

Knowledge About Scabies Among Students At High Institute Of Health Science - Hajjah Branch(YEMEN)

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DOI: <https://doi.org/10.30880/ekst.2022.02.02.044>

Received 1 January 2022; Accepted 30 September 2022; Available online 23 November 2022

Abstract: The purpose of this study was to assess the level of Knowledge about scabies among students at the High Institute of Health Sciences - Hajjah branch, Yemen. A cross-sectional study was conducted at the High Institute of health science - Hajjah branch in Hajjah city among 260 students studying at Health Institute . The data were collected by using self administered structured questionnaire. SPSS software was used for data analysis. Approximately 31.5% of students were classified as having adequate knowledge of Scabies . Most of the students reported that scabies is a communicable disease (90.9%),but only (29.7%) of students reported that a parasite is the causative agent of Scabies. Surprisingly, (12.3 %) students know of appropriate drugs for scabies and (39.3 %) students reported that there's a vaccination against scabies . Health facilities were the most common sources of the knowledge among them . This study found that there is an association between (study level, departments and residency) and level of knowledge about the scabies disease among students. ($p = 0.002$, $p = 0.013$, $p = 0.029$) respectively. The result showed that the knowledge level was moderate in students and health facilities were the most preferred sources of the knowledge. Thus, interventions for knowledge improvement should be more on students and the community in Hajjah governorate.

Keywords: Scabies, Students , Hajjah – Yemen.

1. Introduction

Scabies is a skin infestation caused by the burrowing action of a female parasite. Human scabies has played a modest, but a minor role in the history of dermatology[1]. Scabies can affect people regardless of age, gender, race and at all socioeconomic levels or level of hygiene.² It has been approved

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that if a person has had a scabies infestation before, there is a great possibility of getting infested again if they are exposed to the mites [3], [4] .

Scabies mites are found worldwide, affecting all socioeconomic classes and in all climates. Epidemics have been linked to poverty, poor water-supply, sanitation and overcrowding [5].

Scabies is spread commonly in resource-poor communities with crowded living conditions. Some studies suggested higher rates in urban areas and an increased incidence during the winter season [6]. The worldwide prevalence has been estimated at about 300 million cases a year. However, this may be an overestimate [7] or [8], [9]. An epidemiologic study conducted in the United Kingdom, scabies was explored to be more prevalent in urban areas and among women and children. There are no recent prevalence figures for the UK, however incidence is thought to be increasing. Figures in the past suggested about 100 people per 100,000 of the UK population see their GP every month with scabies [1] .

The burden of scabies in developing countries all over the world is high [1]. Epidemiological studies show the main contributing factors in contracting scabies seem to be poverty and overcrowded living conditions [3] or [12]. India is ranked as the 7th country in the world. Mostly 25 million out of the population is influenced by this disease [7]. In Iraq the disease ranges between 0.4 % to 50% in different places. It was reported the prevalence was as 3.3%, 1.2%, 1.9% and 2.7% in (Basrah, Tikrit, Samara and Kirkuk) respectively [13].

In Yemen, scabies is considered one of the endemic diseases related to overcrowding, poverty, poor nutritional status, homelessness and poor hygiene as well as institutions, residential care homes and refugee camps resulting from civil wars in some parts of Hajjah, Amran, Sa'ada, Abyan and Shabwah Governorates [14] , [15] .

A medical team has discovered the existence of 1205 recently infested people by scabies in the directorates of Zinjibar and Khan far in Abyan Governorate. On the other hand, a medical report for the health office has shown that scabies increasingly spreading in 9 districts and the report addressed the health minister to take the urgent procedures to limit the disease in these 9 districts so as not to spread to the rest [15] .

Based on (1999-2004) registration data at Ibn Sina hospital at Mukalla city, it was clear the spectrum of this dermal disease distributed mainly in Hadhramout and in other governorates of Yemen. The percentage among males is 71.13% (138 positive/194 cases diagnosed), and among females is 28.87% (56/194). In Hajjah, recently the number of scabies cases has been increased depending on the reports of the health office and main health facilities there. The cases of infested people reached to the extent of (2150) in its totality only in the year of 2014.

Many studies show that there is a lack of knowledge about scabies. A study was conducted by Mohan K, in India to assess the knowledge of public regarding Scabies and its management, showed that among 1260 of the sample just 20.6% had adequate knowledge [17]. Another similar study carried out by Bela for the same purpose . Some important medico-social factors such as age, sex, religion, caste, place of residence, type of work, period of work, perception and knowledge about disease, treatment and preventive procedures were taken into account. The study found that the knowledge of respondents concerning prevention of scabies increased with the literacy status, 65.8% in illiterate to 95.7% in middle school and above. About (14.1%) per cent respondents were not aware about symptoms of scabies [18].

Also, Rathi SK, et al conducted a study to assess the awareness about scabies among general medical practitioners of Karachi, Pakistan. The study showed that a real number of general practitioners have insufficient knowledge regarding causative organism of scabies. Only 36% of them had a sufficient level of awareness [1].

Furthermore, a survey was carried among general practitioners and dermatologists in Belgium, to explore their knowledge about scabies. The scores on the knowledge test were of an acceptable level and the number of years of experience had an important effect on this score [20].

All the above-mentioned studies showed that there is a lack of knowledge about scabies. The knowledge about scabies among students of health institute is not explored specifically. The surprising number of infested people by scabies in the last year in Hajjah Governorate, which represents the fifth population intensity in Yemen and is in need for more general practitioners and specialists. On the other hand, the outcomes of High Institute of Health Science - Hajjah Branch, who distribute and provide health services in their areas after graduation, form the majority of health workers in the governorate, motivates me as a researcher to investigate this study among them. The researcher's point of view, knowledge represents the corner stone in reducing the amount of any healthy problem. Thus, this study aimed to assess the level of Knowledge about scabies among students at the High Institute of Health Sciences – Hajjah branch.

2. Materials and Methods

2.1 Materials

Study tool & Data collection: Self administered questionnaire used in this study to collect data which was developed by the researcher. Getting the assistance through what he had read of literature review and previous studies as: Rathi, et al in (2009)¹, Lapeere, et al in (2005)²⁰. The questionnaire used in this study was to assess the level of Knowledge about Scabies. There were three possible response options of “Yes,” “No,” and “Don’t know” for each item. Each correct answer scored 1, and the wrong and “don’t know” answers scored 0, and 3 questions selective. The knowledge about scabies was divided into three levels; those with >75% correct answers were classified as “good,” a range of 50-74.9% correct answers was classified as “fair,” and those with < 50 % correct answers were rated as having a “poor” level of knowledge. , Based on (Likert’s scale)

Pilot study was carried out before starting data collection on 10% of all students who were excluded from the universal sample. The questionnaire was in Arabic Language. Item analysis for the questionnaire was good: the Cronbach's alpha score was above 0.638. It is good and fulfills the purposes of the study.

The questionnaire consisted of two parts, the first part was independent variables. Age, gender, department, study level, residential area (urban or rural), monthly family income and family members studied in this study., The second part consisted of the dependent variables which included knowledge about scabies disease (causative agent, transmission mode, associated factors, incubation period, symptoms & signs, treatment, prevention, others and the source of information about scabies). Data was collected by the researcher in February 2015 and a self administered questionnaire completed by students at High Institute of Health Sciences -Hajjah branch.

2.2 Methods

Study design and area: A cross-sectional study design was conducted at High Institute of Health Sciences students-Hajj branch, that located in Hajjah city-Yemen, which consists of 4 departments (specializations) such as Medical Assistant, Nursing Technician, Laboratory Technician and Midwives Technician. The institute provides graduate diplomas 3 years study after secondary school.

- Study Population:

The study population were all students, males and females who were studying in all departments at High Institute of Health Sciences -Hajjah branch, based on enrolled students in the institute.

- Sample Size & Sampling method:

the sample size was 260 students (all students at High Institute of Health Sciences -Hajjah branch) The universal sample technique was used.

- Study Period: 6 month (from September- 2014 to March- 2015

2.3 Ethical consideration

All necessary approval letters to conduct the study was taken . The permission to conduct this study at High Institute of Health Science - Hajjah branch was granted in written approval by its Principal and verbal consent was taken from the students before participation in the study .

2.4 Data analysis

Statistical analysis was carried out using Statistical Package for Social Sciences (SPSS, version 20.0). Descriptive statistics was used for frequency and percentage distribution. Chi-square was used to assess the association between socio demographic factors and the level of Knowledge about scabies among students. A p value of less than 0.05 was considered statistically significant.

3. Results and Discussion

The total 219 students (91.25%) completed the questionnaire forms . (25 ;10%)out of 260 students, who participated in the pilot study, were excluded. And 16 students were absent at the time of data collection. No discarded questionnaires or missing information were found. The socio demographic characteristics of the respondents are shown in **Table 1**,

The majority (122 ; 55.7%) were in the age range between 18 to 22 years. Most students were female (123; 56.2%) and many students were from rural areas forming (142; 64.8%). The majority of the participants (111 ; 50.7%) reported that their monthly family income was lower than 55000 Yemeni rails. Most of the participants reported that their family members are less than 9 members (138 ; 63.0%) while(81; 37.0%) reported that their family members were more than 9 members

Table 1: Socio Demographic Characteristics Of The Student (n=219)

Socio demographic variable		No.	%
Age group(years)	< 22	122	55.7
	22-26	85	38.8
	>27	12	5.5
Gender	Male	96	43.8
	Female	123	56.2
Department	Medical Assistant	65	29.7
	Nurse	72	32.9
	Lab Technician	46	21.0
	Midwife	36	16.4
Study level	First year	57	26.0
	Second year	83	37.9
	Third year	79	36.1
Resident	Urban	77	35.2
	Rural	142	64.8
Monthly Family Income	<55000	111	50.7
	>55000	108	49.3
Family Members	<9 person	138	63.0
	>9 person	81	37.0

Table 2 displays the responses to the knowledge questions showing that (65 ; 29.7%) out of 219 students mentioned parasite as the causative agent of scabies and (52; 23.0%) mentioned bacteria. The information of sources about scabies among students' were diverse, students with a percent of(75;34.2%), reported Health facilities were their major sources of information about Scabies, followed by the Society (59 ; 26.9%). Some students received their information from the Health Institute

(43 ; 19.6%) . Only 42 students (19;10 %) obtained their information from all mass media that represented in (Television, Magazines, Newspaper and Internet) .

Table 2: Selected Items Knowledge of The Student and Resource of Knowledge (n=219)

		No.	%
Causative agent of scabies	Bacteria	52	23.7
	Virus	51	23.3
	Parasite	65	29.7
	Fungus	51	23.3
Resource of knowledge	The health institute	43	19.6
	Healthy facilities	75	34.2
	Society	59	26.9
	Television	36	16.4
	Magazine	4	1.8
	Internet	2	0.9

The result also showed that the Knowledge about causative agent of scabies was low compared to a study done among general medical practitioners of Karachi, Pakistan that showed (102 ; 51 %) of 200 GPs [1]. The reason for that was the general medical practitioners were highly educated and their experiences were more than students among this research .

As shown in **Table 3** , responses to the knowledge questions showed that 199 of students knew scabies as a communicable disease (90.9 %) . Responses to questions about modes of transmission of scabies were a higher proportion and varied as follows: A number of students(175 ; 79.9 %) knew that scabies could be transmitted by using infested individuals' tools, by direct contact skin to skin (153 ; 69.9 %), Sexual contact with infected persons (117;53.4%) and by contact with pets (113 ;51.6%) respectively. There were some misconceptions, however, regarding transmission methods. Fewer respondents knew that scabies can be transmitted by shaking hands (98;44.7%). The responses to questions about associated factors of transmission of scabies showed that a higher proportion recognized them as follows first, poor hygiene (187;85.4%), then followed by the ignorance factor (162; 74.0 %) and finally, over crowdedness (153;69.9%). Regarding signs and symptoms about (7 ; 3.2%) of students agreed that severe itching, usually is worse at night was a symptom, (37 ;16.9 %) of students were knowledgeable that the skin rash was a sign of scabies, and a number of students (72; 32.9 %) considered small grayish burrows as a sign of scabies. (27;12.3 %) students mentioned there are appropriate drugs for scabies . Also, (86;39.3 %) students reported that there is a vaccination against scabies . Respondents' knowledge of means of prevention from scabies were low . (44;20.1 %) of students reported that there should be an isolation for the infested ones, (10;4.6 %) illustrated health awareness about scabies is one of preventive means. On the other hand, some students(27;12.3%) gave the priority to early diagnosis and treatment. Overall.

Table 3 : Items of Knowledge of The Student About Scabies (n=219)

Items of knowledge	Yes		No	
	No.	%	No.	%
Transmission mode:				
Scabies communicabl	199	90.9	20	9.1
By shaking hands	98	44.7	121	55.3
Direct contact skin to skin	153	69.9	66	30.1
Using infested individuals' tools	175	79.9	44	20.1
Contact with pets	113	51.6	106	48.4
Sexual contact with infected persons	117	53.4	102	46.6
Associated factors:				

Over crowdedness	153	69.9	66	30.1
Poverty, poor nutritional status.	84	38.4	135	61.6
Homelessness	98	44.7	121	55.3
Poor hygiene	187	85.4	32	14.6
Refugee camps and prisons	157	71.7	62	28.3
Immunodeficiency	106	48.4	113	51.6
Draught	103	47.0	116	53.0
Ignorance	162	74.0	57	26.0
Incubation period:				
		2-6 WEEKS	< 1 WEEK	
			Or > 6 week	
	88	40.2	131	59.8
Symptoms & signs:				
Severe itching, usually worse at night	7	3.2	212	96.8
The skin rash	37	16.9	182	83.1
Small grayish burrows	72	32.9	147	67.1
Crusts appear in places infection of the skin	31	14.2	188	85.8
There is an effective drug for scabies	27	12.3	192	87.7
Is there a vaccination against scabies	86	39.3	133	60.7
Means of prevention:				
Health awareness about scabies	10	4.6	209	95.4
Early diagnosis and treatment	27	12.3	192	87.7
Isolating the infested ones	44	20.1	175	79.9
Avoiding using the infested person's tools	11	5.0	208	95.0
Never skin-to-skin contact infested ones	13	5.9	206	94.1
Paying attention to public and personal hygiene	11	5.0	208	95.0
Other:				
Have you ever been affected by scabies or one of your family?	210	95.9	9	4.1
Have you ever seen an infected person with scabies?	120	54.8	99	45.2
Is the number of case is increase in Hajjah	55	25.1	164	74.9
Does the syllabus of the institute deal with scabies thoroughly .	130	59.4	89	40.6

The present study showed that knowledge about transmission of mode "Scabies communicable" and associated factors were obvious . The findings were similar with the outcome of the previous study carried out by Rathi SK, et al [1] . However, our study was higher than other previous study conducted by Ebrahim, et al in (2009) in rural Solapur in India that showed (20%) of the individuals wrongly reported that scabies is not contagious [19]. Ebrahim's study was different with the present study because the current study was done among students who were studying in health field. Overall, the results from our study showed that the students had lack of the knowledge level about Symptoms & signs of scabies, which differs from the two previous studies. The first study carried out by the Bela Shah in (2009) in Jodhpur district, Rajasthan that showed about fourteen per cent (14.1%) only respondents were not aware about symptoms of scabies [18]. In addition to the second study that carried out by the Rathi SK, et al ; which reported that as regards the most common clinical feature, 156 out of 200 GPs gave nocturnal itch as the answer [1]. These differences may be because of differences in the study populations . The results from our study showed (12.3%) of students knew an effective drug for scabies and the result concurs with the result of a previous study concluded by Mohan K, et al in (2007), in India . They found that 33.4% of the samples wrongly reported that scabies is a non curable disease [17] .

The students had incorrect information about the availability of a vaccination against scabies. Thus, their responses were (39.3%) . This result was similar to a previous study that showed they realised that around 46.7% victims are currently following appropriate anti - scabies prophylaxis that includes allethrin, permethrin and ivermectin [17] .

The study showed that totality of correct responses about ways to prevent scabies "Means of prevention" were a few and at the same time similar to study carried by Ebrahim A E and Nasarullah S, that showed (82%) of people had inadequate awareness about scabies and its prevention which concluded that there is an urgent requirement to educate the public regarding scabies and its prevention. Similarly, a study carried out by Bela Shah recommended that proper health education about Scabies and awareness of personal protection and preventive measures against Scabies should be carried out [18] .

Table 4, as are all tables, should be referenced in the text. Which shown in The level of knowledge was good of respondents 69 (31.5%) and fair knowledge of 150 students. with a percent of (68.5%).

Table 4: Level of Knowledge about Scabies Among Students

Itmes	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	69	31.5	31.5
	Fair	139	63.5	63.5
	poor	11	5	5
	Total	219	100	100

This result in this table showed there was a moderate of knowledge level among students at the High Institute of Health Sciences - Hajjah branch table 5, which was (69; 31.5) % out of 219. This finding was higher than the previous study, which showed that the level of knowledge was low among public regarding scabies and its management, in Indian which found only 20.6% of 1260 samples [17] . This is because the previous study was done among public participants but the present study was conducted among students who have higher knowledge about scabies that was acquired from diverse sources that they found the scabies cases in their community firstly. Secondly, they were training in health facilities (hospitals, health centers) and they were studying some relevant subjects (such as epidemiology, infectious diseases, parasites and public health) at Health Institute .

Table 5, The findings showed that there was more strongly association between the study level and the level of knowledge about scabies ($p = 0.002$), the association between a department and knowledge level about scabies was strong ($p = 0.013$) and we found an association between resident area and knowledge level ($p = 0.029$) about scabies. However, the relation between age and knowledge level about scabies was found ($p = 0.191$) which means there was no association as well as other socio demographic variables such as gender, family members, monthly family income. These were shown as in (Table 5).

Table5: The Association Between Knowledge And Socio Demographic Variable

Socio demographic variable	Level of knowledge				Total	P-value
	Good		Fair			
	No.	%	No.	%		
Age group(years)						
< 22	93	76.2	29	23.8	122	0.191**
22-26	72	84.7	13	15.3	85	
>27	11	91.7	1	8.3	12	

<i>Gender</i>							
Male	82	85.4	14	14.6	96	0.096*†	
Female	94	76.4	29	23.6	123		
<i>Department</i>							
Medical Assistant	50	76.9	15	23.1	65	0.013*†	
Nurse	54	75.0	18	25.0	72		
Lab Tec	36	78.3	10	21.7	46		
Midwife	36	100.0	0	0.0	36		
<i>Study level</i>							
First year	39	68.4	18	31.6	57	0.002***†	
Second year	64	77.1	19	22.9	83		
Third year	73	92.4	6	7.6	79		
<i>Resident</i>							
Urban	68	88.3	9	11.7	77	0.029*†	
Rural	108	76.1	34	23.9	142		
<i>Monthly income</i>							
<55000	88	79.3	23	20.7	111	0.810*†	
>55000	88	81.5	20	18.5	108		
<i>No of family</i>							
<9 person	113	81.9	25	18.1	138	0.460*†	
>9 person	63	77.8	18	22.2	81		

*p<0.05, ** p<0.01, †Pearson Chi-Square

The results showed: the Chi-Square analysis indicated there was an association between (study level, departments and residency) and level of knowledge about scabies disease among students. This finding was similar to the other studies, (Bela Shah, 2001) [18] and (Lapeere H, 2009) [20], at least with regard to the academic level and specialization. This is also similar to the study by (Mohan K, et al 2007) in relation to residency which recommended and concluded that rural communities require more information and education regarding skin related contagious diseases and their management measures [17]. Our study also found that variables such as age, gender, monthly family income and family members did not have a significant association with the level of knowledge because the students are learning the same knowledge, skills and expertise (studying at the Institute of Health and trained in the same health facilities both male and female). This concurred with the findings of the previous studies, as (Rath, et al, 2009) [1] and (Bela Shah, 2001) [18] at least with respect to the variables of age, gender. That means there were several socio-demographic influencing factors of the knowledge level about scabies disease among students as study level, departments and residency. The present study showed that students have acquired knowledge from several sources. The most important source was health facilities, followed by societies, Health Institute and finally various media such as television.

That's why we concluded scabies is one of the health problems in Hajjah governorate. The strength of this study is the knowledge score was determined specifically among students of health institutes who study in the medical field. The other strength is that this study showed the sources of knowledge on scabies disease among health institute students. This study also showed that the shortness of the health institute syllabus to cover this topic which can be an invitation for the institute management to make some modifications . One of the limitations of this study, it was done in one institute and that because there is only one in Hajjah. Another limitation, it was done during difficult political circumstances. There is a need for similar studies among health workers and the public. In addition, a research about the prevalence of scabies can be obtained to know the extent of its prevalence and this research can be a supplement to ensure a better understanding of the disease to enable the formulation of a comprehensive long term control programs.

4. Conclusion

In conclusion, the results showed that the knowledge level was moderate in students . Study level, departments and residency are the only influencing factors on knowledge level among students. Also, health facilities were the most sources for obtaining the knowledge. Thus, interventions for knowledge improvement should be more on students and the community in Hajjah governorate.

Acknowledgement

The author would like to thank the Prosecution of Graduate Studies, Sana'a University, for its support. I would like to thank the Principal, teachers and students of High Institute of Health Science Hajjah branch, Yemen for their permission and cooperation to conduct the study at the Institute.

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