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Socio-demographic Patterns, Perceptions, Prevalence and Communicability of Scabies in Islamabad, Pakistan

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ABSTRACT

Even though there is a high prevalence of scabies in various impoverished communities, no profound research work has been done so far on its contagiousness, communicability, and risk assessments in Islamabad, Pakistan. Scabies has been enlisted by the World Health Organization as the most neglected contagious tropical disease and its high prevalence in various underprivileged, impoverished and resource-poor communities, no profound research work has been done so far on its contagiousness, communicability, and risk assessments in Islamabad, Pakistan. The present study was aimed to explore the community perceptions, socio-demographic features, healthcare-seeking attitudes, and prevention practices that were contributing to the prevalence and communicability of scabies in a resource-deficient urban community of Islamabad, Pakistan. Data was collected through an orally-administered questionnaire through random sampling. The community responses were entered and analyzed in statistical package SPSS software version 21. The results have shown a high prevalence of scabies (57%) in the target slum community of Islamabad, Pakistan. More than half of the population were found living in congested household settings (61%), deficient in formal /informal education (57%), and were hardly making both ends to meet (59%) with their nominal monthly income (< 6000 Pakistani rupees). It is hence concluded that a low level of community awareness and perception coupled with the socio-demographic features were found to be associated with the high prevalence and communicability of scabies.

Keywords: Scabies,Mite, Vector, Slum, urban

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INTRODUCTION

Scabies is a frequently neglected tropical disease caused by *Sarcoptes scabiei var. hominis* – a microscopic parasitic mite (1). A huge global proportion is infested by this contagious infestation, affecting both genders of all socioeconomic status and races equally (2). Scabietic patients suffer from scratching, intense pruritus, and worse itching due to nocturnal activities of mites which leads to restlessness and insomnia (3, 4). The Incubation period of parasitic mites is variable, itching is noticed within two weeks of exposure (5). Direct and indirect skin contact is the most effective way of transmission such as prolonged exposure (15-20 minutes), hand-holding, and/or sexual contact with an affected individual (6, 7).

Recognized epidemiological risk factors include prolonged exposure with an infected person and immuno-deficiencies developed because of hyperkeratosis (9). A wider range of epidemiological risk factors influence the distribution of scabies in community, including gender, age, ethnicity, unhygienic and overcrowding situations which have

been found primarily or secondarily linked with the indicators of poverty and deplorable economic conditions at the community and/or infra-community level (10-15). According to a global prospective study, it is assessed that 300 million scabies cases affect 6% to 27% population per annum, most of which inhabited in resource-deficient areas of the world (16). This significantly high prevalence ratio makes it a significant public health problem in developing world communities, most particularly in overcrowded tropical areas (17-24).

Almost everyday scabies is diagnosed in dermatology clinics of Pakistan (25). An escalating population burden coupled with the surge in urbanization has tremendously enhanced the health-related concerns of the Pakistani community. Data collected from the district health information system of Pakistan reveals that scabies is prevalent in all provinces. It has become a social stigma and spreads quickly among populations living in resource-deficient and congested settings. As the disease is contagious, community education in addition to prevention and control has attained prime importance. The Resurgence of disease holds the potential to cause social and economic losses at the cost of mankind's health, thus, doubling the burden of disease and resulting in a poverty-ridden unhealthy society. Despite ample literature available on the epidemiology of this contagious infestation in impoverished and developing countries relatively infrequent investigations have been made on the fore-mentioned epidemiological risk factors in Islamabad, Pakistan (3, 15, 26). The present study was conducted in slum areas of Islamabad to find out the Knowledge, Attitudes, and Practices (KAP) of communities toward scabies so that a proper community education strategy could be designed for prevention and control against scabies.

MATERIAL AND METHODS

We conducted a cross-sectional qualitative study in an urban slum area of Pakistan's capital-Islamabad. It comprised a total of one thousand households colonized by almost 5000 inhabitants. The climate varied with respective averages of 267mm-309mm for the months of July and August, per annum average rainfall of 1143mm, and relative humidity level up to 55%. The coldest month was January and the hottest month was June with the mean temperatures of 17ºC (max) ± 2.6ºC and 40ºC (max) ± 24ºC, respectively. People were dwelling in generally poor, deprived, and miserably deplorable conditions. Overcrowding was the key feature. A Majority of the participants belonged to the Malakand Agency, Mardan and Khyber Pakhtunkhwa (KPK) characterized by their distinct traditional social beliefs and ancient cultural lifestyles. A Major chunk of the participants were daily wagers and laborers. No proper health care facility except a small clinic equipped with few emergency medicines and unprofessional medical staff was found in the studied area.

We administered a semi-structured oral interview supplemented with a questionnaire-based survey of 397 participants (aged between 18-75 years) inhabiting the impoverished areas of Islamabad. A questionnaire was piloted based on the domains comprising the household information, demographic figures, knowledge, perceptions, and attitudes of participants toward treatment-seeking and prevention practices. All members of the households present at the time of the survey were interviewed. Data were collected and analyzed by using SPSS version-21. The proposal was presented to the Institutional Review Board (IRB) of Health Services Academy for ethical approval. For the sake of confidentiality of data, the responses of respondents were disguised as codes.

RESULTS

Prevalence of Scabies

During the survey, more than fifty percent (57%) of respondents had scabies at the time of the survey. However, almost one-quarter of participants reported the prevalence of disease in at least one of their house members since the last three months of the survey.

Socio-Demographic characteristics

Gender distribution of participants indicates that 53.4% of respondents were males and 46.6% were female. Overall 97% of respondents were married. Fifty-nine percent of the studied population had not received any type of formal education, whereas, a respective 33.2% and 7.6% of respondents had received informal and below the secondary level of education. However, only 3% were reported to receive an intermediate level of education. We found that a meager percentage (1.5%) of respondents had a monthly income ranging from 10,000 to 12,000 Pakistani rupees. However, a respective and

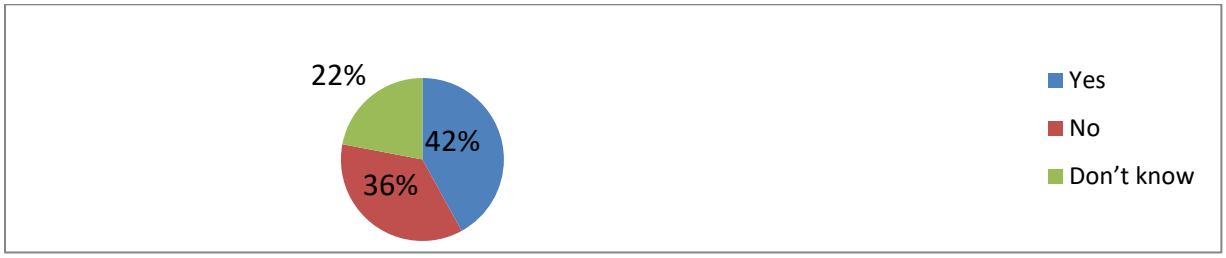

Fig. 1. Participant's Responses on the communicability of Scabies

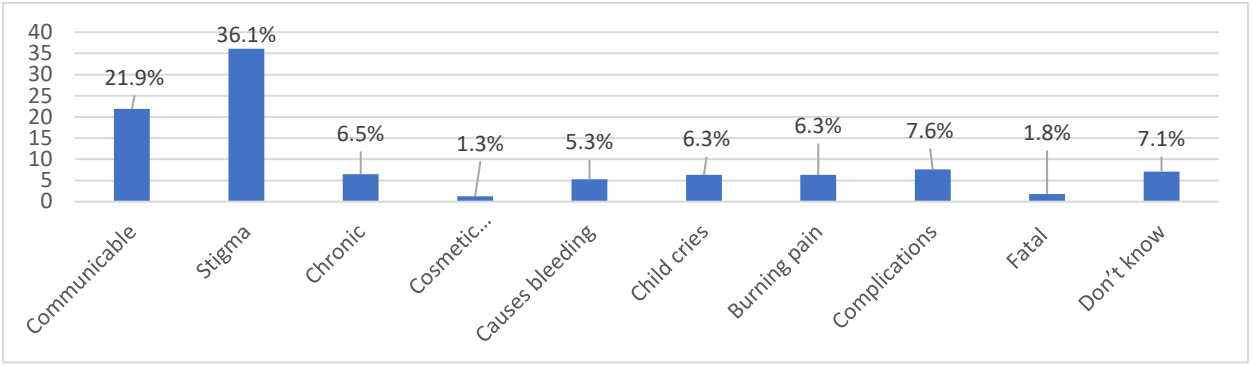

Fig. 2. Basic understanding of complications associated with scabies prevailing amongst the target population

an approximate percentage of 56.9% and 19.4% respondents were found spending their lives at the nominal monthly income of 8000 and <6000 Pakistani rupees. Some 11% of participants indicated no actual and fixed monthly income.

Household Characteristics

The response rate of all households was almost a hundred percent (99%). Information on household characteristics such as type of house, number of rooms per house, electricity, and fuel source was collected. Solar source of electricity was used by three fourth of respondents. Other sources of fuel were wood, gobar, and coal. Sources of water include a hand pump and tube-well. The majority of households were found to contain a separate kitchen. All households used Pit latrine. Almost 70% of households had kept the pet animals inside their houses. Nearly half of respondents (45.6%) reported two to four rooms per house. Almost 41% of the houses comprised 1-2 rooms followed by 11.8% of households having 4 to 6 rooms. The total number of rooms in a household setting is a good forecaster in the transmission of skin ailments. A respective approximate percentage of 48.9% and 12.1% respondents were found sharing a congested setting of 3-6 and 6-9 persons per room in their household settings. Almost 34.5% of household percentage, however, was found in comparatively less-shared settings of 1-3 persons per room (Table 1).

Awareness and perceptions

More than fifty percent of respondents (54%) have shown knowledge about symptomatic conditions like itching in scabies. Information regarding scabies was collected mainly from family members and neighbors (65.5%), followed by the health department (14.6%), newspapers or magazines (13.4%), and TV/Radio (4.2%). Respondents reported sharing the same bed facility (32%) followed by insects (24%), clothes (18%), and close contact (12%) as the main source of spreading the infection. Itching at night was reported as one major symptom of scabies (32%), followed by itchy rashes (8%) and redness (23%). Some 42% of respondents were found aware of the communicability of scabies, whereas 22% were found ignorant of the facts attributed to this infection (Fig. 1, Table 3). This skin infestation was considered a precarious disease because of its association with social-stigma (36.1%), communicability (21.9%), the possibility of complications (7.6%), and cosmetic reasons (1.3%) as shown in Fig. 2 and Table 3. It was found that approximately one-third of respondents (31%) had awareness about the vector of scabies–mite. Human skin was considered as a vector habitat by 27% of interviewed participants, followed by human clothing (19.9%) and animal skin (13.4%).

Control Practices

To prevent scabies, respondents reported maintaining personal hygiene (44.6%) and/or considered it as a neutral practice (25.9%). Others responded in favor of washing hands (54.4%), segregating the patients (14.9%), preventing overcrowding (27%), skin-to-skin contact (32.8%), and by limiting the share of cloths (30%), beds (21.7%) and towel/soap (21.7%) to prevent masses from the exposure to this contagious skin infection (Table 2 and 4). The frequency of taking a bath varied among the respondents from twice a day (11.3%), once a day (39.8%), once a week (37.8%) to once a month (11.8%) (Table 3).

Practices of Respondents

Table 1. Socio-demographic characteristics of the target population

Questions	Status Options	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	41
	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
Duration of Residence	<6	13	3.3
	Up to 6	26	6.5
	>1	8	2.0
	1-2	95	23.9
	>2	255	64.2

*DK = Don't Know

More than half of respondents (52.6%) considered scabies as a treatable disease, 10.1% reported visiting Hakims and /or Homeopaths, followed by 37% who visited doctors for treatment. Nearly half of respondents knew nothing about the treatment of scabies (46.1%), others reported it can be cured by the use of tablets (18.9%), injections (5.5%), and Cream/Lotion (22.4%). To the utmost of the author's surprise, half of the respondents had no idea about the available health facility in their vicinity (54%), whereas, others reported visiting tertiary care hospitals (30%), THQ (30%), and DHQ (8%) (Table 4).

Table 2. Awareness /knowledge regarding Scabies

Attitude of respondents	Options	Frequency	Percentage
Do you maintain cleanliness	Yes	397	100.0
	No	-	
	Don't know	-	
In your opinion is personal hygiene important to prevent Scabies	Yes	177	44.6
	No	117	29.5
	Don't know	103	25.9
How we can prevent the spread of scabies	By isolating the patient	59	14.9
	Personal hygiene	74	18.6
	Environmental Hygiene	124	31.2
	Don't know	81	50
Can washing of hands prevent scabies	Yes	216	54.4
	No	82	20.7
	Don't know	99	24.9
How often you take a bath	Twice a day	45	11.3
	Once a day	155	39.8
	Once week	159	37.8
	One in month	47	11.8
How should scabies patient's clothes be washed	With cold water	46	11.6
	With Hot water	110	27.7
	With soap	121	30.5
	Don't know	109	30.0
What preventive measure you adopt to avoid scabies	Separation of bed	86	21.7
	Separate towel /soap	86	21.7
	Avoid skin to skin contact	130	32.8
	Don't know	94	23.9

Table 3. Respondent's Attitude toward Scabies

Awareness/knowledge about Scabies	Options	Frequency	%-age
Awareness about Scabies or itching at night	Yes	215	54.2
	No	165	41.6
	Don't know	17	4.3
If yes, then the source of information	Health department	58	14.6
	Electronic media	18	4.5
	Print media	8	2.0
	Newspapers/Magazines	260	13.4
	Self/ Neighbors	53	65.5
How do we get infected with scabies	Same bed	82	20.7
	Insects	42	10.6
	Clothes	35	8.8
	Close contact	23	5.8
	Any other	159	56
What are the symptoms of scabies	Intense itch at night	125	31.5
	Pimple-like itchy rash	30	7.6
	Redness	93	23.4
	Any other	87	38
Can Scabies spread from one person to another	Yes	167	42
	No	141	36
	Don't know	89	22
Is scabies dangerous	Yes	220	55.4
	No	177	44.6
If "Yes" why is it dangerous	Communicable	87	21.9
	Stigma	143	36.11
	Chronic	26	6.5
	Cosmetic reasons	5	1.3
	Causes bleeding	21	5.3
	Child cries/cannot sleep	25	6.3
	Burning pain	25	6.3
	Complications	30	7.6
	Can be fatal	7	1.8
	Don't know	1	7.1
Awareness /knowledge about Scabies Vector			
Awareness about scabies mite	Yes	124	31.2
	No	217	54.7
	Don't know	56	14.1
Where does scabies mite live	In human skin	107	27.0
	In human clothes	79	19.9
	In animals skin	53	13.4
	Don't know	39	40

Table 4. Prevention Practices Prevailing among Respondents

Practices of respondents	Options	Frequency	%-age
What are the personal protective measures against scabies	Avoid overcrowding	107	**27.0**
	Avoid sharing clothes	119	30.0
	Any other	118	29.7
	Don't know	52	13.3
Do you think that unhygienic condition is one of the causes of scabies	Yes	250	63.0
	No	147	37.0
Do you think scabies is related to overcrowding at home	Yes	107	27.0
	No	121	31
	Other	37	9
	Don't know	132	42
Do you think that environment is also responsible for the spread of scabies	Yes	127	32
	No	84	21
	Don't know	96	47
Is scabies treatable	Yes	209	52.6
	No	64	16.1
	Don't know	124	31.2
Generally, where would you prefer to go for the treatment of scabies	Doctor	147	37.0
	Hakeem /Homeopaths	40	10.1
	Other	52	13.1
	Don't know	158	39.8
Do you have an idea how scabies is treated?	Tablets	75	18.9
	Injection	22	5.5
	Cream/Lotion	89	22.4
	Any other	183	46.1
	Don't know	4	8
Nearest medical facility for treatment	TCH	120	30.2
	THQ	31	8
	DHQ	33	9
	Other	213	54

DISCUSSION

The high prevalence of scabies (57%) in the impoverished community of Islamabad confirms an endemic status of the disease in Pakistan. It has been found consistent with the finding of a high prevalence of scabies ranging from 18.1-70.2% (35-37). However, the Eastern neighbor of Pakistan, Bangladesh, was reportedly inhabiting a high incidence (98%) of scabies in her madrassahs (38).

The current study was designed to investigate the predominance, beliefs, and understandings of communities based in an urban slum area, which was motivated by the assumption that overcrowding, unhygienic conditions, and poor socioeconomic situations may serve as the breeding ground for the emergence and communicability of this mite-originated widely neglected tropical skin infection. To the author's best knowledge, no reliable data on this contagious skin ailment for this particular slum area has been found at all. Hence, the present study can better be regarded as representative of the other deplorable and resource-deficient communities of Pakistan. As far as the demographic factors are concerned, poor housing, low income, frequent illiteracy, poor hygiene, social and behavioral attitudes or practices facilitate the transmission of a parasitic mite (15, 27-29). The target population was inhabiting in the dismal (nominal monthly earning < 6000 PKR), unhygienic, and congested living conditions which were reported as major contributing factors for the prevalence of disease (15-18). A study conducted in the Internally Displaced Persons (IDPs) camp of Muzaffarabad (Pakistan), agrees well with our findings, that poor hygiene coupled with deplorable social and economic standards were the root cause of scabies (32).

Crowded conditions investigated in this study have been found justifying the high frequency of scabies in this target urban slum community which is in line with the outcomes of the predecessor's studies conducted in Malaysia (8), the UK (39), Brazil (5) and Pakistan (40). Poor and congested living standards in tropical areas have been frequently documented in the literature as the main contributing factors for the proliferation of this contagious skin infestation (17-19). Recent literature has also remarkably confirmed this complex association between unhygienic living conditions, risk behavior, overcrowding, and accelerating ratio of infested persons (11, 28, 37-38). It can best be demonstrated by the fact that high-fold diagnosis of scabies was found in the individuals who lived in the target communities for above six months than those who arrived recently (28).

A considerable level of community awareness was observed for the occurrence and transmission of this contagious skin infestation. Almost half of the participants (42%) were found aware of the transmissible characteristics of the disease, contrary to the rest of respondents who were found ignorant of this widely proven fact, which is consistent with the findings of some predecessors (30). As far as awareness of the disease communicability is concerned, fairly concordant responses of other researchers considering lack of environmental and personal hygiene responsible for the spread of scabies were also reported (33-34).

Community practices like admittedly sharing of household accessories (towels, beds, and clothes) and prolonged physical contact were found as more frequent and persistent means of transmitting the mite infestation from person to person which is consistent with the findings of some other surveys (13, 40). Hence, lack of basic knowledge about personal and environmental hygiene practices has been regarded as a major risk factor, which is consistent with the studies that recognized community unawareness as a major contributing factor, in the high prevalence and communicability of scabies (31).

CONCLUSION

The current study found a high prevalence of scabies in the target population. Most of our findings *i.e.* low socio-economic status, scarce personal and environmental hygiene, overcrowding, personal direct and/or indirect contact with the infected persons, sharing of household accessories, etc. were found as the key contributing factors in the prevalence and communicability of this tropical contagious infestation. It is hereby concluded that the level of community awareness about the prevalence, transmission, and treatment of scabies was fundamentally low which was further compounded by the persisting socio-demographic features (*i.e.* congestion, low income, and lack of hygiene) and thus contributed to the high prevalence of scabies in the impoverished community of Islamabad. This indicates the need for planning comprehensive community education and active intervention strategies to improve public awareness for the prevention and control of scabies.

CONFLICT OF INTEREST

All authors declare **no conflict of interest** in the work.

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