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Evaluation of the Knowledge, Attitude, and Practices toward Scabies among Hopsotial Outpatients in Jalalabad City, Afghanistan

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ABSTRACT

Background: Scabies is widespread skin disease in tropical and subtropical areas and is particularly prevalent in developing regions with low socioeconomic conditions. Scabies can be effectively prevented with proper education. Therefore, this study aimed to determine the level of knowledge, attitude, and practices toward scabies among hospital outpatients in Jalalabad City, Afghanistan.

Materials and Methods: A cross-sectional study was conducted on 442 individuals who visited the adult outpatient departments (OPD) at public and private health facilities for various health services from August 1 to November 15, 2023. A non-probability convenience sampling technique was used to select study participants, and data was collected through structured questionnaires. The data was then analyzed using the statistical package for social sciences (SPSS) version 27.

Findings: In this study, a total of 442 participants were enrolled; 67.6% of them were male and 32.4% were female. Regarding knowledge, half of the participants had heard about scabies, and more than 70% were aware of its signs and symptoms. The majority of respondents (52%) had a moderate level of knowledge about scabies, while 24% had poor knowledge and 24% had good knowledge. The respondents' attitudes were generally good and their practices were moderate. The study showed a statistically significant relationship between the knowledge score and demographic variables, such as gender, educational level, and family income.

Conclusion: The study concluded that, overall, participants reported moderate knowledge of scabies. Additionally, the respondent's knowledge about scabies is somewhat influenced by their demographic factors. Thus, there is a need for enhanced health education, awareness initiatives, and preventive programs to improve community knowledge and support the implementation of effective prevention measures.

Keywords: Scabies, Knowledge, Attitude, Practice, Hospital, Outpatient

INTRODUCTION

Scabies is a contagious skin infection caused by a parasitic mite that primarily infects humans.(Seetan et al., 2021). Scabies is a neglected parasitic disease that is prevalent in developing countries, particularly in parts of Africa, Egypt, Central America, and Southeast Asia (Afzal et al., 2020). It has a significant global prevalence, affecting approximately 300 million people worldwide (ALshehri et al., 2018). Globally, the prevalence of scabies varies widely, ranging from 0.3% to 71%, and it accounts for 0.21% of the total disability-adjusted life years (DALYs) worldwide (Misganaw et al., 2022). Scabies is very common in developing countries compared to developed countries; scabies is more sporadic, occurring in individual cases (Afzal et al., 2020). Scabies can infect individuals of both genders and all age groups, from children to adults. It is often associated with poor health conditions, such as poverty, overcrowding, and inadequate hygiene practices (ALshehri et al., 2018). The primary clinical manifestations of scabies include skin lesions such as erythematous papules, pustules, small burrows, and tunnels, as well as intense itching. However, the complications

of scabies are often underestimated. Scabies can directly impact the quality of life due to sleep disturbances caused by pruritic, as well as stigma, discrimination, and psychological distress. In resource-limited countries, scabies is also associated with an increased burden of secondary skin infections. Specifically, infections with Group A streptococci can lead to acute post-streptococcal glomerulonephritis and acute rheumatic fever (Lopes et al., 2020). Physical contact is the usual way that scabies is spread from person to person. It is extremely common for transmission to occur within families, especially from mother to child. The majority of the time, scabies infections arise from unhealthy behaviors, including sharing bedding or personal items, clothes-exchanging, and poor personal hygiene. A variety of other factors, including crowded human populations, such as refugee camps, low socioeconomic levels, unfavorable environmental circumstances, and a lack of awareness regarding personal hygiene, which can facilitate the spread of various contagious skin diseases (Seetan et al., 2021; Walton & Currie, 2007). Scabies is often transmitted through sexual contact among young adults. However, it's important to note that even a single case of scabies introduced into a crowded community can lead to an outbreak (Ogunbiyi et al., 2005). Typically, the mites that cause scabies can survive off a human host for 24 to 36 hours (Cohen, 2017). Delayed treatment due to a delayed diagnosis, limited access to treatment, non-adherence to treatment, or a failure to treat all members of an affected household is linked to continuous scabies transmission within communities (Lopes et al., 2020). A survey conducted by the World Health Organization (WHO) in the Nusai district of Badakhshan province, Afghanistan, revealed that the most prominent symptom of scabies among the patients was intense itching, especially at night. The majority of the survey participants (94%) were unaware of scabies, which may be due to the neglected status of the disease in that region (Dawoodzada, 2017). Another study conducted in Helmand Province, Afghanistan, found that 44% of the participants reported being informed about scabies, while over half (56%) were unaware of scabies. Based on these findings, the community's awareness and knowledge about scabies are poor (Dawoodzada, 2017). An awareness and education program about scabies and its prevention measures could be particularly important for vulnerable groups that are disproportionately affected by scabies, such as the very poor, children, the elderly, the sick, and the homeless. However, there is a lack of studies evaluating the knowledge, attitudes, and practices regarding scabies among residents in Jalalabad City. Therefore, this study aimed to determine the level of knowledge, attitudes, and practices towards scabies among hospital outpatients in Jalalabad City, Afghanistan.

MATERIALS AND METHODS

Study Setting and Design

A cross-sectional study was conducted on 442 participants who visited the adult outpatient departments (OPD) of public and private health facilities for various health services. Thus, the study was not restricted to scabies patients. The health facilities included three public hospitals: Nangarhar University Teaching Hospital, Nangarhar Regional Hospital, and Fatima Zahra Hospital, and two private hospitals: Dauwodzai Medical Complex and Rokhan Hospital. The selection criteria were: 1) public and private hospitals registered with the Ministry of Public Health and located in Jalalabad City, Afghanistan. 2) Participants who are willing to participate in the study. 3) Age ≥ 18 years. 1) Participants who are not residents of the respective locality were excluded from the study. Data collection took place from 1st August to 15th November 2023.

Samples Size and Sampling technique

The Epi-Info (http://www.openepi.com/SampleSize/SSMean.htm) sample size calculator was used to identify a representative sample with consideration of the Jalalabad City population, which was estimated at approximately 356,274 by the Asylum Report ("The State of Afghan Cities Report 2015"). Archived from the original on (2015-10-31) with a 95% confidence level, 50% expected frequency, 1.0 affected size, and 5% margin of error. The required minimum sample size was 385 participants. The sampling method chosen is non-probability convenient sampling for data gathering. To account for the potential statistical non-response rate and increase the study's statistical power, the minimum required sample size of 384 was increased by 15%. This additional 15% equals 57.6, which was rounded up to 58. Therefore, the

total number of participants to be selected for the study was 384 + 58 = 442.

Data Collection

The questionnaire for the survey was modified based on a similar study carried out in Jordan and Pesantren Darul Fatwa, Jan (Seetan et al., 2021; Yusof et al., 2015), with some minor changes according to the context of Afghanistan to meet our objectives. The survey questionnaire had a total of 44 questions, divided into four parts to collect the key variables for the study: The first part, consisting of 7 questions, regarding the socio-demographic characteristics of the patients; the second part, consisting of 14 questions, related to the knowledge of patients toward scabies; the third part, consisting of 9 questions, regarding assessing attitude towards scabies; and the last part, consisting of 14 questions regarding practices towards scabies. Data was collected by four trained survivors and was supervised by the principal investigator weekly.

Overall, Knowledge Score

A scoring system was used to evaluate the participants knowledge regarding scabies. The knowledge score was calculated as a continuous variable by adding up the number of correct answers the participants provided for 14 questions. Each correct answer was awarded 1 point, while the wrong or uncertain response received 0 points. The maximum achievable knowledge correct score was 14 for each respondent. The knowledge scores were then divided into three levels. 1: Poor knowledge (<7) scores; 2: Moderate knowledge (7–10) scores; 3: Good knowledge (10–14) scores (Seetan et al., 2021).

Pilot Study

The questionnaire was pre-tested on a small sample of 50 respondents for one day to confirm its validity and reliability. The Cronbach alpha test was used to assess the reliability of the tool. The results demonstrate the tool's acknowledged reliability: 0.72 for knowledge, 0.74 for attitude, and 0.83 for practice questions. The pilot study's observation was excluded from the final analysis.

Ethical considerations and consent to participate

This study received ethical approval (IRB No. 133, dated 13/07/2023) from the Department of Dermatology, Faculty of Medicine, Nangarhar University Institutional Review Board (NUFM-IRB). All participants provided written informed consent before taking part in the study. The study was conducted in accordance with the principles outlined in the Declaration of Helsinki (as revised in Fortaleza, Brazil, October 2013).

Statistical Analysis

The initial data were entered into an Excel spreadsheet and then exported to the SPSS Version 28.0 for analysis. The distribution of quantitative data was tested for normality using the Shapiro-Wilk test and summarized as the mean ± SD with approximately normal distributions, or as median and interquartile ranges (IQR) for continuous variables with skewed distributions. All qualitative data was recorded as numbers (n) and percentages (%). For comparison between two groups of categorical data, the chi-square test was used. p-values less than 0.05 were considered as statistically significant.

RESULTS

Sociodemographic characteristics of study participants

In this study, a total of 442 respondents were enrolled; 299 (67.6%) of them were male and 143 (32.4%) were female. The median age of the study respondents was 28 (37–21) years (range, 18–80). The detailed sociodemographic distribution of the respondents is shown in Table 1.

Table 1. Demographic characteristics of study respondents [N= 442].

Variables	Frequency	Percentage
Age category (years)		
- 18-30	288	65.2
- 31-42	83	18.8
- 43-55	47	10.6
- >55	24	5.4
Gender n (%)		
- Male	299	67.6

- Female	143	32.4
Marital status n (%)		
- Married	286	60.6
- Unmarried	174	39.4
Residence n (%)		
- Rural	264	59.7
- Urban	178	40.3
Family Income n (%)		
- High	12	2.7
- Medium	272	61.5
- Low	158	35.7
Occupation n (%)		
- Government employee	27	6.1
- Non- Government employee	102	23.1
- Unemployed	313	70.8
What is your educational level? n (%)		
- Uneducated	176	39.8
- Primary School	54	12.2
- Secondary School	60	13.6
- High School	83	18.8
- University	69	15.6

Knowledge toward scabies among study participants

From the total population interviewed, half of the respondents revealed that they had heard about the scabies, while 50% reported that they had never heard about the scabies. The majority of respondents 230 (52%) had a moderate (7-10) level of knowledge about scabies, while 106 (24%) had poor (< 7) knowledge and 106 (24%) had good (10-14) knowledge (Figure 1).

Table 2. Knowledge toward scabies among study participants [N= 442].

Variables	**Frequency**	**Percentage**
Have you ever heard of scabies?		
- Yes	221	50
- No	221	50
What is the etiology, or cause?		
- Sacroptesscabiei*	64	14.5
- Germs	84	19
- The impact of scratching	101	22.9
- Unknow	193	43.7
What is the symptoms and sign?		
- Got small to large spots which are reddish and wet	68	15.4
- Itching at night and feel the heat with pus*	335	75.8
- I do not know	39	8.8
Parts of the body that are affected		
- Between fingers, armpits, waist, genitals, elbows, and wrist*	318	71.9
- Part that is often being covered	21	4.8
- Mostly at genital area	78	17.6
- I do not know	25	5.7
Transmission of scabies disease		
- Through skin-to-skin contact as well as through the patient's clothing, towels, bed linen, and other items*	250	56.6
- Through skin contact only	25	5.7

- Through clothes and bed only	43	9.7
- I do not know	124	28.1
Who is susceptible for scabies?		
- All age groups, particularly teenager*	276	62.4
- Teenagers exclusively	42	9.5
- Only in specific age groups	17	3.8
- I do not know	107	24.2
Dose scabies spread through clothing exchanges with an infected person?		
- Yes, can spread*	335	75.8
- When an immunity is low	11	2.5
- No, cannot be spread	20	4.5
- I do not know	76	17.2
Can scabies be harmful to the health of skin?		
- Yes*	389	88
- No	16	3.6
- I do not know	37	8.4
Does quarantine need for the patient?		
- No, simply require routine care	173	39.1
- Simply stay away from the patient	70	15.8
- Yes, require isolation*	121	27.4
- I do not know	78	17.6
How can we stop the spread of the scabies disease?		
- Treat and disinfect clothes and bed linen at the same time*	268	60.6
- Avoid close contact with others if you have scabies.	78	17.6
- Require regular treatment only	60	13.6
- I do not know	36	8.1
Can scabies be avoided by drying a mattress and pillow?		
- Yes*	319	72.2
- No	46	10.4
- I do not know	77	17.4
How can scabies be prevented?		
- Bath twice a day with soap and avoid direct contact with infected patients *	162	36.7
- Bath twice a day and keep the cleanliness of clothes	70	15.8
- Avoid bedding, clothes, and towels from coming into contact with scabies patients.	126	28.5
- I do not know	84	19
Following diagnosis, environmental disinfestation by pesticide spray is necessary?		
- Yes*	282	63.8
- No	77	17.4
- I do not know	83	18.8
Dose every member of the infected patient's family need to be examined and followed?		
- Yes*	316	71.5
- No	56	12.7
- I do not know	70	15.8

Attitudes toward scabies among study participants

The respondents' opinions on scabies are shown in Table 3. Regarding scabies, the attitude level was good (6–9) among the majority of the respondents, 353 (79.9%); 72 (16.3%) had a moderate (4-6) attitude among the respondents, while 17 (3.8%) had a poor attitude (less than 4) about scabies.**Table 3.** Attitudes toward scabies among study participants [N= 442].

Variables	**Strongly* Agree n (%)**	**Agree* n (%)**	**Lees Agree n (%)**
Every week, pillows and mattresses are dried	238 (53.8)	146 (33)	58 (13.1)
Should scabies patients be kept in isolation?	144 (32.6)	161 (36.4)	137 (31)
Did not share clothes, towels and bedding with others?	250 (56.6)	137 (31)	55 (12.4)
Scabies patients do not need to be avoided?	137 (31)	85 (19.2)	220 (49.8)
Is practicing good personal hygiene essential for preventing scabies?	283 (64)	134 (30.3)	25 (5.7)
Is staying away from those who have scabies really necessary?	265 (60)	133 (30.1)	44 (10)
Is it possible to avoid scabies by good personal hygiene?	250 (56.6)	149 (33.7)	43 (9.7)
If cases of scabies are identified, prompt treatment is necessary to prevent the disease from spreading?	286 (64.4)	115 (26)	41 (9.3)
In addition to good personal hygiene, maintaining a clean and healthy environment is also crucial for avoiding the transmission of scabies?	223 (53.4)	159 (36)	47 (10.6)

Practices (personal hygiene) toward scabies among study participants

In general, the majority of study participants correctly answered all questions regarding practices (personal hygiene and habits) toward scabies except for three questions: changing bed linen > 2 weeks (53.8%), changing pillowcase > 2 weeks (58.4%), and drying the pillow once a month (41.9%). Other information regarding practices toward scabies are summarized in Tables 4–5.

Table 4. Practices toward scabies among study participants [N= 442].

Variables	**Frequency**	**Percentage**
Personal Hygiene		
Change clothes three times per day*	190	43.0
Change clothes two times per day	182	41.2
Change clothes one times per day	70	15.8
Bath three times per day *	178	40.3
Bath two times per day	162	36.7
Bath, one times per day	102	23.1
Wash towel once a week*	215	48.6
Wash towels every two weeks	90	20.4
Wash towels every three weeks	137	31.0
Change bed linen less than once a week*	108	24.4
Change bed linen every two weeks	96	21.7
Change bed linen every three weeks	238	53.8
Change pillowcase every week*	105	23.8
Change pillowcase every two weeks	79	17.9
Change pillowcase every three weeks	258	58.4
Drying mattress once a week*	173	39.1
Drying mattress every two weeks	99	22.4
Drying mattress once a month	170	38.5
Drying pillow every week*	148	33.5
Drying pillow for every two weeks	109	24.7
Drying pillow once a month	185	41.9
Habits		

Never borrow a friend's towel*	311	70.4
Rarely borrow a friend's towel	74	16.7
Often borrow a friend's towel	57	12.9
Towel never being borrowed by friend*	309	69.9
Towel rarely borrowed by friend	82	18.6
Towel often borrowed by friend	51	11.5
Never sharing clothes with friends*	367	83.0
Rarely sharing clothes	60	13.6
Often sharing clothes	15	3.4
Clothes not ever being borrowed by friends*	367	83.0
Clothes are seldom borrowed by friends	55	12.4
Clothes regularly borrowed by a friend	20	4.5
Never take someone else's bed *	205	46.4
Rarely use someone else's bed to sleep in	214	48.4
Sleep on other people's bed frequently	23	5.2
Your friends not ever sleep on your bed*	217	49.1
Your friends rarely sleep on your bed	182	41.2
Your friends frequently sleep on your bed	43	9.7
Often drying towel after use*	286	64.7
Rarely drying towel after use	118	26.7
Never drying towel after use	38	8.6

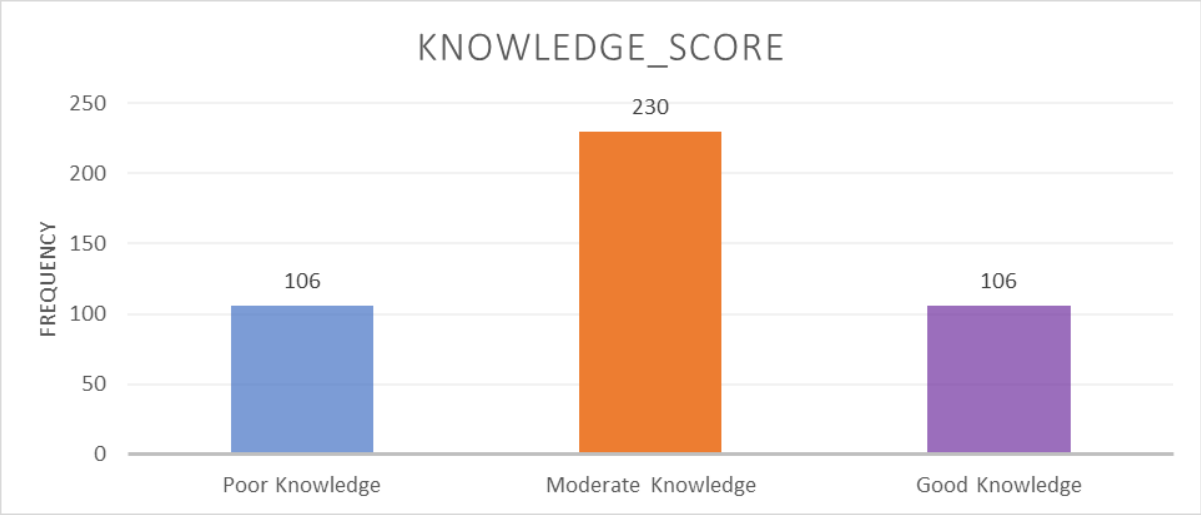

Figure 1: Knowledge score of study participants toward scabies

DISCUSSION

In this study, a total of 442 participants were enrolled; 299 (67.6%) of them were male and 143 (32.4%) were female. Overall, most participants were able to correctly answer the majority of questions regarding scabies, except for two specific questions: the underlying cause of scabies (14.5%) and the need for isolating infested patients (27.4%). The findings of this study are comparable to the findings of a study conducted in Indonesia (Yusof et al., 2015). This is because that there are no such training and awareness programs in the community level regarding infectious skin disease like scabies. In the current study, from the total population interviewed, half of the respondents reported that they had heard about the scabies, while 50% reported that they had never heard about the scabies. The findings of this study are in line with the findings of a study conducted by Dr. Ubaidullah Dawoodzada in Helmand Province, Afghanistan (Dawoodzada, 2017). When asked about the signs and symptoms of scabies, 75.8% of participants knew the signs and symptoms, and 24.2% didn't. Only 27% of the study participants agreed that the patient should be isolated to prevent the transmission of the

diseases. This study is also supported by the study conducted in Peshawar, Pakistan (Afzal et al., 2020).This study found that the majority of respondents had a moderate knowledge level about scabies. This contrast with previous studies conducted in Jordan and Indonesia, which found that the majority of participants had poor knowledge about the scabies (Seetan et al., 2021; Sule et al., 2015). Although, these findings are consistent with those of other research, which have also reported an overall adequate level of knowledge about scabies (Baradah et al., 2019; Yusof et al., 2015). The majority of participants in this study agreed that treatment should start as soon as scabies is diagnosed, and that maintaining good personal hygiene is essential for preventing scabies and recurrence. These findings align with the results of previous studies conducted in Jordan and Guinea-Bissau (Lopes et al., 2020; Seetan et al., 2021). The study revealed that more than half of the respondents reported that sharing clothes, towels, and bedding with others can spread scabies. The results of a study conducted in Helmand Province, Afghanistan, align with this finding (Dawoodzada, 2017).The respondents' levels of personal hygiene and habit practices were found to be moderate and good, respectively, in this study. Researchers conclude that this could be because of the facilities offered and the substantial supports in the surrounding area that encouraged the adoption of healthy habits and personal hygiene. The results of this study align with results of research conducted in Indonesia (Yusof et al., 2015). However, the majority of respondents, despite this, continued to practice inadequate personal hygiene, such as drying pillows once a month and changing bed linens more often than twice a week. The reason was a lack of facilities. The respondents were required to wash their own clothes because no laundry facilities were available to them. In addition, some of the participants did not use bed linens, and there was not an additional bed sheet accessible for them to change every week. A statistically significant relationship was found between the knowledge score and demographic characteristics, including gender, educational level, and Family income, which help explain the difference in the knowledge found between this study and the previous studies. The results of this investigation are in line with the results of studies conducted in previous literature (Seetan et al., 2021; Sule et al., 2015; Yusof et al., 2015). This study had several limitations. Firstly, the present study focused on individuals attending hospital outpatient's department in Jalalabad City. Therefore, generalizability to other populations is difficult. Thus, it would be helpful if studies with more nationwide samples were replicated. Second, access to wider populations is limited, and convenience sampling within a healthcare setting is typically the most pragmatic, and safest, research methodology available to us. Strengths of this study: this study fills the gap in the scientific literature, providing an innovative focus on this emerging issue. Furthermore, the findings of the current study highlight the need to improve health education, recognition, management and affordable access to treatment to support broader scabies control efforts.

CONCLUSION

The study concluded that participants generally had a moderate understanding of scabies. This moderate level of knowledge may be due to insufficient awareness campaigns and preventive programs in Jalalabad City, which have not effectively encouraged individuals to take preventive measures or seek appropriate care if they contact scabies. Additionally, the respondent's knowledge about scabies is somewhat influenced by their demographic factors. Thus, there is a need for enhanced health education, awareness initiatives, and preventive programs to improve community knowledge and support the implementation of effective prevention measures.

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AUTHORS CONTRIBUTIONS: **Sherzad Abdul Ghafar**: conceptualization; drafting the protocol; questionnaire design; methodology; statistical analysis; visualization; writing the original draft; writing the final draft; and making critical comments. **Chardiwal Humayun**: conceptualization; methodology; validation; review and editing final draft. **Imamzai Iqbal Shah**:

conceptualization; drafting the protocol; questionnaire design; data collection; methodology; supervision. **Azimee Mohammad Azim**: conceptualization; questionnaire design; methodology. **Nisar Nargis**: data collection; methodology; validation. **Ayoubi Arzo**: data collection; methodology; statistical analysis. **Akbari Sanga**: data collection and supervision.

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