

Original Article

Epidemiological Study on Three Hundred Patients of Scabies in the Industrial Area of Dhaka, Bangladesh.

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Abstract

Background: Scabies is a common and highly contagious skin disease caused by a mite called *Sarcoptes scabiei*.

Objective: The aim of this study was to analyze the epidemiological factors associated with scabies infection in an industrial area. **Methodology:** This cross-sectional study was conducted on the department of Dermatology & Venereology, Monno Medical College, Manikganj, Bangladesh for a period of six (06) months from September 2023 to February 2024. Data obtained from Three hundred patients with scabies in the outdoor patient, Savar, Dhaka. It was considering age, sex, occupation, economical condition, educational status, family history of scabies of the selected patient. **Results:** The age group of 1 to 10 years (28.66%) is high prevalence then variable prevalence with age 11-20 years (28.0%), 21-30 years (7.7%), 31-40 years (10.7%), 41-50 years (14.3%), more than 50 years (6.7%) and patient in low socioeconomic condition (58.66%) affected more than middle (30%), high (11.3%). Primary (44.00%), Secondary (28.70) and above secondary (31.3%), overcrowding living (Madrasah 37.33%) showed the highest infestation rates and garments worker (29.68%), house wife (17%), school student (8.66%). **Conclusion:** In conclusion an improvement of socio-economic conditions, improve living facilities, education, social awareness may contribute to a reduction in the number of scabies infections.


Key Words: Scabies; epidemiological factors; outbreaks

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Introduction:

Scabies is a common global disease caused by *Sarcoptes scabiei*. It affects people of all races and social classes. It is a cosmopolitan obligatory human skin parasite.¹ Scabies can spread easily under crowded conditions where close body and skin contact is common. Each year about 300 million cases are reported worldwide.² Although the disease affects all social classes, some groups, such as

children, the elderly, immunocompromised individuals, the residents of care facilities or overcrowded populations with low socio-economic status, are particularly at risk of becoming infected.³ A classic symptom of scabies is intense pruritus, becoming particularly intense at night. Depending on the stage of the disease and inflammatory response, the clinical symptoms may vary.⁴

Scabies frequently occurs in body cleavage such as those between the fingers and toes, the buttocks, the elbows, the waist area, the genital area, and under the breasts in women. The face, neck, palms, soles and lips are usually not affected, except in infants or very young children.⁵ The most common symptoms of scabies are itching, especially at night and papules is the earliest and most common symptom of scabies. Later may develop pustules, excoriation, nodules and secondary bacterial infection.⁶ Scabies treatment involves eliminating the infestation with medication.⁷ Several creams and lotions are available. Patients usually apply the medication all over the body from the neck down, and leave the medication on for at least eight hours. A second treatment is needed if new burrows and rashes appear. All people in the household who have had close skin-to-skin contact with a scabies affected person during the past month must be treated.⁸ This usually includes everyone in the home, even if they don't have symptoms: the symptoms can take 4 to 6 weeks to develop after a person is infested.

Scabies is most commonly treated with permethrin 5% dermal cream. Permethrin is an insecticide that kills the mites that cause scabies.⁹ Permethrin should be washed off after 8–14 hours and the application can be repeated 1–2 weeks later if live mites are seen. The cream should be washed off in 8–9 hours in children less than 6 years but can be left on for up to 12–14 hours for older children.¹⁰ Oral ivermectin should be considered for patients who have failed treatment with or who cannot tolerate FDA-approved topical medications for the treatment of scabies. If used for classic scabies, two doses of oral ivermectin (200µg/kg/dose) should be taken with food, each approximately one week apart. The safety of ivermectin in children weighing less than 15 kg and in pregnant women has not been established¹¹. Benzyl benzoate 25%, Sulfur (5%-10%), Crotamiton lotion 10% can be use for the treatment of scabies¹². The purpose of the study was to analyze the epidemiology of scabies in industrial zone, Savar, Dhaka, Bangladesh, considering age, sex, socio-economic, education and occupational factors.

Methodology

Study Settings and Population: This cross-sectional study was conducted on the department of Dermatology & Venereology, Monno Medical College, Manikganj, Bangladesh for a period of six (06) months from

September 2023 to February 2024. Data was obtained from Three hundred patients with scabies in the Alif Medical Centre (DEPZ) outdoor patient, Savar, Dhaka, Bangladesh. **Study Procedure:** Scabies typically present itchy papules, pustule, nodules, excoriation and eczematous lesions. Lesions are symmetrical and mainly affect the hands, wrists, axillae, thighs, buttocks, waist, soles of the feet, areola and vulva in females and penis and scrotum in males. The neck and above are usually spared. The data included patient number, age, gender, occupation, monthly income, educational status and the scabies presentation (Primary and reinfection), clinical feature, diagnosis and family history of scabies of the selected patient.

Statistical Analysis: Computer based statistical analysis were carried out with appropriate techniques and systems. All data were recorded systematically in preformed data collection form (questionnaire) and quantitative data were expressed as mean and standard deviation and qualitative data were expressed as frequency distribution and percentage. Statistical analysis was performed by using window-based computer software devised with Statistical Packages for Social Sciences (SPSS-17) (SPSS Inc, Chicago, IL, USA). 95% confidence limit was taken. Probability value <0.05 was considered as the level of significance.

Ethical Consideration: Prior to the commencement of this study, the research protocol was approved by the ethical committee (Local Ethical committee) of Monno Medical College, Manikganj. Participants were awarded and investigators got written informed consent from them.

Results

A total number of 300 patients were recruited after fulfilling the inclusion and exclusion criteria. Among them age group of 1 to 10 years 86(28.9%) is high prevalence and more than 50 years is low prevalence 20(6.7%). Scabies patient is more in Male158(52.7%) compare to female 142(47.3%) (Table 1).

Table 1: Distribution of population according to age and sex

Age Groups	Male	Female	Total
1 to 10 Years	49(16.4%)	37(12.4%)	86(28.9%)
11 to 20 Years	48(16.0%)	36(12.0%)	84(28.0%)
21 to 30 Years	10(3.30%)	13(4.3%)	23(7.70%)
31 to 40 Years	18(6.00%)	16(5.3%)	34(10.7%)
41 to 50 Years	20(6.70%)	33(11.0%)	53(14.3%)
More Than 50 Years	13(4.3%)	7(2.3%)	20(6.7%)
Total	158(52.7)	142(47.3)	300(100%)

The madrasah students 112(37.33%) are affected more and subsequent reduce the number. Garment worker 89(29.68%), house wife 51(17%), school student 26(8.66%) and others (7.33%) (Table 2).

Table 2: Distribution of population according to occupation.

Occupation	Frequency	Percent
Madrasah student	112	37.33
Garment worker	89	29.68
House wife	51	17
School Student	26	8.66
Others	22	7.33
Total	300	100

Primary 120(40.00%) education level patients are affected more than secondary 56(28.7%) and above secondary 94(31.30%) education level (Table 3).

Table 3: Distribution of Population According to Educational Level

Education Level	Frequency	Percent
Primary	120	40.00
Secondary	86	28.70
Above secondary	94	31.30
Total	300	100

The primary 194(64.7%) scabies infection is generally more than reinfection 106(35.30%) (Table 4).

Table 4: Distribution of Population According to Presentation (History)

History	Frequency	Percent
Primary Infection	194	64.70
Reinfection	106	35.30
Total	300	100

Scabies patient of low 176(58.7%) socioeconomic condition have high frequency compare to middle 90(30.00%) and high 34(11.30%) socioeconomic status. (Table 5).

Table 5: Distribution of population according to Socioeconomic state

Socioeconomic state	Frequency	Percent
Low	176	58.70
Middle	90	30.00
High	34	11.30
Total	300	100

Discussion

This study and literature data show that scabies continues to represent a health threat for society in Bangladesh, as well as globally. During the analyzed period in an industrial area of Savar, Dhaka considering age, sex,

occupation, economical condition, educational status, family history of scabies of the selected patient. In the current study, the highest prevalence was seen in the 1 to 20 y age group (56.66 %), followed by 1 to 10 y age group (28.66 %) and 11 to 20 y age groups (28.00 %). The highest prevalence was seen in the 10 to 19 y age group (25.9%), followed by 0 to 9 (22.4%) and 20 to 29 y age groups (15.6%).¹³

The relationship between socio-economic conditions, educational status and scabies infection is complex. Scabies is hyperendemic in Bangladeshi madrasahs. This study shows higher incidence rate of scabies in madrasah student (37.33%) and next lower incidence in garment worker (29.66%), house wife (17%), school Student (8.66), others (7.33%). The student of madrasah in Bangladesh showed high prevalence of scabies in the study of Talukder et al.¹⁴

Our study showed lower educational status increase the incidence of scabies in primary level (44.00%), secondary level (28.66%) and above secondary level (33.33%). Karim et al¹⁵ showed in Bangladesh, in families with low income, activities such as washing clothes and bed linen, bathing, and the use of soap are less frequent than in families in a better financial situation. Nair et al¹⁶ showed poor socioeconomic conditions directly affect the body nutritional status, which may in turn result in impaired immunity, and thus make it more difficult to fight the disease.

In our study showed patient with low socioeconomic condition affected high (58.66%) and followed by middle class (30%) and higher society population are 11.33% affected. Rahman et al¹⁷ showed their study that scabies more in children with primary infection associated with overcrowding, bizarre living, parental sociodemographic status and poorer household income. In this study we found incidence of scabies higher in primary disease (64.66%), less in reinfection (35.33%).

Conclusion

In conclusion there are many factors for increasing rate of scabies, so reduce the poverty, improve living facilities, educational status can reduce the prevalence of scabies. Outbreaks of scabies may be very difficult to control and require the implementation of appropriate control program.

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