

## The Relationship between Education Level and Scabies Prevention Behavior of Santri in Pondok Pesantren Y Pati

Nissa Anggraeni, Nina Anggraeni Noviasari, Chamim Faizin

Universitas Muhammadiyah Semarang, Indonesia

Email: [nissaanggraeni99@gmail.com](mailto:nissaanggraeni99@gmail.com)

Correspondence: [nissaanggraeni99@gmail.com](mailto:nissaanggraeni99@gmail.com) \*

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### KEYWORDS

Education Level; Scabies; Scabies Prevention Behavior

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### ABSTRACT

Scabies can be prevented by implementing healthy behaviors such as scabies prevention behaviors. This can help reduce the spread of scabies transmission in boarding schools. One of the risk factors for scabies is the level of education. The incidence of scabies is mostly experienced by MTs students rather than MA students. Because MTs students tend to have poor scabies prevention behavior. In relation to the incidence of scabies in individuals, exposure experience is a crucial aspect because individuals of more mature age, namely MA students, have better potential in knowing how to prevent scabies. The purpose of this study was to determine the relationship between education level and the prevention behavior of scabies in students at Pondok Pesantren Y Pati. This study applied analytic observational method with cross sectional research design. The research sample was 56 male and 87 female students of Pondok Pesantren Y Pati who were selected through total sampling technique. The research instrument was a scabies prevention behavior questionnaire that had been tested for validity and reliability by Umi Hasanah, 2019. Data were analyzed by applying the chi square test at a significance level of 95%. There is a significant relationship between education level and scabies prevention behavior  $p = 0.000$ , with a PR value = 14.695. With the characteristics of male respondents = 56 students (39.2%), female = 87 students (60.8%), MTs = 93 students (65.0%), MA = 50 students (35%), students who experience scabies = 62 students (43.4%), students who do not experience scabies = 81 (56.6%). The level of education can affect the behavior of preventing scabies in students. There is a significant relationship between the level of education and the behavior of preventing scabies in students in boarding school Y pati.

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### Introduction

In 2016, the global prevalence of scabies was estimated to affect 0.3% to 4.6% of the population, equating to approximately 130 million individuals, according to data from the International Alliance for the Control of Scabies (IACS). In the United Kingdom, the prevalence was recorded at 2.27 cases per 1,000 males and 2.81 cases per 1,000 females. In developing countries, scabies incidence

demonstrates fluctuating patterns, often influenced by socioeconomic and environmental factors. In Indonesia, for instance, periodic outbreaks reflect these dynamics (Samino et al., 2021).

The annual report of WHO 2017 stated that scabies cases occur as many as 300 million cases each year; until 2020, it was recorded that scabies cases could occur in as many as 200 million people at any time (WHO, 2023). The Ministry of Health of the Republic of Indonesia in 2016 noted that the prevalence of scabies in Indonesia ranged from 4.6%-12.95%, as many as 261.6 million people, making it the third of the 12 most common diseases. Referring to data from the Central Java Provincial Health Office in 2011, out of 20 health centers, the first case of scabies in the Cilacap area reached 46.8%, then in the Bukateja area came second at 34.2%, and in the Semarang area came third with 19% of cases (Kusumaningtyas, 2015).

Scabies prevalence tends to be significantly higher in environments characterized by close interpersonal contact, such as orphanages, prisons, and boarding schools (Sonhaji et al., 2019). Among students in these settings, 14% have developed secondary infections, often marked by festering wounds on affected skin areas (Kusumaningtyas, 2015; Naidoo et al., 2023). Based on the results of Mayrona's research, revealed that 84.8% of students in Pati City, equivalent to 39 out of 46 individuals surveyed, were infected with scabies, underscoring the high transmission rates in densely populated living environments (Sonhaji et al., 2019).

Scabies is a skin disease caused by the parasitic mite *Sarcoptes scabiei*. The parasite forms tunnels under the skin and is transmitted through direct human contact. Scabies causes discomfort to the sufferer due to itching at night or in hot weather (Samino et al., 2021). Sufferers are prone to lethargy. In students, prolonged sleep disturbances can affect learning concentration and lower performance in class (Savira, 2020). Common disorders include skin integrity disorders, oral mucous membrane disorders, eye infections, and physical nail disorders. The second disorder is classified as psychosocial effects, which are social problems related to personal hygiene, such as impaired sense of comfort, self-confidence, and social interaction. The third disorder or abnormality that appears on the individual's physical appearance is signs on the skin that will arise in the area of fingers, toes, shoulders, neck, underarms, and the genital area in the form of small bumps (Marga, 2020). Secondary infections arise from scratching wounds, which allow bacteria to enter the body (Nadiya et al., 2019).

Based on research conducted by Intan, the factors that influence scabies are unhealthy behavior; for example, hanging clothes in the room and exchanging clothes and personal objects, such as towels and combs, which can also be influenced by the lack of insight related to personal hygiene. This often occurs, especially among boarding school students, because of the students' dense activities, which impacts underestimating personal hygiene. Therefore, it is necessary to apply scabies prevention behavior to reduce the incidence of scabies in the boarding school (Naftassa & Putri, 2018; Oktarina & Nurhusna, 2022).

Several factors, including the level of education influence scabies prevention behavior. The level of education is related to the age of the students. Older age tends to have better potential than younger age. Adults have a higher exposure experience, namely experience in handling and preventing scabies transmission; this is in line with research conducted by Naftassa and Tiffany (2018) that as many as 30 students (96.8%) of Madrasah Tsanawiyah (MTs) experienced scabies and 11 students (57.9%) of Madrasah Aliyah experienced scabies. For this reason, the level of education plays an important role in preventing scabies in students.

This study was conducted in boarding school Y Pati because the students of boarding school Hajroh Basyir have been unable to prevent scabies optimally. The tradition of borrowing and lending goods between students and other unhealthy behaviors evidences this condition. Based on data from the caregivers of the male students at the boarding school, there are 38 Madrasah Tsanawiyah (MTs) students and 27 Madrasah Aliyah students. In contrast, for female students, there are 45 Madrasah Tsanawiyah students and 35 Madrasah Aliyah students.

## Research Methods

This study applied an analytical observational research design through a cross-sectional approach. The study population was all male and female students who lived in the cottage, namely 143 students, with 56 male and 87 female students. The sample was selected through a *total sampling* technique.

The inclusion criteria in this study are male and female students willing to be respondents, male and female students of MTs and MA, and male and female students who live in the hut. The exclusion criteria are male and female students who do not complete the questionnaire and male and female students who are not present at the research socialization.

The research instruments were the demographic data of the students and the scabies prevention behavior questionnaire consisting of 15 statements that Umi Hasanah had validated. Univariate analysis to describe gender, education level, incidence of scabies, length of stay in the hut, and scabies prevention behavior. Bivariate analysis was conducted to determine the relationship between education level and scabies prevention behavior with a chi-square test.

## Research Ethics

This study has undergone the Ethical Clearance review process and obtained an ethical feasibility decision following the Ethical Feasibility Certificate of the Health Research Ethics Commission (KEPK) of the Faculty of Medicine, Muhammadiyah University of Semarang. No. 111/EC/FK/2022.

## Results and Discussion

**Table 1. Sample characteristics**

<b>Variables</b>	<b>Frequency (%)</b>
<b>Gender</b>	
Male	56 (39,2)
Female	87 (60,8)
<b>Education level</b>	
MTs	93 (65,0)
MA	50 (35,0)
<b>Incidence of scabies</b>	
Having scabies	62 (43,4)
Does not have scabies	81 (56,6)
<b>Length of stay in the cottage</b>	

<1 year	69 (48,3)
>1 year	74 (51,7)
<b>Scabies prevention behavior</b>	
Good	58 (40,6)
Bad	85 (59,4)

Table 1 shows that the gender of 143 respondents is mostly female, totaling 87 (60.8%). Referring to the education level of 143 respondents, most of the MTs education level is 93 (65%). Based on the incidence of scabies from 143 respondents, most did not experience and never experienced scabies, namely 81 (56.6%). Based on the length of stay in the cottage of 143 respondents, most were > 1 year, namely 74 (51.7%). Based on the scabies prevention behavior of 143 respondents, most of them had poor scabies prevention behavior, namely 85 (59.4%).

**Table 2. Relationship between education level and data on scabies prevention behavior**

Education level	SCABIES PREVENTION BEHAVIOR						P	RP (95% CI)
	Bad		Good		Total			
	n	%	n	%	n	%		
MTs	82	88,2	11	11,8	93	100,0	0.000	14.695 (4.893- 44.131)
MA	3	6,0	47	94,0	50	100,0		
<b>Total</b>	<b>58</b>	<b>40,6</b>	<b>85</b>	<b>59,4</b>	<b>143</b>	<b>100,0</b>		

Based on Table 2, it was found that the respondents of MTs education level who had poor scabies prevention behavior were 82 (88.2%), while the MA education level who had good scabies prevention behavior was 11 (11.8%). The MA education level with poor scabies prevention behavior was 3 (6.0%), while the MA education level with good scabies prevention behavior was 47 (94.0%). In this analysis, it was found that there was a significant relationship between education level and scabies prevention behavior ( $p = 0.000$ ). Based on the table, the value of  $RP = 14.695$  (CI 95% 4.893-44.131) shows that the MTs education level has 14 times more risk of having poor scabies prevention behavior than the MA education level.

## Discussion

This study aimed to determine the relationship between the level of education and the prevention behavior of scabies in male and female students in boarding school Y Pati. The measuring instrument in this study is a questionnaire to determine whether the prevention behavior of scabies in students is bad or good.

Referring to the results of the study, it was found that there was a relationship between education level and scabies prevention behavior. MTs students have higher bad scabies prevention behavior than MA students. This study's findings align with research conducted by Ratnasari, which found that the MTs education level had a higher prevalence of scabies than the MA education level. Kuspriyanto also conducted similar research in one of the boarding schools in Pasuruan, East Java.

Research by Zaira Naftassa (2018) showed that MTs students have a 21 times greater risk of experiencing scabies than MA students.

The level of education is related to the age of the individual, tsanawiyah students are generally younger than aliyah students. The respondent's age is a characteristic that determines an individual's maturity level. Age has a crucial role in knowledge, attitudes, and individual behavior. Regarding the incidence of scabies, a person's exposure experience plays an important role because individuals with older age and experience with scabies have the potential to be better at handling and preventing the transmission of scabies. In some developing countries, the prevalence of scabies tends to be high among children and adolescents (Handoko, 2009).

Scabies is an infectious skin disease that is still a problem for the health of Indonesian people. Scabies is caused by the infestation and sensitization of a mite called *Sarcoptes Scabiei Varhominis*. Scabies transmission can occur through direct and indirect contact. Direct contact, such as shaking hands with sufferers, having sex, and sleeping together. While indirect contact transmission can be through inanimate objects such as pillows, towels, clothing, and other personal items. When a person is in direct contact, after 30 minutes, *Sarcoptes scabiei Varhominis* will release secretions in the form of proteolytic enzymes to degrade the stratum corneum with the aim that the skin can be dug easily to form tunnels by mites. When the mites begin to dig tunnels, the mites will secrete a lot of secretions in the form of saliva, which will cause an immune response in the form of increased IgE and IgG, and type IV hypersensitivity occurs. At that time, there will be skin abnormalities in the form of erythema macules, vesicles, edema, and papules. Patients with scabies will feel itchy at night, causing scratching, which causes excoriation and eventually becomes a pustule (Maryunani, 2013; Sunderkötter et al., 2021).

Scabies are closely related to personal hygiene; the rate of scabies tends to increase in environments where people live in groups, such as boarding schools, orphanages, and prisons. Due to a lack of knowledge, scabies are often considered trivial because they are not life-threatening. This results in a lack of treatment to prevent scabies. A person's knowledge is related to their level of education. The higher the education of an individual, the wider the knowledge gained. Therefore, individuals with a high level of education have good scabies-prevention behavior (Lopes et al., 2019; Onayemi et al., 2005).

From the results of Umi Hasanah's research, poor scabies prevention behavior can be one of the factors for the high spread of scabies. Scabies prevention behavior consists of improving personal hygiene, improving environmental hygiene, avoiding direct contact with people with scabies such as shaking hands, not borrowing towels, bed sheets, or blankets from people with scabies, cleaning the house, and ensuring the home is adequately ventilated. In this study, it was found that the level of education was related to the behavior of preventing scabies. It was found that MTs students of boarding school Y Pati tended to have poor scabies prevention behavior. This causes more MTs students to suffer from scabies than MA students.

## Conclusion

There is a significant relationship between the level of education and the prevention behavior of scabies in students of boarding school Y Pati. Students at higher education levels, such as those in Madrasah Aliyah (MA), demonstrate substantially better scabies prevention practices compared to their counterparts in Madrasah Tsanawiyah (MTs). This finding underscores the critical role of

education in shaping health-related behaviors, suggesting that cognitive and behavioral maturity associated with higher education levels enhances students' ability to adopt and maintain preventive hygiene practices.

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