

The Relationship Between Knowledge, Attitudes, and Behavior and Symptoms of Scabies at the At-Taqwa Orphanage in Kalumata, Ternate City

Eni Anggraini Kisman*, Ryan Rinaldy Marsaoly, Ferdian Hidayat

Universitas Khairun, Indonesia

Email: enianggraini352@gmail.com*, ferdian999@gmail.com

Abstract

Keywords	Scabies is a skin disease caused by the <i>Sarcoptes scabiei</i> var. <i>hominis</i> mite, with approximately 300 million cases reported annually worldwide. According to data from the Ternate City Health Office, the Kalumata Health Centre recorded 311 cases in 2023. The At-Taqwa Kalumata Orphanage in Ternate City represents a high-risk setting for scabies, which serves as the basis for this study. Knowledge, attitude, and behaviour are important factors in preventing scabies. This study aims to determine the relationship between knowledge, attitude, and behaviour and the occurrence of scabies symptoms among residents of the At-Taqwa Kalumata Orphanage in Ternate City. A cross-sectional analytic design was used, employing univariate and bivariate analyses, specifically the chi-square test. A total of 42 samples were obtained using a total sampling technique, and data were collected through interviews using a questionnaire. Of the 42 samples, knowledge was found to be in the poor category (42.9%), attitude in the poor category (40.5%), and behaviour in the sufficient and poor categories equally (38.1%). The majority of respondents were aged 11–14 years (42.9%), female (69.0%), and had completed junior high school as their highest level of education (47.6%). Bivariate analysis yielded a p-value of 0.038 for knowledge, 0.017 for attitude, and 0.012 for behaviour. These results indicate that there is a significant relationship between knowledge, attitude, and behaviour and the occurrence of scabies symptoms among residents of the At-Taqwa Kalumata Orphanage in Ternate City.
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INTRODUCTION

Scabies is a skin disease caused by the *hominis* variant of the *Sarcoptes scabiei* mite. This skin disease is a very common problem worldwide with 300 million cases reported each year, in Indonesia scabies is recorded as the third most common skin disease out of twelve other skin diseases. This disease is not life-threatening, but it can cause discomfort because it makes the skin feel very itchy which can lead to secondary infections by Group A bacteria *Streptococcus* and *Staphylococcus aureus* (Mutiara et al., 2016).

A person can be known to have scabies with four main signs, and at least two signs are found so that it can be diagnosed as scabies (Abdillah, 2020), including nocturnal pruritus (itching at night), infecting a group of people in a dormitory, orphanage or cottage, the presence of parasites was found on microscopic examination and there were eggs or skibala feces (Mutiara et al., 2016).

The prevalence of scabies is said to be high in densely populated places, namely orphanages. A study in Thailand found that 87% of children in orphanages suffer from scabies, Malaysia 31%

of children in orphanages also suffer from scabies and Indonesia about 25% of orphanage residents suffer from scabies (Maryanti et al., 2023).

Orphanages are one of the places where scabies occur. Where this place is devoted to children who have no parents, in this orphanage there is a person called a nanny who takes care of a group of children who live with them. However, sometimes the density of housing is not very clean, so it can make children sick (Maryanti et al., 2023).

Data from the Ternate City Health Office in 2023 from January to December showed 543 cases of people experiencing scabies with a total of 311 cases at the Kalumata Health Center. In this data, it was found that the highest incidence of scabies disease was at the Kalumata Health Center (Dinkes Ternate, 2023). The work area of the Kalumata Health Center is a place with a high risk of scabies symptoms, namely the At-Taqwa Kalumata Orphanage, Ternate City, from the results of interviews with the caregivers of the orphanage, complaints of itching on the skin between the fingers and others in the orphanage children with a large number. This makes researchers feel the need to raise the topic.

The research conducted to determine the level of knowledge and attitudes about personal hygiene with the behavior of preventing scabies transmission on 54 samples at the Martapura class IIA Children's Correctional Institution, stated that there was a meaningful relationship between knowledge and attitudes about personal hygiene and behavior to prevent scabies transmission (Jasmine et al., 2016).

The urgency of this research is underscored by the vulnerable population involved—children and adolescents living in a congregate setting where transmission risks are amplified. Without timely intervention, scabies can lead to secondary bacterial infections, decreased quality of life, and potential outbreaks. Understanding the modifiable factors (knowledge, attitudes, behavior) is essential for designing effective, evidence-based prevention programs tailored to orphanages in resource-limited settings.

The novelty of this research lies in several aspects. First, it focuses on an orphanage in Ternate City, eastern Indonesia, a region underrepresented in scabies literature. Second, it simultaneously analyzes the triad of knowledge, attitudes, and behavior as predictors of scabies symptoms. Third, it includes both children and caregivers as respondents, providing a more comprehensive picture of the institutional environment. Fourth, it applies a validated questionnaire adapted specifically for the orphanage context.

Based on the description above, it is necessary to understand the signs and symptoms, prevention, and management of scabies. If there is less knowledge about it, transmission will be easy. The factors that affect the symptoms of scabies in orphanages include a lack of knowledge, attitudes and behaviors. Therefore, the researcher chose to conduct research on the relationship between knowledge, attitudes, and behaviors with symptoms of scabies at the At-Taqwa Kalumata Orphanage, Ternate City.

METHODS

The type of research used is observational analytics using a cross sectional approach, which is a type of observational research that analyzes variable data collected in a certain time. The purpose of this research is to analyze the relationship between knowledge, attitudes, and behaviors with scabies symptoms.

The data obtained uses primary data from the filled questionnaire sheet, after which the data is obtained and processed using the IBM Statistical Product Service Solutions (SPSS) application version 30 or the statistical computer program. Furthermore, the data from the SPSS will be tested for normality, namely Kolmogorov-Smirnov to assess whether the data distribution is normal or not. The data will be converted in the form of a table with univariate analysis techniques to describe frequency and bivariate analysis with chi-square statistical tests for the analysis of the relationship between knowledge, attitudes, and behaviors with scabies symptoms. Then, these results will be discussed to prove the hypothesis that has been made by the researcher.

RESULTS AND DISCUSSION

Table 1. Characteristics of Research Samples

Variable	Frequency	
	N	%
Symptoms of Scabies		
Symptoms	21	50,0
Non Symptomatic	21	50,0
Knowledge		
Good	14	33,3
Enough	10	23,8
Less	18	42,9
Attitude		
Good	14	33,3
Enough	11	26,2
Less	17	40,5
Behavior		
Good	10	23,8
Enough	16	38,1
Less	16	38,1
Age		
11-14 Years	1	42,9
15-17 Years	16	38,1
18-45 Years	4	9,5
45-59 Years	3	7,1
>60 Years	1	2,4
Gender		
Male	13	31,0
Women	29	69,0
Education		

College	3	7,1
High School	16	38,1
Junior High School	20	47,6
SD	2	4,8
No School	1	2,4
Total	42	100

Based on Table 1. From 42 samples, there were 21 samples (50.0%) with symptoms of scabies, as many as 1 caregiver and 20 foster children and 21 samples (50.0%) who were asymptomatic, as many as 6 caregivers and 15 foster children. Then, the distribution of knowledge variables in this study that was the most abundant was the category of less than 18 samples (42.9%) consisting of 2 caregivers and 16 foster children, followed by the good category of 14 samples (33.3%), namely 3 caregivers and 11 foster children, and the sufficient category of 10 samples (23.8%) with 1 caregiver and 9 foster children. The most common attitude variable was the category of lacking 17 samples (40.5%) consisting of 3 caregivers and 14 foster children, followed by the good category of 14 samples (33.3%), namely 3 caregivers and 11 foster children, and the fair category of 11 samples (26.2%) with 1 caregiver and 10 foster children. Then the distribution of behavioral variables has two balanced categories, namely the sufficient and deficient categories of 16 samples (38.1%) with 3 caregivers and 13 foster children, and the good category of 10 samples (23.8%) consisting of 2 caregivers and 8 foster children.

The distribution of the most common age variables found in this study was 11-14 years old with 18 samples (42.9%), followed by 15-17 years old with 16 samples (38.1%), 18-45 years old with 4 samples (9.5%), namely caregivers, 45-59 years old with 3 caregiver samples (7.1%), and caregivers aged >60 years with 1 sample (2.4%).

The distribution of gender variables in this study was the most numerous, namely women with 29 samples (69.0%), namely 5 caregivers and 24 foster children, and men with 13 samples (31.0%) with 2 caregivers and 11 foster children.

Then the distribution of the most educational variables based on the table above is junior high school with 20 samples of foster children (47.6%), followed by high school with 16 samples (38.1%), namely 2 caregivers and 14 foster children, universities with 3 samples (7.1%), then elementary schools with 2 samples (4.8%), namely 1 caregiver and 1 foster child, and not at school there is 1 sample of caregivers (2.4%).

Table 2. The Relationship of Knowledge to Scabies Symptoms

Variable	Symptoms of Scabies				p-value
	Symptoms		Non Symptomatic		
	N	%	N	%	
Knowledge					
Good	4	19,0	10	47,6	0,038
Enough	4	19,0	6	28,6	
Less	13	61,9	5	23,8	
Total	21	100%	21	100%	

Based on table 2. There were 13 samples with symptoms (61.9%) that were poorly knowledgeable, namely 1 caregiver and 12 foster children, then the category of good and sufficient as many as 4 samples of foster children (19.0%) who were balanced. The non-symptomatic sample with good knowledge was 10 samples (47.6%) consisting of 5 caregivers and 5 foster children, 6 samples (28.6%) were sufficiently knowledgeable, namely 1 caregiver and 5 foster children, and 5 samples (23.8%) were less knowledgeable with 1 caregiver and 4 foster children. Based on the results of the chi-square bivariate statistical test of 0.038 (<0.05), it means that there is a meaningful relationship between knowledge and scabies symptoms.

Table 3. The Relationship of Attitude to Scabies Symptoms

Variable	Symptoms of Scabies				p-value
	Symptoms		Non Symptomatic		
	N	%	N	%	
Attitude					
Good	4	19,0	10	47,6	0,017
Enough	4	19,0	7	33,3	
Less	13	61,9	4	19,0	
Total	21	100%	21	100%	

Based on table 3. A sample of 13 samples (61.9%) was found to be less symptomatic, consisting of 1 caregiver and 12 foster children, 4 samples of foster children (19.0%) were adequate, and 4 samples of foster children (19.0%) were well-behaved. Then the non-symptomatic sample was obtained, 10 samples (47.6%) behaved well, namely 4 caregivers and 6 foster children, 7 samples (33.3%) behaved enough with 1 caregiver and 6 foster children, along with 4 samples (19.0%) behaved less consisting of 1 caregiver and 3 foster children. Based on the results of the chi-square bivariate statistical test of 0.017 (<0.05), it means that there is a meaningful relationship between attitude and scabies symptoms.

Table 4. The Relationship of Behavior to Scabies Symptoms

Variable	Symptoms of Scabies				p-value
	Symptoms		Non Symptomatic		
	N	%	N	%	
Behavior					
Good	1	4,8	9	42,9	0,012
Enough	9	42,9	7	33,3	
Less	11	52,4	5	23,8	
Total	21	100%	21	100%	

Based on table 4. Samples with symptoms were obtained as many as 11 samples (52.4%) who behaved poorly consisting of 1 caregiver and 10 foster children, 9 samples of foster children (42.9%) who behaved adequately, and 1 sample of foster children (4.8%) who behaved well. The non-symptomatic sample as many as 9 samples (42.9%) behaved well consisting of 2 caregivers and 7 foster children, 7 samples (33.3%) behaved moderately with 2 caregivers and 5 foster

children, and 5 samples (23.8%) behaved poorly, namely 2 caregivers and 3 foster children. Based on the results of the bivariate chi-square statistical test of 0.012 (<0.05), which means that there is a meaningful relationship between behavior and scabies symptoms.

Characteristics of Respondents by Age

This is in line with the research conducted in the work area of the UPTD Puskesmas Tanggul Jember Regency on 99 samples where the most dominant age group was 10-14 years old with 36 samples followed by 15-17 years old with 9 samples (Krizdiana, 2021). This research is in line with research in the work area of the Kamonji Health Center on 37 samples found in the age group of 11-16 years old as many as 17 samples (45.9%) (Suciety et al., 2018).

Age is a characteristic that distinguishes a person's level of maturity, so it can affect knowledge, attitudes, and behavior. In some developing countries, the prevalence of scabies tends to be high in children and adolescents (Aulis & Kusumawati, 2024). Thus, there is a difference in experience of diseases according to age, namely the older a person is, the better the level of awareness of a disease will be, and vice versa, the younger a person is, the lower the level of awareness of a disease.

Characteristics of Respondents by Gender

This study shows that the proportion of women is higher in the At-Taqwa Kalumata Orphanage, Ternate City. The results of this study are in line with the research at the Qotrun Nada Islamic Boarding School, Depok City on 50 samples, where women dominate as many as 26 samples (52.0%), according to the theory this shows that the male and female genders have the same chance of experiencing scabies (Naftassa & Putri, 2018). This study is not in line with the research by Mauliza et al. (2022) on students at the Peudada Health Center's work area on 68 samples where the results of the study showed that 39 samples were male (57.4%) compared to women (Mauliza et al., 2022).

Based on the results of the interview, there are 4 bedrooms available for children and caregivers, this can happen because the number of bedrooms is not suitable and is the cause of scabies due to the density of residents in one room. The researcher's view is that men are generally more indifferent about personal hygiene than women, but this is not a strong foundation because personal hygiene behavior is not dependent on gender.

Characteristics of Respondents based on Education

This study found that the majority of residents of the At-Taqwa Kalumata Orphanage, Ternate City, have a junior high school education. This research is in line with research in the work area of the Kamonji Health Center from 37 samples, 21 samples (56.8%) were educated in junior high school (Suciety et al., 2018). This is not in line with the research at the Tanggul Health Center of Jember Regency obtained from 99 samples with the highest level of respondents, namely elementary school as many as 37 samples (37.4%) (Krizdiana, 2021).

The higher a person's formal education, the better the process of understanding in receiving information so that they can adjust to their environment to prevent the development of a disease, especially scabies, because education is an effort to protect and improve the degree of health and

the lack of education level will cause a person to have little knowledge about a clean and healthy lifestyle (Priccilia et al., 2024).

The Relationship of Knowledge to Scabies Symptoms

The results of this study are in line with the research conducted at the Al-Islam Islamic Boarding School Jember on the risk factors of scabies symptoms for 56 samples with the results of the study showing a lack of knowledge level of 41 samples (73.2%) using the chi-square test with a p-value of 0.000 (<0.05) (Nuraini & Wijayanti, 2016). A study conducted on students at the Harsalakum Islamic boarding school, Bengkulu City on the relationship between knowledge, attitudes, and hygiene hygiene behaviors to 52 samples showed a similar thing with a lack of knowledge level of 25 samples (48.1%) seen from the results of the chi-square test with a p-value of 0.006 (<0.05) (Alen Elita et al., 2023).

A person's understanding of health is the primary foundation for their actions and behaviors in maintaining health. The wider a person's knowledge, the better the healthy habits they will apply. Knowledge can be a powerful driver in shaping positive health behaviors and plays an important role in efforts to prevent scabies symptoms (Hidayat et al., 2022).

Based on the results of the study, knowledge of the symptoms of scabies at the At-Taqwa Kalumata Orphanage in Ternate City is still relatively low or lacking because the residents of the orphanage still do not know about scabies. In the view of the researcher, there is a lack of information about health education so that the residents of the orphanage do not get enough information on how to prevent skin diseases, including scabies.

The Relationship of Attitude to Scabies Symptoms

The results of this study are in line with research at SD Negeri 2 Panggung Harjo, Air Sugihan District, Ogan Komering Ilir Regency, South Sumatra on 60 samples showing a negative attitude or less as many as 33 samples (55.0%) using the chi-square test with a p-value of 0.001 (<0.05) (Ardianty, 2017).

Research at the Darut Bulusan Islamic Boarding School in Semarang shows that the level of knowledge of students greatly affects the prevention of scabies. Students who have a poor understanding and outlook tend not to make efforts to prevent scabies properly, while students who have a good understanding and outlook show effective scabies prevention behavior. The results of the analytical test using chi-square obtained a p-value of 0.003 (<0.05) which means that there is a meaningful relationship between the attitude and perception of students and the behavior of scabies prevention (Nugraheni et al., 2016).

Attitude is a person's response to an event and as a form of one's readiness or willingness to take action, one's attitude can affect the symptoms of scabies because poor attitude can lead to poor scabies prevention behaviors (Amalia, 2021).

The Relationship of Behavior to Scabies Symptoms

The results of this study are in line with the research conducted at the Darul Falah Islamic boarding school on personal hygiene behavior and suspected scabies symptoms on 79 samples with a low category of 52 samples (65.8%) using a chi-square test with a p-value of 0.000 (<0.05) (Tahani, 2022). Research conducted at the Semarang City Islamic Boarding School on 78 samples

found that 47 samples behaved negatively or less. With bivariate analysis using chi square, a p-value of 0.001 (<0.05) was obtained, which can be interpreted as having a meaningful relationship between personal hygiene behavior and scabies symptoms (Maisyaroh Bakti Pertiwi et al., 2019).

According to Lawrence Green's theory adapted by Notoatmodjo, a person's behavior is influenced by factors such as knowledge, attitudes, beliefs, and values. This shows that a person's understanding of health can determine whether they are at risk of developing scabies or not (Yunita, 2018). Based on the results of the interview, it was stated that the children and caregivers of the At-Taqwa Kalumata Orphanage in Ternate City were still lacking in terms of behaving such as still using towels alternately with friends, not drying towels, often borrowing clothes, prayer tools, and using blankets and bed sheets together.

CONCLUSION

Based on the results of research and discussion on the relationship between knowledge, attitudes, and behaviors with the symptoms of scabies at the At-Taqwa Kalumata Orphanage, Ternate City, it can be concluded: 1) The age characteristic with the most frequency is 11-14 years old at 42.9%. 2) The gender characteristic with the most frequency is female at 69.0%. 3) The characteristics of education with the most frequency are junior high school education at 47.6%. 4) There is a meaningful relationship between knowledge and symptoms of scabies with a p-value of 0.038. 5) There was a meaningful relationship between attitudes and scabies symptoms with a p-value of 0.017. 6) There is a meaningful relationship between behavior and scabies symptoms with a p-value of 0.012.

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