Jurnal Ners

Volume 21 Issue 1, February 2026, p. 87-94
http://dx.doi.org/10.20473/jn.v21i1.71582

Original Article

Open Access

Determinants of scabies severity among students in Islamic boarding schools in Indonesia: a cross-sectional study

Miftahul Munir[1]*, Naili Rahmawati[2,3], and Mohd Hijaz Mohd Sani[2]

[1] Faculty of Health, Institute of Health Sciences Nahdlatul Ulama Tuban, Tuban, Indonesia

[2] Borneo Research on Algesia, Inflammation and Neurodegeneration (BRAIN) Group, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kinabalu, Malaysia

[3] Midwifery Study Program, STIKes Dharma Husada, Bandung, Indonesia

*Correspondence: Miftahul Munir. Address: Faculty of Health, Institute of Health Sciences Nahdlatul Ulama Tuban, Indonesia. Email: munir.stikesnu@gmail.com

Responsible Editor: Ferry Efendi

Received: 8 April 2025○ Revised: 17 February 2026 ○ Accepted: 24 February 2026

ABSTRACT

Introduction: Scabies is a communicable skin disease that frequently affects students in Islamic boarding schools (pesantren), where communal living conditions may exacerbate disease severity. This study aimed to identify the determinants associated with increased scabies severity among students in pesantren in Indonesia.

Methods: A cross-sectional study was conducted to identify the determinants of increasing scabies severity among clinically confirmed cases in Islamic boarding schools, involving 120 students from six schools in Lamongan and Tuban. Data were collected using a modified and validated questionnaire, and nutritional status was assessed using body mass index (BMI). The primary outcome variable was scabies severity (ordinal), determined through clinical examination by trained health workers using standard diagnostic criteria, including pruritic papules or burrows in typical locations, nocturnal itching, and a history of similar symptoms among close contacts. All participants were clinically diagnosed with scabies. Severity was categorized as mild, moderate, or severe based on the number of lesions and clinical manifestations. All instruments underwent content validity and reliability testing (Cronbach's alpha ≥ 0.70), and ordinal logistic regression (proportional odds model) was applied to identify predictors of increasing scabies severity ($p < 0.05$) using SPSS version 25.

Results: Frequent sharing of personal items was the strongest predictor of greater severity. Students who sometimes shared items had odds ratio (OR) of 3.01 (95% confidence interval [CI]: 1.45–6.60; $p = 0.003$), while frequent sharing increased the odds to 9.06-fold (95% CI: 3.00–27.40; $p < 0.001$). Good personal hygiene markedly reduced severity (OR = 0.04; 95% CI: 0.01–0.25; $p = 0.002$). Adequate residential density and longer duration of stay were also protective factors. Nutritional status and general knowledge were not consistently associated with severity.

Conclusions: Scabies severity in *pesantren* is primarily driven by modifiable behavioral and environmental factors. Reducing shared-use practices and strengthening hygiene interventions may substantially mitigate disease severity in communal boarding school settings.

Keywords: behavioral determinants, islamic boarding schools, hygiene behavior, residential density, scabies severity

Introduction

Islamic boarding schools (*pesantren*) are among the oldest Islamic educational institutions in Indonesia, providing religious instruction while accommodating students in dormitories or cottages within the school complex. Living in a communal environment, separated from the general community, creates close social interaction but also increases the risk of communicable diseases if personal and environmental hygiene are not maintained (Hidayat *et al.*, 2022). Previous studies have reported that crowded living conditions in *pesantren* can contribute to the spread of various infectious diseases, such as scabies, diarrhea, typhoid, dengue fever,

tuberculosis, and skin disorders (Jira, Matlhaba and Mphuthi, 2023).

Scabies, caused by *Sarcoptes scabiei*, is a neglected tropical disease (NTD) targeted for eradication by the World Health Organization (WHO) in its 2021–2030 program. Globally, there are an estimated 200 million cases, with Indonesia bearing one of the highest burdens (Joseph *et al.*, 2024). The Indonesian Ministry of Health reports a prevalence of 5.60%–12.95%, ranking third among dermatological conditions (Rahman *et al.*, 2024). In *pesantren*, scabies transmission is facilitated by high occupancy density, direct skin contact, and poor hygiene practices, such as infrequent bathing, sharing personal items, and inadequate laundering of clothes and bedding (Awisarita *et al.*, 2025). The disease can cause persistent itching, skin lesions, and secondary bacterial infections, affecting students' comfort, social interaction, and learning activities.

Several factors influence scabies severity in *pesantren*, including environmental conditions (temperature and humidity), socioeconomic status, and personal hygiene habits. Studies have shown that new students, often unaccustomed to the pesantren environment, are particularly vulnerable to scabies due to limited knowledge of prevention and adaptation challenges (Mariani *et al.*, 2021). Although scabies is not life-threatening, chronic untreated cases can lead to complications and sustained community transmission (Asih and Setianto, 2022). These findings highlight the importance of education and health promotion to improve hygiene practices among students and reduce overcrowding in dormitories (Suparto *et al.*, 2021). Existing literature often broadly discusses scabies without evaluating targeted preventive strategies tailored to religious boarding school environments. This gap is important because *pesantren* have unique communal living arrangements, cultural norms, and hygiene-related behaviors that may influence transmission dynamics differently from other settings. Overcrowding, shared personal items, and inadequate hygiene facilities commonly reported in *pesantren* further increase the risk of scabies transmission (Fauzah & Suparmi, 2023; Puspita et al., 2021). Therefore, effective control of scabies in pesantren requires context-specific interventions integrating behavioral modification, improved environmental sanitation, and institutional health policies aimed at reducing recurrent outbreaks (Asih & Setianto, 2022; Suparto et al., 2021). This study aimed to identify the determinants associated with increasing scabies severity among students in Indonesian Islamic boarding schools.

Materials and Methods

Study design

This study used a quantitative cross-sectional design to identify determinants associated with scabies severity (mild, moderate, and severe) among boarding school students in Lamongan and Tuban. The study was conducted from June to August 2022, with data collection taking place over approximately four weeks at each institution. The selected schools were medium-sized *pesantren* accommodating 150–300 students, with dormitory settings characterized by shared sleeping quarters, communal bathing areas, and limited ventilation. The sanitation infrastructure typically consisted of shared bathrooms, basic waste disposal systems, and routine but non-standardized cleaning practices. Most dormitories had dense occupancy, with 8–15 students per room, and students commonly used shared facilities for daily activities. These characteristics are representative of many traditional *pesantren* in Indonesia, thereby enhancing the relevance and generalizability of the study findings.

Sampling and sample

The study population comprised all students residing in the selected boarding schools. This study involved 120 students from Islamic boarding schools in Tuban and Lamongan. Participants were recruited through coordination with school administrators, who informed students about the study and invited them to participate voluntarily. Participation was not compulsory, and students were included only after providing written informed consent and parental/guardian consent for minors. External validity may be limited because of the purposive selection of high-risk schools.

Boarding schools were selected using purposive sampling based on criteria such as a history of recurrent scabies cases and the willingness of the school to collaborate. From each school, 20 students were recruited, resulting in six schools contributing to a total sample of 120 participants. No dropouts were recorded during data collection, and all students who were invited agreed to participate, resulting in a 100% response rate.

The sample size was determined based on cross-sectional estimation principles and feasibility considerations from previous literature, a confidence level of 95%, and an allowable error of 10%, resulting in a minimum required sample of 120 students. A simple random sampling technique was applied within each school using student lists provided by administrators to reduce selection bias and ensure representativeness.

Variable and measurement

The dependent variable, scabies severity, was categorized as mild, moderate, or severe in clinically confirmed scabies cases. The independent variables included personal hygiene behavior, habitual sharing of personal items, residential density, duration of stay, nutritional status, and knowledge regarding scabies. These variables were selected based on theoretical frameworks that emphasize host susceptibility, hygiene

behavior, and environmental determinants in the transmission of communicable diseases.

Data were collected using a modified questionnaire adapted from previously published instruments on hygiene behavior, knowledge, and sharing practices. Modifications were made to adjust the wording to the comprehension level of adolescents, incorporate *pesantren* specific behaviors (e.g., sharing prayer garments, sarongs, bedding, and towels), and align response options with local daily routines. The questionnaire was translated into Bahasa Indonesia using forward–backward translation and reviewed by two public health experts and one dermatologist for cultural and contextual suitability. A pilot test was conducted on 20 students from a boarding school not included in the main sample to assess clarity and feasibility; ambiguous items were revised accordingly.

Content validity was evaluated by three experts using a relevance assessment, and all items were retained after minor wording adjustments. Reliability testing demonstrated acceptable internal consistency, with Cronbach's alpha values of 0.81 for personal hygiene behavior, 0.78 for sharing personal items behavior, and 0.74 for knowledge about scabies (all ≥ 0.70). Nutritional status was measured objectively using body mass index (BMI), calculated from standardized weight and height measurements, and occupancy density was assessed through direct observation of room size, number of occupants, and ventilation conditions.

Scabies Diagnosis

Scabies was assessed through clinical examinations by licensed health workers. The diagnosis was made following the standard clinical criteria, including the presence of pruritic papules or burrows, lesions on typical body sites (finger webs, wrists, and abdomen), nocturnal itching, and a family or roommate history of similar symptoms.

Scabies severity was classified into three categories: mild (≤2 lesions, mild pruritus, no secondary infection), moderate (3–5 lesions, moderate pruritus, possible excoriation), and severe (>5 lesions or crusted scabies, severe itching, with or without secondary infection). Data were recorded as ordinal variables (1–3).

Personal Hygiene Assessment

Personal hygiene behavior was measured using a validated questionnaire adapted from Delea et al. (2020). Instrument details: Number of items: 12; domains: bathing frequency, handwashing, clothing hygiene, nail hygiene, bedding hygiene; scoring method: 1 = poor, 2 = moderate, 3 = good; higher scores indicate better hygiene.

Knowledge About Scabies

Knowledge regarding scabies was assessed using a structured questionnaire adapted from Ramadhini et al. (2021), consisting of ten multiple-choice items covering the cause of the disease, signs and symptoms, transmission routes, prevention, and treatment. Each correct answer was scored 1 and incorrect answer 0, with total scores categorized into poor, adequate, and good knowledge levels.

Duration of Stay

The duration of stay was self-reported by students and categorized as <1 year, 1–2 years, and >2 years. The choice of categories followed previous studies (Yulfi et al., 2022) that link longer durations with increased exposure risk.

Nutritional Status

Nutritional status was assessed using body mass index (BMI), which was calculated from direct measurements of body weight and height using standardized anthropometric procedures. BMI values were classified according to the World Health Organization Asia-Pacific criteria as underweight (<18.5 kg/m²), normal weight (18.5–22.9 kg/m²), overweight (23.0–24.9 kg/m²), and obese (≥25.0 kg/m²) (WHO Expert Consultation, 2004).

Residential Density

Residential density was assessed using an observation checklist and a structured questionnaire adapted from Fauzah and Suparmi (2023). The assessment focused on the physical characteristics of student living spaces, including room size, number of occupants per room, ventilation, and sleeping arrangement. Room size was measured in square meters and divided by the number of occupants to calculate the living space per student. Ventilation was evaluated based on the presence and adequacy of windows or air openings, whereas sleeping arrangements were observed to determine whether students slept individually or shared sleeping spaces and bedding.

Based on these parameters, occupancy density was categorized into three levels. Crowded density was defined as living space of < 4 m²/student, accompanied by overcrowded sleeping arrangements and inadequate ventilation. Adequate density referred to living space ranging from 4 to < 8 m²/student, with acceptable ventilation and shared sleeping arrangements that did not result in direct overcrowding. Spacious density was defined as living space of ≥ 8 m²/student, supported by sufficient ventilation and individual or well-organized sleeping arrangements that allowed adequate personal space. This classification was based on national housing health standards and previous literature addressing residential density in communal living environments.

Habitual Sharing of Personal Items

This variable was measured using a six-item questionnaire adapted from Yulfi et al. (2022).

Scoring system: 1 = never/rarely, 2 = sometimes, and 3 = often.

Higher scores reflect greater sharing behavior, which increases scabies transmission risk.

Analysis

Data were processed through editing, coding, entry, and cleaning. Univariate analysis described respondent characteristics and severity distribution. Bivariate analysis examined the associations between independent variables and scabies severity. Because the outcome variable was ordinal (mild, moderate, and severe), ordinal logistic regression (proportional odds model) was applied to identify predictors of increasing scabies severity ($p < 0.05$). All analyses were conducted using SPSS version 25.

Ethic

This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Ethical approval was obtained from the Institutional Ethics Committee prior to data collection. Permission to conduct the study was also obtained from the management of each Islamic boarding school.

Given that the participants were underage students, a two-stage consent process was implemented. Written informed consent was obtained from parents or legal guardians after providing them with detailed information regarding the study objectives, procedures, potential risks, and benefits. In addition, verbal assent was obtained from the students themselves prior to participation. Students were informed that their participation was entirely voluntary and that they had the right to refuse or withdraw from the study at any time without any academic or personal consequences.

To ensure confidentiality, participants were assigned unique identification codes, and no personally identifiable information was recorded in the dataset. All data were stored securely and were accessible only to the research team. Clinical examinations were conducted in a private setting to maintain the dignity and comfort of the participants. The study posed minimal risk to participants, and any students identified with suspected scabies were referred to local health services for further management. No financial incentives were provided for participation. Ethical clearance was obtained from the Health Research Ethics Commission of the Institute of Health Sciences Nahdlatul Ulama Tuban (No. 0257/LEPK.

Table 1. Characteristics data of participants (n=120)

Characteristics	n	%
Age		
11 years old	8	6.8
12 years old	33	27.3
13 years old	44	36.4
14 years old	30	25
15 years old	5	4.5
Gender		
Male	60	50
Female	60	50
Nutritional Status		
Underweight	16	13.3
Normal	71	59.2
Overweight/ Obese	33	27.5
Personal Hygiene Behavior		
Poor	87	72.5
Moderate	24	20
Good	9	7.5
Residential Density		
Crowded	63	52.5
Adequate	51	42.5
Spacious	6	5
Duration of stay		
<1 year	97	80.8
1-2 years	21	17.5
>2 years	2	1.7
Knowledge		
Poor	84	70
Adequate	22	18.3
Good	14	11.7
Habitual Sharing of Personal Items		
Never	27	22.5
Sometimes	59	49.2
Often	34	28.3
Scabies severity distribution		
Mild	54	45
Moderate	45	37.5
Severe	21	17.5

Table 2. Distribution of scabies severity according to demographic characteristics (n = 120)

Variable	scabies severity						Total		P
	Mild		Moderate		Severe				
	n	%	n	%	n	%	n	%	
Age									
11 years old	5	4.2	2	1.7	1	0.8	8	6.7	0.051
12 years old	8	6.7	19	15.8	6	5	33	27.5	
13 years old	28	23.3	9	7.5	7	5.8	44	36.7	
14 years old	11	9.2	13	10.8	6	5	30	25	
15 years old	2	1.7	2	1.7	1	0.8	5	4.2	
Gender									
Male	32	26.7	17	14.2	11	9.2	60	50	0.099
Female	22	18.3	28	23.3	10	8.3	60	50	

Table 3. Ordinal logistic regression for factors associated with increasing scabies severity (n = 120)

Predictor	Category / unit	OR (95% CI)	P-Value
Habitual Sharing of Personal Items	Sometimes vs Never	3.01 (1.45-6.60)	0.003
	Often vs Never	9.06 (3.00-27.40)	<0.001
Personal Hygiene Behavior	Moderate vs Poor	0.30 (0.16-0.80)	0.025
	Good vs Poor	0.04 (0.01-0.25)	0.002
Residential Density	Adequate vs Crowded	0.42 (0.20-0.93)	0.030
	Spacious vs Crowded	0.15 (0.03-0.72)	0.005
Duration of Stay	1-2 years vs < 1 year	0.45 (0.22-0.93)	0.031
	>2 years vs < 1 year	0.16 (0.02-1.20)	0.074
Nutritional Status	Underweight vs Normal	2.20 (0.94-4.90)	0.073
	Overweight/obese vs Normal	1.20 (0.62-2.33)	0.600
Knowledge	Adequate vs Poor	0.90 (0.40-2.00)	0.790
	Good vs Poor	0.35 (0.12-0.99)	0.048

IIKNU/VIII/2022). Written consent was obtained from participants, and it was entirely voluntary. All data were collected in writing and kept confidential.

Results

Data on respondent characteristics included age, sex, nutritional status, personal hygiene behavior, residential density, duration of stay, knowledge, habitual sharing of personal items, and scabies severity distribution. All categorical variables were classified according to the criteria listed in Table 1. All data were obtained from questionnaires completed by the respondents.

Based on Table 1, this study involved 120 participants. The age distribution of the respondents was dominated by 13-year-old students (36.4%). The sex proportion was equal, with 50% male and 50% female. Most respondents had normal nutritional status (59.2%), poor personal hygiene behavior (72.5%), and crowded residential density (52.5%). The majority of respondents had poor knowledge about scabies (70.0%) and had lived in a dormitory for less than 1 year (80.8%). Scabies severity was classified as mild (45%), moderate (37.5%), and severe (17.5%).

As shown in Table 2, there was no statistically significant association between age (p = 0.051) or sex (p = 0.099) and scabies severity. The distribution of severity across age groups showed that mild, moderate, and severe cases were found in all age categories without a clear concentration in a specific group. Similarly, the distribution between men and women was relatively comparable across severity levels. These findings indicate that demographic characteristics were not significantly related to increased scabies severity in this population.

Based on Table 3, habitual sharing of personal items was the strongest risk-increasing factor for greater scabies severity. Compared with students who never shared, those who sometimes shared had higher cumulative odds of being in a more severe category (OR = 3.01; 95% CI: 1.45–6.60; p = 0.003), and those who often shared had markedly higher odds (OR = 9.06; 95% CI: 3.00–27.40; p < 0.001). Better personal hygiene showed a protective association: moderate hygiene (vs. poor) was associated with lower odds of greater severity (OR = 0.30; 95% CI: 0.16–0.80; p = 0.025), with an even stronger protective effect for good hygiene (OR = 0.04; 95% CI: 0.01–0.25; p = 0.002). Less crowded living conditions were also protective, with adequate (OR = 0.42; 95% CI: 0.20–0.93; p = 0.030) and spacious density (OR = 0.15; 95% CI: 0.03–0.72; p = 0.005) showing lower odds of greater severity than crowded conditions. A longer duration of stay showed reduced odds for 1–2 years (OR = 0.45; 95% CI: 0.22–0.93; p = 0.031), whereas >2 years was not statistically significant (p = 0.074). Nutritional status was not significantly associated with severity, and knowledge showed a mixed pattern: adequate knowledge was not associated with severity (p = 0.790), while good knowledge demonstrated a modest protective association (OR = 0.35; 95% CI: 0.12–0.99; p = 0.048).

Discussions

Scabies in Pesantren

Scabies remains a significant health concern in Islamic boarding schools, with most identified cases presenting with mild-to-moderate severity. Because this study focused exclusively on clinically confirmed cases, the findings reflect the determinants of severity rather

than disease occurrence. The communal living environment in *pesantren* facilitates close contact and repeated exposure, which may exacerbate clinical manifestations. The presence of moderate- and severe-cases suggests the importance of routine health monitoring, adequate sanitation facilities, and continuous health education in boarding school environments. These findings highlight the relevance of early detection and preventive measures, particularly in high-density dormitory settings.

Habitual Sharing of Personal Items

Sharing personal items was the strongest predictor of increasing scabies severity, consistent with the findings of Palanivel et al. (2021) and Majeed et al. (2023). Towels, clothing, bedding, and prayer garments can act as fomites, especially when stored or used in humid conditions that support mite survival. Although this behavior is culturally common in pesantren, it likely facilitates repeated exposure and re-infestation, leading to more severe clinical manifestations. These findings suggest that preventive strategies should not only focus on improving knowledge but also address daily habits and shared-use practices within the boarding school environment.

Personal Hygiene Behavior

Poor personal hygiene was significantly associated with higher scabies severity, consistent with studies reporting that limited bathing, irregular washing of clothing, and inadequate bedding hygiene contribute to persistent infestations (Navylasari et al., 2022; Laganà et al., 2024). These findings suggest that inadequate hygiene practices may facilitate ongoing exposure and worsen clinical manifestations. Strengthening access to clean water, providing clear hygiene guidelines, and implementing routine supervision may support improved hygiene practices in boarding school settings.

Residential Density

Higher residential density was associated with greater scabies severity, supporting previous evidence (Fauzah & Suparmi, 2023). Although density itself does not directly cause infestation, crowded living conditions may increase the frequency and duration of close contact, facilitating repeated exposure and more severe clinical manifestations. These findings suggest that improving space allocation and ventilation may support preventive efforts in boarding school environments.

Duration of Stay in *Pesantren*

Contrary to some studies (Ararsa et al., 2023), a shorter duration of stay was associated with higher scabies severity. This finding may reflect limited adaptation to hygiene routines or insufficient awareness among newly admitted students. In contrast, students who had lived longer in the dormitory may have developed better preventive habits or received previous treatment, resulting in milder clinical manifestations. These findings suggest the importance of early orientation and health education for new students in boarding school environments.

Nutrition Status

Nutritional status was not significantly associated with scabies severity in this study, although underweight students showed a non-significant trend toward higher severity. However, the presence of cases among students with normal nutritional status indicates that environmental and behavioral factors may play a greater role in densely populated settings. Variations across studies, including reports of higher severity among obese individuals (Sanei-Dehkordi et al., 2021), suggest that the influence of nutritional status is complex and may interact with hygiene practices and living conditions.

Integrated Interpretation

Taken together, these findings suggest that scabies severity in pesantren is influenced by multiple interacting behavioral, environmental, and individual factors. The consistent influence of sharing personal items and poor personal hygiene indicates that daily practices within communal living settings play an important role in the degree of clinical manifestation. Environmental conditions, such as dormitory crowding and sanitation, may also contribute to repeated exposure and worsening symptoms. These findings support the relevance of integrated and context-specific preventive approaches in communal living environments.

Level of Knowledge

The association between knowledge and scabies severity was inconsistent. Although students with good knowledge demonstrated significantly lower odds of greater severity than those with poor knowledge, adequate knowledge was not significantly associated with severity. This pattern suggests that knowledge does not operate in a strictly linear manner. According to behavioral theory, knowledge alone is often insufficient to produce sustained health behavior change without reinforcement and environmental support (Notoatmodjo et al., 2021). Similarly, previous studies in school-based settings have shown that moderate levels of knowledge do not necessarily translate into improved hygiene practices unless accompanied by structural and social support (Ramadhini et al., 2021; Suparto et al., 2021). These findings indicate that substantial knowledge, together with consistent behavioral application, may be required to meaningfully reduce scabies severity in communal boarding environments.

This study has several limitations. The cross-sectional design prevents the establishment of causal relationships between the examined factors and scabies severity. Several independent variables were collected through

self-report questionnaires, which may have introduced recall or social desirability bias. In addition, the study was conducted in only two regions, limiting the generalizability of the results to other Islamic boarding schools with different characteristics. Despite these limitations, this study provides useful evidence regarding behavioral and environmental factors associated with scabies in *pesantren* settings.

Conclusion

This study demonstrates that scabies severity among students in Islamic boarding schools is primarily influenced by modifiable behavioral and environmental factors. Frequent sharing of personal items was the strongest determinant of increasing severity, showing a clear dose–response relationship. Poor personal hygiene behavior and crowded residential density were also significantly associated with greater clinical severity, whereas a duration of stay of one to two years appeared protective. In contrast, nutritional status and general knowledge were not consistently associated with severity.

These findings suggest that interventions focusing on reducing shared-use practices, strengthening hygiene reinforcement, and improving dormitory living conditions may substantially mitigate scabies severity in communal boarding school settings. Targeted behavioral and environmental strategies should be prioritized to reduce the disease burden and prevent persistent re-infestation.

Acknowledgments

We would like to thank The Institute for Research and Community Service (LP2M) at the Institute of Health Sciences Nahdlatul Ulama Tuban for their valuable insights and contributions to this study.

Funding source

This research was funded by the Institute of Health Sciences Nahdlatul Ulama Tuban.

Availability of data and materials

The datasets generated and analyzed in the current study are not publicly available owing to confidentiality agreements but are available from the corresponding author upon reasonable request.

Authors' contributions

Miftahul Munir, as the lead and corresponding author, contributed to the research design, research idea, writing of the manuscript, and data collection. Naili Rahmawati and Mohd Hijaz Mohd Sani, as the second and third authors, contributed to the data analysis, provision of feedback, and revision of the draft manuscript.

Declaration of Interest

The authors declare no conflict of interest.

References

Amare, H.H. and Lindtjorn, B. (2021) 'Risk factors for scabies, tungiasis, and tinea infections among schoolchildren in southern Ethiopia: A cross-sectional Bayesian multilevel model', *PLoS neglected tropical diseases* [Preprint].

Ararsa, G. *et al.* (2023) 'Prevalence of scabies and associated factors among children aged 5–14 years in Meta Robi District, Ethiopia', *Plos one* [Preprint].

Asih, A. Y. P., & Setianto, B. (2022). Workshop Dalam Upaya Mewujudkan Pesantren Sehat di Pondok Pesantren Adduriyah Nyantren Pamekasan Madura. *To Maega : Jurnal Pengabdian Masyarakat*, *5*(3), 406. https://doi.org/10.35914/tomaega.v5i3.1174

Awisarita, R.W. *et al.* (2025) 'Personal hygiene and scabies among students at islamic boarding school in Indonesia', *BIO Web of Conferences*, 148, pp. 1–5. Available at: https://doi.org/10.1051/bioconf/202414802017.

Bergamin, G. *et al.* (2024) 'A systematic review of immunosuppressive risk factors and comorbidities associated with the development of crusted scabies', *International Journal of Infectious Diseases*, 143, p. 107036. Available at: https://doi.org/10.1016/j.ijid.2024.107036.

Damayanti, L. *et al.* (2021) 'The Relationship Between Knowledge and Clean Behavior and Healthy Lifestyle on the Incidence of Scabies at Boarding School Students', *Proceedings of the 12th Annual Scientific Meeting, Medical Faculty, Universitas Jenderal Achmad Yani, International Symposium on 'Emergency Preparedness and Disaster Response during COVID 19 Pandemic' (ASMC 2021)*, 37(Asmc), pp. 217–221. Available at: https://doi.org/10.2991/ahsr.k.210723.051.

Efendi, R., Adriansyah, A.A. and Ibad, M. (2020) 'Hubungan Personal Hygiene dengan Kejadian Scabies Pada Santri di Pondok Pesantren', *Jurnal Kesehatan Masyarakat Indonesia*, 15(2), p. 25. Available at: https://doi.org/10.26714/jkmi.15.2.2020.25-28.

Fauzah and Suparmi (2023) 'Analysis of the Scabies Incidence at As'ad Islamic Boarding School, Jambi City', *Archives of Razi Institute*, 78(6), pp. 1719–1727. Available at: https://doi.org/10.32592/ARI.2023.78.6.1719.

Fauziah, R. and Suparmi (2023) 'Analysis of the Scabies Incidence at As'ad Islamic Boarding School, Jambi City', *Archives of Razi Institute*, 78(6), pp. 1719–1727. Available at: https://doi.org/10.32592/ARI.2023.78.6.1719.

Galván Casas, C. *et al.* (2024) '[Translated article] Clinical and Epidemiological Characteristics of Patients Being Treated for Scabies in Spain: Opportunities for Improvement — A Multicenter Cross-Sectional CLINI-AEDV Study', *Actas Dermo-Sifiliográficas*, 115(1), pp. T36–T47. Available at: https://doi.org/10.1016/j.ad.2023.10.037.

Gusman, A.P., Notoatmodjo, S. and Aprilia, Y.T. (2021) 'Hubungan Pengetahuan Dan Sikap Terhadap Pemilihan Alat Kontrasepsi Jangka Panjang Pada Wanita Usia Subur (WUS) di Wilayah Kerja Polindes Kefa Utara Kab. TTU PROV. NTT Tahun 2021', *Jurnal Untuk Masyarakat Sehat (JUKMAS)*, 5(2), pp. 120–127. Available at: https://doi.org/10.52643/jukmas.v5i2.1553.

Haggag, M.H. *et al.* (2024) 'Effect of Raising Nutritional Awareness Level on Height of Stunted School-aged Children', *Bulletin of the …* [Preprint].

Hidayat, N. *et al.* (2022) 'Association between Personal Hygiene Behavior and Sleeping Quality on Scabies Incidence', *International Journal of Nursing and Health Services (IJNHS)*, 5(4), pp. 351–359. Available at: https://doi.org/10.35654/ijnhs.v5i4.610.

Iradaty, F. *et al.* (2021) 'Female students' experience in preventing scabies', *International Journal of Public Health Science*, 10(3), pp. 581–589. Available at: https://doi.org/10.11591/ijphs.v10i3.20580.

Jafar, A. *et al.* (2022) 'Virtual Learning during COVID-19: Exploring Challenges and Identifying Highly Vulnerable Groups Based on Location', *International Journal of Environmental Research and Public Health*, 19(17). Available at: https://doi.org/10.3390/ijerph191711108.

Jira, S.C., Matlhaba, K.L. and Mphuthi, D.D. (2023) 'Evaluating the current management approach of scabies at selected primary health care in the Deder district, Ethiopia', *Heliyon*, 9(1), p. e12970. Available at: https://doi.org/10.1016/j.heliyon.2023.e12970.

Joseph, M. *et al.* (2024) 'Prevalence of Sarcoptes scabiei infestation and its associated factors among primary school children: A school-based cross-sectional survey in the Rufiji district, Tanzania', *IJID Regions*,

11(February), p. 100365. Available at: https://doi.org/10.1016/j.ijregi.2024.100365.
Klar, K. *et al.* (2022) 'Knowledge about hand hygiene and related infectious disease awareness among primary school children in Germany', *Children* [Preprint].
Laganà, A. *et al.* (2024) 'Resurgence of scabies in Italy: The new life of an old disease', *Parasite Epidemiology and Control*, 27(November). Available at: https://doi.org/10.1016/j.parepi.2024.e00392.
Mahendradhata, Y. *et al.* (2021) 'The Capacity of the Indonesian Healthcare System to Respond to COVID-19', *Frontiers in Public Health*, 9(July), pp. 1–9. Available at: https://doi.org/10.3389/fpubh.2021.649819.
Majeed, A. *et al.* (2023) 'Patterns of common dermatological conditions among children and adolescents in Pakistan', *Medicina* [Preprint].
Mariani, A. *et al.* (2021) 'The relationship between knowledge and personal hygiene and the occurrence of sexually transmitted diseases at the Community Health Center Talise, Palu', *Gaceta Sanitaria*, 35, pp. S164–S167. Available at: https://doi.org/10.1016/j.gaceta.2021.10.016.
Mulyana Rosi, R.B., Hikmawati, D. and Abdullah, N.A. (2021) 'Scoping Review: Hubungan Faktor Sosiodemografi dan Perilaku dengan Kejadian Skabies', *Jurnal Integrasi Kesehatan & Sains*, 3(2), pp. 200–206. Available at: https://doi.org/10.29313/jiks.v3i2.7426.
Munir, M. *et al.* (2022) 'Metode Penelitian Kesehatan Penerbit', *Eureka Media Aksara*, pp. 1–178.
Nadiroh, K.A. *et al.* (2021) *No Title*. 1st edn. Malang.
Navylasari, N.N., Ratnawati, R. and Warsito, E. (2022) 'Faktor Yang Berhubungan Dengan Upaya Pencegahan Penularan Penyakit Skabies Di Pondok Pesantren Darul Ulum Takeran Kabupatan Magetan', *Ulil Albab: Jurnal Ilmiah Multidisiplin*, 1(2), pp. 129–136.
Palanivel, N. *et al.* (2021) 'A cross sectional survey for dermatoses in children and adolescents residing in orphanages in urban Tirunelveli, Tamil Nadu, India', *Indian Journal of ...* [Preprint].
Puspita, S.I.A. *et al.* (2021) 'Factors of Personal Hygiene Habits and Scabies Symptoms at Islamic Boarding School', *Jurnal PROMKES*, 9(2), p. 91. Available at: https://doi.org/10.20473/jpk.v9.i2.2021.91-100.
Rahman, M.S. *et al.* (2024) 'Prevalence of scabies and its associated environmental risk factors among the Forcibly Displaced Myanmar Nationals living in the Cox's Bazar district of Bangladesh', *Journal of Migration and Health*, 9(September 2023), p. 100220. Available at: https://doi.org/10.1016/j.jmh.2024.100220.
Ramadhini, A.D., Nurlinawati, N. and Mulyani, S. (2023) 'The Effect of Health Education About Personal Hygiene in Adolescents on the Prevention of Scabies Disease in Boarding School in Sungai Terap', *Riset Informasi Kesehatan*, 12(2), p. 260. Available at: https://doi.org/10.30644/rik.v12i2.774.
Ruslana, F.H. and Mulyono, S. (2022) 'The relationship of cultural values with clean and healthy life behaviour among Islamic boarding school students in Indonesia', *Journal of Public Health Research*, 11(2), pp. 83–86. Available at: https://doi.org/10.4081/jphr.2021.2739.
Sanei-Dehkordi, A. *et al.* (2021) 'Risk factors associated with scabies infestation among primary schoolchildren in a low socio-economic area in southeast of Iran', *BMC pediatrics* [Preprint]. Available at: https://doi.org/10.1186/s12887-021-02721-0.
Sigit, F.S. *et al.* (2024) 'Factors influencing the prevalence of anaemia in female adolescents: A population-based study of rural setting in Karanganyar, Indonesia', *Clinical Epidemiology and Global Health*, 25(September 2023), p. 101500. Available at: https://doi.org/10.1016/j.cegh.2023.101500.
Singh, S. and Talmale, P. (2023) 'Impact of dental caries and nutritional status on oral health related quality of life in young Indian adolescents', *Journal of Oral Biology and Craniofacial Research*, 13(4), pp. 506–510. Available at: https://doi.org/10.1016/j.jobcr.2023.05.002.
Suparno, L.W. and Novitayanti, E. (2022) 'Pengaruh Promosi Kesehatan Personal Hygiene dalam Pencegahan Penyakit Skabies di Pondok Pesantren Nurul Burhan Disease at The Nurul Burhan Islamic Boarding School Ngawi City', *Stethoscope*, 3(1), pp. 69–77. Available at: https://doi.org/DOI : 10.54877/stethoscope.v3i1.896.
Suparto, T.A. *et al.* (2021) 'Exploring the Obstacles of Islamic Boarding School Health Post in Bandung Indonesia', *Malaysian Journal of Medicine and Health Sciences*, 17(3), pp. 78–85.
Supriadi, S. *et al.* (2024) 'Risk Factors of Scabies Among School Students In Low And Middle Income Countries: Systematic Review', *Health Education and ...* [Preprint].
Utami, A.T. *et al.* (2020) 'Novel therapy of Scabies's disease', *International Journal of Infectious Diseases*, 101, p. 208. Available at: https://doi.org/10.1016/j.ijid.2020.09.554.
Uzun, S. *et al.* (2024) 'Clinical practice guidelines for the diagnosis and treatment of scabies', *International Journal of Dermatology*, pp. 1642–1656. Available at: https://doi.org/10.1111/ijd.17327.
World Health Organization Expert Consultation. (2004). Appropriate body-mass index for Asian populations and its implications for policy and intervention strategies. *The Lancet, 363*(9403), 157–163. https://doi.org/10.1016/S0140-6736(03)15268-3.
Zheng, D.X. *et al.* (2021) '362 Sociodemographic factors associated with scabies in the inpatient setting', *Journal of Investigative Dermatology*, 141(5), p. S63. Available at: https://doi.org/10.1016/j.jid.2021.02.384.

How to cite this article: Munir, M., Rahmawati, N., and Sani, M. H. M. (2026) 'Determinants of Scabies Severity among Students in Islamic Boarding Schools in Indonesia: A Cross-Sectional Study', *Jurnal Ners*, 21(1), pp. 87-94. doi: http://dx.doi.org/10.20473/jn.v21i1.71582