The Epidemiology Of Scabies In Gaza Governorates

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Abstract: *An epidemiological study was conducted on 134 patients who were infested with scabies and were diagnosed at Remal health center in Gaza over a period of 6 months (March 2005-September 2005). More infestation was observed in the age group less than 10 years but there was no significant difference in prevalence by sex (males 57% than females 43%) or age. The most common signs and symptoms were itching, skin burrows, papules and vesicular lesions. The most affected sites were the peri-umbilical area (91%), buttock (66.4), and hands (64.9%). The risk factors that were significantly associated with scabies infections in these patients were house by overcrowding, number of family members, education and occupation of the patients' parents.*

Keywords*: Sarcopetes scabiei, epidemiology, prevalence, Gaza Governorates*

Introduction

The burrowing ectoparasitic mite *Sarcoptes scabiei* is regarded as an important public health problem world-wide, especially for indigenous populations. It causes a disease “scabies” which is believed to be the first disease of man with a known cause.[1] *Sarcoptes scabiei* is family Sarcoptidae, Members are slow moving mites and are obligate parasites burrowing into the skin of mammals [2] Scabies manifests as an allergic type skin reaction,[3,4] and cause purities which is frequently more intense at night. An infestation occurs when the adult female mite, approximately 0.3 mm in length, forms a burrow in the skin often invisible to the naked eye. The severe itching and popular rash of the primary infestation take 4 to 6 weeks to develop, during which mite numbers can reach between 10 and 50.[5]

Scabies is a major epidemiological and socioeconomic problem all around the world, especially in less developed countries. It is a highly contagious, particularly in overcrowded housing, which predisposes a community to the spread of this mite.[6]
To the best of our knowledge, no studies regarding scabies have been carried out in the Gaza Governorates.

The aim of this study was to investigate the prevalence of scabies in Gaza and to describe the socioeconomic factors that help in the transmission of the parasite.

Materials and Methods

A total of 134 patients were seen and diagnosed with scabies in the outpatient clinic of Remal center health over a period of six months (March 2005-September 2005). The diagnosis was made by a dermatologist who works in this center. All scabies patients who were seen in the center during that period were included in the study. They were 57 females and 77 males. Their ages ranged from one year up to 59 years old.

Scabies was diagnosed clinically by the presence of burrows or erythematous papular, vesicular, pustular or bullous lesions associated with itching.

A questionnaire was filled for each patient with the help of the dermatologists. The questionnaire included questions about demographic data, age, sex, signs and symptoms, and other information to identify socioeconomic status of the patients, such as, occupation and education of the parents, family size, and number of bedrooms in the house.
Statistical analysis: The data were analyzed statistically using the chi square test. Statistical significance was considered at a P value<0.05.

Results

The risk of contracting scabies was highest among children under 10 years. Scabies was diagnosed slightly more in males (77/134, 57%) compared to females 57/134, 43%) Fig (1); however the difference was not statistically significant.

A higher prevalence of parasite was observed among patients of families who had more than 6 members (43%), and in patients living in houses that had less than 4 rooms (45.5%) (Table 1).

Also the prevalence of the parasite was associated with the degree of the parent’s education, e.g., secondary education or less of the father (38%), and elementary education of the mother (36.5%).

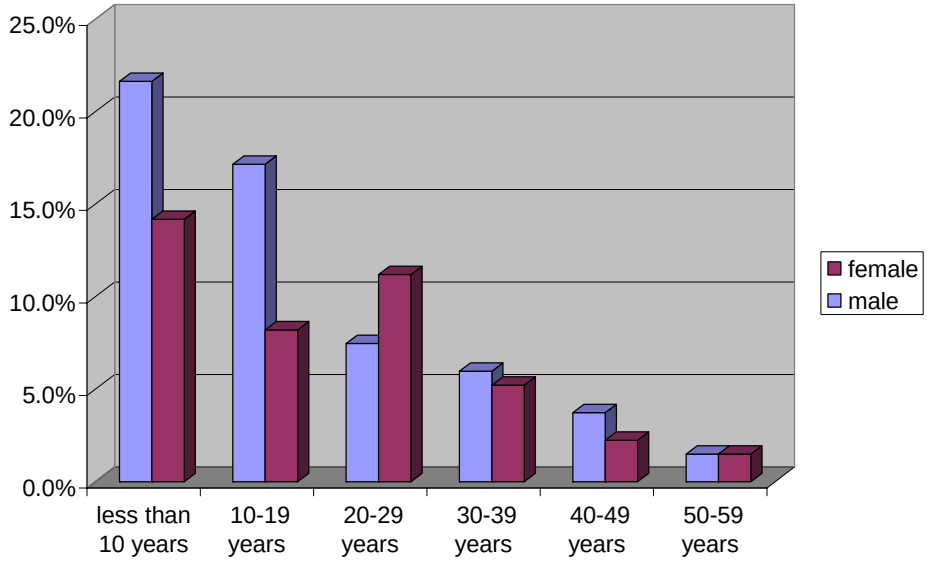

Fig 1: **Age group distribution among 134 patients according to sex.**

A significant difference was found between patients related to employ versus unemployed parents.
The family size was found to be significantly associated ($P<0.05$) with scabies infestations, where a higher prevalence was recorded in patients coming from families with more than six persons.

A difference in the topographical distribution of lesions was also observed (Table 2). The percentage of patients who had lesions in the peri-umbilical area, buttocks, hands, between fingers, and wrists were 91%, 66.4%, 64.9%, 54.5%, 40.3% respectively. Of the 134 patients, 78% had the reported symptoms for less than 20 days. Other family members of the patients complained from similar symptoms. Pruritus was worse in the evening and at night, with 32% of the patients had it in the evening and 44% at night.

Thirty two percent of the patients had contact with people in the work place and in schools who complained from similar symptoms. A recurrent of the scabies infestation was reported by 15% of the patients who were previously treated.

Table 1: The factors associated with the for prevalence of scabies in 134 patients

Father`s education	Number	%	P value
Primary	27	20	
Elementary	24	17.9	0.004
Secondary	51	38	
Higher Education	32	23.8	
Mother Education			
Primary	43	32	0.000
Elementary	49	36.5	
Secondary	32	23.8	
Higher Education	10	7.4	
Father Occupation			
Unemployed	50	37.3	0.025
Employed	30	22.3	
Worker	54	40.2	
Mother Occupation			
Housewife	127	94.7	0.000
Employed	7	5.2	
No of rooms			
<4	61	45.5	
4	53	39.5	
>4	20	14.9	0.000
No of family members			
1	1	7	0.000
2	4	3	
3	10	7.5	
4	17	3	
5	21	15	
6	23	17	
>6	58	43	
Crowding index at night			2.29
1	20	14.9	
2	63	47	
3	42	31.3	
4	9	6.7	

Table2: Topographical distribution of lesions among 134 patients.

Cases	**Number**	**%**
Peri-umbilical	122	91
Buttock	89	66.4
Hand	87	64.9
Between Fingers	73	54.5
Wrists	54	40.3
Penis	49	36.5
Chest	47	35
Palms	39	29
Foot	38	28.3
Elbows	35	26
Knee	30	22

Discussion

Scabies is cosmopolitan in distribution, and about 300 million cases of scabies are registered worldwide.[7] Scabies has been found to be endemic in many resource-poor populations around the globe.[8]-[10]

People at any age may suffer from scabies as previously reported, [11,12] and this has been our observation too in this study**.** However scabies in our study is more common in children less than 10 years, and 10-19 age group and this is accordance with Sharma *et al*., [13] and also El Okbi *et al*., [14] found a high prevalence in Cairo, the incidence may be due to overcrowding, poor living conditions and the prolonged contact among children and their family members .

Kenawi *et al*., 1993 reported that scabies was more common in women than in men, while Gulati *et al*., [14] provide a contradictory data on scabies incidence among different sexes, and Sharma *et al*.,[13] reported equal incidence of scabies in both sexes. In our study there was no significant gender difference in the studied patients.

In the developing countries, when access to water is restricted, poor personal hygiene and lower frequency of washing and changing clothes has been reported. The unavailability of clean water could be contributing factors. Moreover, mite survival on and off the host is prolonged in a cooler environment.[15]

The crowding and general socio-economic level is demonstrated by the housing density where the number of persons in the house and/ or in one room is high compared to standard conditions.

Hygiene is an important factor in the transmission of scabies as it relates to personal contacts, sharing of sleeping garments and bed linen, and infrequent laundering of clothes and bedding.[10]

The result of this study indicate that scabies was significantly more prevalent among patients from families with more than 6 person (P=0.00) living in a house with few rooms .Over crowding and limited sleeping spaces were among the factors that were associated with scabies.[15] Similar results were reported from other developing countries, [10]-[18] where scabies was more prevalent among large families with a high crowding index at night due to close contact and sharing of beds that increase the transmission of the scabies mite.

The relationship between scabies and poverty, crowding and hygienic practices within a household and in a community is complicated and individual susceptibility and level of exposure must be considered. Scabies has been observed to affect people from all socioeconomic levels.

In this study, the level of education of the patients' parents was significantly associated with the frequency of infestation, where higher rates of infestation were observed in children of mothers with low education level and this is indication of poverty and lack of health education. This finding is supported by a study of Cietci *et al*., [19] who reported a significant relationship between the occupation of mothers and fathers of infested patients and the prevalence of the scabies.

The usual signs and symptoms of human scabies infestation are pruritic, lesions, papules (53%), vesicular lesions (37%), nodules (5.9%) and erythema (2.9%).

Itching associated with mite infestation may be mild to sever; it was experienced more at night, 44% of infested patients, which may be due increased mite burrowing activity that is associated with secretions and defecation.[20]

The topographical distribution of lesions observed in the studied patients was typical predilection sites being the trunk, arms, legs and axillae, which are similar to those described previously.[21]-[24]

Coclusion

In conclusion this study showed that scabies is a prevalent disease in Gaza especially in people of a low socioeconomic status and should be considered as a serious health problem for the population of this region. Early diagnosis and intervention may decrease the burden of the infestation and the complications that the patients may suffer.

References

1. Montesu, M. and Cottoni, F. G.C. Bonomo and D. Cestoni. Discoverers of the parasitic origin of scabies. *Am J Dermatopatholo,* **1991**, 13**,** 425-427.
2. Kettle, D.S. Acari-Astigmata and Oribatida. In: *Med and Vet Entomolo*. London and Sydney: Croom Helm. **1984**, 356-379.
3. Chosidow, O.Scabies and pediculosis. *Lancet,* **2000**, 355**,** 819-826.
4. Commens, C. We can get rid of scabies: new treatment available soon. *Med J Australia,* **1994**, 160**,** 317-318.
5. McCarthy,J, S.,Kemp,DJ.,Walton,SF, Currie BJ. Scabies: more than just an irritation. *Postgraduate Med J.,* **2004**, 80, 382-387.
6. Buczek A., Pabis B., Bartosik K., Stanislawe I., Salata M., Pabis A Epidemiological study of scabies in different environmental conditions in central Poland. *Ann Epidomol.,* **2006**, 16(6), 423-8.
7. Heukelbach J, Wilcke T, Winter B, Feldmeier H . Epidemiology and morbidity of scabies and pediculosis capitis in resource-poor communities in Brazil.*Br J Dermatol*, **2005**, 153(1), 150-6.
8. Abdel-Hafez K, Abdel-Aty MA, Hofny ERM. Prevalence of skin diseases in rural areas of Assiut Governorate, Upper Egypt. *Int J Dermatol*., **2003** , 42, 887–92.
9. Currie BJ, Carapetis JR. Skin infections and infestations in aboriginal communities in northern Australia. *Austrlia J Dermatol*., **2000**, 41, 139–43.
10. Hegazy AA, Darwish NM, Abdel-Hamid IA. Epidemiology and control of scabies in an Egyptian village. *Int J Dermatol*.,**1999** 38, 291–5.
11. Kristensen JK Scabies and Pyoderma in Lilongwe, Malawi. Prevalence and seasonal fluctuation. *Int J Dermatol*., **1991** 30(10), 699-702.
12. Downs AM, Harvey I, Kennedy CT .The epidemiology of head lice and scabies in the UK. . *Epidomiol Infec* ., **1999** , 122(3), 471-7.

13. Sharma RS, Mishra RS, Pal D, Gupta JP, Dutta M, Datta KK. An epidemiological study of scabies in a rural community in India. **1:** *Ann Trop Med Parasitol.* **1984**, 78(2), 157-64

14. Gulati PV, Braganza C, Singh KP, Borker V. Scabies in a Semiurban area of India: an epidemiologic study. *Int J Dermatol*, **1977**., 16(7), 594-8.

15. El Okbi LM, Sarwat MA, el Sayed MH, el Deeb HK Epidemiological studies on human scabies in Cairo. *J Egypt Soc Parasitol*, **1993**, 23(3) , 795-808.

16. Heukelbach J. and Feldmeier H. Scabies. *Lancet*, 2006 . 27, 367(9524), 1767-74 .

17. Sachdev TR, Gulati PV, Prasad P A. study on prevalence of scabies in a resettlement colony (slum area) and its association with some sociocultural and environmental factors. *J Indian Assoc Commun Dis*. **1982**, 5(3-4), 88-91.

18. Larrosa A, Cortes-Blanco M, Martinez S, Clerencia C, Urdaniz LJ, Urban J, and Garcia J. Noscomial out break of scabies in a hospital in Spain .*Euro Surveill*., **2003**, 8(10), 199-203.

19. Ciftci IH, Karaca S, Dogru O, Cetinkaya Z, Kulac M. Prevalence of pediculosis and scabies in preschool nursery children of Afyon, Turkey. *Korean Parasitol*., **2006** , 44, 95-98.

20. Arlian LG. .Biology, host relations, and epidemiology of Sarcoptes scabiei. *Annu Rev Entomol*., **1989**, 34, 139-61.

21. Stanton B, Khanam S, Nazrul H Nurani S, Khair T. Scabies in urban Bangladesh. *J Trop Med Hyg*., **1987**, 90, 219–26.

22. Kenawi MZ, Morsy TA, Abdalla KF, Nasr ME, Awadalla RA. Clinical and parasitological aspects on human scabies in Qualyobia Governorate, Egypt. *J Egypt Soc Parasitol*., **1993**, 23(1), 247-53.

23. Terry BC, Kanjah F, Sahr F, Kortequee S, Dukulay I, Gbakima AA Sarcoptes scabiei infestation among children in a displacement camp in Sierra Leone. *Public Health*., **2001**, 115(3), 208-11.

24. Walton Sf, Holt DG, Gcrrie BJ ,Kemp DJ. Scabies anew disease for a neglected disease. *Adv Parasitol*., **2004**, 57, 309-76.