



**SCABIES AMONG ADOLESCENTS IN ISLAMIC RELIGIOUS BOARDING SCHOOLS: A DESCRIPTIVE STUDY**

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**ABSTRACT**

Scabies is a common skin infestation caused by mite, posing significant health challenges, especially in densely populated environments like boarding schools. Objective: This study aimed to identify the incidence of scabies among adolescents in Islamic religious boarding schools in Pontianak, Indonesia. Methods: A quantitative descriptive design was employed, involving 220 students from an Islamic boarding school in Pontianak. Consecutive sampling was used to select participants. Data were collected using questionnaires on knowledge and attitudes about scabies, and observation sheets for environmental assessment. Descriptive statistics was performed. Results: The study found that 66.3% of respondents experienced low severity scabies symptoms, while 33.6% had high severity symptoms. The majority of respondents were female (55%), with a mean age of 13.6 years. Knowledge about scabies was generally low, with significant gaps in understanding symptoms, transmission, and prevention. Attitudes towards scabies prevention were also poor, with many students neglecting personal hygiene and environmental cleanliness. Conclusion: The high prevalence of scabies in the boarding school highlights the need for targeted interventions. Future research should focus on evaluating the effectiveness of these interventions to develop sustainable solutions for managing scabies in similar settings.

Keywords: adolescents; environmental sanitation; islamic religious boarding schools; personal hygiene; scabies

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**INTRODUCTION**

Skin diseases are a prevalent health issue affecting a broad range of people, from infants to the elderly, and are a significant concern for healthcare providers. These diseases manifest in various forms, including itching, pain, rashes, scabs, and infections. Scabies, in particular, is the third most common skin disease globally. Known colloquially as scabies, it is especially prevalent in tropical regions (Apriani et al., 2021). Scabies is caused by the mite *Sarcoptes scabiei* var. *hominis*, which belongs to the phylum Arthropoda, class Arachnida, order Acari, and family Sarcoptidae (Alslyali et al., 2019). According to the World Health Organization, the prevalence of scabies in 2019 was estimated to be between 100-200 million cases worldwide, with approximately 455 million new cases each year, classifying it as a neglected tropical disease (NTD) (WHO, 2019). Previous study reported 200 million cases with an average prevalence of 5-10%, predominantly affecting children (Mayrona et al., 2018).

In Indonesia, the Ministry of Health reported that in 2016, the prevalence of scabies was between 4.60% and 12.95% among the 261.6 million population, making it the third most common skin disease (Sunarno & Hidayah, 2021). Specifically, in Pontianak city, there were 454 cases in 2010. This number decreased to 378 cases in 2011 but surged to 4,446 cases in 2012 (Yulianti et al., 2014). Data from the West Kalimantan Provincial Health Service in 2020 indicated 2,758 cases of skin diseases caused by parasitic infections from hospitals across the province (Dinas Kesehatan Provinsi Kalimantan Barat, 2021). Scabies is often overlooked because it is not life-threatening, leading to a lack of treatment and prevention efforts. However, untreated scabies can cause severe complications. The resulting lesions can cause intense itching, leading to scratching, which may result in secondary bacterial infections and complications such as abscesses and sepsis (Kumarayanti et al., 2020).

High population density is a significant factor contributing to scabies in developing countries. These crowded conditions are often found in dormitories, Islamic boarding schools, detention centers, hospitals, and slum areas. The tropical climate in Indonesia fosters the growth of bacteria, fungi, and parasites. Poor self-care practices further exacerbate the prevalence of skin diseases. Research on scabies mites indicates that symptoms, resembling dermatitis with papules, vesicles, and urtica, appear about a month after infection. Scratching exacerbates the condition, causing excoriation, erosion, lesions, and secondary infections (Apriani et al., 2021). The prevalence of scabies is notably high in densely populated areas with frequent interpersonal contact. Islamic boarding schools, characterized by high residential density and poor environmental hygiene, are particularly affected. Often, these schools lack adequate ventilation, and overcrowding further degrades air quality and increases room humidity, creating a conducive environment for scabies transmission (Nisa & Rahmalia, 2019). This study aims to identify the prevalence of scabies among adolescents in Islamic religious boarding schools in Pontianak, Indonesia.

## **METHOD**

This research utilizes a quantitative descriptive design to assess the incidence of scabies among adolescents in Islamic religious boarding schools in Pontianak, Indonesia. The population for this study comprises students from an Islamic boarding school in Pontianak. To be eligible, students must have been residing in the boarding school for at least six months. A consecutive sampling technique was employed to collect the data. The final sample size was determined to be 220 participants, calculated using the Slovin formula to ensure statistical validity. Data collection was conducted in July 2023. The research involved two main components: a questionnaire and an observational study of the boarding school environment. The questionnaire was designed to gather information on the students' knowledge and attitudes about scabies, while the observation sheets were used to evaluate the environmental conditions of the boarding school.

The questionnaire included items related to the participants' demographic information, knowledge about scabies, attitudes towards prevention and treatment, and personal hygiene practices. The environmental observation sheets assessed factors such as cleanliness, ventilation, overcrowding, and the general state of living conditions within the boarding school. Ethical approval for the study was obtained from the relevant ethical review board, with approval number 3372/UN22.9/PG/2023. All participants were required to provide informed consent before participating in the study. They were assured of the confidentiality of their responses and the voluntary nature of their participation. Measures were taken to protect the privacy and anonymity of the participants throughout the research process. The collected data were coded and entered into a statistical software program for analysis. Descriptive

statistics were used to summarize the prevalence of scabies and the participants' knowledge and attitudes. Frequency distributions, means, and standard deviations were calculated for the quantitative variables. The results were presented in tables to provide a overview of the findings.

**RESULTS**

Table 1 presents the characteristics of the 220 participants in this study. The majority of participants were aged 13 (42.3%) and 14 (33.2%) years, with a mean age of 13.6 years (SD=2.21). Females constituted 55% of the sample, while males made up 45%. Most participants were in the 7th grade (55%), with the remaining 45% in the 8th grade. Regarding scabies severity, 66.3% of participants had low severity, whereas 33.6% had high severity. Environmental sanitation was assessed as good for 38.1% of participants and bad for 61.8%.

Table 1.  
Participant characteristics (n=220)

Variable	Category	f	%
Age (years)	12	15	6.8
	13	93	42.3
	14	73	33.2
	15	36	16.4
	16	3	1.4
Mean=13.6, SD=2.21			
Gender	Male	99	45.0
	Female	121	55.0
Class level	7th grade	121	55.0
	8th grade	99	45.0
Scabies Severity	Low	146	66.3
	High	74	33.6
Environmental sanitation status	Good	84	38.1
	Bad	136	61.8

**Knowledge Related to Scabies**

Table 2 shows the participants' knowledge related to scabies. Less than half of the participants correctly identified the definition of scabies (45.4%), while 54.5% were incorrect. Knowledge about the symptoms of scabies was low, with only 28.1% answering correctly. Similarly, 32.7% of participants correctly identified the mode of transmission, and 31.8% were aware of scabies prevention methods.

Table 2.  
Knowledge related to scabies (n=220)

Knowledge domain	Correct		Incorrect	
	f	%	f	%
Definition of scabies	100	45.4	120	54.5
Symptoms of scabies	62	28.1	158	71.8
Mode of transmission	72	32.7	148	67.2
Scabies prevention	70	31.8	150	68.1

**Attitudes About Scabies Prevention**

Table 3 details participants' attitudes towards scabies prevention. A minority (36.8%) agreed that drying mattresses and pillows is an effective preventive measure. Only 32.2% recognized the media of scabies transmission, while 45% agreed on the importance of personal hygiene. Regarding prevention and treatment, 31.3% had a positive attitude towards preventive measures, whereas 68.6% disagreed.

Table 3.  
Attitudes about scabies prevention (n=220)

Attitude domain	Agree		Disagree	
	f	%	f	%
Drying mattresses and pillows	81	36.8	139	63.1
Media of scabies transmission	71	32.2	149	67.7
Personal hygiene	99	45.0	121	55.0
Prevention to treatment	69	31.3	151	68.6

## DISCUSSION

Based on the research results, the majority of respondents being female. The study also found that majority of respondents experienced low severity symptoms of scabies. This aligns with the findings of previous study which indicated that the majority of scabies sufferers are male due to their higher mobility compared to females (Anggreni & Indira, 2019). This observation is further supported by (Suciaty et al., 2021), who noted that men often neglect their personal appearance, affecting individual hygiene and self-care practices. The respondents' ages ranged from 12 to 16 years, with the highest incidence of scabies symptoms observed in the 14-year-old age group. According to (Triasmari & Kusuma, 2019), age influences cognitive development and thinking patterns, enhancing the individual's ability to acquire knowledge. A previous study also found that the 12-16 year age group exhibited the highest prevalence of scabies, which they attributed to the increased interaction with the environment during early adolescence, facilitating the transmission of scabies (Sunarno & Hidayah, 2021).

During early childhood, cognitive development is primarily driven by sensory-motor integration, which forms the basis for attentional, perceptual, memory, language, and socialization systems (Cherukunnath & Singh, 2022). As children progress into adolescence, their cognitive abilities expand to include meta-awareness and social-emotional cognition, which further influence learning processes (Reynard et al., 2022; Wen et al., 2021). The development of basic information-processing functions, such as reasoning, memory, and perceptual speed, shows normative growth during childhood and adolescence but tends to decline in adulthood and old age (Ferguson et al., 2021; Moses-Payne et al., 2022). However, the acquisition of knowledge and skills, often referred to as the 'pragmatics' of cognition, can continue to improve across the adult lifespan, driven by environmental influences such as intellectual stimulation and physical activity (Crăciun, 2023; Säljö, 2022). During secondary school years, pupils develop logical reasoning, problem-solving skills, and expertise in specific fields, which are crucial aspects of cognitive development (Lövdén et al., 2020).

Individual differences in cognitive functioning are evident from an early age and can be attributed to factors such as prior experience, motivation, and the amount of knowledge acquired (Martínez-Nadal & Bosch, 2020). Moreover, cognitive outcomes can vary significantly among individuals, as seen in studies of preterm children, where distinct cognitive patterns and developmental trajectories are observed from preschool age to late adolescence (Guez et al., 2021). Overall, the interplay between biological maturation, environmental influences, and individual experiences shapes cognitive development and thinking patterns, thereby enhancing the ability to acquire and apply knowledge throughout life (Bjorklund, 2022; Saracho, 2023). The study also revealed a significant lack of knowledge among students about scabies. Specifically, 54.55% did not know the definition of scabies, 71.82% were unaware of the symptoms, 67.27% did not understand the modes of

transmission, and 68.18% were ignorant of prevention methods. This lack of knowledge poses a risk for increased transmission of scabies, as knowledge is crucial for implementing clean and healthy living behaviors. This finding is consistent with a previous study reported that 45.3% of students lacked knowledge about scabies. Knowledge is essential for forming attitudes and behaviors, which in turn facilitate actions that prevent scabies transmission (Ramadhan et al., 2019).

Regarding attitudes toward scabies prevention, the study found that 63.18% of respondents did not dry mattresses and pillows, 67.73% did not know the means of scabies transmission, 55% did not practice personal hygiene, and 68.64% did not take preventive measures for treating scabies. Furthermore, 73.18% did not practice environmental hygiene. These results differ from those of (Ramadhan et al., 2019), who found that 56% of students had a positive attitude towards cleanliness. The poor attitude towards cleanliness in the dormitory, such as cleaning the floor, maintaining personal belongings, and avoiding the exchange of clothing, significantly contributes to the spread of scabies, as noted by (Syukri, 2017). In the behavioral domain, knowledge, attitudes, and actions are interrelated. Efforts to change behavior, including improving knowledge and attitudes, are essential for reducing scabies incidence in Islamic boarding schools, where communal living conditions increase the risk of transmission.

This research found that 66.37% of students did not experience symptoms of scabies, differing from (Nur et al., 2019), who associated scabies with overcrowded housing and inadequate environments. Personal hygiene practices, such as not borrowing personal items and maintaining cleanliness, are critical for preventing scabies. Research result (Mayrona et al., 2018) highlighted a significant relationship between environmental sanitation and scabies incidence. In this study, 61.82% of the environments did not meet sanitation standards, consistent with findings by (Harto & Ferdi, 2019), who reported a significant relationship between environmental sanitation and scabies. (Amelia et al., 2019) also emphasized the importance of clean water provision in preventing scabies. Environmental sanitation should be maintained by ensuring clean yards, drainage systems, and water sources that meet health standards. Proper personal and environmental hygiene is essential for controlling the transmission of scabies.

## **CONCLUSION**

This study provides important insights into the prevalence and severity of scabies among adolescents in Islamic religious boarding schools in Pontianak, Indonesia. The findings indicate that a significant proportion of students experience low severity symptoms of scabies, with a higher incidence among males. The results highlight the influence of age, personal hygiene practices, and environmental conditions on the prevalence of scabies. The lack of knowledge about scabies among students and their poor attitudes towards prevention and personal hygiene underscore the need for comprehensive educational programs. These programs should focus on improving students' understanding of scabies, its symptoms, transmission modes, and prevention strategies. Furthermore, the study emphasizes the importance of maintaining good environmental sanitation in boarding schools. Ensuring clean living conditions, adequate ventilation, and proper waste management can significantly reduce the risk of scabies transmission.

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