

Relationship between Knowledge, Environmental Sanitation and Personal Hygiene with Scabies (Observational study in the Diamond Miners Community of Cempaka District Banjarbaru South Kalimantan)

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Abstract- Scabies is a disease that can affect diamond miners community, because of their work related to the lack of personal hygiene and unsanitary environment. Based on preliminary observations, there are cases of scabies in the diamond miners community of Cempaka District, which is likely due to job factors, personal hygiene and the unsanitary environment. The aims research is to determine the relation of knowledge, environmental sanitation and personal hygiene with disease

incidence of scabies in the diamond miners community of Cempaka District Banjarbaru South Kalimantan. This research method is analytical observation with cross sectional design. The subjects were diamond miners numbered 100. Chi-square test results shows correlation between knowledge, personal hygiene and environmental sanitation with scabies with p value $(0,000;0,000;0,000) < 0,05$. Based on the results of this research are expected miners community can improve personal hygiene by

cutting the nails once a week, take a bath twice a day, change clothes when they are sweating, not alternately wearing a towel with family, drying clothes, towels and bed spray the sun and keeping the environment cleaning.

Index Terms— knowledge, sanitation, personal hygiene, scabies

I. INTRODUCTION

Healthy is the right of each people. According to the World Health Organization (WHO) healthy is a healthy condition of physical, spiritual and social, and not just freedom from disease and disability. In Law Number 36 Year 2009 on health described health is good health, about physically, mentally, spiritually and socially to enable each people to live socially and economically productive. Healthy condition is strongly influenced by the personal hygiene and environmental sanitation condition (1). Some of the factors that can cause transmission of the scabies disease are socio economic factors, personal hygiene, unsanitary environmental, sexual promiscuity, demographics, diagnosis is wrong and individual behavior (2).

One of the indicator clean and healthy living behaviors (PHBS) in the family is a personal hygiene. Personal hygiene is an effort made by individuals to maintain personal hygiene to avoid the disease (1). Personal hygiene carried out by maintaining the cleanliness of the body, which can be done with a bath, brushing teeth, washing hands, and wearing clean clothes. Bathing can remove odors, dust, and dead skin cells. Beneficial bath to maintain health, maintain hygiene, and maintain in order to keep a neat appearance. While washing hands with soap is also known as one of the efforts to prevent disease. This is done because the hands are often the agents who carry pathogenic bacteria and cause switching from one person to another, by direct or indirect contact (3).

Environment is everything that surrounds and also outside the human or animal conditions that allow infectious. Maintenance of a clean and healthy environment will be good for health. Environmental care must also be accompanied by the awareness of individuals and communities in healthy living behavior. Healthy behavior is proactive behavior to maintain and increase health, prevent the risk of disease, to protect themselves from the threat of disease, and play an active role in the movement of public health. If the environment is not good maintained and public awareness in healthy life behavior is not implemented then the various diseases will also appear, ranging from a disease that attacks the respiratory system, digestive system and integument systems like the scabies disease (4).

Scabies disease is widespread throughout the world, especially in areas with critical land, poverty and poor sanitation. About 300 million people per year in the world were reported stricken by scabies. Besides that scabies also found in all countries with varying prevalence. In some developing countries, the prevalence of scabies about 6% -27% of the general population and tend to be higher in children and adolescents. According to the Ministry of Health of the Republic of Indonesia prevalence of scabies in health centers throughout Indonesia in 2008 was 5.6% -12.95% and scabies is the third of the 12 most common skin disease (4).

Nur and Setyowati research results (2011) about the relationship between the level of knowledge about personal hygiene scavengers mother with the incidence of scabies in

infants in landfills city of Semarang, the result is there are relationship between the level of knowledge about personal hygiene scavengers mother with the incidence of scabies in infants (1).

Scabies is a disease that can affect diamond miners community, because of the they work is closely related to personal hygiene is not good and unsanitary environment. Based on data collection Indonesian Children Dermatology Study Group (2001), from 9 hospitals in 7 major cities in Indonesia, obtained the highest number of patients with scabies is Jakarta (5).

Scabies is a skin disease caused by infestation and sensitization to mites *Sarcoptes scabiei* var *hominis* and products. Modes of transmission of scabies can occur through direct contact or indirectly. Scabies is easily transmitted from human to human, from animals to humans, or vice versa. Factors that play a role in the transmission of scabies as low socioeconomic, poor personal hygiene, unsanitary environment, behavior that does not support the health and population density (6).

Scabies is caused by tiny eight-legged mite (*Sarcoptes scabiei*), and is transmitted through physical contact with other people affected by scabies. The spread of scabies occur through hands holding in a long time with this disease (6).

Sarcoptes scabiei var *hominis* is a mites with a length of 0.5 mm that cause scabies in humans. Females mites digging under the skin and produce eggs and skibala. Type IV hypersensitivity reactions occurred after 1 month in patients who are not sensitized and cause itching typical. The skin is the organ most outside and protect vital organs. Skin is very complex, elastic, and sensitive, skin condition varies according to climatic conditions, age, sex, race, and location of body (6).

Based on preliminary observations made, there are cases of scabies in the diamond miners community of Cempaka District, which is due to occupational factors, personal hygiene and the unsanitary environment.

Based on the background above, research is needed to explain the relationship of knowledge, personal hygiene and environmental sanitation with scabies in the diamond miners community of Cempaka District Banjarbaru South Kalimantan.

II. RESEARCH METHODS

This research is an observational analytic study with cross sectional approach. The samples in this research using totally sampling techniques. Samples are all diamond miners community in the Cempaka District Banjarbaru South Kalimantan totaling 100 people. Instruments in this research is:

1. The stuffing to know the characteristic of respondents.
2. The questionnaires to identify the knowledge, personal hygiene, environmental sanitation and symptoms of scabies.

The questionnaire given to respondents directly upon the respondent to work or rest. Respondents were asked to fill out questionnaires directly.

III. RESULTS AND DISCUSSION

Univariate Analysis

In this research, the focus of research is knowledge, personal hygiene, environmental sanitation and the incidence of scabies. Overview of knowledge, personal hygiene, environmental sanitation and the incidence of scabies as follows.

1. Knowledge

Based on the results of questionnaires from 100 respondents, the obtained frequency distribution of knowledge by the respondents can be seen in table 1.

Table 1. Frequency Distribution of Respondents by Knowledge

No.	Knowledge	Frecuency	Percentage
1.	Less	20	20%
2.	Medium	60	60%
3.	Good	20	20%
Total		100	100%

Based on the table 1 shows most of the respondents have medium knowledge of scabies about 60 respondents (60%).

2. Personal hygiene

Based on the results of questionnaires from 100 respondents, the obtained frequency distribution of personal hygiene by the respondents can be seen in table 2.

Table 2. Frequency Distribution of Respondents by Personal Hygiene

No.	Personal Hygiene	Frecuency	Percentage
1.	Less	21	21%
2.	Medium	63	63%
3.	Good	16	16%
Total		100	100%

Based on the table 2. most of the respondents have medium of personal hygiene about 63 respondents (63%).

3. Environmental sanitation

Based on the results of questionnaires from 100 respondents, the obtained frequency distribution of environmental sanitation by the respondents can be seen in table 3.

Table 3. Frequency Distribution of Respondents by Environmental Sanitation

No.	Sanitasi Lingkungan	Frecuency	Percentage
1.	Less	21	21%
2.	Medium	68	68%
3.	Good	11	11%
Total		100	100%

Based on the table 3. most of the respondents have medium of environmental sanitation about 68 respondents (68%).

4. Scabies

Based on the results of questionnaires from 100 respondents, the obtained frequency distribution of scabies by the respondents can be seen in table 4.

Table 4. Frequency Distribution of Respondents by Scabies

No.	Scabies	Frecuency	Percentage
1.	Ya	25	25%
2.	No	75	75%
Total		100	100%

Based on the tabel 4 most of respondents did not scabies about 75 respondents (75%).

Bivariate Analysis

1. Relationship of knowledge with Scabies

Bivariate analysis was performed using chi square test to determine the relationship between knowledge (independent variable) with scabies (dependent variable). Result of chi square test the relationship of knowledge with scabies can be seen in table 5.

Table 5. Relationship of knowledge with scabies

No	Knowledge	Scabies		Total	p-value
		Ya	No		
1	Less	14 (70%)	6 (30%)	10 (100%)	0,000
2	Medium	9 (15%)	51 (85%)	60 (100%)	
3	Good	2 (10%)	18 (90%)	20 (100%)	

Result of chi square test with 95% confidence level, to see the relationship with scabies obtained knowledge, p value = 0.000. Of the decision obtained p value Ho is rejected (p <0.05), which means there is a significant relationship between knowledge with scabies.

Knowledge influenced by information received. Information obtained from the formal and non formal education can provide a short-term effect, resulting in a change or an increase in knowledge. Respondents in this research getting information about the scabies disease of non-formal and formal information. Non-formal information they can through social interaction, as do religious activities on Friday and formal information derived from the activities of counseling students about scabies (7).

Communities with good knowledge tend to have a good attitude in preventing scabies. It is also consistent with the theory that the cognitive component is a component related to the knowledge, views, beliefs relating to how people behave (8).

Azizah and Setiyowati research results (2011), it is known that lack of knowledge makes people difficult to obtain more information about skin diseases (9). According Muzakir (2008), mentions knowledge has an important role in providing information on the causes and prevention of disease (10).

According Notoatmodjo (2003) scabies is a disease that is difficult to eradicate, especially in a society in residential environments with low socioeconomic, education and knowledge are low. Moreover, according to Santosa (2002) of scabies occur in patients with less knowledge about personal hygiene, unsanitaryenvironment, less water availability, the behavior of mothers who lack child care. This trend raises the case of scabies in this place bigger than anywhere else (11).

The relationship between knowledge that is being medium, shows that efforts to improve hygiene behaviors necessary to improve knowledge. Improving knowledge will give significant results to changes in behavior. This is consistent with the statement Notoadmojo (2003), which states that the domain knowledge is very important for the formation of behavior. Behavior based knowledge will last longer than behavior that is not based on knowledge. Therefore it required

an effort to provide stimulus to the respondent, the provision of information that will increase knowledge (11,12). Knowledge affects the behavior of scabies disease prevention, this research is consistent with the results of Andayani research (2005) that the lack of knowledge leads to a lack of prevention scabies prevention (13).

2. Hubungan personal hygiene dengan kejadian Skabies

Bivariate analysis was performed using chi square test to determine the relationship between personal hygiene (independent variable) with scabies (dependent variable). Result of chi square test the relationship of personal hygiene with scabies can be seen in table 6.

Table 6. Relationship of personal hygiene with scabies

No	Personal Hygiene	Scabies		Total	p-value
		Ya	No		
1	Less	16 (76,2%)	5 (23,8%)	21 (100%)	0,000
2	Medium	9 (14,3%)	54 (85,7%)	63 (100%)	
3	Good	0 (0%)	16 (100%)	16 (100%)	

Result of chi square test with 95% confidence level, to see the relationship with scabies obtained personal hygiene, p value = 0.000. Of the decision obtained p value Ho is rejected (p <0.05), which means there is a significant relationship between personal hygiene with scabies.

From cross tabulation table above can be seen as many as 54 respondents who have medium levels of personal hygiene is not experiencing scabies. This is because the application of personal hygiene can decide the transmission of skin diseases from the environment to human or from human ill to human health, so as to prevent infection (3).

Personal hygiene is crucial health status, where individuals knowingly and private initiatives to maintain health and prevent disease. These efforts include hygiene personal hygiene hair, eyes, ears, teeth, mouth, skin, nails, as well as hygiene in the dressing (14).

One effort of personal hygiene is caring skin hygiene because the skin serves to protect the surface of the body, maintaining body temperature and remove certain impurities. The importance of the skin as a protective organ, the skin needs to be maintained. Skin diseases can be caused by fungi, viruses, bacteria, parasites. One skin disease caused by the parasite is Scabies (14).

Scabies is very closely related to a clean and healthy life behavior, poor personal hygiene and poor sanitation can improve scabies infections. Pawening (2009) states that humans are infected by the *Sarcoptes scabiei* mite regardless of age, race or gender and does not recognize the social and economic status (15). In daily life hygiene is very important and must be considered, because hygiene affect a person's health and psychological (16). Cleanliness is free of debris, including dust, garbage, and stink. In Indonesia, the issue of cleanliness has always been a growing polemic. The case of hygiene problem is increasing every year. Cleanliness is the epitome of someone's personality, if the place of residence, and the state of his clothes look clean it is ascertained that person is a man who is clean and healthy (17).

Scabies disease can be transmitted through indirect contact such as through the bedding, towels, and clothing plays an important role. Based on the Hand research results (2007), there was a significant relationship between the use of soap habits, change clothes habits, sleeping together habits, the use of a blanket sleeping habits and customs of washing clothes along with people with scabies (18).

One habit that can lead to the transmission of scabies is shared use of towels. Research conducted by Setiadi (2007) mentions the habit of exchanging towels have an important role in relation to the incidence of scabies (19).

According to Wartonah (2003), personal hygiene including skin hygiene is very important in the business of health care such as bathing 2 times a day with soap to avoid infectious diseases. For the comfort of our own bodies, to take a bath 2 times a day is a must. In addition to cleanse the body, bath ing can refresh and escape from anxiety, not tasty and less unpleasant body odor. In addition to physical comfort, the bathing is a necessity integrity of the skin, then the outward treatment according to what is desired is very important and also the body will be spared from infectious diseases (20).

Hand and nail hygiene is essential, if the patient of scabies has poor hand hygiene and long nails can lead to the development of germs due to scratching on the skin infection. This is consistent with research Desi (2005) that may occur due to skin disease and nail hand hygiene is lacking. According to Wolf (2000), hands should be washed before and after any activity such as before eating, after eating, after defecation or urination in order to prevent the development of germs and reduce the chance of infection. According to Stevens (2000), while the goal of nail care is to clean the nails, restores the limits of the edge of the nail to the normal state as well as prevent the development of germs, and therefore need to nail care by cutting the nails once a week and use a nail brush soap (21).

Clothes absorbing sweat and dirt that is issued by the body. Clothes in direct contact with the skin so that if the clothes were wet with sweat and dirty would be the growth of bacteria on the skin. Clothes soaked with sweat will cause odor (22).

Skin diseases can be transmitted through indirect contact, skin diseases caused by exchange towels with others and not dried in the sun. This is consistent with research Azizah (2011) that most people who suffer from skin diseases often exchange towels with others. Use of towels together can facilitate the transmission of bacteria from patient to others. Moreover, when the towels never dried under the sun or not washed in a long period of time (9).

3. Relationship of environmental sanitation with scabies

Bivariate analysis was performed using chi square test to determine the relationship between environmental sanitation (independent variable) with scabies (dependent variable). Result of chi square test the relationship of environmental sanitation with scabies can be seen intable 7.

Table 7. Relationship of environmental sanitation with Skabies

No	Sanitasi Lingkungan	Scabies		Total	p-value
		Ya	No		
1	Less	13 (61,9%)	8 (38,1%)	21 (100%)	0,000
2	Medium	9	59	68	

		(13,2%)	(86,8%)	(100%)	
3	Good	3 (27,3%)	8 (72,7%)	11 (100%)	

Result of chi square test with 95% confidence level, to see the relationship with scabies obtained environmental sanitation, p value = 0.000. Of the decision obtained p value Ho is rejected (p <0.05), which means there is a significant relationship between environmental sanitation with scabies.

According to Slamet (2007), the lack of clean water, especially for maintaining personal hygiene, can cause skin and eye diseases. This happens because there is always bacteria on the skin and the eyes have a chance to develop. Moreover, among people with poor nutritional state such as lack of vitamin A, B and C. Diseases caused by lack of clean water is a trachoma disease and all kinds of skin diseases caused by fungi, and bacteria. Skin is an elastic wrapper that protects the body from environmental influences. One part of the human body are quite sensitive to various diseases of the skin (22). A healthy and clean environment will take effect for the skin. Meanwhile, a dirty environment will be the source of the emergence of various diseases including skin diseases (23).

Water is the most essential for health, not only in production but also for the efforts of domestic consumption and utilization (drinking, cooking, bathing, etc.). Most water-related diseases are infectious, these diseases are generally classified according to various aspects of the environment that can be at intervention by humans. Water is a tool to improve public health, because water is one of the media of various kinds of disease transmission. Through the provision of clean water is expected spread of infectious diseases can be minimized (9).

Besides the unsanitary disposal of feces that can cause a variety of diseases such as typhoid, cholera, dysentery, poliomyelitis, ascariasis, and so on. Human waste is a solid effluent which besides causing odors, pollute the environment, is also a medium of transmission of the disease in the community. Therefore it is necessary to maintain the cleanliness of toilets and bathrooms, so there is no transmission of diseases caused by feces (9).

Shelter and disposal of waste water that meets the health requirements necessary to protect, maintain, and improve public health. Unhealthy environment as a result of polluted waste water can cause disruption to public health. Waste water can be breeding sites pathogenic microorganisms that can be transmission disease (24).

IV. CONCLUSION

1. Most of the respondents have medium knowledge of scabies about 60 respondents (60%).
2. Most of the respondents have medium of personal hygiene about 63 respondents (63%).
3. Most of the respondents have medium of environmental sanitation about 68 respondents (68%).
4. Most of respondents did not scabies about 75 respondents (75%).
5. There is a significant relationship between knowledge and scabies with p value = 0,000 (< 0,05).
6. There is a significant relationship between personal hygiene and scabies with p value = 0,000 (< 0,05).
7. There is a significant relationship between environmental sanitation and scabies with p value = 0,000 (< 0,05).

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