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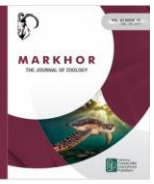

Original Article

Prevalence and Associated Factors of Scabies in An Urban Slum Area, Islamabad

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ABSTRACT

Scabies is a parasite infection that affects both men and women of all races and socioeconomic backgrounds. Scabies traditionally affects the hands, between the fingers, wrists, elbows, shoulders, genital areas, and breasts in women. Prolonged skin-to-skin contact, hand-holding, or sexual contact are the most prevalent modes of transmission. Scabies is a sexually transmitted illness because transmission takes 15-20 minutes of close contact **Objective:** To assess the prevalence and associated factors of scabies in an urban slum in Islamabad. **Methods:** A cross-sectional descriptive study was carried out in a slum area of Islamabad. A simple random sampling technique was used for the selection of households. The sample size was 397. A specially designed, semi-structured questionnaire was developed by the researcher to collect information on all study variables related to demography and other variables related to scabies. The collected data thus collected were entered and analyzed in IBM SPSS (Statistical Package for Social Sciences) version 21. The results were produced in the form of frequency, percentages, valid percentages and cumulative percentages, graphs and tables and tabulated form. **Results:** The results showed that 57% of population was suffering from scabies at the time of the study. Gender (male) (p-value 0.286), marital status (married) (p-value 0.126), educational status (illiterate) (p-value 0.005), income (<6000) (p-value 0.005), and length of residence (>2 years) (p-value 0.000) were significantly associated with scabies. **Conclusions:** It is concluded that there was a high prevalence of scabies in the study population. Gender, marital status, educational status, income, and length of residence were strongly associated with the prevalence of scabies in that population while a number of people living in one room (overcrowding) was not associated with the prevalence of scabies.

INTRODUCTION

Scabies is a parasite infection that affects both men and women of all races and socioeconomic backgrounds [1]. The *Sarcoptes scabiei* mite causes scabies, which is a highly contagious, pruritic dermatitis [2]. *S scabiei* is an arachnid belonging to the genus *Acarus*. In 1687, Bonomo used a light microscope for the first time to identify the mite [3]. Scabies traditionally affects the hands, between the fingers, wrists, elbows, shoulders, genital areas, and breasts in women [4]. Itching gets worse at night, and the incubation period varies in length. Itching may not appear for 14 days or longer after the first illness. The burrowing of *S scabiei* into the epidermis of the skin is how scabies is transmitted. Adult female mites that have been fertilized burrow into the stratum corneum and lay 0 - 4 eggs every day for up to 6 weeks before dying. It takes two weeks to complete the developing life cycle. [5] Prolonged skin-to-skin contact, hand-holding, or sexual contact are the most prevalent modes of transmission. Scabies is a sexually transmitted illness because transmission takes 15-20 minutes of close contact [67]. Scabies is reported to affect 300 million people worldwide each year, while several groups argue the figure is either exaggerated or understated [8,9]. Scabies is a significant public health problem in the developing world due to its incidence and consequences, with a disproportionate burden on children living in poor, congested tropical settings [10-12].

Scabies is a common diagnosis in Pakistani dermatological clinics. Scabies is a common disease in all of Pakistan's provinces, according to data obtained by the district health information system [13]. Despite the fact that scabies is a common disease in the country, little attention has been paid to its prevention and control. Scabies is a contagious parasite

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infestation in which a few mites produce an allergic reaction. It's a societal issue that swiftly spreads among people who live in low-resource areas. It has a negative connotation in society. The disease is on the rise in many impoverished areas of Pakistan, owing to a lack of community awareness and health-care professional illiteracy. Very less data is available on the disease prevalence in the slum areas, the current study was, therefore, conducted to evaluate the situation.

Community involvement and motivation through educational programs, diligent follow-up, regular re-screening, and timely treatment of cases are all part of scabies control. A single application of 5% Permethin cream is applied to all cutaneous areas on the fingernails, waist, and genitalia as part of the treatment [14]. It is a well-established fact that Economic burden can be minimized through regular community awareness campaigns [15]. In order to control scabies epidemics in India, Nair (1999) proposed a national policy. The primary strategies were well-proven health-education techniques, community participation, and government ownership, particularly the centralization of medical-care duty [2].

In Pakistan, the majority of the population is poor and lives in a congested environment, making them more susceptible to diseases like scabies. Despite the severity of the problem, there is a lack of knowledge about the clinical and epidemiological features of this preventable contagious disease in our country, and there is little documented proof. In the country, there is no clear policy for preventing scabies in the community. Due to the contagious nature of the disease, community participation in disease prevention and control, as well as community education, is essential. The disease is resurging, posing a greater social and economic cost to humanity in the form of health-care costs, including direct and indirect medical costs, doubling the disease burden and, as a result, resulting in poverty, which leads to an unhealthy community and society. The aim of our study was to assess the prevalence and associated factors of scabies in an urban slum in Islamabad.

METHODS

A cross-sectional descriptive study was carried out in a slum area of Islamabad. Mixed method approach (both quantitative and qualitative) was used to collect data. Data was collected on the specially designed questionnaire, which was pre-tested, reviewed, and refined before being administered in the community. Interviews were conducted from all individuals of both genders was conducted to assess the perception level of scabies. The study was carried out from September 2014 to February 2015.

The study population comprised of an urban slum of Islamabad. Simple random sampling technique was used for the selection of households.

Sample size was calculated as follows:

n=sample size, p =prevalence in the population, e=Marginal error

α=5%=level of significance, p=Prevalence=0.03, I-p=I-0.3=0.70

$$n = \frac{Z^2\alpha/2 \; P.(I-p)}{(e)^2}$$

n=358

Including 10% non-response 358+39=397

Total sample size calculated was 397 household.

Inclusion criteria included the persons consenting in writing to participate in the study, the person who has living in the study area at least last two years, all individuals above 18 year of age and both genders. Exclusion criteria included the individuals not consenting to participate in the study, locked/closed households, and individuals below 18 years of age. A specially designed, semi-structured questionnaire was developed by the researcher to collect information on all study variables related to demography and perception of scabies. After taking informed consent of the Households the data was collected. The survey questionnaire was administered in a face-to-face unprompted interview to the respondent by the researcher & volunteer. There were five sections of the questionnaire which were household information, demographic information, and the prevalence of scabies. The collected data thus collected was entered and analyzed in IBM SPSS (Statistical Package for Social Sciences) version 21. The results were produced in the form of frequency, percentages, valid percentages and cumulative percentages, graphs and tables and tabulated form. All the qualitative variables are also described through frequencies and percentages. The data analyzed by using appropriate descriptive and inferential statistics which were used to analyze demographic variables.

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RESULTS

A total of 397 households were selected for this study. During the survey, all households were visited and the response rate was 99%. Information on household characteristics, such as type of house, number of rooms in a house, and availability of electricity is given in Table 1. All of the houses were Kacha houses (mud houses), with solar devices serving as the primary source of energy in 75% of the homes and wood, gobar and coal serving as the primary fuel sources. A hand pump and a tube well in the vicinity provided water. A separate kitchen was found in the majority of the houses (70 percent). Pit latrines were utilized by all homes. The vast majority of them kept their pets indoors.

Characteristics	Status	Frequency	Percentage
Type of houses	Kacha	397	100
Sources of Fuel (heating in winter)	Wood,Gobar,Coal	397	100
Source of water	Hand pump	280	70
Separate kitchen		277	70
Toilet facility	Pitletrine	397	100
No. of houses Where animals were kept Inside house		280	70.5

Table 1: Households characteristics

Table 2 shows the socio-demographic characteristics of the study population. Most of the respondents (53.4%) were males. In total, 97 percent of those participants were married. Fifty-nine percent of the participants in the survey were educated, 33 percent had informal education, and 7.6 percent were below intermediate. Most of the respondents 56.9% had monthly income of less than Rs 6000, followed by Rs 8000 -10000 in 19.4% and between Rs 10000-12000 in 1.5%. About 11% of the respondents were not sure about their monthly income. Regarding the number of rooms in a household, most of the households had three to four rooms. On the whole, 41% of the households had one, followed by 2-4 rooms (46%), 4-6 rooms (12%), and over five rooms in 2%. When asked about number of people living in one room, 1-3 persons 34% of households said 3-6 persons , 48.9%, 6-912.1% more than > 9 4.5% people share a single room (Table 2).

Variable	Status	Frequency	Percentage
Gender	Male	212	53.4
	Female	185	46.6
Marital status	Married	386	97.2
	Single	11	2.8
Educational status	Education	234	59
	Informal	132	33.2
	Below intermediate	30	7.6
Income	<6000	226	56.9
	8000	77	19.4
	8001-10000	44	11.1
	10001-12000	6	1.5
	DK	44	11.1
Number of rooms in the house	1-2	161	40.6
	2-4	181	45.6
	4-6	47	11.8
	> 6	8	2.0
Number of people living in one room	1-3	137	34.5
	3-6	194	48.9
	6-9	48	12.1
	> 9	18	4.5

Table 2: Socio- demographic Information

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Regarding length of residence in the study area, it was found that most of the respondents (64.2%) were residing in the study area for more then two years (Table 3).

Duration of Residence	Frequency	Percentage %
<6	13	3.3
Up to 6	26	6.5
>1	8	2.0
1-2	95	23.9
>2	255	64.2

Table 3: Duration of Residence

Figure 1 depicts the prevalence of scabies in the study population. Overall, 57 percent of respondents had scabies at the time of the survey, with 25% reporting that at least one family member had contracted the disease in the previous three months (Figure 2).

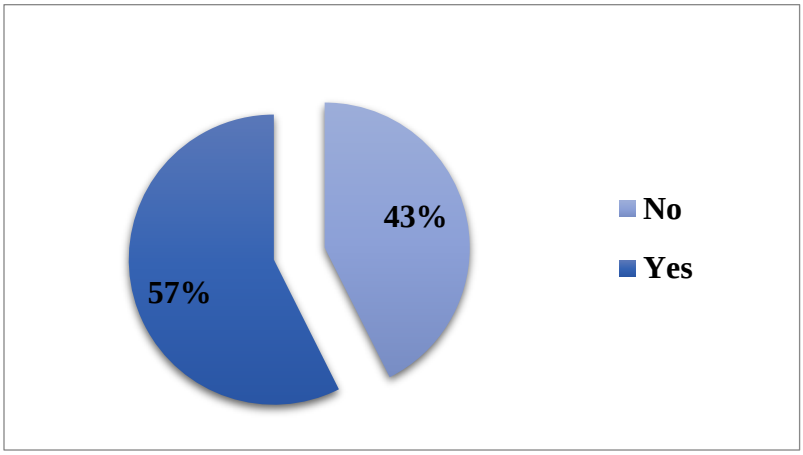

Figure 1: Prevalence of Scabies in Target Population

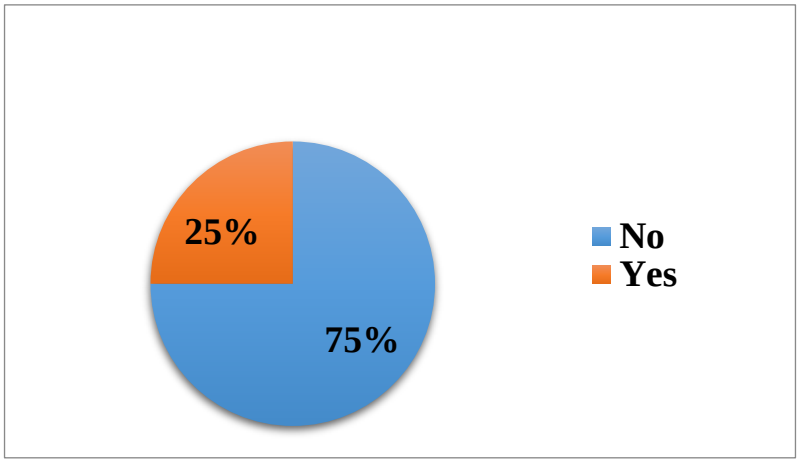

Figure 2: Population Suffering from Scabies during Last 3 Months

The association of different factors with the prevalence of scabies was also assessed. Results showed that gender, marital status, educational status, income, and length of residence were strongly associated with the prevalence of scabies in that population while number of people living in one room (overcrowding) was not associated with the prevalence of scabies (Table 4).

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Variables	Frequency (Percentages)	P-Value
Gender		
Male	127 (32%)	0.286
Female	101 (25.4%)	
Marital Status		
Single	9 (2.3%)	0.126
Married	219 (55.2%)	
Educational Status		
No Education (Illiterate)	151 (38%)	0.005
Informal	64 (16.1%)	
Below Secondary	13 (3.3%)	
Intermediate	0 (0%)	
Income		
<6000	152 (38.3%)	0.005
6001-8000	32 (8.1%)	
8001-10000	19 (4.8%)	
10001-12000	4 (1%)	
Don't Know	21 (5.3%)	
Length of Residence		
Up to 6 years	18 (4.5%)	0.000
1 year	3 (0.8%)	
1-2 years	48 (12.1%)	
>2 years	159 (40.1%)	
Number of People living in One Room		
1-3	76 (19.1%)	0.910
4-6	115 (29%)	
7-9	27 (6.8%)	
>9	10 (2.5%)	

Table 4: Associated Factors of Scabies

DISCUSSION

Scabies has been a common disease in Pakistan for the past ten years. Scabies is a contagious parasite infestation in which a few mites produce an allergic reaction. It is a social issue that has expanded globally. It appears to be a societal taboo. Scabies is a significant public health problem in the developing world due to its incidence and consequences, with a disproportionate burden on children living in poor, congested tropical settings. To determine the prevalence of scabies and associated determinants, a cross-sectional descriptive study was done in one of Islamabad's slum districts. Our study revealed that the prevalence of scabies among the population was 57%. While a study conducted in Ethiopia concluded that the prevalence of scabies was 14.5%. Persons from high family size and any contact with scabies case were factors associated with scabies [16].

Our results showed that most of the people were living in poor conditions with an earning of less than 6000 PKR per month, and almost all the respondents were living in muddy houses (Kacha House) and the main source of electricity were solar devices. Most of the respondents were living in an unhygienic condition which was one of the main factors for the prevalence of disease reported by other studies also [17-19]. A study conducted in IDPS camp in Muzaffarabad (Pakistan) also showed that scabies is a common disease in internally displaced populations (IDPs) mainly because of poor hygiene & living standards [20].

In our study, overcrowding (Number of people living in one room) was not associated with the prevalence of scabies. On the contrary, studies conducted in India, Mali, Brazil, and northern Australia showed a significant association between the prevalence of disease and overcrowding [21-23]. Our results showed the association of education with the occurrence of scabies among that population which is similar to the findings of a study conducted in Ethiopia. That study found that educational status had a substantial impact on the prevalence of scabies. Students in the first cycle of schooling should receive special care because they are at the greatest risk of infestation [24]. Our study clearly indicates that there is a strong need for community education and awareness and this requires the development and implementation of a comprehensive community awareness strategy.

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CONCLUSIONS

The current study shows a high prevalence of scabies in the study population. Gender (male), marital status (married), educational status (illiterate), income (<6000PKR), and length of residence (>2 years) were strongly associated with the prevalence of scabies in that population while number of people living in one room (overcrowding) was not associated with the prevalence of scabies. Furthermore, there is a strong need for community education and awareness and this requires the development and implementation of a comprehensive community awareness strategy.

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