

## Research Article

# The Influence of Environmental Management and Personal Health Education on the Incidence of Scabies at Boarding School

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**Abstract.** Scabies is a skin disease that is global in nature. It is estimated that the prevalence of scabies worldwide reaches more than 300 million cases per year. Personal hygiene and poor environmental management can increase the risk of scabies. The provision of health education on personal hygiene and environmental management is one of the efforts to reduce the incidence of scabies. The aim of this research was to determine the effect of environmental management and personal hygiene education on the incidence of scabies at Islamic Boarding School Pangandaran. This study was a quasi-experimental study with a one group pretest-posttest design. The population was all students who suffer from scabies at the school, and a sample of 42 students was used. Data were analyzed using paired sample t test with a confidence level of 95% ( $\alpha = 0.05$ ). Based on the bivariate analysis, it was shown that before the environmental management intervention was given, almost all of the respondents (38 people – 90.5%) had a low level of habitual behavior. After the environmental management intervention was given, most of the respondents (28 people – 66.7%) had a higher level of habitual behavior than before environmental management. After education on personal hygiene, 22 respondents (52.4%) had a good level of knowledge and 20 (47.6%) had sufficient knowledge ( $p$ -value < 0.05). Therefore, environmental management and health education on personal hygiene can lead to a decrease in the incidence of scabies in Pondok Pesantren Riyadlussharf Walmantiq Pangandaran.

**Keywords:** scabies incidence, personal hygiene, environmental management, health education

## 1. Introduction

Scabies is one of the examples of infectious skin diseases, the distribution of epidemiological data, this disease is spread throughout the world, especially in densely populated areas and low levels of hygiene [1]. The latest WHO report stated that the incidence of scabies in 2017 was 130 million people in the world. In Indonesia, the prevalence of scabies is still quite high, the prevalence of scabies in Indonesia in 2015 was 3.9-6% [2]. And scabies ranks third out of 12 skin diseases [3][4]. According to the West Java

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Health Office in Hardiana (2016) [2], scabies is still ranked 9th out of 10 of the largest and most common diseases in West Java (Sadidah, 2019). Scabies is ranked 7th out of 10 main diseases at Puskesmas and ranks 3rd of the most common skin diseases in Indonesia [5].

Scabies disease is a skin disease that is transmitted through direct contact between humans and indirectly (through objects) and is caused by the parasitic mite *Sarcoptes scabiei* which attempts to form tunnels under the skin [6]. The immediate impact felt by people with scabies is itching. The itching gets worse at night or when the weather is hot and the patient is sweating. This condition causes sufferers to experience sleep disturbances so that in the morning they look less concentrated and lethargic. Sleep disturbances that last a long time can affect learning concentration and decrease achievement in class [6].

In terms of age, the prevalence rate of scabies is higher in children. According to Heukelbach, scabies tends to occur in children and adolescents aged 10-14 years [7]. Many cases of scabies are found in orphanages, dormitories (boarding schools), prisons, hospitals, and places with poor sanitation [8]. The factors that support the development of scabies include low socioeconomic status, poor environmental management and poor *personal hygiene* [9].

*Personal hygiene* is an action to maintain one's health and hygiene which aims to create well-being both physically and psychologically [10]. *Personal hygiene* and cleanliness in the Pondok Pesantren environment still really needs attention, looking at the condition of each room, the habit of students hanging dirty clothes and towels, the condition of the bathrooms and toilets being dirty, as well as the density of occupancy seen from the size of the rooms and it becomes a gap that needs to be addressed. repaired.

The dalil of the Qur'an related to personal hygiene is QS. Al-Baqarah verse 222:

Meaning: "*Indeed Allah loves those who repent and loves those who purify themselves*" (QS Al-Baqarah: 222) [11].

Seeing so many students who experience scabies, especially male students, it is necessary to carry out health education and environmental management against the incidence of scabies. Health education is activities aimed at improving students' abilities and making the right decisions regarding health care. The *output* expected of health education is to apply health behavior, especially in problems *personal hygiene* or behavior to maintain and improve health knowledge. It can be said that the behavior is conducive if indeed the students can apply behavior *personal hygiene* after the health education is carried out [12].

Evidenced by research Research conducted by Livana Ph, et al (2018) [13] in the research title "The effect of health education *personal hygiene* on the level of knowledge and the community of Mangonharjo Village" shows the results that there are differences in the knowledge of respondents before and after health education. In terms of health education *personal hygiene* can affect the level of knowledge[13]. Another study conducted by Cindy Tya Mayrona, et al (2018) [9] in the research title "The influence of environmental sanitation on the prevalence of scabies disease in the Matholiul Huda Al-Kautsar Islamic boarding school, Pati Regency" shows that the results obtained are changes before and after environmental management is carried out. So there is a statistically significant effect between environmental sanitation practices and the incidence of scabies [9].

The purpose of this study was to determine the effect of environmental management and education on the *personal hygiene* incidence of scabies.

The benefits of this research are expected to be an insight into the handling of scabies disease in Islamic boarding schools. In addition, this can be used as reference material and can be developed for further writing at a higher level.

The hypothesis in this study is the influence of environmental management and health education *personal hygiene* on the incidence of scabies.

## 2. Research Method

The Method *quasi-experimental one group pretest-posttest design* where the researcher provides treatment in the form of intervention in the form of environmental management and health education *personal hygiene*. In this study, on the first day the researcher filled out the pre-test questionnaire sheet to all respondents after that carried out personal hygiene health education for 40 minutes after completion and then

filled out the personal hygiene health education post-test questionnaire sheet, then 1 week after the researchers intervened, namely environmental management. The intervention was carried out 3 times in 3 weeks, and after that the respondents would be given a post-test by filling out environmental management questionnaires.

The study was conducted at the Riyadlussharfi Walmantiq Islamic Boarding School Pangandaran on March 12-April 2, 2021. The population in this study were all students who suffered from scabies at the Riyadlussharfi Islamic Boarding School Walmantiq Pangandaran. The sampling in this study used a Total Sampling as many as 42 Respondence with scabies at the Riyadlussharfi Islamic Boarding School, Walmantiq Pangandaran.

TABLE 1

Environmental Management	Pre test	Post Test
Meet	4 (9.5%)	28 (66.7%)
Does not meet	38 (90,5%)	14 (33.3%)

The research begins with conducting a preliminary study to obtain the data needed in the research process. The basic data was taken from the UPTD of the Pargi Health Center, Pangandaran Regency, which previously coordinated with the Office of National Unity, Politics, Pangandaran Regency and conducted a literature study to find various literature reviews that were used as references and received research permission from the STIKes Muhammadiyah Ciamis Nursing S1 Study Program.

When in the field, the researcher coordinates with the chairman of the Boarding School Board for the implementation of the research. The research process respondents were given a *pre-test* with a questionnaire with a score of 0 (if the answer was wrong), and a score of 1 (right answer).

After the observation *pre-test* of environmental management and *pre-test* health education *personal hygiene*, respondents are given treatment of health education on *personal hygiene* to the incidence of scabies for 45 minutes until the respondent understands. After the health education was carried out, the researcher observed again whether the respondents understood by giving back the questionnaire sheet as a *post test* then after that the respondent a daily observation sheet was given to determine whether or not environmental management was carried out for 3 weeks and the last *post test* was environmental management.

Data analysis in this study used univariate and bivariate analysis. Univariate analysis was conducted to determine the distribution and percentage of each variable including gender, age, and class. Meanwhile, bivariate analysis was used to determine the effect of environmental management and health education on increasing knowledge by using the *paired sample t test*.

### 3. Results and Discussion

#### 3.1. Univariate analysis

##### a. Description *Pre-test* of environmental management

Based on the table above, the results obtained are that from 42 respondents before being given environmental management interventions, most of the respondents did

TABLE 2

Education <i>Hygiene</i>	<i>Personal</i>	Pre test	Post Test
Good		2 (4.8%)	22 (52.4%)
Enough		13 (31.0%)	20 (47.6%)
Less		27 (64.3%)	0

not meet or had a level of habitual behavior that was less by 38 people (90.5%), and those who met as many as 4 people (9.5%). Then after the environmental management intervention was given, most of the respondents met or had a level of habitual behavior that increased or could be said to be good than before environmental management was carried out, namely 28 people (66.7%), and those who still did not meet were as many as 14 people (33.3%).

Environmental management in the boarding school area aims to overcome the problem of environmental pollution and monitor environmental factors that can affect the health status of course this is related to the cleanliness of the rooms and the environment around the cottage because of the lack of awareness of students to manage or maintain the environment as a result many students suffer from scabies. Looking at the characteristics of the santri respondents who suffer from scabies at the Riyadlussharfi Walmantiq Pangandaran Islamic Boarding School, the majority of the students are at the junior high school level. Until the results are obtained, namely from 42 respondents. Most of the respondents do not fulfill in carrying out environmental management. While the respondents who meet the environmental management is very low. The results obtained from the pre-test showed that students who suffered from scabies at the Riyadussharfi Walmantiq Pangandaran Islamic Boarding School were very lacking in environmental management so that this factor became one of the causes of the large number of students suffering from scabies.

#### b. Overview of *pre test-post test* education *personal hygiene*

Based on the table above, the results show that from 42 respondents before being given health education, most of the respondents had a poor level of knowledge of 27 people (64.3%), sufficient knowledge of 13 people (31.0%). While the respondents who have a good level of knowledge, that is equal to 2 people (4.8%). Then after being given health education, *Personal Hygiene* most of the respondents had a good level of knowledge of 22 people (52.4%), sufficient knowledge of 20 people (47.6%). Meanwhile, respondents who have a low level of knowledge, there is not a single respondent.

TABLE 3

Paired Samples Test				
Paired Differences	Mean	t	df	Sig. (2-tailed)
Environmental Management	-2.19048	-7.511	41	.000
Education <i>Personal Hygiene</i>	-3.71429	-13,922	41	.000
T-Test				P=0.000

Health education can play a role in changing the behavior of individuals, groups and communities in accordance with health values. These behavioral changes are expected to be able to maintain and improve personal hygiene health, prevent the risk of scabies disease, and protect themselves from the threat of skin disease. Personal Hygiene is self-care to maintain health. Health is related to behavior and the environment that affects the health of individuals to maintain their health. Looking at the characteristics based on the sex of the Students who suffer from scabies, they are male. Until the results are obtained, namely from 42 respondents. Most of the respondents have less knowledge, while respondents who have good knowledge are at the bottom. The results obtained from the *pre-test* showed that the lack of knowledge of the students was due to the fact that there had never been health education at the Riyadlussharfi Walmantiq Pangandaran Islamic Boarding School about *personal hygiene*, as a result, many students did not understand *personal hygiene*.

### 3.2. analysis Bivariate

The effect of environmental management and health education on *personal hygiene* on the incidence of scabies

Based on the results of the cross tabulation above, it shows that the statistical test results with a 95% confidence level ( $\alpha = 0.05$ ), in respondents before and after being given environmental management with the activity observation method, daily and health education *personal hygiene* with the lecture method and using powerpoint media obtained p value = 0.000 so that  $p < 0.05$  which means environmental management by observing daily activities and health education lecture method using media *powerpoint* affects the recovery of students who suffer from scabies in Ryadlussharfi Walmantiq Pangandaran Islamic Boarding School before and after being given environmental management and health education.

The results of this study with statistical tests showed that environmental management with daily observation methods and health education with lecture methods using media

*powerpoint* and leaflets on the incidence of scabies at Riyadlussharfi Islamic Boarding School, Pangandaran between before and after treatment there were significant differences. Most of the respondents for environmental management interventions did not fulfill most of the environmental management and for health education interventions *personal hygiene* respondents had less knowledge, this could happen because there were several factors such as lack of information, and health education had never been carried out at the Islamic Boarding School.

The results obtained by the respondents after environmental management were carried out, most of the respondents complied with as many as 28 people and those who did not meet as many as 12 people and the respondents after health education were mostly in the good category as many as 22 people and 20 people were in the sufficient category. This improvement is supported by the process of delivering material as well as *powerpoints* and *leaflets* which become learning media so that students do not feel bored, are able to accept and understand the material presented without having to practice it directly. According to Fitriani (2011) [14] health education using the method *power point* and leaflets given clearly will more attract attention, are very practical and easy to understand, colors and images can help appeal in obtaining information [15].

The results of this study are in line with the research of Livana PH et al (2018) [13] that the influence of education *personal hygiene* on the incidence of scabies is obtained by a p-value of 0.001 while the results obtained in this study are a p-value of 0.000. then statistically there is a significant effect between health education *personal hygiene* with the incidence of scabies. And the results of Cindy Tia Mayrona's research (2018) [9] prove that the influence of environmental management with the incidence of scabies has a p-value of 0.029 while the results obtained in this study are a p-value of 0.000. then statistically there is a significant effect between environmental management hygiene practices with the incidence of scabies.

After performing statistical tests using a test parametric *paired sample t* with a confidence level of 95% ( $\alpha = 0.05$ ), the significance value (2-tailed) was

0.000. because the value of Sig (2-tailed)  $0.000 < 0.05$  then  $H_a$  is accepted according to the hypothesis contained in Chapter II. So it can be said that the average difference between the variables *pre-test* and *post-test* means that there is an influence of environmental management and health education *personal hygiene* on the incidence of scabies at the Riyadlussharfi Islamic Boarding School, Walmantiq Pangandaran. Based on the results of the data analysis above, it can be concluded that there is an effect of environmental management and health education *personal hygiene* on the incidence of scabies in Riyadlussharfi Islamic Boarding School, Walmantiq Pangandaran with daily

observation and lecture methods plus media *powerpoint* and *leaflet*. With the value of  $> Value (0.05 > 0.000)$ . From the analysis also obtained the average value of *Paired Differences* in environmental management (-2.19048) and health education *personal hygiene* (-3.71429).

From the results of the research described above, it can be compared with the results of Turang's (2013) research. The results of Turang's study showed that the value of the presentation before health education was in the good category (23%) after it was given (46%) where the increase value obtained was (23%). While the results of this study with the lecture method using *powerpoint* and *leaflets* an increase (52.4%). The change in the resulting value is more significant so that the opportunity for respondents with good knowledge has a big impact compared to just the lecture method. Then also in line with the results of Adi Nurapandi's research (2021) [16] the results of the study showed changes in behavior *personal hygiene* were better with the *Paired Samples T-Test test*, P value  $< 0.05$  and a decrease in the incidence of scabies with the *Difference Test Mann-Whitney The test* obtained a P value  $< 0.05$  in the intervention group. After being given a model of behavior *personal hygiene* and environmental management [16].

## 4. Conclusions and Suggestions

### 4.1. Conclusion

Based on the results of data collection, processing and analysis regarding the Effect of Environmental Management and Health Education *Personal Hygiene* on Scabies Incidence at the Ryadlussharfi Walmantiq Islamic Boarding School Pangandaran, the authors can provide the following conclusions:

1. Before environmental management was carried out, the results were that most of the respondents do not meet in environmental management and after environmental management is carried out, most of the respondents meet in environmental management.
2. Before being given health education, it was *personal hygiene* found that the respondents had a low level of knowledge and after being given health education the *personal hygiene* respondents had a good level of knowledge.
3. There is an effect of environmental management on the incidence of scabies in Ryadlussharfi Islamic Boarding School Walmantiq Pangandaran.



4. There is an effect of health education *personal hygiene* on the incidence of scabies at Riyadlussharfi Islamic Boarding School Walmantiq Pangandaran.

## 4.2. Suggestions

1. Islamic boarding schools are expected to reduce the incidence of scabies at the Riyadlussharfi Walmantiq Islamic Boarding School for students who are infected with scabies.
2. The institution is expected to make an academic contribution in developing the concept or theory of scabies disease.
3. Patients with scabies are expected to increase knowledge and become an intervention for students who are infected with scabies.
4. Further researchers are expected to develop a broader research. In addition, further researchers can improve the treatment given to respondents regarding environmental management and health education *personal hygiene*.

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