insight into the epidemiology and risk factors of scabies within this vulnerable population could inform the development of effective prevention strategies.

2. Methodology

This was a cross-sectional study that was conducted at the Department of *Dermatology and Venereology, Community Based Medical College Hospital, Bangladesh* from January 2023 to December 2023. A total of 1,131 resident school and madrasah children, comprising both genders, were enrolled in the study using a purposive sampling technique. The inclusion criteria encompassed school-going children aged

5 to 16 years who willingly participated, while those under 5 years, over 16 years, or unwilling to participate were excluded. Screening for scabies was conducted following the guidelines of the International Alliance for the Control of Scabies [10]. Data were collected using a predesigned questionnaire, capturing demographic and clinical information of all participants. The analysis was performed using MS Office tools.

3. Result

In this study, scabies prevalence among 1131 children was 21% (n=243). Nearly half (48.10%) of cases were aged 7-12 years, while 19.30% and 32.50% belonged to the 5-6- and 13-16-year age groups, respectively. Most cases (70.0%) were from rural areas. Among fathers, 52.70% had an education level of illiterate or primary, while 47.30% had secondary or higher education. For mothers, 65.8% were illiterate or primary-level educated, and 34.2% had secondary or higher education. Most fathers (67.9%) were unemployed or manual workers, while 32.10% were service holders or self-employed. The majority of mothers (84.0%) were housewives. Most scabies cases (65%) were from schools, with the remaining 35% from madrasahs. Over half (63%) were in the primary stage, while 9.5% and 27.6% were in pre-primary and high school levels, respectively. Nearly half of the children with scabies slept with one person, followed by 20.99% alone, 23.46% with two persons, and 7.41% with three or more. Additionally, 31.3% had animals inside the house, 28.8% interacted with animals, and 57.6% lived in non-cemented houses. Itching (99.2%) and night-time severity (98.4%) were nearly universal among cases.

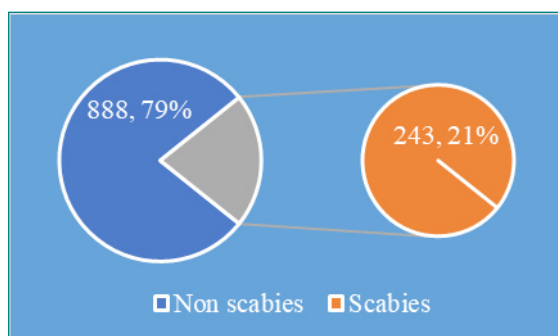


Figure 1. Prevalence of scabies (N=1131)

Table 1. Sociodemographic data of scabies cases (n=243)

Characteristics	n	%
Age		
5-6 years	47	19.3%
7-12 years	117	48.1%
13-16 years	79	32.5%

Residence		
Urban	73	30.0%
Rural	170	70.0%
Father's education		
Illiterate/primary	128	52.7%
Secondary/university	115	47.3%
Mother's education		
Illiterate/primary	160	65.8%
Secondary/university	83	34.2%
Father's occupation		
Unemployed/manual worker	165	67.9%
Service/self-employed	78	32.1%
Mother's occupation		
Housewife	204	84.0%
Working	39	16.0%

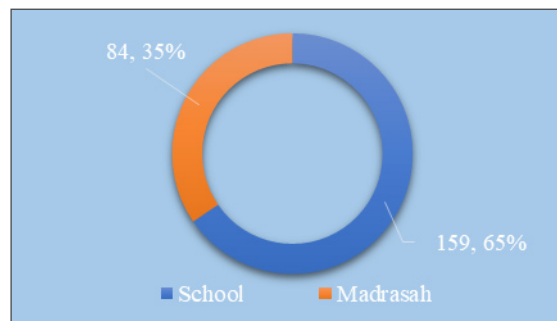


Figure 2. Distribution of institute (n=243)

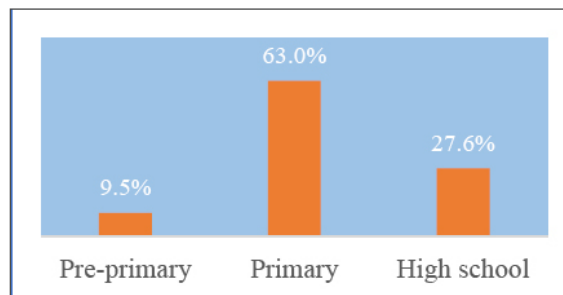


Figure 3. Distribution of stages (n=243)

Table 2. Environmental characteristics (n=243)

Variables	n	%
Sleeping index		
Alone	51	20.99%
With 1 person	117	48.15%
With two persons	57	23.46%
≥ 3 persons	18	7.41%
Having animals inside the house		
No	167	68.7%
Yes	76	31.3%
Dealing with animals outside the house		
No	173	71.20%
Yes	70	28.80%
Type of house		
Cemented house	103	42.40%
Non-cemented house	140	57.60%

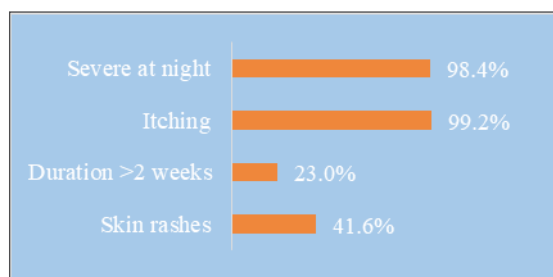


Figure 4. Scabies observation (n=243)

4. Discussion

This study found a scabies prevalence of 21% among children, which is consistent with findings in similar low-resource settings globally [11]. In another similar study [12] such prevalence was found 24%. Nearly half of the cases (48.10%) were aged 7–12 years, aligning with previous studies indicating higher transmission rates in school-age children due to close contact in educational environments [13]. Most cases (70.0%) were from rural areas, reflecting the well-documented association between scabies and underprivileged living conditions [14]. Parental education appeared to be an important factor; 52.70% of fathers and 65.80% of mothers had only primary or no formal education, supporting research linking low education levels to limited awareness and preventive measures [15]. Occupational status also played a role; 67.9% of fathers were unemployed or manual workers, and 84.0% of mothers were housewives, indicating that financial constraints may hinder access to healthcare and proper hygiene facilities [16]. A significant proportion of children (57.6%) lived in non-cemented houses, while 31.3% had animals inside the home, and 28.8% interacted with animals, aligning with studies associating these environmental factors with higher scabies prevalence [17]. Overcrowding was evident, as nearly half of the children shared a bed with at least one person, further confirming the role of close contact in disease spread [18]. Among children with scabies, 65% attended schools, and 35% were from madrasahs, with primary school students comprising 63% of cases. This emphasizes the role of dense environments in fostering transmission [19]. Clinically, itching was nearly universal (99.2%), and night-time severity was reported in 98.4% of cases, findings that are consistent with the classical presentation of scabies [20]. The findings underscore the importance of targeted public health interventions, including improving living conditions, promoting hygiene education, and conducting school-based screening and treatment programs.

5. Conclusion and Recommendation

The study reveals a 21% prevalence of scabies, with

the highest occurrence in children aged 7–12 years. Most cases are from rural areas, and many fathers and mothers have low education levels. Fathers are predominantly unemployed or manual workers, while mothers are housewives. The primary stage is the most common, and a significant number of children have household animals or interact with them. Severe itching and night-time symptoms are prevalent among affected children. Improved awareness and prevention efforts are needed, particularly in rural areas.

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