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The Relationship between Personal Hygiene and the Incidence of Scabies Disease in Students at Al-Adabiy Islamic Boarding School, Pontianak

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Abstract. *Scabies is a skin disease that is influenced by the environment and personal hygiene. Caused by infestation and sensitization of Sarcoptes scabiei var. hominis. Symptoms of scabies are complaints of itching at night, with clinical signs of papules or vesicles, the peak is like a tunnel in the predilection area, grayish white, straight or curved. The objective of this study was to determine the relationship between personal hygiene and the incidence of scabies in students at the Al-Adabiy Pontianak Islamic Boarding School in 2023. The research design used in this study was observational analytic with a cross-sectional approach conducted on 60 students of Al-Adabiy Islamic Boarding School using a simple random sampling technique, hypothesis testing using Fisher's test. The results showed that respondents who had scabies were in the age range of 12-16 years (65%), were in class X (50%) and were dominated by males (60%). 85% of students had poor personal hygiene with a scabies incidence rate of 33.3%. The results of the Fisher's test obtained a significance value (sig.) of 0.023 (p <0.05). There is a relationship between personal hygiene and the incidence of scabies.*

Keywords: *Scabies, Personal Hygiene, Islamic Boarding School*

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INTRODUCTION

Environmentally based diseases are one of the biggest health problems in Indonesia and can affect a person's health condition driven by several factors (Ganus et al., 2021). Scabies is a disease that can be influenced by an unclean environment and poor personal hygiene (Samosir et al., 2020). This disease is a disease that is still spreading and is a world health problem, but until now scabies is still neglected and is included in the six epidermal skin parasitic diseases with the highest prevalence in the world (Rokayah & Inayanti, 2021).

World Health Organization (WHO) data shows that the incidence of scabies reaches 300 million cases each year (World Health Organization, 2023). Data from the Ministry of Health of the Republic of Indonesia (Depkes RI) shows that the prevalence of scabies in Indonesia from health centers throughout Indonesia in 2020 was 3.9-6% and is the 3rd out of 12 most common contagious skin diseases (Lilia & Novitry, 2022). Data from the Pontianak City Health Office shows that scabies is the 7th most common disease in Pontianak City with 3,541 cases in 2021 (Pontianak City Health Office, 2023). Scabies or commonly called scabies is caused by infestation and sensitization of Sarcoptes scabiei variety hominis, a parasite that can dig tunnels in the skin and cause itching (Rokayah & Inayanti, 2021). Scabies is a contagious skin disease with complaints of itching especially at night and can be seen with clinical signs, namely papules or

vesicles that at the peak there is a tunnel in the predilection place with a grayish white color and in the form of a straight or curved line with the end of a vesicle (Rahmadyanti & Lynda, 2023; Widasmara et al., 2020).

Scabies can be transmitted through direct and indirect contact and is often found in densely populated areas such as dormitories, Islamic boarding schools and prisons (Rahmadyanti & Lynda, 2023). Islamic boarding schools are Islamic schools that require all students or students to live in one residence also known as a dormitory (Rahmadyanti & Lynda, 2023). Dense housing can accelerate the transmission of scabies that occurs in it. There are several studies that show that the prevalence of scabies is quite large in Islamic boarding schools. This can be seen based on research by Efendi (2020) and Faidah (2022) stating that the majority of students in Islamic boarding schools have experienced scabies (DA& RES Benefits, 2022; Efendi et al., 2020). Personal hygiene is an individual's effort to maintain cleanliness and health for physical and psychological well-being (Karlina et al., 2021). Personal hygiene needs to be considered to avoid environmental-based diseases such as scabies that attack individuals or groups. The better the hygiene is maintained, the lower the activity and spread of parasites as a nest of disease, thereby reducing the prevalence of scabies. Majid's research (2019) states that personal hygiene and sanitation are important factors in efforts to control scabies, one of which is in Islamic boarding schools as densely populated residential areas (Rahmadyanti & Lynda, 2023; Majid & Astuti, 2019).

The purpose of this research to find out the relationship between personal hygiene and the incidence of scabies in students at the Al-Adabiy Pontianak Islamic Boarding School, to knowing the characteristics of students at the Al-Adabiy Pontianak Islamic Boarding School, to knowing the level of personal hygiene of students at the Al-Adabiy Pontianak Islamic Boarding School, and to knowing the incidence of scabies in students at the Al-Adabiy Pontianak Islamic Boarding School. Based on the description above, the high incidence of scabies in densely populated housing such as Islamic boarding schools is the reason why researchers chose the research title, namely the relationship between personal hygiene and the incidence of scabies in students at the Al-Adabiy Islamic Boarding School in Pontianak.

LITERATURE REVIEW

Scabies is a disease caused by the Sarcoptes scabiei mite that can survive outside the host for 24-36 hours at room temperature of 21 o C and humidity of 40-80% and can survive longer with high humidity. Sarcoptes scabiei will use odor and temperature stimuli to find the host body to be targeted. Scabies can easily attack healthy people with direct contact with sufferers for a long time so that it can be transmitted quickly in a family or group of people who have the same residence. Scabies transmission can occur if there are female mites or lice that have fertile eggs transferring themselves to healthy sufferers, so that in the following month there is an increase in the number of mites in the skin layer (Graham, 2022).

The World Health Organization states that scabies is a significant disease for public health because it is a substantial contributor to global morbidity and mortality. The prevalence of scabies worldwide is reported to be around 300 million cases per year. 4 Scabies is a skin disease that is endemic in tropical and subtropical climates such as Africa, South America, the Caribbean, central and southern Australia and Asia. The highest case reports of scabies attack infants and children living in tropical areas and countries with low resources. In some regions, especially in the Pacific, the reported prevalence of scabies is 20–30%, with a prevalence of occurrence in children >50% (Lilia & Novitry, 2022). The prevalence of scabies in Indonesia according to data from the Ministry of Health has decreased from year to year as seen from the prevalence data in 2018 of 5.60-12.96%, the prevalence in 2019 of 4.9-12.95% and the latest data obtained recorded the prevalence of scabies in Indonesia in 2020, namely 3.9-6% (Lilia & Novitry, 2022). This disease is often associated with lower-class people and poor hygiene, especially those who do not have clean water sources and dense living environments, making it easier for scabies to spread (Roybafie et al., 2023).

Adult mites are round, eyeless, sac-like bodies. Females are 0.30–0.45 mm long and 0.25–0.35 mm wide and males are slightly more than half that size. Mating occurs after an active male penetrates the molting pouch of an adult female. Mating occurs only once and makes the female fertile for the rest of her life. Females with eggs leave the molting pouch and wander on the skin surface until they find a suitable site. Once on the skin surface, mites attach to the skin using sucker-like pulvilli attached to their front two pairs of legs. When the female finds a suitable site, she begins to tunnel her characteristic convoluted body and lays eggs in the process. Once the female with eggs burrows into the skin, she remains there and continues to extend the tunnel and lay eggs for the rest of her life (1–2 months). Male mites are rarely seen; they make temporary shallow burrows in the skin to feed until they find a female mate. 19 There are several factors related to scabies, including sanitation, knowledge, population density, behavior of sharing goods, water, economy and personal hygiene (Widasmara et al., 2020).

Personal hygiene is a preventive measure related to the responsibility of each person to improve health and limit the spread of infectious diseases, especially those that can be transmitted through direct contact. There are several things that encompass personal hygiene, including body cleanliness, cleanliness of nails, mouth, teeth, hair, skin, ears, clothes, nose, eyes, genitals, items such as towels and bedding (Hastuty et al., 2023). Personal hygiene that is well maintained will make a person healthy and free from various diseases. The impacts that often arise due to lack of maintaining personal hygiene are (Hastuty et al., 2023).

METHODS

The research employed an observational analytical design with a cross-sectional approach, conducted from February to March 2024 at Al-Adabiy Pontianak Islamic Boarding School. The study population comprised 90 students, with 50 males and 40 females, from which a sample size of 47 was determined using Slovin's formula and selected through simple random sampling. Inclusion criteria included being a registered student residing at the boarding school and consenting to participate, while exclusion criteria ruled out students who failed to complete the questionnaire or had skin diseases other than scabies. The independent variable was personal hygiene, assessed across clothing, skin, genitalia, towels, and bedding, while the dependent variable was the incidence of scabies. Measurement involved a questionnaire, comprising 30 questions across five components, and direct observation for cardinal signs of scabies, with personal hygiene classified as "Good" or "Not Good," and scabies incidence as "Positive" or "Negative." Data collection involved explaining the research objectives and obtaining informed consent before distributing and collecting questionnaires and conducting physical examinations, with privacy maintained and examinations gender-matched to the respondents. The validity and reliability of the questionnaire were pre-established by prior studies, ensuring credible instruments with a Cronbach's alpha value exceeding 0.6. Data were analyzed using univariate methods to describe variable distributions and bivariate analysis with the chi-square or Fisher's test to determine relationships between personal hygiene practices and scabies incidence. This comprehensive methodology ensured the study's rigor and the reliability of its findings.

RESULT AND DISCUSSION

The respondents used in this study were students in grades VIII, X, XI and XII totaling 60 people with the number of students in grade VIII as many as 4 people, grade X as many as 21 people, grade XI as many as 17 people and grade XII as many as 18 people. The results of data collection on the characteristics of the respondents included can be seen in Table 1.

Table 1. Frequency Distribution of Research Respondent Characteristics

Characteristics	Number (n)	Percentage (%)	Scabies (n)		Percentage (%)	
			Positive	Negative	Positive	Negative
Age						
12-16	27	45.0	13	14	65.0	35.0
17-25	33	55.0	7	26	35.0	65.0

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Total	60	100.0	20	40	100.0	100.0
Class						
VIII	4	6.7	2	2	10.0	5.0
X	21	35.0	10	11	50.0	27.5
XI	17	28.3	6	11	30.0	27.5
XII	18	30.0	2	16	10.0	40.0
Total	60	100.0	20	40	100.0	100.0
Gender						
Man	26	43.3	12	14	60.0	35.0
Woman	34	56.7	8	26	40.0	65.0
Total	60	100.0	20	40	100.0	100.0
Length of Stay						
< 12 months	21	35.0	10	11	50.0	27.5
>12 months	39	65.0	10	29	50.0	72.5
Total	60	100.0	20	40	100.0	100.0

Source: Primary Data, 2024

The results in Table 1 show the characteristics of respondents consisting of age, class, gender and length of stay of respondents. The highest proportion of respondents in the age range of 17-25 years, namely 33 people (55%) and dominated by women 34 people (56.7%). The respondents who participated the most were class X respondents as many as 21 people (35%) and the fewest were class VIII respondents as many as 4 people (6.7%). The length of stay of respondents who most stayed in the Islamic boarding school was more than 12 months as many as 39 people (65%). The highest proportion of respondents affected by scabies were in the age range of 12-16 years (65%), were in class X (50%) and were dominated by males (60%). The proportion of respondents affected by scabies had the same ratio (50%) between the length of stay of less than 12 months and more than 12 months.

Table 2. 1Distribution of Personal Hygiene Components

Personal Hygiene Components	Number (n)	Percentage (%)
Cleanliness of Clothes		
Not good	50	83.3
Good	10	16.7
Total	60	100.0
Skin Cleanliness		
Not good	51	85.0
Good	9	15.0
Total	60	100.0
Genital Hygiene		
Not good	26	43.3
Good	34	56.7
Total	60	100.0
Towel Cleanliness		
Not good	43	71.7
Good	17	28.3
Total	60	100.0
Cleanliness of Bed Sheets and Mattresses		
Not good	49	81.7
Good	11	18.3
Total	60	100.0

Source: Primary Data, 2024

Table 2 shows that 4 out of 5 components of *personal hygiene* in students are still in the less than good category, namely clothing cleanliness (83.3%), skin cleanliness (85%), towel cleanliness (71.7%) and bed and mattress cleanliness (81.7%), while only the genital hygiene component is included in the good category (56.7%). Personal hygiene is self-care carried out by individuals to maintain personal cleanliness in the form of clean clothes, clean skin, clean genitals, clean towels and clean sheets and mattresses.

Table 3. Frequency Distribution of Personal Hygiene in Santri

Personal Hygiene	Number (n)	Percentage (%)
Not good	51	85.0
Good	9	15.0
Total	**60**	**100.0**

Source: Primary Data, 2024

Table 3 shows that 51 people (85%) have poor personal hygiene and 9 people (15%) have good personal hygiene. The incidence of scabies is the health status of respondents regarding the presence or absence of scabies disease experienced after a physical examination of the signs and symptoms of scabies.

Table 4. Frequency Distribution of Scabies Occurrence in Islamic Boarding School Students

Scabies	Number (n)	Percentage (%)
Positive	20	33.3
Negative	40	66.7
Total	**60**	**100.0**

Source: Primary Data, 2024

Table 4 shows that 40 people (66.7%) did not experience (negative) scabies and 20 people (33.3%) experienced (positive) scabies. The distribution of respondents based on the relationship between personal hygiene and scabies incidence in this study was grouped into two categories, namely less good if the score was <6 out of 6 questions per component and good if the score was 6 out of 6 questions per component.

Table 5. Relationship between Personal Hygiene and Scabies Incidence in Islamic Boarding School Students

Personal Hygiene	Scabies Occurrence				Total		P
	Positive		Negative				
	n	%	n	%	N	%	
Not good	20	39.2	31	60.8	51	100	0.023*
Good	0	0	9	100	9	100	
Amount	20	33.3	40	66.7	60	100	

Note: *indicates significant relationship

Table 5 shows the results obtained from the Fisher's test with a significance value (sig) of 0.023 (p <0.05). The p value <0.05 indicates that there is a relationship between personal hygiene and the incidence of scabies in students at the Al-Adabiy Pontianak Islamic Boarding School.

The results of a study conducted at the Al-Adabiy Pontianak Islamic Boarding School with 60 respondents showed that the highest incidence of scabies occurred in respondents aged 12-16 years, namely 13 people (65%). The results of this study are in line with the results of Sunarno's study (2021) which found the highest prevalence of scabies in the 12-16 years age group. The research results obtained are also in line with existing theories. Age is one of the characteristic traits that has direct interaction with the environment that influences a person's ability to understand and think. The Ministry of Health of the Republic of Indonesia in 2009 grouped the ages of 12-16 years into the early adolescent category. During this period, early

adolescents generally take secondary education. They will experience a lot of direct interaction with the educational environment. Direct interaction with the environment can be a factor in contracting scabies (Sunarno & Hidayah, 2021; Suciaty et al., 2021).

As many as 12 out of 20 students who had scabies were male students. This shows that the risk of scabies in men is higher than in women. This is in line with a study conducted by Samosir (2020) which found that 17 out of 20 respondents who had scabies were male. The study stated that gender is a co-founder variable in the relationship between personal hygiene and the incidence of scabies. Men are six times more at risk of getting scabies than women. It is assumed that men tend to pay less attention to personal and environmental hygiene so that the risk of getting scabies and transmitting scabies is greater than women (Samosir et al., 2020). The results of the study showed that the personal hygiene components of male students including cleanliness of clothes, skin, towels and beds and sheets were classified as poor and many still did not maintain this cleanliness compared to female students such as; not changing clothes 2x a day, exchanging clothes and sarongs with friends, taking a shower without using your own soap and using towels and sheets with friends.

As many as 10 out of 20 students who experienced scabies were in grade X of Senior High School (SMA). This is different from the results of Suciaty's study (2021) which found that 17 people (56.8%) who experienced scabies were at a low level of education, namely Junior High School (SMP). The study stated that the higher the formal education achieved, the better the process of understanding a person in receiving information to increase knowledge, skills and attitudes to prevent the development of scabies.

Education as one of the solutions to preventing scabies is closely related to the level of knowledge. Knowledge about how scabies is transmitted and efforts to prevent it. If someone has been exposed to scabies, it is hoped that it can influence lifestyle behavior by maintaining personal and environmental hygiene and being able to suppress or even eliminate the incidence of scabies (Hidayat et al., 2022). The research results obtained in this study differ from existing theories. This is because students at the Al-Adabiy Islamic Boarding School do not have sufficient understanding of scabies and the importance of maintaining personal hygiene in preventing scabies, so that even though the students are already in high school, they do not practice good personal hygiene. The lack of understanding of students can occur because students do not get enough basic knowledge about skin diseases such as scabies.

The results of Lufhfa's (2019) study at the Demak Regency Islamic Boarding School found that 20 students (57.1%) with a length of stay of less than 12 months had scabies (Luthfa & Nikmah, 2019). These results differ from this study which showed the same proportion (50%) between a length of stay of less than 12 months and more than 12 months in students who had scabies. Another study conducted by Asri (2023) stated that there was a relationship between length of stay and health status in students. Length of stay has great potential on the health status experienced because the longer students live in the Islamic boarding school environment, the greater the chance of being exposed to various factors that affect health such as scabies (Asri et al., 2023).

The results of the study showed that 20 students (33.3%) at the Al-Adabiy Pontianak Islamic boarding school had scabies. This figure is relatively lower compared to scabies cases in various other dormitory-based residences in Indonesia, one of which was a study conducted by Rahmi (2021) at the Putra Muhammadiyah Bangkinang Orphanage, Riau. The study with a cross-sectional design involving 56 children also found that the majority of children in the orphanage had scabies. The frequency of scabies found in the study was 58.9% (Rahmi & Hidayat, 2021). Another study conducted by Sari (2018) at an Islamic boarding school in Central Java also found the same results. The study with a cross-sectional design involving 70 people found that 68.2% of students had scabies (Sari, 2018).

The results of this study also found that in general the personal hygiene of students at the Al-Adabiy Pontianak Islamic boarding school is included in the poor category (85%). This is due

to the lack of understanding of students regarding personal hygiene which includes cleanliness of clothing, cleanliness of skin, cleanliness of genitals, cleanliness of towels and cleanliness of beds and sheets, causing students not to carry out personal hygiene properly. Clothing is a basic human need besides food and shelter which is used to protect and cover the body. Sweat, oil and dirt released by the body will be absorbed by clothing. In a day, sweaty and oily clothes will emit an unpleasant odor that is disturbing. If this condition is ignored, it can cause skin health problems due to unmaintained body moisture. Clothes need to be changed every day to maintain cleanliness. Wearing special clothes when sleeping is important for comfort and to protect the body (Aulia et al., 2022). The results of this study showed that as many as 50 students (83.3%) had poor levels of clothing cleanliness.

The habits of students who still do not change clothes twice a day, exchange clothes and sarongs between friends, do not iron clothes and do not dry clothes in the sun can increase the risk of spreading scabies. These habits need to be avoided to maintain clothing cleanliness in order to minimize the spread of ascabies through clothing. The skin is the largest organ of the human body that has the main function of protecting against physical, biological and chemical hazards that endanger the body.

Skin cleanliness is one of the categories of personal hygiene, therefore it is necessary to maintain skin cleanliness so that personal hygiene is also maintained. The results of this study found that 51 students (85%) had poor skin cleanliness. From the data obtained, many male and female students cleaned their skin using bar soap and lent soap to friends. Shared use of bar soap can be a risk factor for the spread of scabies. The results of Avidah's study (2019) stated that poor skin cleanliness increases the risk of scabies 2.7 times greater than good skin cleanliness (Avidah et al., 2019).

The results of this study showed that 34 students (56.7%) already had a good level of genital hygiene. The genital area is one of the places where scabies is predilection, so maintaining genital hygiene such as changing underwear twice a day, wearing underwear that easily absorbs sweat and avoiding exchanging underwear with others is important (Sarma et al., 2023). From the data obtained, there are still students who have the habit of not drying underwear under the hot sun. The results of Leeyphan's (2019) study on the effects of hot scabicides on the survival of scabies mites and their eggs showed that scabies mites were destroyed and eggs became non-viable after incubation at a temperature of 50^{o}C for 35 minutes (Leeyaphan et al., 2019), so it can be assumed that preventing scabies by washing with hot water and drying clothes under the hot sun can make it difficult for scabies and their eggs to survive.

Towels are a means used to dry the body after bathing. In this process, the remaining water and dead skin cells on the body will be left on the towel which causes the towel to become damp. Damp conditions will make the towel a place for microorganisms to nest. Maintaining the cleanliness of towels by cleaning them regularly is important to avoid contracting skin diseases through towels (Aulia et al., 2022). The results of the study on the level of towel cleanliness in this study found that 43 students (71.7%) were still classified as poor.

Many of the students used towels alternately with friends, did not dry towels under the hot sun and some still used damp towels. If these habits are allowed to continue, of course, they can increase the risk of spreading scabies through towels. Therefore, maintaining the cleanliness of towels by using your own towels in a dry condition and routinely drying towels under the sun is important to prevent the spread of scabies.

The results of the study on the level of cleanliness of beds and sheets in this study found that 49 students (81.7%) were still classified as poor. From the data obtained, many of the students used the same sheets and sleeping mats, did not routinely dry the sleeping mats and did not routinely change their sheets. This behavior can certainly be a risk factor for the spread of scabies. It is assumed that sleeping mats that are rarely dried and sheets that are rarely changed allow scabies mites to grow and reproduce on the sleeping mats and sheets so that they can cause scabies for those who come into contact with the sleeping mats and sheets. The cross-tabulation

results between personal hygiene and the incidence of scabies in students at the Al-Adabiy Pontianak Islamic Boarding School showed that 31 students who did not experience scabies had poor personal hygiene. This can happen because students who do not experience scabies do not sleep in the same room as students who have scabies so that the risk of contracting scabies is reduced compared to students who sleep in the same room as students who have scabies. However, students who do not experience scabies still have a risk of contracting scabies because they live in the same environment and do not practice good personal hygiene.

Fisher's test obtained a p value of 0.023 ($p < 0.05$) which indicates that there is a relationship between personal hygiene and the incidence of scabies in students at the Al-Adabiy Pontianak Islamic Boarding School. These results are similar to various other studies that have been conducted previously. One of them is a study conducted by Fanissa (2020) in North Sumatra. The study with a cross-sectional design involving 91 people aimed to determine whether the personal hygiene behavior of students was related to the incidence of scabies. The study used a questionnaire instrument to measure personal hygiene behavior and direct examination to measure the incidence of scabies. The results of the study found that 48 students (52.7%) had scabies and 17 students (18.7%) had poor levels of personal hygiene. Fisher's test obtained a p value of 0.001 ($p < 0.05$) which indicates a significant relationship between personal hygiene and the incidence of scabies (Fanissa, 2020).

The study with a cross-sectional design involving 66 people aimed to determine the relationship between personal hygiene and the incidence of scabies in students at the Tanwiriyyah Cinajur Islamic Boarding School. The study used a questionnaire instrument to measure personal hygiene and direct examination to measure the incidence of scabies. The study found that 37 respondents (56.1%) had a sufficient level of personal hygiene and 60 respondents (90.9%) had scabies. The results of the analysis showed a significant relationship between personal hygiene and the incidence of scabies in students at the Tanwiriyyah Cinajur Islamic Boarding School ($p < 0.05$) (Rahmawati et al., 2022).

Research conducted by Nadiya (2020) in Jambi found different results from this study. The study with a cross-sectional design involving 85 students aimed to determine the relationship between personal hygiene and environmental sanitation with the incidence of scabies skin disease in students at the Sa'datuddaren Islamic Boarding School in Jambi City. The study used questionnaire instruments and direct examinations. The results of the analysis obtained a p value = 0.832 (> 0.05) which showed that there was no significant relationship between personal hygiene and the incidence of scabies. [43] Differences in research results can of course occur because they are influenced by several factors such as the geographical location of the research site, physical conditions of the environment, researcher negligence and others.

Although the results of the study conducted by the researcher show similarities regarding the relationship between personal hygiene and the incidence of scabies with several studies that have been conducted previously, it cannot be ignored that the incidence of scabies in this study is relatively low (33.3%) when compared to the level of personal hygiene which is mostly still considered poor (85%). This difference is thought to be caused by several reasons. First, various factors that may influence the occurrence of scabies in the study conducted by the researcher and previous studies may have different characteristics, such as housing density, children's knowledge level, environmental sanitation, room humidity, room ventilation and others (Ibadurrahmi et al., 2017). Because these factors are factors that also influence the incidence of scabies, it is possible that the results of this study were also influenced by these factors. Second, the researcher suspects that the criteria for good personal hygiene used in the questionnaire used as an instrument in this study are too strict. Respondents must meet 6 parameters to demonstrate good personal hygiene, so that these respondents will be more likely to be assessed as having poor personal hygiene.

CONCLUSION

The study concludes that the majority of students affected by scabies are aged 12-16 years, primarily in class X, with a higher prevalence among males, while the length of stay whether more or less than 12 months shows a similar proportion of scabies cases. Personal hygiene among students at Al-Adabiy Pontianak Islamic Boarding School is generally poor, contributing to a scabies incidence rate of 33.3%. A significant relationship was identified between personal hygiene practices and the occurrence of scabies, emphasizing the critical role of maintaining hygiene to reduce scabies cases in this environment. For further researchers, it is expected to conduct research with a larger population and sample size and it is necessary to develop research using variables that have never been studied before such as environmental sanitation, housing density or level of knowledge and conduct laboratory examinations related to the mites found and then perfect this research so that the results obtained are more in-depth and optimal.

REFERENCES

Asri, Y., Asdary, R. N., Priasmoro, D. P., & Indari, I. (2023). Relationship between gender, length of stay, communication with friends, satisfaction with the boarding school environment, and sleep needs with health status of students at Islamic boarding schools. *Jurnal Kebidanan*, 12(02), 145–152. https://doi.org/10.35890/jkdh.v12i02.301

Aulia, N., Tono, W., & Din, A. (2022). Personal hygiene with the incidence of scabies disease at the Thawalib Islamic Boarding School, Padang City. *Jurnal Environmental Sanitation*, 2(2), 72–78. https://doi.org/10.36086/jsl.v2i2.1308

Avidah, A., Krisnarto, E., & Ratnaningrum, K. (2019). Risk factors for scabies in conventional and modern Islamic boarding schools. *Herb-Medicine Journal*, 2(2), 58. https://doi.org/10.30595/hmj.v2i2.4496

DA& RES Benefits. (2022). Description of personal hygiene Santri on scabies incident in Pondok. *Medscience*, 8(1), 23–30.

Efendi, R., Adriansyah, A. A., & Ibad, M. (2020). Relationship between personal hygiene and scabies incidence in students at Islamic boarding schools. *Journal of Indonesian Community Health*, 15(2), 25–28. https://doi.org/10.26714/jkmi.15.2.2020.25-28

Fanissa. (2020). The correlation of *santri's* personal hygiene to the incidences of scabies in Pesantren Al-Kautsar Simalungun (a boarding school). *Jurnal Endocrinology Tropical Medicine and Infectious Disease*, 2(1), 49–56. https://doi.org/10.32734/jetromi.v2i1.3494

Ganus, E., Yohanan, A., & Wahyuni, I. D. (2021). Evaluation of the sanitation clinic program for environmentally based diseases at the Kendalsari Health Center, Malang City. *Media Husada Journal of Environmental Health*, 1(1), 44–57.

Graham, R. (2022). *Dermatology* (8th ed.). Jakarta: Erlangga.

Hastuty, Y. D., Nasution, N. A., Efitra, E., & Gustiani, W. (2023). *Knowledge and personal hygiene behavior of adolescent girls during menstruation*. Surabaya: PT. Sonpedia Publishing Indonesia.

Hidayat, U. A., Hidayat, A. A., & Bahtiar, Y. (2022). The relationship between the level of knowledge about scabies and the incidence of scabies in Manbaul Ulum students. *Journal of Nursing Galuh*, 4(2), 33. https://doi.org/10.25157/jkg.v4i2.7817

Ibadurrahmi, H., Veronica, S., & Nugrohowati, N. (2017). Factors influencing the incidence of scabies in students at the Qotrun Nada Cipayung Dopok Islamic Boarding School in February 2016. *Jurnal Profesi Medika: Jurnal Kedokteran dan Kesejahteraan*, 10(1). https://doi.org/10.33533/jpm.v10i1.12

Karlina, N., Rusli, B., Muhtar, E. A., & Candradewini, C. (2021). Socialization of personal hygiene maintenance and self-protection in housing environments in the new normal era. *Kumawula Journal of Community Service*, 4(1), 49. https://doi.org/10.24198/kumawula.v4i1.30658

Leeyaphan, C., Pluetrattanabha, N., Limphoka, P., & Bunyaratavej, S. (2019). Scabicidal effect of heat on the in vitro survival of scabies mites and their eggs: Optimal temperature and exposure time. *Indian Journal of Dermatology, Venereology, and Leprology*, 85(6), 647–649. https://doi.org/10.4103/ijdvl.IJDVL_198_19

Lilia, D., & Novitry, F. (2022). The relationship between the habit of using shared towels, occupancy density and ventilation with the incidence of scabies at the An Nur Orphanage, Work Area of the Surakarya Health Center UPTD, Ogan Komering Ulu Regency, 2022. *Journal of Environmental Health*, 8, 51–58.

Luthfa, I., & Nikmah, S. A. (2019). Lifestyle behavior determines scabies incidence. *Jurnal Ilmiah Permas STIKES Kendal*, 9(1), 35–41. https://doi.org/10.32583/pskm.9.1.2019.35-41

Majid, R., & Astuti, R. D. I. (2019). The relationship between personal hygiene and the incidence of scabies in students at Islamic boarding schools in Bandung Regency in 2019. *Journal of Integrative Health and Science*, 2(22), 161–165.

Nadiya, A., Listiawaty, R., & Wuni, C. (2020). The relationship between personal hygiene and environmental sanitation with scabies disease in students at the Sa'Adatuddaren Islamic Boarding School. *Contagion: Scientific Periodical Journal of Public Health and Coastal Health*, 2(2), 99. https://doi.org/10.30829/contagion.v2i2.7240

Pontianak City Health Office. (2023). *Overview data of the top 10 most common diseases in the city*. Retrieved from https://data.pontianak.go.id/

Rahmadyanti, E., & Lynda, R. (2023). *Sanitation and environmental health of residential homes*. Aceh: Uwais Inspiration Indonesia.

Rahmawati, R. S., Ruliani, S. N., & Novita, A. (2022). With the incident of scabies in students at the Tanwiriyyah Islamic Boarding School in Cianjur in 2022. *Jurnal Kesehatan Siliwangi*, 4(1), 70–79.

Rahmi, E., & Hidayat, R. (2021). The relationship between personal hygiene and the incidence of scabies at the Muhammadiyah Bangkinang Boys' Orphanage. *Journal of Tambusai Health*, 2(1), 1–6. https://doi.org/10.31004/jkt.v2i1.1553

Rokayah, & Inayanti, E. R. S. (2021). *Textbook of reproductive health & family planning*. Surabaya: NEM Publisher.

Roybafie, Y., Tohri, T., & Ramadhan, A. (2023). The relationship between knowledge of clean and healthy living behavior (PHBS) and the incidence of scabies at the Cinta Wali Islamic Boarding School, Cianjur Regency in 2021. *Journal of Rajawali Health*, XII(2022), 14–17.

Samosir, K., Sitanggang, H. D., & MF, M. Y. (2020). The relationship between personal hygiene and scabies incidence at the Madani Unggulan Islamic Boarding School, Bintan Regency. *Journal of Public Health Science*, 9(3), 144–152. https://doi.org/10.33221/jikm.v9i03.499

Sari, V. M. (2018). The relationship of clean and healthy living behavior to the incidence of scabies at Darul Falah Islamic Boarding School [Thesis]. Sultan Agung Islamic University. Retrieved from http://repository.unissula.ac.id/id/eprint/13074

Sarma, A. S., Mona, L., & Zainun, Z. (2023). The relationship between knowledge level and personal hygiene and the incidence of scabies in students at the Dar El Iman Islamic Boarding School, Padang City. *Jurnal Kedokteran Nanggroe Medika*, 6(2), 9–19.

Suciaty, S., Ismail, S., & Julaika. (2021). Scabies disease profile in patients treated in the Kamonji

Health Center work area in 2018. *Med Alkhairaat Journal of Medical and Health Researcher*, 3(2), 45–50. https://doi.org/10.31970/ma.v3i2.72

Sunarno, J. M., & Hidayah, A. I. (2021). Overview of knowledge, attitudes, and behavior of scabies sufferers in the Pejawaran Health Center UPTD area in 2021. *Medsains*, 7(01), 1–10.

Widasmara, D., Rofiq, A., & Fitri, L. E. (2020). *New concept of scabies*. Malang: Brawijaya University Press.

World Health Organization. (2023). *Scabies*. Retrieved from https://www.who.int/news-room/fact-sheets/detail/scabies

