

## Relationship between Knowledge, Attitude and Practice of Student's Personal Hygiene with Scabies Incidence in Pesantren Darul Fatwa, Jatinangor, West Java, Indonesia

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### Abstract

**Background:** Scabies is a parasitic infection caused by *Sarcoptes scabiei Hominis* varian and Acarina order. *Sarcoptes scabiei* infects both male and female in any age groups, ethnics, and socio-economic levels. Transmission of scabies can pass through by a direct contact from skin-to-skin or indirect contact through sharing bed, clothes, and towels. Pesantren as an educational institution supplies facilities that are shared thus making students susceptible to scabies infection. This study was conducted to discover relationship between knowledge, attitude, and practice of student's personal hygiene with scabies incidence.

**Methods:** An analytic observational study was conducted from October to November 2015 in Pesantren Darul Fatwa, Jatinangor. Study was conducted with cross-sectional design and total sampling for the sample size. Total of 37 students who participated in this study were 22 males and 15 females. This study was begun with a stand alone-questionnaire, fill out on knowledge, attitude, and practice of personal hygiene that was supervised by researcher, and physical examination for scabies diagnosis that was performed by doctors.

**Results:** Based on history taking and physical examination, 15 out of 37 students were diagnosed with scabies positive. All of them were males, dominated by 13 year old students, 1st and 2nd Junior High School students. Statistical analysis with chi-square test showed that there were no relationship between knowledge, attitude and practice of student's personal hygiene with scabies incidence.

**Conclusions:** There is no relationship between knowledge, attitude and practice of student's personal hygiene with scabies incidence in Pesantren.

**Keywords:** Attitude, hygiene, knowledge, practice, scabies

### Introduction

Scabies prevalences around the world exceed 300 million people.<sup>1-3</sup> Scabies is caused by *Sarcoptes scabiei* which lives on stratum corneum layer of the human skin. Lesion characteristic caused by this infection is pruritic papular eruption.<sup>4</sup> An epidemiological study showed that scabies incidences in developing countries in Asia are high, about 17% in schools in Timor Leste and 31% in orphanages in Malaysia.<sup>5</sup>

*Sarcoptes scabiei* migrates from the infected body to the new host by odour and body heat stimulation. In order to have enough stimulation, a person must live in a place that has very close skin-to-skin contact, such as a

crowded pesantren.<sup>6,7</sup>

Pesantren is an institution that provides some facilities that are shared together as the student's types of personal hygiene varies. This makes them susceptible to be infected with scabies.<sup>8</sup> A study showed that *Sarcoptes scabiei* infected about 10% of general population and 59% children on rural community.<sup>9</sup> A study conducted at Madrasah in Dhaka City, Bangladesh also reported that in 2011, scabies is hyper endemic at the Madrasah, 98% of 492 students at Madrasah are diagnosed with scabies positive.<sup>10</sup> Thus, this researcher was attracted to conduct a study about relationship between knowledge, attitude, and practice of student's personal hygiene with scabies incidence in Pesantren.

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## Methods

This study was carried out from October to November 2015 in Pesantren Darul Fatwa Jatinangor. The type of study was analytic observational with cross-sectional design. Sampling method used was total sampling method, which 37 students participated in this study (15 females and 22 males). Every student was needed to be in the inclusion and exclusion criteria parameters to participate the study. Inclusion criteria in this study were both male and female students in Junior High School who lived at Pesantren Darul Fatwa Jatinangor. Students were obligated to fill the inform consent form as an agreement to participate in this study. Students who had mental disorder were included into exclusion criteria because they disturbed communication process. The method of this study was unpaired categorical comparative analytic. This study was approved by Health Research Ethics Committee Faculty of Medicine Universitas Padjadjaran No.538/UN6.C1.3.2/KEPK/PN/2015. Tested variables were knowledge, attitude, and practice of student's personal hygiene as the independent variables, and scabies incidence as the dependent variable.

Data collection was begun from study instruments preparation, such as questionnaire and physical examination tools. Questionnaire used as a tool was validated

in a pesantren in Jatinangor that had similar characteristics with this research location. The alpha-Cronbach's scores were:  $\alpha=0.733$  for personal hygiene knowledge,  $\alpha=0.716$  for personal hygiene attitude, and  $\alpha=0.701$  for personal hygiene practice. Scoring criteria division for each knowledge, attitude, and practice were divided into three categories, which were good (respondent's answer percentage was 76%–100% from total score), moderate (respondent's answer percentage was 56%–75% from total score), and poor (respondent's answer percentage was <56% from total score).<sup>11</sup> Subjects who were eligible to participate the study were given inform consent first, and then filled the questionnaire autonomously as the researcher supervised fulfillment process. Next step, the respondents were interviewed and examined by doctors. The doctors who examined the students were from Department of Dermato-venerology of Dr. Hasan Sadikin General Hospital Bandung. They have been standardized and were competent for this study. Physical examination was conducted by male doctor who examined male students, and female doctor who examined female students. History taking and physical examination were conducted to diagnose scabies infection on students, determine lesion efflorescence, and microscopic examination of *Sarcoptes scabiei* with cellophane tape method. The data were not normally distributed after

**Table 1 Respondent's General Characteristics**

Characteristics	Scabies		Total
	Yes	No	
Gender			
Male	15	7	22
Female	0	15	15
Age (year)			
11	0	1	1
12	2	2	4
13	7	1	8
14	3	5	8
15	3	12	15
17	0	1	1
Grade in Junior High School			
1 <sup>st</sup>	6	5	11
2 <sup>nd</sup>	6	13	19
3 <sup>rd</sup>	3	4	7

**Table 2 Distribution of Lesion Efflorescence On Scabies Sufferers**

Type of Lesion	Number of Scabies Sufferers
Excoriation	13
Erosion	2
Hiper pigmentation	7
Crust	14
Papule	15

**Table 3 Distribution of Lesion Location on Scabies Sufferers**

Type of Lesion	Number of Scabies Sufferers
Finger webs of hand	15
Volar of lower arm	11
Abdomen	9
Genital	9

running a normality test, Saphiro-Wilk, so Chi-square and Fisher test on statistical program that were used to test relationship among two categorical variables. Confidence interval value was 95% with mean determined by p value, in which p value <0.05 showed that the result had a meaning or there was an relationship

among two tested variables.

## Results

Thirty seven data were collected from this study, 15 students were diagnosed with scabies. Respondents of this study were

**Table 4 Analysis of Relationship between Knowledge, Attitude, and Practice of Student's Personal Hygiene with Scabies Incidence in Pesantren**

Independent Variables	Scabies (n=37)		Total	p Value
	Yes	No		
Knowledge of Personal Hygiene				p=0.708
Good	17	10	27	
Moderate	5	5	10	
Poor	0	0	0	
Total	22	15	37	
Attitude of Personal Hygiene				p=1.000
Good	18	12	30	
Moderate	4	2	6	
Poor	0	1	1	
Total	22	15	37	
Practice of Personal Hygiene				p=1.000
Good	2	2	4	
Moderate	17	11	28	
Poor	3	2	5	
Total	22	15	37	

dominated by male students. All of scabies sufferers were males, dominated by 13 years old students, 1<sup>st</sup> and 2<sup>nd</sup> Junior High School students (Table 1).

Statistical differences between knowledge, attitude, and practice of student's personal hygiene with scabies incidence resulted  $p > 0.05$ . This result showed that there was no relationship between knowledge, attitude, and practice of student's personal hygiene with scabies incidence.

## Discussion

This study discovered that more than 50% students were diagnosed with positive scabies. This result was similar with the epidemiological study in 2013 which showed that scabies incidence in developing countries in Asia was high, about 17% in schools in Timor Leste and 31% in orphanage in Malaysia.<sup>5</sup> It was reported that high number of scabies sufferers lived in an institution that accommodated many people in one place (Pesantren, Orphanage), were high for scabies transmission because there were so many people living in the same place. Due to the phenomena, direct contact from skin to skin can be easily established and often occurred.

This study showed that scabies sufferers efflorescence distribution and lesion location are appropriate with the given theories. A study reported that lesion efflorescence scabies sufferers are pruritic papule, pustule, vesicle, nodul, excoriation, and crust.<sup>12</sup> Characteristics of lesion distribution are on predilection area of the body, which are finger webs, dorsum and palm, axilla, periumbilicus, genital, and sole.<sup>12</sup>

This study discovered that most of personal hygiene knowledge and attitude degree of respondents were good. In contrast, most of personal hygiene practice degree were at moderate level. There were 27 out of 37 respondents having good knowledge, 30 out of 37 having good attitude, while 28 out of 37 having moderate practice. These results are similar to other studies conducted in 2012 about the characteristics of knowledge, attitude, and practice in preventing transmission of scabies in Pesantren.<sup>13</sup>

Based on this study analysis of pesantren situation and questionnaire result, respondents' knowledge, attitude, and practice of personal hygiene are good because most students understand about personal hygiene itself. However, most of the practice of personal hygiene was at moderate level. These results might be as a consequence of

the minimal facilities in Pesantren. Pesantren does not have laundry service so every student must wash their own clothes. There is also no health facility, thus sick students seldom get cure and has minimum knowledge about prevention strategies of scabies. In addition, students also sleep together in their room, share towels and clothes each other. Students who live together in a room can be influenced by personal hygiene practice of other students. However, this study discovered that there was no relationship between knowledge, attitude, and practice of students' personal hygiene with scabies incidence in Pesantren. This result was contradicted with theory that stated scabies can transmit if students do not understand about personal hygiene.<sup>14</sup> Another theory claimed that students are vulnerable to get scabies because of students' personal hygiene varieties.<sup>8</sup> A study reported that the poor knowledge of student's personal hygiene can increase scabies incidence which contradicts with this study.<sup>15</sup>

In this study, the causes of scabies incidence might be caused by the students who live together with other friends in one crowded room (close contact), so that the students with good knowledge, attitude, and practice of personal hygiene can be transmitted by the students with moderate and poor knowledge, attitude, and practice of personal hygiene.

The limitations of this study are small sample size and less detail questionnaire. The study hereafter needs to consider the sample size, elaborate, and develop the questionnaire, and focus on the preventive and management strategies of scabies.

The conclusion of this study is the tested hypothesis which is rejected. It means there is no relationship between knowledge, attitude and practice of student's personal hygiene with scabies incidence at Pesantren Darul Fatwa, Jatinangor.

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