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The Relationship Between Personal Hygiene Behavior With The Incidence Of Scabies In Pondok Pesantren Modern Darul Hikmah Kota Medan

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Abstract. ***Introduction.*** *Scabies is often found in Indonesia, which is due to its tropical climate. Data showed that the prevalence of scabies Indonesia in 2013 was 6%. Poor personal hygiene, low socioeconomic status, and non-supporting health behavior are also some of the risk factors.* ***Objectives.*** *To identify the relationship between personal hygiene behavior with scabies in Pondok Pesantren Modern Darul Hikmah Kota Medan.* ***Methods.*** *This is an analytical study using cross sectional design. The sample was all the students from grade 7-12. The data was taken cardinal signs of scabies and microscopic examination towards the scrapped skin. The risk factors on personal behavior was taken thru questionnaire and direct observation on the research site.* ***Results.*** *The incidence of scabies in Pondok Pesantren Modern Darul Hikmah Kota Medan is 81 out of 220 respondent (36,8%). There is a strong correlation between personal hygiene behavior with incidence of scabies in Pondok Pesantren Modern Darul Hikmah Kota Medan (p=0,001). The environmental sanitation is categorized poor according to 3 aspects including clean water availability, occupant density, and personal storage availability.* ***Conclusion.*** *There is a strong correlation between personal hygiene behavior with the incidence of scabies in Pondok Pesantren Modern Darul Hikmah Kota Medan.*

Keyword: *Scabies, Environment sanitation, Personal hygiene, Boarding school*

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1 Introduction

Scabies is a transmitted disease which occured because of infestation and sensitization of Sarcoptes scabiei var hominis and its product.. the life cycle from egg to adult occurs in a month. The symptoms are itchy especially at night *(pruritus nocturnal*) (Boediardja dan Handoko, 2017) [6]. Bad personal hygiene, unsanitary environment, low social-economy, and bad behavior are factors that have a role in skin diseases (Astriyanti, 2010) [3]. Scabies could be diagnosed by characteristics, such as itchiness at night, tunnel shaped skin lesions, papules and vesicles

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especially between the fingers, wrists, outer part of elbow, armpit, umbilicle, men's external genitalia, areola mammae, foot, and palm (WHO, 2015) [17].

Scabies is a skin disease with really high number at developing country. In 2010, the direct effect of scabies invasion in the skin was estimated to effect more than 1,5 million *YLDS* (*years live with disability*), and the undirect effect from kidney and heart dysfunction is bigger. Scabies incident in 2014 happens to 13 million people in the world (WHO, 2015) [17].

Scabies incident in 2015 also have a high prevalence in some countries such as Egypt (4,4%), Nigeria (10,5%), Mali (4%), Malawi (0,7%), and Kenya (8,3%), the highest incidence occurs to children and teenagers (Hegab, 2015) [9]. Scabies was found a lot in Indonesia, it is caused by Indonesian tropical climate. Scabies prevalence in Indonesia shows decreasing from year to year, the last data noted in Indonesia at 2013 is at 6%. Even though there is a decreasing number of scabies, it could be said that Indonesia is still not free from scabies and scabies is still one of a transmitted disease problem in Indonesia (RISKESDAS, 2013) [15].

According to a research in East Java, scabies prevalence in 12 boarding schools in Kabupaten Lamongan is 48,8% (Badri, 2007) [5] and a research in East South Sulawesi Province, scabies prevalence is 4,5% in 2012 (Dinas Kesehatan Provinsi Sulawesi Tenggara, 2013) [7]. A research in North Sumatera Province shows that scabies prevalence in Ar-Raudhatul Hasanah boarding school is 63 people (73%) from the total sample (Asra, 2010) [2].

2 Methods

This is a analytic research with cross sectional design. The sample was taken using total sampling method, which means all the students (220 people) with inclusion criteria joined this research. The purpose of this research is to find the relationship between personal hygiene behavior with the incidence of scabies in Pondok Pesantren Modern Darul Hikmah Kota Medan.

Primary data was used in this research, which is a direct data from subject using a measurement for scabies screening, behavior questionnaire, and environmental sanitary observation in the boarding school. The sample was tooks by steps, from july to september 2019. Environmental sanitation data was taken with observing the environmental sanitation in boarding school, behavior data was taken using validated questionnaire , and scabies incident data was taken using clinical examination, skin scrapping at the suspicious scabies lesions, and diagnosis by finding at least 2 out of 4 cardinal signs. The data was processed using the help of statistics application, and data analysis was done by univariate and bivariate using chi-square test.

3 Results

1. Univariate Analysis Results

Table 1. Frequency Distribution of Scabies Among Respondents

Scabies	Amount	Percentage (%)
Not having scabies	139	63,2
Scabies symptoms	80	36,4
Scabies skin scrapped	1	0,4
Total	220	100

According to table 1 above, respondents who are having scabies is 81 out of 220 respondens. 80 respondents (36,4%) out of that diagnosed with scabies by clinical manifestation whick is finding 2 out of 4 cardinal signs while 1 respondent (0,4%) was diagnosed by microscopic finding of scabies in scrapped skin. By the next data analysis all the research subject who are having scabies symptoms and having scabies with microscopic finding will be categorized into scabies category.

Table 2. Frequency Distribution of Respondent Based on Their Age

Age	Amount	Percentage (%)
10-13 year	81	36,8
14-16 year	107	48,6
17-20 year	32	14,6
Total	220	100

According to table 2 above, it shows that out of 220 respondents, where are 81 respondents (36,8%) with the age of 10-13 years old, 107 respondents (48,6%) with the age of 14-16 years old, and 32 respondents (14,6%) at the age of 17-20 years old.

Table 3. Frequency Distribution of Scabies Incident Based on Respondent's Age

Characteristics	Scabies	Not having scabies	Total
Age			
10-13	43(19,5%)	38 (17,3%)	81 (36,8%)
14-16	30 (13,7%)	77 (35%)	107 (48,7%)
17-20	8 (3,6%)	24 (10,9%)	32 (14,5%)
Total	81 (36,8%)	139 (63,2%)	220 (100%)

According to table 3 above, it show that there are 36,8% respondents who are having scabies. The highest number of scabies incident is at the age range of 10-13 years old (19,5%).

Table 4. Frequency Distribution of Respondent Based on Their Gender

Gender	Amount	Percentage (%)

Female	105	47,7
Male	115	52,3
Total	220	100

According to table 4 above, it shows that there are more male respondents than female which is 115 respondents (52,3%).

Table 5. Frequency Distribution of Scabies Incident Based on Respondent's Gender

Characteristics	Scabies	Not having scabies	Total
Female	27 (12,3%)	78 (35,4%)	105 (47,7%)
Male	54 (24,5%)	61 (27,8%)	115 (52,3%)
Total	81 (36,8%)	139 (63,2%)	220 (100%)

According to table 5 above, it shows that there are more male to have scabies which is 24,5%.

Table 6. Frequency Distribution of Respondent Based on Their Personal Hygiene Behavior

Personal Hygiene Behavior	Amount	Percentage (%)
Good	135	61,4
Bad	85	38,6
Total	220	100

According to table 6 above, it shows that there are 85 respondents (38,6%) with bad personal hygiene and 135 respondents (61,4%) with good personal hygiene.

2. Bivariate Analysis Results

Table 7. Relationship Between Personal Hygiene Behavior With The Incidence of Scabies

Behavior	Scabies	Not having scabies	Amount	Sig (p)
Good	36(16,4%)	99 (45%)	135 (61,4%)	0,001
Bad	45(20,4%)	40(18,2%)	85 (38,6%)	
Total	81 (36,8%)	139 (63,2%)	220 (100%)	

According to table 7 above, it shows that there are 81 out of 220 respondents to have scabies (36,8%), then there are 85 out of 220 respondents to have a bad personal hygiene (38,6%). Table 7 also shows there are 81 respondents with scabies infection and out of those 81 respondents, there are 45 respondents with a bad behavior (20,4%).

Chi square test was done to know there is a relationship or not between personal hygiene behavior with scabies incident in Pondok Pesantren Modern Darul Hikmah Kota Medan. The result was significant with p value = 0,001 and $p \leq 0,05$ so Ho was ignored and Ha was accepted which means there is a relationship between personal hygiene behavior with scabies incident.

4 Analysis

a. Scabies Incident Based on Respondent's Age

The results shows that 10-13 years old age range has the highest number of scabies. A research in boarding school in Padang tells that the highest frequency of scabies happenned to 12-13 years old age range for 34,8% (Akmal *et al.,* 2013) [1]. Another research in a orphanage in Medan also shows that the highest frequency of scabies happenned to early teenagers with 54,2% (Jauhari, 2015) [10]. It coud be concluded thath the result is suitable with theories and previous researches. Younger respondents have higher risks to be infected by scabies. The level of vulnerability and experience about the disease usually hapens to older respondents (Muin, 2009) [13].

b. Scabies Incident Based on Respondent's Gender

The result shows that scabies more frequenty happenned to male respondents. Previous reearch at boarding school in South Kalimantan Province tells that male respondents tend to have scabies (92%) (Audhah *et al.,* 2012) [4]. Another research in X boarding school in East Jakarta shows scabies of male respondents at 57,4% (Ratnasari and Sungkar, 2014) [14]. It could be concluded that the result is suitable with theories and previous research which is male respondents will be at a higher risk to be infected by scabies because of lacking in their personal hygiene and it was different than what the female respondents would do.

c. Relationship Between Personal Hygiene Behavior With The Incidence of Scabies

The result show that there is a relationship between personal hygiene behavior with scabies incident to students at Pondok Pesantren Modern Darul Hikmah Kota Medan. This result is relevant with a research to students in a boarding school in Nusa Tenggara Barat Province which shows scabies incident at 79,3% was happened because of bad behavior (Mariana, 2010) [12]. Another research in an orphanage in Kecamatan Medan Sunggal Kota Medan that shows there is a relationship between scabies infection with behavior *($p = 0,007$)* (Saragih, 2016) [16]. A behavior not to have a good personal hygiene could be a good reason for scabies to happen (Hadidjaja and Sungkar, 2011) [8]. It is concluded that the result is suitable with theories and previous researches, where a bad personal hygiene behavior will have higher risk to be infected by scabies.

5 Conclusion

The conclusion of this research is that there is a relationship between personal hygiene behavior with scabies incident in Pondok Pesantren Modern Darul Hikmah Kota Medan. Scabies incidence rate in Pondok Pesantren Modern Darul Hikmah Kota Medan adalah is 81 out of 220 respondents. Diagnosed with scabies by clinical examination and scabies was found in scrapped skin. The most scabies incident happened to 10-13 years old age range and more common in male than female.

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