



Personal Hygiene and Scabies Incidence on Scavengers in Alak Lanfill Kupang City

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Abstract

Personal hygiene is needed to maintain good health, both physically and psychologically. Application of lack of personal hygiene and environmental conditions were as dirty as the final disposal, will facilitate the emergence of various skin diseases like scabies. Until now research Scabies thus only rarely occurs in Kota Kupang. This study aims to determine the relationship of personal hygiene with the incidence of scabies in Alak landfill scavengers. This analytic observational research used cross sectional design and was conducted in Alak Landfill. The samples were 40 people working as scavengers and be taken by purposive sampling. Sample criteria are scavengers with age over 17 years old, can read and willing as respondents. Research variables are scabies incidence, skin hygiene, hair cleanliness, clothes hygiene, cleanliness of hands and feet, and also bed linen cleanliness. Data retrieved through observation and direct interviews with respondents and then were analyzed by chi square test with $\alpha=0:05$. There is correlation between scabies incidence with skin hygiene ($p=0.032$ OR=14.143), hair cleanliness ($p = 0.043$ OR=12.000), but there is no correlation with clothes cleanliness ($p=0.316$), hands and feet cleanliness ($p=1.000$) and also with bed linen cleanliness ($p=0.566$). The public health center and other relevant agencies are expected to remain and continue the health promotion activity of personal hygiene and to give scabies medicine completely.

Keywords: scabies; personal hygiene; scavengers; landfill.

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1. Introduction

Scabies is a skin eruption that most common in children which is caused the infestation and sensitization to tiny mite *Sarcoptes scabiei* var *hominis* that burrows under skin [1,2,3]. This mites cannot jump or fly but crawl on warm skin [4]. Scabies transmission occurs by direct contact when infected people contact with other people, and indirect contact through using towels and clothing together [5]. There is no fatality for scabies, complication and mortality may occur because of secondary bacterial infection. Scabies is global health problems and its prevalence is estimated to be about 300 millions cases every year [1,4,6].

The incidence of scabies in health centers throughout Indonesia in 2008 was 5.6% to 12.95% and scabies is the third of the twelve most common skin diseases. The incidence of scabies in 2008 in various slums (landfill, flats, boarding school) in Jakarta reached 6.20% [7]. The health profile of Kupang City in 2010 showed the number of infectious skin diseases (dermatitis, scabies) reached 4.88% [8].

Alak Landfill is a landfill and a place to live as well as work place for scavengers. Scavengers are people who collect used goods or certain waste to recycling process so they have high risk for transmission of communicable disease. Scavengers usually have low education and even not a few of those who have never attended school. Lack of experience and understanding of the importance of personal hygiene and environmental conditions were filthy scavengers cause less or not doing a good personal hygiene activities [9].

Data in Alak PHC in the last 1 month there are 9 scavengers affected skin infections that two people are affected dermatitis and seven other people suffered symptoms of scabies, and there are skin lesions such as tunnels grayish colored skin. Based on this background, the researchers are interested in doing this research to determine the relationship of personal hygiene with the incidence of scabies of scavengers in Alak landfill.

2. Research Methodology

This research is an analytic observational with cross sectional study design. The study was conducted at the Alak landfill Kupang City. Samples were scavengers who located at Alak landfill Kupang City. The sample size be determined by using the formula [10] and got 40 people working as scavengers in Alak landfill. Samples were taken by purposive sampling with the inclusion criteria aged >17 years old, able to read and write as well as willing to become respondents.

Research variable is the incidence of scabies, skin hygiene, hair cleanliness, clothing cleanliness, bed cleanliness and hygiene of the hand and foot. Data retrieved through direct observation and interviews in respondents with regard anonymity and confidentiality. The collected data is processed through the stages of editing, coding, entry and cleaning, then analyzed with chi square test with $\alpha=0.05$.

3. Finding and Discussion

Scavengers in this study are more female than male, that are 57% for female and 43% for male. The education level of scavengers in this study only have primary (66%) and secondary school (34%). Personal hygiene in this

study mostly good than less, but the percentage of scabies more on the personal hygiene is lacking, as shown in Table 1.

Table 1: Distribution of Personal Hygiene of Scavengers

Personal Hygiene		Not Scabies		Scabies		Total
		N	%	N	%	
Skin hygiene	Good	33	97.1	1	2.9	34
	Less	7	70.0	3	30.0	10
Hair Cleanliness	Good	32	97.0	1	3.0	33
	Less	8	72.7	3	27.3	11
Cleanliness Clothes	Good	23	95.8	1	4.2	24
	Less	17	85.0	3	15.0	20
Cleanliness Hands and Feet	Good	12	92.3	1	7.7	13
	Less	28	90.3	3	9.7	31
Cleanliness Bed linen	Good	7	87.5	1	12.5	8
	Less	33	91.7	3	9.1	36
Total		40	79.5	4	20.5	44

The results show the variables associated with the incidence of scabies are skin hygiene (p=0.032 and OR=14.143), the cleanliness of the hair (p=0.043 and OR=12.000), as seen in Table 2.

Table 2: Relationship between Personal Hygiene and Scabies Incidence

Personal Hygiene	OR	p	CI 95%
Skin hygiene	14.143	0.032	1.276 – 156.782
Hair Cleanliness	12.000	0.043	1.097 – 131.238
Cleanliness Clothes	4.059	0.316	0.388 – 42.491
Cleanliness Hands and Feet	1.286	1.000	0.121 – 13.645
Cleanliness Bed Linen	0.636	0.566	0.57 – 7.054

This study finds the incidence of scabies is higher in female than in male, and previous study also found that statistically there was relationship between age and scabies incidence [11]. Most scavengers in this study just have education in elementary and secondary school. Previous study found scabies incidence related to the education and knowledge of scabies [12,13]. Formal or non formal education is important to increase knowledge and with good knowledge people can have good attitude and practice of health including for scabies prevention [14]. Based on previous study, people with good knowledge have risk to get scabies lower 0.087 times compare

to people with less knowledge.

Scabies as a contagious skin infestation can be transmitted from infected people to healthy people by direct or indirect [16] especially by direct transmission because mite cannot live in long time outside human skin. Personal hygiene is a self-care to maintain health, both physically and psychologically, adoption of less personal hygiene will facilitate the emergence of various diseases one of which is the skin disease scabies [7].

Results of this study show scavengers with good skin hygiene have risk to get scabies lower than scavengers with less skin hygiene. Most of scavengers in this study have good skin hygiene, but the incidence of scabies is more common in scavenger with less skin hygiene than good skin hygiene and it has relationship between the incidence of scabies with skin hygiene ($p=0.032$ and $OR=14.143$). This means that the scavengers who have less skin hygiene have chances of getting scabies 14.143 times higher than scavengers who have good skin hygiene.

The previous study showed most of respondents have less skin hygiene. Nevertheless, that study also found there was a significant correlation between skin cleanliness with symptoms of skin disorders. One of the causes of skin disorders, namely employment and poor personal hygiene [9]. Therefore, maintaining skin hygiene and healthy habits should always be considered. The skin is an important part that protect the body from germs or trauma, so the need for adequate care in maintaining its function. To maintain the cleanliness of skin it need good behaviors such as bathing twice a day, a shower with soap, keep clean clothes, and keep the healthy environment [17].

This study finds most of scavengers have a habit of maintaining hair cleanliness, because scavengers already know about the benefits of maintaining the cleanliness of hair. In addition, other factors that support the behavior scavenger maintain the cleanliness of the hair so well is because of the availability of facilities such as adequate water and also material shampoo owned by the scavengers. Nevertheless, the percentage of scabies is more common in scavenger with less hair cleanliness, and statistically there is a relationship between the scabies incidence with the cleanliness of the hair with a possible risk of scabies infection 12 times greater in scavengers with less hair hygiene than scavengers with good hair hygiene.

Based on the results and the theory by Green [9] it can be concluded that the antecedents including the physical environment greatly influence the behavior of maintaining the cleanliness of hair on a scavenger. Hair are part of the body which have a function as protection and temperature control for body. Hair care aims to clean germs on the scalp, adding a sense of comfort, eradicate lice or dandruff that attach to the skin, and facilitate the circulation system of blood under the skin. To maintain the cleanliness of hair needs to action such as washing your hair at least 2 times a week, and wash your hair with shampoo or another hair washing materials.

The results also show that most of the scavengers have good habits in maintaining the cleanliness of clothing such as changing clothes whenever bathing, washing clothes with detergent and drying clothes in the sun. Scabies occurs more frequently in the scavenger with the cleanliness of clothes less, but statistically there is no relationship between scabies incidence with the cleanliness of clothing ($p=0.316$). The results are consistent with previous study where most of the respondents have behavioral keep clothes clean [18]. The results also

show that the behavior maintain good hygiene garments affects on skin disease is less than the behavior of less keep clothes clean. Moreover, study in Zaria showed there was relationship between scabies transmission with mean number of days clothes are worn before they are washed [19].

Behavior of scavengers in Alak landfill is still lack in maintaining the cleanliness of clothing e.g. they often store and put the clothes on the ground and the habit of drying wet clothes inside the house so that the clothes do not dry and not exposed to direct sunlight. Direct sunlight is beneficial to kill germs found on the clothes. In addition to the state of the environment and nature of work of scavengers that always make direct contact with the dirty environment (garbage) also affects the cleanliness of clothing scavengers.

Clothes are used to protect the body from the outside environment. To maintain the cleanliness of clothes to do things like changing clothes after shower, wash clothes by using detergents, drying clothes in the sun, wash clothes after used and not to use clothes repeatedly. Used clothes contain sweat, germs and bacteria that can cause skin irritation such as redness, discomfort and itching of the skin [17]. The cleanliness of clothes also affect the location of lesions, and it has explained by previous study e.g. lesions in bottom for male because man usually wearing double pants and not every day they wash those pants but after used 2-3 times [20].

Maintain nails and feet cleanliness is one of the important aspects in maintaining selfcare, due to a variety of germs can enter the body through the nails. Therefore, the nails should remain healthy and clean. Under normal conditions the nail will look smooth, with a thickness of approximately 0.5 mm, and transparent pink. The proper way to maintain the cleanliness of nails, hands and feet are washing hands with the right techniques and use soap and clean water and nails should be cut so no germs can stick on the nail [17].

This study shows that most of the scavengers have less hand, foot and nail hygiene. This happens because of their habit when working or being away from home always contact with rubbish and when washing hands without using soap and running water, but there is no relationship scabies incidence with the cleanliness of hands and feet in this study. The results of this study is same with previous study that most respondents have less hygiene hands, feet and nails [9].

Cleanliness of the bed linen is very important for our health specially for skin health. Keeping clean bed linen aims to prevent skin does not directly touch the coarse material wrapped around a pillow and mattress. The bed linen should be replaced once a week because if more than one week it will dusty and may contains mites that can penetrate the pores of bed linen and mattresses. These mite feces can cause sneezing and skin irritation such as redness and itching [17]. Other organisms like virus, germ, and helminthes also can contaminate the bed line, so it can affect on people health.

Most of scavengers have less attention to bed linen cleanliness. It is caused by a lack of understanding about the importance of maintaining bed linen cleanliness. In addition, scavengers also have bad habits such as rare sunning mattresses, sharing bed linen with other people and seldom washing or changing bed linen. Based on chi square test there is no relationship between scabies incidence with the cleanliness of bed. It means the risk to get scabies is not different between scavengers who have good or less bed cleanliness. This results research

show that the lack of cleanliness of the bed and the bed linen is caused due to environmental conditions where a high density and living together in a narrow place. Besides poor environmental sanitation, density and moisture house habitable rooms are less qualified also affects the behavior of scavengers in maintaining the cleanliness of bed linen. This condition is different with the previous study that found the relationship between environmental hygiene with scabies incidence ($p=0.000$) [13]. Moreover, nutrition status can affect also on scabies incidence with p value 0.015 [21]. People who consume healthy food with balance nutrient make their body healthy and have immunity to fight diseases infection including scabies infection. Family member and the presence of livestock also have relationship with the scabies incidence [12]. Not all variables were analyzed in this research, so it is important for future research to analyze the rest variables. Health promotion for preventing scabies incidence cannot be success if lack of local expertise to detect the scabies infestation [16], so beside health promotion for the community, it is also important to support with the health expertise and medicine to detect and treat the scabies patient completely and reduce the transmission.

4. Conclusion

This study shows that personal hygiene associated with the incidence of scabies so the public health center and other relevant agencies are expected to remain and continue to conduct health promotion of personal hygiene and disease scabies.

5. Recommendation

Not all variables were analyzed in this research, so it is important for future research to analyze the rest variables. Beside health promotion for the community, it is also important to support with the health expertise and medicine to detect and treat the scabies patient completely and reduce the transmission

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