International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 09 Issue 04 April 2026
DOI: 10.47191/ijcsrr/V9-i4-01, Impact Factor: 8.048
IJCSRR @ 2026
www.ijcsrr.org

Relationship Between Knowledge Level About Scabies and Scabies Symptoms Among Students Living in a Sports School Dormitory in Kupang, Indonesia: A Cross-Sectional Study

Karmelia Eleonora Putri Bengan Tokan[1*], Regina M. Hutasoit[2], Arley Sadra Telussa[3], Insani Fitrahulil Jannah[4]

[1]Faculty of Medicine and Veterinary Medicine, Universitas Nusa Cendana, Kupang, East Nusa Tenggara, Indonesia
[2]Department of Anatomy, Faculty of Medicine and Veterinary Medicine, Universitas Nusa Cendana, Kupang, East Nusa Tenggara, Indonesia
[3]Department of Surgery (Urology Division), Faculty of Medicine and Veterinary Medicine, Universitas Nusa Cendana, Kupang, East Nusa Tenggara, Indonesia
[4]Department of Biomedicine, Faculty of Medicine and Veterinary Medicine, Universitas Nusa Cendana, Kupang, East Nusa Tenggara, Indonesia

ABSTRACT

Background: Scabies is a neglected tropical disease with high transmission risk in crowded living environments such as dormitories. Knowledge is often assumed to play a protective role, but empirical findings remain inconsistent.

Objective: To examine the association between the level of knowledge about scabies and the presence of scabies symptoms among students living in a sports school dormitory in Kupang, Indonesia.

Methods: An analytical cross-sectional study was conducted in July 2025 among 59 students selected using simple random sampling. Knowledge level was assessed using a structured questionnaire, while scabies symptoms were identified through physical examination based on cardinal signs. Data were analyzed using the Chi-square test.

Results: Most respondents demonstrated a high level of knowledge about scabies (79.7%). Scabies symptoms were identified in 25.4% of participants. Statistical analysis showed no significant association between knowledge level and scabies symptoms ($p = 0.148$).

Conclusion: High knowledge levels were not significantly associated with the absence of scabies symptoms. Environmental factors and intensive physical contact related to athletic activities may play a more substantial role in scabies transmission in dormitory settings.

KEYWORDS: Athlete students, Dormitory, Knowledge level, Neglected tropical disease, Scabies.

INTRODUCTION

Scabies is a contagious parasitic skin disease caused by infestation with *Sarcoptes scabiei* var. *hominis*, characterized by intense pruritus, particularly at night, and typical skin lesions in specific predilection sites.[1] The disease remains a significant public health problem, especially in tropical and subtropical regions, and continues to affect populations living in crowded environments such as dormitories, boarding schools, and other communal facilities.[2,3]

In Indonesia, scabies is consistently reported as one of the most common communicable skin diseases. The prevalence is notably higher among children and adolescents living in institutional settings, including Islamic boarding schools (pondok pesantren), dormitories, and correctional facilities.[3,4] Regional health reports have also shown that skin diseases remain among the leading causes of morbidity in adolescents and young adults in Kupang and surrounding areas, indicating ongoing transmission in the community.[5,6]

Transmission of scabies occurs primarily through prolonged skin-to-skin contact and, in some cases, through shared personal items such as bedding, clothing, and towels.[7] Environmental factors including overcrowding, poor ventilation, and increased humidity may prolong mite survival and facilitate transmission.[8,9] These conditions are frequently present in dormitory environments, where close interpersonal contact is unavoidable. In sports-based dormitories, the risk may be further amplified by intensive physical activity,

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 09 Issue 04 April 2026
DOI: 10.47191/ijcsrr/V9-i4-01, Impact Factor: 8.048
IJCSRR @ 2026
www.ijcsrr.org

frequent physical contact, excessive sweating, and shared facilities, all of which may contribute to repeated exposure and reinfestation.[9]

Knowledge regarding scabies—including its etiology, modes of transmission, clinical manifestations, prevention, and treatment—is commonly regarded as an important determinant of preventive behavior. Several studies conducted in boarding school settings have reported that lower levels of knowledge are associated with higher scabies prevalence, suggesting that inadequate awareness contributes to poor hygiene practices and delayed treatment seeking.[10,11] However, other studies have demonstrated inconsistent findings, where individuals with adequate or even high levels of knowledge continued to experience scabies infestation, indicating that knowledge alone may be insufficient to prevent disease occurrence in high-risk environments.[12]

These inconsistencies suggest that scabies transmission is multifactorial and influenced by a complex interaction between individual, behavioral, and environmental factors. Clinical diagnosis of scabies in epidemiological studies often relies on cardinal signs and symptoms rather than laboratory confirmation, particularly in primary care and resource-limited settings.[13,14] While this approach is practical, it may also contribute to variability in reported prevalence and associations across studies.[15]

Despite the growing body of literature on scabies in boarding schools and other communal living settings, evidence focusing on sports dormitory populations remains limited. The Sports Talent School (Sekolah Keberbakatan Olahraga, SKO) in Kupang represents a unique setting that combines adolescent dormitory living with intensive athletic training, potentially modifying conventional transmission dynamics. Therefore, this study aimed to assess the association between the level of knowledge about scabies and the presence of scabies symptoms among students residing in the SKO dormitory in Kupang, Indonesia.

METHODS

This analytical observational study employed a cross-sectional design and was conducted in July 2025 at the dormitory of the Sports Talent School (Sekolah Keberbakatan Olahraga, SKO) in Kupang City, East Nusa Tenggara, Indonesia. The study population consisted of students residing in the dormitory during the study period. A total of 59 respondents were included and selected using a simple random sampling technique based on predefined inclusion and exclusion criteria. Students who were present during data collection and provided informed consent were included, while those who were absent or declined participation were excluded.

The independent variable was the level of knowledge about scabies, while the dependent variable was the presence of scabies symptoms. Knowledge level was assessed using a structured questionnaire designed to evaluate respondents' understanding of scabies, including its etiology, transmission, clinical manifestations, prevention, and treatment. Questionnaire responses were scored and categorized into high, moderate, and low knowledge levels according to predetermined scoring criteria. Scabies symptoms were assessed through direct physical examination conducted by trained medical personnel. The assessment was based on cardinal clinical features of scabies, including nocturnal pruritus and characteristic skin lesions at predilection sites. Laboratory confirmation was not performed, and the outcome was defined as the presence or absence of scabies symptoms.

Data were processed and analyzed using statistical software. Descriptive statistics were used to summarize respondent characteristics, knowledge levels, and the distribution of scabies symptoms. The association between knowledge level and scabies symptoms was analyzed using the Chi-square test. A p-value of less than 0.05 was considered statistically significant.

This study was conducted in accordance with ethical principles for research involving human subjects. Ethical approval was obtained from the Research Ethics Committee, Faculty of Medicine, Universitas Nusa Cendana, Kupang, Indonesia (Ethical Approval No: 005751/KEPK FKM UNDANA/2025). Prior to data collection, all participants received a clear explanation regarding the study objectives and procedures. Written informed consent was obtained from all participants, and confidentiality and anonymity were strictly maintained throughout the research process.

RESULTS

A total of 59 students residing in the dormitory of the Sports Talent School in Kupang City were included in this study and analyzed. All respondents completed the knowledge questionnaire and underwent physical examination for the assessment of scabies symptoms. The results are presented to describe the distribution of knowledge levels about scabies, the prevalence of scabies symptoms, and the relationship between these variables.

The distribution of respondents according to their level of knowledge about scabies and the presence of scabies symptoms is shown in Table 1. Most respondents demonstrated a high level of knowledge about scabies, while a smaller proportion had moderate

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 09 Issue 04 April 2026
DOI: 10.47191/ijcsrr/V9-i4-01, Impact Factor: 8.048
IJCSRR @ 2026
www.ijcsrr.org

or low knowledge levels. In terms of clinical findings, scabies symptoms were identified in approximately one quarter of the respondents.

Table 1. Distribution of Respondents by Knowledge Level and Scabies Symptoms (n = 59)

Variable	Category	Frequency (n)	Percentage (%)
Knowledge level about scabies	High	47	79.7
	Moderate	9	15.3
	Low	3	5.0
Scabies symptoms	Present	15	25.4
	Absent	44	74.6

The relationship between the level of knowledge about scabies and the presence of scabies symptoms was further examined using bivariate analysis. The cross-tabulation of knowledge level and scabies symptoms, along with the results of the Chi-square test, is presented in Table 2. Although respondents with moderate and low knowledge levels appeared to have a higher proportion of scabies symptoms compared to those with high knowledge, statistical analysis did not demonstrate a significant association between knowledge level and scabies symptoms.

Table 2. Association between Knowledge Level and Scabies Symptoms among Respondents (n = 59)

Knowledge level	Scabies symptoms present n (%)	Scabies symptoms absent n (%)	Total n (%)	p-value*
High	10 (21.3)	37 (78.7)	47 (100)	
Moderate	4 (44.4)	5 (55.6)	9 (100)	**0.148**
Low	1 (33.3)	2 (66.7)	3 (100)	
Total	**15 (25.4)**	**44 (74.6)**	**59 (100)**	

*Chi-square test

The Chi-square test indicated that there was no statistically significant association between the level of knowledge about scabies and the presence of scabies symptoms among students living in the dormitory (p = 0.148).

DISCUSSION

This study demonstrated no statistically significant association between the level of knowledge about scabies and the presence of scabies symptoms among students residing in a sports school dormitory in Kupang. Although most respondents possessed a high level of knowledge regarding scabies, a substantial proportion still exhibited clinical symptoms consistent with the disease. This finding indicates that adequate knowledge alone may not be sufficient to prevent scabies transmission in high-risk communal living environments.

Scabies is a parasitic skin disease with transmission dynamics that are strongly influenced by close interpersonal contact and environmental conditions.[1,2] In congregate settings such as dormitories and boarding schools, sustained skin-to-skin contact, shared personal items, and limited control over living arrangements facilitate continuous exposure.[3,4] In this context, individual cognitive factors may have a limited protective effect when structural exposure remains intense and unavoidable.

Several previous studies conducted in Islamic boarding schools and similar institutional settings in Indonesia have reported a significant association between low levels of knowledge and higher scabies prevalence.[10,11] These studies generally argue that insufficient understanding of transmission routes and preventive measures contributes to poor hygiene behavior and delayed treatment. However, other investigations have produced findings consistent with the present study, showing that even individuals with good knowledge may still experience scabies infestation.[12] This inconsistency suggests that knowledge is not an independent determinant of disease occurrence but rather one component within a broader multifactorial framework.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 09 Issue 04 April 2026
DOI: 10.47191/ijcsrr/V9-i4-01, Impact Factor: 8.048
IJCSRR @ 2026
www.ijcsrr.org

The sports dormitory environment may further explain the lack of association observed in this study. In addition to shared living spaces, students are routinely engaged in intensive physical activity that involves frequent physical contact, excessive sweating, and increased skin humidity. These conditions may promote mite survival and facilitate repeated exposure, thereby diminishing the protective role of knowledge-based preventive behaviors.[8,9] Such environmental and activity-related factors may override individual efforts to maintain hygiene or avoid contact, particularly in institutional settings where behavioral choices are constrained.

Another methodological consideration relates to the distribution of the exposure variable. In this study, the majority of respondents were classified as having high knowledge levels, resulting in limited variability between comparison groups. This homogeneity reduces the statistical power to detect associations and may contribute to non-significant findings despite observable differences in symptom proportions. Similar limitations have been described in cross-sectional studies conducted in relatively uniform populations.[10]

Diagnostic approach is also relevant when interpreting the findings. Scabies symptoms in this study were identified through clinical examination based on cardinal signs without laboratory confirmation. While this approach is widely accepted in epidemiological and primary care research, especially in resource-limited settings, it carries the risk of misclassification.[13,14] Clinical manifestations of scabies may overlap with other pruritic skin conditions, potentially biasing the association toward the null. Nevertheless, clinical diagnosis remains a pragmatic and commonly applied method in field-based studies and aligns with national and international practice guidelines.[15]

From a public health perspective, the results of this study support the view that scabies control requires integrated interventions beyond individual-level education. Although health education and knowledge improvement are important components of prevention, their effectiveness depends on the feasibility of behavioral change within the structural environment.[16,17] Effective scabies control in dormitory settings should therefore include environmental improvements, early detection, simultaneous treatment of cases and close contacts, and institutional policies that reduce opportunities for transmission.[14]

Several limitations of this study should be acknowledged. The cross-sectional design precludes causal inference and does not allow determination of temporal relationships between knowledge acquisition and symptom development. The relatively small sample size and limited variability in knowledge levels may have reduced analytical sensitivity. Additionally, the absence of laboratory confirmation limits diagnostic certainty. These limitations should be considered when interpreting the findings and may partly explain the observed lack of association.

Despite these limitations, this study contributes valuable insight into scabies transmission in a sports dormitory setting, a population that has been relatively underrepresented in the literature. The findings emphasize that scabies prevention strategies should not rely solely on improving knowledge but must address environmental and institutional factors that sustain transmission. Future studies employing longitudinal designs, larger sample sizes, and standardized diagnostic criteria are warranted to further elucidate the interplay between knowledge, behavior, environment, and scabies transmission in similar high-risk settings.[18,19,20]

CONCLUSION

This study found no statistically significant association between the level of knowledge about scabies and the presence of scabies symptoms among students residing in a sports school dormitory in Kupang. Despite the predominance of high knowledge levels among respondents, scabies symptoms were still observed in a considerable proportion of students, indicating that knowledge alone does not guarantee protection against scabies in high-risk communal living environments.

These findings highlight the importance of addressing scabies prevention through comprehensive strategies that extend beyond individual-level education. In dormitory-based settings, particularly those involving intensive physical activity, environmental and institutional factors such as close physical contact, shared facilities, and increased skin humidity may play a more substantial role in sustaining transmission.

Future scabies control efforts in similar settings should therefore integrate health education with environmental improvements, routine screening, and coordinated management of cases and close contacts. Further research employing longitudinal designs and standardized diagnostic criteria is warranted to better elucidate the complex interaction between knowledge, behavior, and environmental exposure in the prevention of scabies.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 09 Issue 04 April 2026
DOI: 10.47191/ijcsrr/V9-i4-01, Impact Factor: 8.048
IJCSRR @ 2026
www.ijcsrr.org

REFERENCES

1. Kumaryanti NKD, Hapsari Y, Kusuma DR. Management of scabies using a family medicine approach in adult patients. Jurnal Kedokteran. 2020;9(2):220–228. doi:10.29303/jk.v9i3.4369.
2. Nurmawaddah S, Nurdin D, Munir MA. Scabies: A case report. J Med Profesi (Medpro). 2023;5(1):33–40.
3. Fikri M, Wahongan GJP, Bernadus JBB, Tuda JSB. Prevalence of scabies among male students at Darul Istiqamah Islamic Boarding School, Manado, in 2023. J Kedokt Kom Tropik. 2024;12(1):557–562.
4. Azzahra F, Manuputty AG, Silalahi PY. Prevalence and factors associated with scabies at Al Anshor Islamic Boarding School, Ambon City. Pattimura Med Rev. 2024;6(1):63–69.
5. Hernanda MF, Kesetyaningsih TW. The association between knowledge and behavior with scabies occurrence at Islamic Boarding School X in Brebes, Central Java. Health Med Sci. 2024;1(3):1–12. doi:10.47134/phms.v1i3.219.
6. Rosa N, Natalia D, Fitriangga A. The relationship between scabies knowledge level and personal hygiene with scabies occurrence at South Singkawang Primary Health Center 1. Cermin Dunia Kedokteran. 2020;47(2):97–102.
7. Trasia RF, Hakyanto E, Irawati N. The association of knowledge, behavior, and personal hygiene with the prevalence of scabies infestation among students in Islamic boarding schools in Rangkasbitung District, Lebak, Banten. J Medika Alkhairaat. 2025;6(2):922–931.
8. Scabies: Etiology, pathogenesis, treatment, eradication, and prevention. Jakarta: Faculty of Medicine, Universitas Indonesia Press; 2016. ISBN: 978-979-496-880-2.
9. Sunderkötter C, Wohlrab J, Hamm H. Scabies: Epidemiology, diagnosis, and treatment. Dtsch Arztebl Int. 2021;118:695–704. doi:10.3238/arztebl.m2021.0296.
10. Machali I. Quantitative research methods. Yogyakarta: Faculty of Tarbiyah and Teacher Training, Sunan Kalijaga State Islamic University; 2021. ISBN: 978-602-603461-8.
11. Kurniawan M, Ling MSS, Franklind. Diagnosis and therapy of scabies. Cermin Dunia Kedokteran. 2020;47(2):104–107.
12. Gunardi KY, Sungkar S, Irawan Y, Widaty S. Level of evidence for scabies diagnosis based on the Oxford Centre for Evidence-Based Medicine. eJKI. 2022;10(3):276–283.
13. Indonesian Society of Dermatology and Venereology (Perdoski). Clinical practice guidelines for dermatology, venereology, and aesthetics specialists in Indonesia. Jakarta: Perdoski; 2024. ISBN: 978-623-99603-2-2.
14. World Health Organization. Scabies. Geneva: World Health Organization; 2023.
15. Agustina S, Setiyawati E, Hernanda MF. Scabies: Pathogenesis, transmission, diagnosis, and therapy. Ranah Res J Multidiscip Res Dev. 2024;7(1):592–600.
16. Pakpahan M, Siregar D, Susilawaty A, Tasnim, Mustar, Ramdany R, et al. Health promotion and health behavior. Medan: Yayasan Kita Menulis; 2021.
17. Rachmawati WC. Health promotion and behavioral science. Malang: Wineka Media; 2019. ISBN: 978-602-5973-60-4.
18. Rosani E, Ekawati D, Wahyudi A, Harokan A. Risk factor analysis of scabies occurrence among inmates at Class II A Banyuansin Correctional Facility. Jurnal Ilmu Kedokteran dan Kesehatan. 2025;12(4):826–836.
19. Isramild, Asda A, Purnama RY. Factors influencing scabies occurrence at Darul Falah Islamic Boarding School, Batam City. Jurnal Zona Kedokteran. 2023;13(1):312–323.
20. Centers for Disease Control and Prevention. Scabies. CDC.gov; 2024.

Cite this Article: Tokan, K.E.P.B, Hutasoit, R.M., Telussa, A.S., Jannah, I.F. (2026). Relationship Between Knowledge Level About Scabies and Scabies Symptoms Among Students Living in a Sports School Dormitory in Kupang, Indonesia: A Cross-Sectional Study. International Journal of Current Science Research and Review, 9(4), pp. 1667-1671. DOI: https://doi.org/10.47191/ijcsrr/V9-i4-01