

(RESEARCH ARTICLE)



Assessment of causes, knowledge and risk factors of scabies among general population in Wasit province, Iraq

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Abstract

Scabies is a serious global public health problem that may impact people from all socioeconomic types of life. Poverty and overcrowding appear to be the major causes of scabies infestation. The goal of this study was to determine the causes, risk factors, and awareness of scabies among the general population in the Wasit, Iraq. A total of 143 individuals were studied in this cross-sectional study at the Wasit province's general hospitals/consulting dermatology rooms. Data collection extends from the 1st of April to the 1st of July 2021. A pre-tested questionnaire was adopted and filled through a face-to-face interview and indirect through an electronic platform published on social media. Data were analyzed using descriptive and analytical statistics. The sociodemographic features of the subjects revealed that there were 60 (42%) males and 83 females (58%). The majority (84.6%) of the respondents was from urban areas and (15.4%) were from rural areas. About (51.7%) of the participants have 5-7 members in their families. Scabies is a well-known dermatological disease, commonly seen in low socioeconomic and crowded families that share beds and towels. Thorough their medium education, participants have a good percentage of knowledge that scabies is contagious but curable.

Keywords: Scabies; Pruritus; Knowledge; Sociodemographic; Iraq

1. Introduction

Scabies is a contagious skin infestation caused by parasitic mite (*Sarcoptes scabiei* var *hominis*) which is associated with pruritus, lesions, and rashes [1]. The World Health Organization (WHO) named scabies as a neglected skin disease in 2009, and it is a major health problem in many impoverished nations. Individuals who are infected must be identified and treated as soon as possible since a misdiagnosis can result in outbreaks, morbidity, and an increased economic burden. Although it is not a life-threatening condition, its prevalence is considerable, with an estimated 300 million people globally [2]. Its infestation and outbreaks impose a significant financial burden on local governments, making it difficult to control and cure [3, 4]. Scabies may afflict both men and women, as well as people of all ages, from children to adults. Inadequate health circumstances such as poverty, overcrowding, and poor cleanliness are linked to it [5, 6].

It is spread from person to person by direct touch, and the most common symptom is pruritus that gets worse at night. Death can occur as a result of hypersensitivity and other complications such as impetigo, septicemia, abscesses, folliculitis, and cellulitis [7]. Scabies can be misdiagnosed since it resembles other skin disorders, therefore skin scraping is the best way to diagnose it [8]. Scabies management required a good understanding of the disease and its preventative strategies. As a result, the goal of this study was to assess the general public's awareness, causes, and risk factors for scabies in Wasit, Iraq.

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2. Material and methods

2.1. Study design and setting

An observational cross-sectional study was conducted in Wasit governorate. Two government hospitals in Wasit were selected randomly to conduct this study.

2.2. Study time and duration

Data were collected for approximately 3 months starting from the 1st of April until the 1st of July 2021.

2.3. Sampling method and sample size

The final sample size obtained was 143. The samples were chosen at random from two government hospitals (Alzahara teaching hospital and Alkarama teaching hospital). The questionnaire link was also given to responders via Facebook groups, and the questions were hosted and distributed using a Google form. A total of 143 individuals of all genders were involved in the research.

2.3.1. Inclusion criteria

All patients currently infected with scabies who could communicate well were considered.

2.3.2. Exclusion criteria

Healthy people who do not infected with scabies.

2.4. Data Collection

The researcher conducted the interview using a structured questionnaire form through direct communication with patients and indirect using the electronic form published on social media platforms.

The questionnaires are divided into three sections.

Part 1: Socio-demographic characteristics-related questions:

- Gender
- Age
- Educational level
- Address
- Employment
- Economic situation
- Crowding index (number of family members\number of rooms in the house).

Part 2: Causes and risk factors of scabies disease toward general population in Wasit province that are infected with scabies. The causes and risk factors were assessed by 14 items, which were "yes" or "no" questions.

Part 3: Questions to assess knowledge of the patients about scabies disease. Their knowledge was assessed by 6 items and was answered by a single choice question.

2.4.1. Ethical consideration

Official approval was obtained from the Wasit health department and hospital managers before the study. The aim of the study was explained to all the participants and their consent was obtained. The consenting patients were interviewed after their consultation by a doctor. The questionnaire ensured the anonymity of the respondents and required no names or contact information to be provided. The interviews were conducted in a discreet corner away from other persons to avoid any overhearing of the conversation.

2.5. Statistical Analysis

Data analysis was computer-aided using SPSS version 21. Quantitative variables were presented as means and standard deviations (SD) while qualitative variables were presented by frequencies.

3. Results

The sociodemographic characteristics of the participants are demonstrated in table1. The study comprised a total of 143 respondents who presented to the consulting dermatology room with complaints of scabies symptoms. Of this total 21(14.7 %) were aged between 1-14 years, 26 (18.2%) of them were aged between 15-20 years, while 76(53.1%) were aged 21-40 years, and 20 (14%) were aged more than 40 years. Males made up 42% (60 respondents) of the overall population, while females made up 58% (83 respondents). The majority, 121 (84.6%), of the respondents were living in urban areas, whereas 22 (15.4 %) of them were from rural areas.

Table 1 Sociodemographic characteristics of the participants in Wasit city

Age (years)		Frequency	Percentage
	1_14	21	14.7
	15_20	26	18.2
	21_40	76	53.1
	>40	20	14.0
	Total	143	100.0
Gender			
	female	83	58.0
	Male	60	42.0
	Total	143	100.0
Living area			
	Rural	22	15.4
	City	121	84.6
	Total	143	100.0

More than half of respondents, 106 (74.1%), were from AL-kut city (chart 1), 18 (12.6 %) were from Al-hay city, 8 (5.6 %) were from Al-Nu'maniya city, 4 (2.8 %) were from Al-Zubaidiah city, 3 (2.1%) were from Al-Suwirah city and 2 (1.4%) were from AL-Aziziyah city and Badrah.

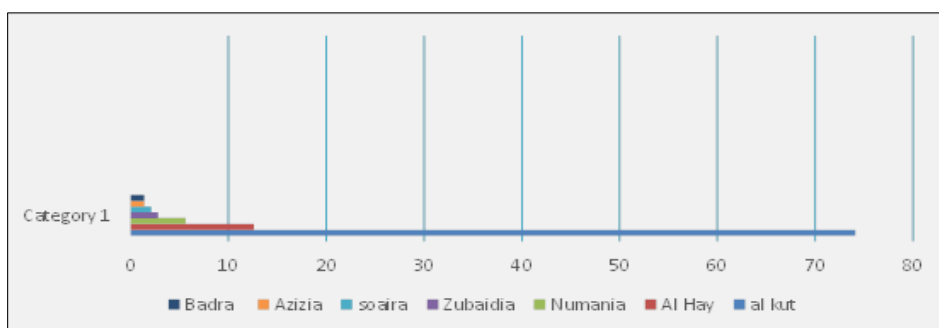


Figure 1 Frequency distribution of living areas of the participants

Regarding educational level 46 (32.2%) of respondents were primary, (22.4%) were secondary, 56 (39.2%) were bachelor's degree (college) and 9 (6.3 %) had a higher degree level. A majority of the respondents, 109 (74.7%), were unemployed while the rest, 34 (23.3%), were employed. More than half of respondents, 76 (53.1%) have a medium economic situation, 55 (38.5%) were in a low economic situation and 12 (8.4 %) were in a good economic situation, as shown in (Table 2)

Table 2 Frequency distribution of educational level, occupation, and economic situation among participants

Educational level	Frequency	Percentage
Primary	46	32.2
Secondary	32	22.4
College	56	39.2
Higher education	9	6.3
Total	143	100.0
Occupation	Frequency	Percentage
Student	44	30.8
Teacher	18	12.6
Housewife	3	2.1
Employer	14	9.8
Free worker	62	43.4
Military	2	1.4
Total	143	100.0
Economic situation	Frequency	Percentage
Poor	55	38.5
Medium	76	53.1
Good	12	8.4
Total	143	100.0

Table 3 Demonstrate the number of family members and rooms in the house. The causes and risk factors feature of the study participants shows that about 51.7% (74) of the participants have 5-7 members in their families, 24.5 % were have 2-4 members, 17.5 % were 8-10 members and 6.3 % were have more than 10 members in their families. About half of the participants (49.7%) had less than 3 rooms in the house, 46.2% had 3 to 6 rooms while only 4.2 % had more than six rooms in the house.

Table 3 Frequency distribution of the number of family members and rooms among participants

Number of family members	Frequency	Percentage
2_4	35	24.5
5_7	74	51.7
8_10	25	17.5
>10	9	6.3
Total	143	100.0
Number of rooms in the house	Frequency	Percentage
Less than 3	71	49.7
3_6	66	46.2
>6	6	4.2
Total	143	100.0

Table 4. A majority of the participants (54.5%) answered yes about other family members infected with scabies while (45.5%) answered no. More than half of the participants (63.6%) answered no about relatives infected with scabies while others 36.4% answered yes. Seventy-two participants (50.3%) answered no about the history of contact with an infected person and 71 (49.7 %) answered yes.

The majority of the respondents, 106 (74.1 %), answered no about the military member in their family and 37 (25.9 %) answered yes. Seventy participants (49.0%) answered yes about the history of travel or overnight stay outside the house and 73 (51.0%) answered no. Eighty five (59.4 %) answered no about sharing clothes with others while 58 (40.6 %) answered yes.

Only 7% had a history of multiple sexual partners and 12.6% had a history of the previous infestation. Only 2.1% had a history of prison entry. Regarding family members with itchy skin lesions, 58.7% had a positive history. Out of female participants, 81.8 % of them were pregnant. Only 9.9% of all participants had a positive history of chronic disease like diabetes mellitus (the frequency was 6).

Table 4 Frequency distribution of risk factors of scabies among participants

	Yes	%	No	%
Family members infected with scabies	78	54.5	65	45.5
Relatives infected with scabies	52	36.4	91	63.6
Contact with infected person	71	49.7	72	50.3
Military in the family	37	25.9	106	74.1
Travel or overnight stay outside the home	70	49.0	73	51.0
Sharing clothes with others	58	40.6	85	59.4
History of multiple sexual partners	10	7.0	133	93.0
History of the previous infestation with Scabies	18	12.6	125	87.4
History of prison entry	3	2.1	140	97.9
other skin diseases like psoriasis or eczema	27	18.9	116	81.1
Taken any creams or ointment before Diagnosis	44	30.8	99	69.2
Secondary bacterial infestation	19	13.3	124	86.7
Family members with itchy skin lesions	84	58.7	59	41.3
History of chronic disease or immunosuppressant drugs	15	9.9	128	90.1

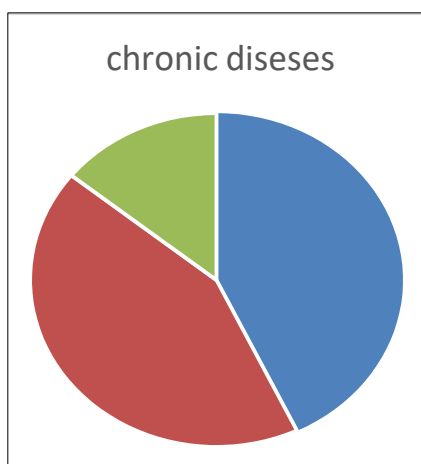


Figure 2 Frequency distribution of chronic disease and steroid abuse among participants. Diabetes 42.9%, malnutrition 42.9%, and steroid abuse 14.2%

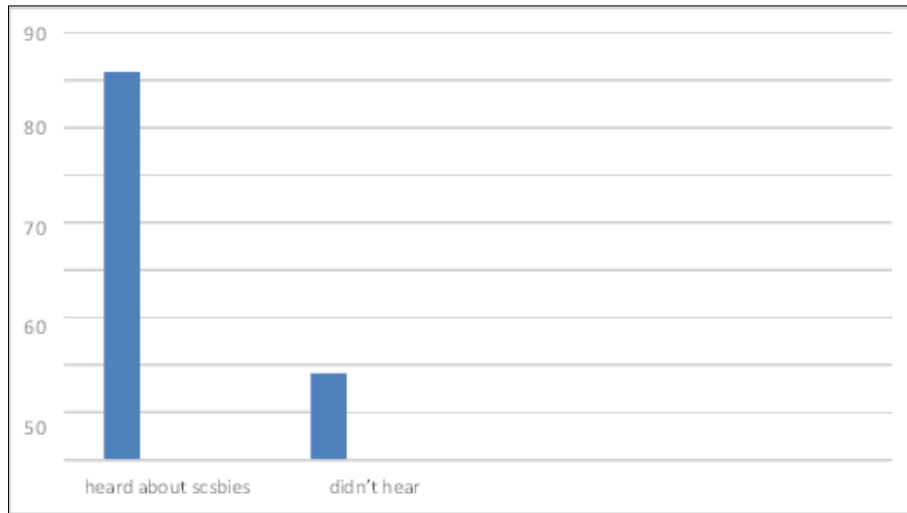


Figure 3 Frequency distribution of the respondents who heard about scabies show: 80.1% of participants heard about scabies and 17.9 did not

Table 5 Participants' scabies knowledge pieces are displayed. Seventy-three (51.0%) of the participants said they had no idea what causes scabies, followed by 43 (30.1 %) who said parasite, 6 (4.2 %) who said virus, and 21 (14.7 %) who said bacteria. The majority of participants, 93 (65%), they answered that scabies transmitted by direct skin to skin touching followed by 49 (34.3 %) they answered don't know. Regarding symptoms of the disease, 88.1% answered itching and 11.9% answered red patchy nodules. Of all participants, 64.3% believed that all ages affected by scabies and 34.3% they don't know.

The majority (77.6%) believed that sharing clothes with an infected person transmit the disease while 21% answered no and 1.4% doesn't know. Also, 79.7% of the respondents answered yes about if the infected person needs insolation while 17.5% answered no and followed by 2.8% don't know. And finally, 97.9% of participants answered yes about scabies is a treatable disease and 1.4% answered no followed by 0.7% don't know

Table 5 Displays knowledge items for scabies among participants

Knowledge	Right answer	%	Wrong answer	%	Don't know	%
Cause of scabies	43	30.1	27	18.9	73	51.0
Transmission	93	65	1	0.7	49	34.3
Who are affected	92	64.3	2	1.4	49	34.3
Sharing clothes with an infected person transmit the disease	111	77.6	30	21	2	1.4
Does infected person need insolation	114	79.7	25	17.5	4	2.8
Can scabies be treated	140	97.9	2	1.4	1	0.7

4. Discussion

This study found that more than half of participants (53.1%) are young age 20- 40 years, the frequency of infected children, 12 years and below, was 14.7% unlike another Iraqi study in Tikrit which demonstrate 31.1% frequency of infestation [9]. Females were more prone to disease than males (58% vs 42%) while a study by Mahmood and his colleagues [2008] reported that 54% were males and 46% were females [10]. The study's limitations might lead to an overestimation or underestimation of the real extent of the illness in various Wasit regions which gave results of 84.6 % were living in urban areas most of them from Al-Kut city (74.1%) and only 15.4% were living in a rural area unlike Egyptian study which show that 59% were from a rural area [11].

Regarding family education, our result show that 32.2% of them had primary, 22.4% secondary, 39.2% had bachelor's and 6.3 % had a higher degree, compared to another study which showed 50% of the mothers had no formal education, 44.2 % had received elementary school, and 5.8 % had received secondary or higher education [12].

Socioeconomic status of the patients show more than half (53.1%) were medium and 38.5% were poor while in Girma *et al*, [12] found that 40.4% were poor and 39% were medium economic level.

The present study showed crowding situation, 5-7 members, in 51.7%, and 13.8% more than 7 members in the family. Regarding room number, 49.7% of the houses was small which containing less than 3 rooms, in another research, more than three-quarters of the participants (77.3%) had a family size of more than or equal to five, and 80.2 % lived in a tiny house with their children sharing a bed (Girma *et al.*, 2018). Scabies is spread from person to person by direct skin-to-skin contact. Only 5 to 10 mites are found on the typical host. Patients with crusted scabies can be infected with millions of mites and thus are highly contagious, which may explain the high frequency of cases in family contacts with infected relatives and family members (54.5%), as well as in contacting with infected people or sharing clothes with others (49.7 %, 40.6 %), as compared to another study 83.3% had contacts with infected ones [13]. As a result, family members should also be checked and treated.

In comparison to Egyptian research for school children, about 58.7% of participants reported a family member who had itchy skin lesions. A family member with itchy skin sores affected 15.8% of the children [11].

One of the common risk factors of the disease is diabetes mellitus (42.9%) and was the most common disease (59.6%) in a study by Wang *et al.*, [14]. The knowledge of Scabies disease was high among participants since there were 81.8% had ever heard about scabies disease before, while 18.2% of the participants were never heard about it before almost the same result in the Saudi study which gave a percentage of 96.6 heard about the disease and only 3.4% did not [13]. Concerning the general knowledge toward causes of Scabies disease half of respondents did not know what can cause Scabies disease, 51% didn't know the correct answer, whereas, in the Baradah *et al.* [13] research, 37.8% of the participants said they didn't know the cause of scabies.

Regarding the level of knowledge about the transmission of scabies disease, most participants (65%) know that scabies is transmitted by direct skin to skin contact and 35% don't, in comparison to another study almost three quarters of the respondents know that contacting an infected person can transmit the Scabies disease (74.8%), and 16% did not know how Scabies transmit from an infected person to another [13].

Nearly all of the participants in present study considered scabies as a treatable disease (97.9%) while only 1.4% of them think that scabies have no cure. While only 1.7% of them seen that scabies have no cure. In comparison to the Saudi study, nearly all of the participants 89.1% know that scabies disease had a cure [13].

In addition, 77.6% of the participants in the current study think that exchanging clothes with an infected person spread scabies disease while 21% of them didn't. Only 79.7% agreed with infected patient isolation, while in the Saudi study showed that 92.4% of participants agreed on Scabies patients have to be isolated from other people [13].

5. Conclusion

Scabies is a well-known dermatological disease, commonly seen in low socioeconomic and crowded families that share beds and towels. It has a prominent level of understanding of the condition among population. Further educational initiatives are suggested to avoid the harmful impact of scabies on the community and the quality of an individual's life.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declared that there is no conflict of interest.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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