



RISK FACTORS AFFECTING SCABIES IN BAUBAU CITY

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Abstract

Scabies is known as a contagious skin disease that attacks humans and animals. Data from the Baubau City Health Office of scabies has increased by 195 cases in January-May 2021. The purpose of this study was to determine the risk factors that influence the incidence of scabies in Baubau City. This type of research was a quantitative research with a case control approach, the number of samples is 92, with 46 case respondents and 46 control respondents. The technique for determining the number of samples was simple random sampling. Data processing using SPSS 22 with univariate and bivariate analysis. Based on the results of the bivariate analysis showed that knowledge p Value $0.030 < 0.05$ with OR value = 2.917, personal hygiene p Value $0.035 < 0.05$ with OR value = 2.731, and clean water facilities p -value $0.572 > 0.05$ with OR value = 1,622. The conclusion of this study was that there was an influence between knowledge and personal hygiene with the incidence of scabies and there was no effect of clean water facilities with the incidence of scabies in the working area of Betoambari Public Health Center.

Keywords: *knowledge; personal hygiene; clean water facilities; scabies*

1. Introduction

Scabies is known as a contagious skin disease that attacks humans and animals. The World Health Organization (WHO) classifies scabies in the water-related disease group. The cause of scabies is the mite *Sarcoptes scabiei* which causes itching on the skin. In developing countries this disease is significant but often neglected and becomes a health problem. Worldwide, scabies most often affects children, young adults, and the elderly (Oktavia et al., 2021). The prevalence of scabies often occurs in densely populated environments such as Islamic boarding schools, prisons and orphanages, (Kadri & Fitrianti, 2021).

Among countries with the highest rates, the top 10 were Indonesia, China, Timor-Leste, Vanuatu, Fiji, Cambodia, Laos, Myanmar, Vietnam, and the Seychelles (Aždajić et al., 2022). This disease has been linked to a variety of

health problems, including delayed diagnosis, infection risk, and high mortality, mainly from sepsis, and it has the potential to cause an outbreak due to its hyper-infestation, which makes it highly infectious (Niode et al., 2022).

The number of scabies cases at the Betoambari Health Center has increased significantly since last year. As an illustration, in 2018 there was only 1 case, followed by 2 in 2019, but then increased to 20 cases in 2020. Interestingly, this increasing trend continued in January to July 2021, reaching up to 46 cases (Puskesmas Betoambari, 2021).

Risk factors to scabies prevalence include population density, low economic level, poor sanitation, lack of resources and age. Those lists continue with the level of knowledge, personal hygiene, physical conditions of water, and density of housing (WHO, 2020).

The Health Office of Baubau City has recorded as many as 195 cases in January-May 2021, with the highest distribution being in Betoambari Health Center with 28 cases, followed by Wolio Health Center with 26 cases

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and Katobengke and Kampeonaho each with 23 cases (Dinkes Kota Baubau, 2021).

The purpose of this study is to determine what risk factors affecting the incidence of scabies in Baubau City in 2021 among knowledge, personal hygiene, and clean water facilities.

2. Method

The research is a quantitative, analytical design with a case-control approach. This research was conducted from October to November 2021 in the Betoambari Health Center Work Area, Baubau City. The population in this study consisted of 46 patients who had been diagnosed with scabies as the case population and 46 others as the control. The sampling technique used was a simple random sampling technique. Primary data was obtained directly using questionnaire-interviews, while secondary data was obtained from health documents in the form of reports on scabies at Betoambari Health Center and Baubau City Health Office. The data were analyzed univariate and bivariate-ly using Chi-Square at a significance level of 95% (α 0.05) with Fisher's exact alternative. All of the data analysis uses SPSS 22 applications.

3. Result and Discussion

Based on table 1, the respondents' villages distribution for case and control frequencies in Tarafu Village is shown to be as many as 34 (73.9%) and 23 (50.0%) respectively, while in Bone-Bone Village 12 (26.1%) and 23 (50.0%) respectively. The highest frequency was aged 26-35 years, with 12 cases respondents (26.1%) and 20 controls respondents (43.5%) while the lowest control group was aged 0-16 years with 0 respondents, followed by aged 56-75 years with 4 respondents (en). 4.3%). On gender, the highest frequency was female for case and control with 23 respondents (50.0%) and 26 respondents (56.5%) respectively, followed by male case-control with 23 (50.0%) and 20 respondents (43.5%), respectively. Based on education, the level of Senior High School equivalents dominates among case and control groups, with 13 (28.3%) and 26 (56.5%) respondents, respectively, while the lowest frequency was that of bachelor/master/doctorate with 2 respondents (4.3%). In total there were as many as 46 respondents (50%) having the scabies cases and 46 others (50%) being the control.

Among the risk factors for scabies, poor knowledge dominates with as many as 24 case

respondents (26.1%) and 35 control respondents (38%). In addition, poor personal hygiene dominates with as many as 21 case respondents (22.8%) and 32 control respondents (34.8%). Sufficient clean water facilities also dominate among the groups with as many as 40 case respondents (43.5%) and 37 control respondents (40.2%).

Table 1. Distribution of Respondents Characteristics

Respondents Characteristics	Case		Control	
	n	%	n	%
Address				
District Tarafu	34	73.9	23	50
District Bone-bone	12	26.1	23	50
Total	46	100	46	100
Age(Th)				
0-5	9	19.6	0	0
6-11	5	10.9	0	0
12-16	5	10.9	0	0
17-25	3	6.5	9	19.6
26-35	12	26.1	20	43.5
36-45	4	8.7	9	19.6
46-55	3	6.5	4	8.7
56-65	2	4.3	2	4.3
66-75	3	6.5	2	4.3
Total	46	100	46	100
Gender				
Male	23	50	20	43.5
Female	23	50	26	56.5
Total	46	100	46	100
Education				
Not Finished Primary				
School	8	17.4	0	0
Primary School/equal	10	21.7	3	6.5
Junior High School/equal	8	17.4	12	26.1
Senior High School/equal	13	28.3	26	56.5
Diploma/Associate's				
Degree	5	10.9	3	6.5
Bachelor/Master/Doctorate	2	4.3	2	4.3
Total	46	100	46	100
Scabies Incident				
Knowledge				
Poor	24	26.1	35	38
Good	22	23.9	11	12
Total	46	100	46	100
Personal Hygiene				
Poor	21	22.8	32	34.8
Good	25	27.2	14	15.2
Total	46	100	46	100
Clean Water Facilities				
Insufficient	6	6.5	9	9.8
Sufficient	40	43.5	37	40.2
Total	46	100	46	100

Table 2 showed that most of the respondents with poor knowledge, or 35 respondents (38%), were in the control group, leaving the case group with 24 respondents (36.1%). The analysis between knowledge and scabies incidence using Chi-Square test with the alternative Fisher's exact test revealed a p-value of $0.030 < 0.05$, with an OR value of 2.917 (95%

CI= 1.197-7.109), which means that the level of knowledge affects the incidence of scabies in the working area of Betoambari Public Health Center.

Table 2. The Effect of Knowledge on the Scabies Incidences

Knowledge	Scabies Incident				P-value	OR	95% CI
	Case		Control				
	n	%	n	%			
Poor	24	26.1	35	38	0.030	2.917	1.197-7.109
Good	22	23.9	11	12			
Total	46	100	46	100			

Meanwhile, as seen in Table 3, the percentage of respondents with poor personal hygiene was more in the control group of 32 respondents (34.8%) than in the case group of 21 respondents (22.8%). The analysis between the personal hygiene and the scabies incidence using the Chi-Square test with an alternative Fisher's test resulted in a p-value of 0.035<0.05 with a value of OR= 2.731 (95% CI= 1.157-6.398). This means that there was significant correlation between personal hygiene and the incidence of scabies in the working area of Betoambari Health Center.

Table 3. Effect of Personal Hygiene on Scabies Incidences

Personal Hygiene	Scabies Incident				P-value	OR	95% CI
	Case		Control				
	n	%	n	%			
Poor	21	22.8	32	34.8	0.035	2.731	1.157-6.398
Good	25	27.2	14	15.2			
Total	46	100	46	100			

Table 4 showed that the percentage of respondents with sufficient clean water facilities dominated the population, with the case group slightly bigger (40 respondents/43.5%) than the control group (37 respondents /40.2%). As analyzed using the Chi-Square test with an alternative Fisher's test, clean water facilities were concluded not to affect the scabies incidence in the working area of the Betoambari Health Center, as seen from a p-value of 0.572> 0.05. However, sufficiency of clean water facilities can bring risk for the incidence of scabies with a value of OR= 1.622 (95% CI= 0.526-4.998).

Effect of Knowledge on Scabies Incidence

In the working area of Betoambari Health Center, respondents with poor knowledge reached 64.1% of the total population with the

case category as much as 26.1% and the control category as much as 38%. This leaves only 35.9% of the respondents having good knowledge with the case category as much as 23.9% and the control category as much as 12%. Conclusively, people's knowledge regarding scabies disease was still quite low in the communities in the working area of the Betoambari Public Health Center.

According to Notoatmodjo, one factor that influences a low level of knowledge is the level of education. In this study, most of the respondents (64%) only have senior and junior high school education levels. This could be a factor causing the low level of knowledge in general, let alone in the information related to scabies disease such as what causes and prevents it.

Table 4. Effect of Clean Water Facilities on Scabies Incidences

Clean Water Facilities	Scabies Incident				p-value	OR	95% CI
	Case		Control				
	n	%	n	%			
Insufficient	6	6.5	9	9.8	0.572	1.622	0.526-4.998
Sufficient	40	43.5	37	40.2			
Total	46	100	46	100			

Clean and healthy living behavior plays an important role in preventing scabies disease. As people tend to practice what they know to make life better, people with good knowledge of clean and healthy living behavior will certainly practice it in their daily life and, in this case, keep them away from scabies (Abdillah, 2020) (Rahmi & Iqbal, 2022).

The results of this study were in line with that of research on Sintang Regency, where p-value of 0.005 was achieved, meaning that influential relationship exists between knowledge and the scabies incidence. With the OR value of 3.799, knowledge could not only be said to have any relationship but was also a risk factor itself that affected the scabies incidence in Sintang Regency (Samosir et al., 2020) (Sonhaji et al., 2019).

A similar study at Al-Muayyad Islamic Boarding School Surakarta discussed the relationship between female students' knowledge of scabies disease and their prevention behavior. It was found that female students had good knowledge and behavior of scabies prevention. The results of data analysis with the Chi Square test showed a p-value of 0.000 indicating a relationship between the two variables (Egeten et al., 2019).

Influence of Personal Hygiene with Scabies Incidence

Our study on personal hygiene in the Betoambari Health Center Work Area found 57.6% of the respondents had poor personal hygiene with 22.8% being in the case group and 34.8% in the control. The other 42.4% respondents had good personal hygiene, with 27.2% being in the case group and 15.2% in the control. As a conclusion, most of our respondents had poor personal hygiene. Knowledge has a relationship with the occurrence of changes in behavior in society. This knowledge is closely related to the level of community education (Darmawan et al., 2022).

Personal hygiene affects scabies incidence, because those who don't keep up their personal hygiene increase the risk of contagion on direct contact with scabies sufferers. In our case, respondents who had been practicing good personal hygiene were not easily transmitted with scabies upon direct contact. Poor personal hygiene in the communities of Betoambari Health Center's working area was related more to the low level of their knowledge.

Personal hygiene behavior and environmental management can be applied to reduce the incidence of scabies (Nurapandi, 2021). As in literature, scabies disease is very closely related to personal hygiene conditions, so maintaining it is necessary to prevent the disease. This maintenance can include, among others, regular bathing habits, separating towels and clothes among family members, avoiding the use of bed linen together with patients, washing clothes, towels and bed linen regularly, and drying mattresses and pillows under sunlight. Poor personal hygiene makes bodies vulnerable to skin diseases, infectious diseases, oral and dental diseases, and gastrointestinal diseases. It can even eliminate the function of certain body parts (Sa'adatin & Ismail, 2015).

The results of this study were the same as those of Sa'adatin et al. that personal hygiene (OR=2.934) with p-value=0.005 had a significant relationship with the incidence of scabies. Another study was conducted by Sudyanto in Bengkulu Timur Health Center's working area where the statistical test results obtained a p-value= 0.012, which signified a similarly significant relationship between personal hygiene and the incidence of scabies (Yunita et al., 2018).

This was also in line with the research in Hamadi Health Center's working area where the

personal hygiene variable obtained a p-value of 0.006. It showed a significant relationship between personal hygiene and the incidence of scabies, with an OR value of 3.955 and a 95% CI value (1.546-10.114). This means that the respondents with poor personal hygiene had a risk of getting scabies 3.955 times greater than those who had good personal hygiene (Wayangkau & Yufuai, 2017).

Effect of Sufficiency of Clean Water Facilities on Scabies Incidence

There is significant correlation between dormitory sanitation with scabies incident (Rofifah et al., 2019). In our findings, the water facilities had no significant relationship with the incidence of scabies. This was because of the high percentage of sufficiency of clean water facilities in the working area of Betoambari Health Center (reaching 83.7%, with 43.5% the case and 40.2% the control groups). This leaves the insufficient to be around 16.3% with the case being 6.5% and the control 9.8%. Most of the respondents had used clean water that met physical requirements from the Regional Drinking Water Company and wells.

The sufficiency of clean water remains a factor that can affect scabies incidence in a community. Insufficiency of clean water facilities forces people to have to use unqualified water sources. Meanwhile, the average volume of water needed for each individual per day is between 150-200 liters or 35-40 gallons. These needs vary and depend on climatic conditions, living standards and habits of the community (Romadlon et al., 2016). The availability of personal hygiene facilities influences changes in personal hygiene behavior in the community (Darmawan et al., 2021).

There is a significant relationship between personal hygiene, environmental sanitation, physical water conditions, level of knowledge, age, occupancy density. someone with an incidence of scabies (Husna et al., 2021) (Nurlita & Rahman, 2022). A similar study about clean water sufficiency was conducted on the students of Darul Hikam Islamic Boarding School, in Rimbo Ulu District of Tebo Regency. While the clean water facility had met standard requirements, the results showed a prevalence ratio (PR) of 1.844 with a value of (CI= 95%), indicating that the respondents without sufficient clean water developed a 1.844 times higher risk of experiencing scabies symptoms. This was in line with the research by Fitria, et al

2020 who found no relationship between the provision of clean water facilities and complaints of scabies disease (p-value = 0.725) (Indriani et al., 2021).

This was in line with the research conducted by Hartono et al, which stated that sufficiency of clean water did not have a significant relationship with the incidence of scabies in the community in Lubuk Buaya Health Center's working area in Padang City. The results of the chi square test revealed a p-value of 0.454, with 95% CI= 1.5 (0.5339-4.2143), it could be concluded that there was no effect of clean water sufficiency on the scabies incidence. This study was also in line with other research (Yunita et al., 2018).

4. Conclusion and Suggestion

On the scabies incidences in Betoambari Health Center's working area, knowledge and personal hygiene were found to be influential, but not with the sufficiency of clean water. In relation to scabies, health workers are expected not only to carry out curative actions but also to be able to promote healthy behavior among communities by increasing public knowledge. Our main goal should be making communities that actively seek out ways to prevent scabies by changing their attitudes and behaviors in taking scabies prevention measures.

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