MEDALION JOURNAL: Medical Research, Nursing, Health and Midwife Participation | ISSN(e): 2986-7754
Volumes 6 No. 4 (2025)

DETERMINATION OF SCABIES RISK FACTORS BASED ON PERSONAL HYGIENE, CONTACT HISTORY, AND ENVIRONMENTAL CONDITIONS: A LITERATURE REVIEW

Reka Maulidar[1], Roslita[1]
[1]Klinik Ar-rayyan Medika, Kabupaten Aceh Singkil, Aceh, Indonesia
[2]Rumah Sakit Umum Daerah Kabupaten Aceh Singkil, Aceh, Indonesia
[*)]Email Korespondensi: maulidarreka@gmail.com

Received	: 30 August 2025	Published	: 31 December 2025
Revised	: 10 September 2025	DOI	: https://doi.org/10.59733/medalion.v6i4.241
Accepted	: 25 September 2025	Publish Link	: https://medalionjournal.com/index.php/go

Abstract

Scabies is a contagious skin disease that continues to pose a public health problem, particularly in developing countries with inadequate environmental conditions and poor hygiene practices. The disease is caused by an infestation of the mite Sarcoptes scabiei var. hominis, and its transmission is strongly influenced by behavioral, physical environmental, and socioeconomic factors. This literature review aims to analyze the factors contributing to the incidence of scabies based on empirical evidence from recent studies. The literature search was conducted through several scientific databases using keywords related to scabies, risk factors, personal hygiene, contact history, humidity, and household crowding. The analyzed articles include primary research studies and scientific reviews published within the last 10 to 15 years that met the inclusion criteria. The findings indicate that poor personal hygiene is the most consistently reported risk factor. Infrequent bathing, irregular changing of clothes, and inadequate cleanliness of bedding significantly increase the likelihood of infection and reinfection. Contact history becomes the most dominant mechanism of transmission, both through direct skin-to-skin contact and through shared personal items. Environmental factors such as overcrowded living conditions and poor ventilation further elevate the risk by increasing the frequency of close contact and creating microclimatic conditions that support myth survival. Low levels of community knowledge about symptoms, transmission, and prevention also contribute to the persistently high incidence of scabies.

Keywords: Scabies, personal hygiene, contact history, household crowding, knowledge, physical environment

INTRODUCTION

Human health is influenced by various factors, including behavior, health services, genetics, and the living environment. The environment, encompassing physical, biological, and sociocultural components, plays a crucial role in the emergence of various infectious diseases, which remain a major challenge in many developing countries. Various environmentally-based diseases, such as acute respiratory infections, dengue fever, diarrhea, tuberculosis, and skin diseases, continue to be reported at high rates in various regions.(Afifa et al., 2022) The high prevalence of these diseases is generally associated with poor sanitation, limited access to clean water, increasing environmental pollution, and inadequate hygiene practices. These factors create ideal conditions for infectious agents to thrive and be easily transmitted within the community.(Kim et al., 2024a) Scabies is a contagious skin disease that remains a global concern. This disease is caused by an infestation of the mite Sarcoptes scabiei var. hominis, which lives and reproduces on the surface of human skin. Epidemiologically, scabies is found in various countries with varying prevalence; in some developing countries, the incidence rate is reported to reach 6–27% of the general population, and is more common in children and adolescents. In Indonesia, data from the Ministry of Health shows that scabies is among the three most common skin diseases reported in healthcare facilities.(Alvikri & Yudhastuti, 2024; Sinaga et al., 2024) Scabies transmission is influenced by conditions that facilitate direct or indirect contact, such as overcrowding, suboptimal environmental hygiene, poor personal hygiene practices, and limited availability of clean water. Furthermore, a lack of public knowledge about the symptoms, transmission, and prevention of scabies contributes to the recurrence of cases in various communities. Socioeconomic factors, education level, and the habit of sharing personal items such as towels or clothing are also cited as important determinants of scabies

transmission.(Fauziah & Suparmi, 2023) Although scabies case reports are not always prominent in health news, this disease still places a significant burden on the quality of life of sufferers. The intense itching, especially at night, and the risk of secondary infections from scratching make scabies a condition that impacts productivity, comfort, and daily activities. In a public health context, a thorough understanding of risk factors, transmission patterns, and environmental determinants is crucial for formulating appropriate prevention strategies.

OBJECTIVE

The purpose of this study is to analyze various factors contributing to the incidence of scabies based on empirical evidence from previous studies. The discussion focuses on the influence of knowledge, personal hygiene behavior, contact history, physical environmental conditions such as humidity, and residential density on the spread of scabies. By reviewing the available literature, this review aims to identify the main determinants influencing scabies transmission and provide a comprehensive overview that can serve as a basis for developing strategies for scabies prevention and control in various community settings.

RESULTS

Based on the results of the literature review obtained, the results show consistent findings regarding the determinants of scabies incidence. The factors most frequently reported to be associated with an increased risk of infection are: (1) poor personal hygiene, (2) history of contact/sharing behavior, (3) crowding, and (4) low knowledge/lack of awareness about prevention.

Table1Literature search results

Research Title	Research Findings
Analysis of the Scabies Incidence (Fauzah & Suparmi, 2023)	Contact history, poor personal hygiene, low knowledge, room humidity, and overcrowding are significantly associated with scabies symptoms. Contact history is the most dominant factor.
Clinical Profile and Risk Factors of Scabies in Hospital Settings (Kim et al., 2024)	Poor personal hygiene habits, such as infrequent bathing and frequent changes of clothing, are strong risk factors. The risk of reinfection increases in patients with poor personal hygiene.
Scabies in Purwokerto Prison Inmates (Hidayati et al., 2024)	Poor personal hygiene, the habit of sharing towels and clothes, and crowded living conditions significantly increase the incidence of scabies in prisoners.
Literature Review of Scabies Risk Factors During the Pandemic (Sinaga et al., 2023)	Poor personal hygiene, low knowledge, close contact, poor ventilation, and overcrowding are the most common factors found in the increase in scabies cases.

Based on the summary of several studies in Table 1, a pattern of risk factors associated with scabies incidence is evident. Nearly all studies emphasize that poor personal hygiene is a major determinant of susceptibility to Sarcoptes scabiei infestation. Research by Kim et al. (2024) and a study of prisoners by Hidayati et al. (2024) show that poor personal hygiene habits, such as infrequent bathing, infrequent changing of clothes, or sharing personal items, directly contribute to the increasing number of scabies cases. These findings demonstrate that personal hygiene practices are fundamental in breaking the chain of transmission.(Afifa et al., 2022; Kim et al., 2024a) Furthermore, a history of contact with an infected individual is a very dominant factor, as reported by Fauzah and Suparmi (2023). Direct and indirect contact through contaminated objects allows mites to spread rapidly, so individuals with high contact intensity are at greater risk. A literature review by Sinaga et al. (2023) further supports these findings by showing that close contact is the most frequently encountered variable in various studies during the pandemic. mOvercrowding has emerged as an environmental factor that exacerbates the risk. Studies conducted on prison populations have shown that crowded conditions increase the frequency of contact between individuals, accelerating the spread of the virus. This was also addressed in studies from 2023 and 2024, which showed that poor ventilation

and close proximity between residents increase the chances of transmission.(Kim et al., 2024b; Tavoletti et al., 2025) In addition to behavioral and social interaction factors, poor knowledge about the causes, symptoms, and prevention of scabies is also a significant factor in the high incidence. A study by Fauzah and Suparmi (2023) and a review by Sinaga et al. (2023) show that this lack of understanding prevents individuals from implementing appropriate preventive measures, increasing the risk of infection.

DISCUSSION

1). Personal Hygiene

Personal hygiene is a significant factor in the incidence of scabies. A clinical study conducted by Kim et al. in 2024 reported that poor personal hygiene habits, such as low bathing frequency, wearing clothes that are not changed regularly, and lack of attention to personal hygiene, are closely associated with an increased risk of scabies infection. Patients with inadequate hygiene have also been shown to have a greater risk of reinfection, highlighting the importance of personal hygiene practices in preventing this disease.(Gupta et al., 2024) An observational study conducted in Purwokerto in 2024 also showed similar findings. The results showed that individuals who did not maintain personal hygiene, such as rarely washing bedding, changing clothes, and not maintaining nail hygiene, had a higher prevalence of scabies. Sharing towels, clothing, or blankets with others has also been shown to increase the risk of transmission because it allows for indirect mite transfer.(Skayem et al., 2023)

Literature review by(Sinaga et al., 2024), published in 2023, confirmed that most of the studies analyzed identified personal hygiene as the most dominant risk factor. The study found that irregular bathing habits, unclean clothing, and lack of bed maintenance were factors consistently present in populations with high scabies rates. This study emphasized that poor personal hygiene is a primary gateway for scabies transmission across various age groups and social environments. The quality of personal hygiene is often influenced by the availability of sanitation facilities, health knowledge, and a person's socioeconomic status. The review explains that the inability to maintain optimal personal hygiene can lead to the accumulation of mites on the skin and personal objects, facilitating both direct and indirect transmission.(Sinaga et al., 2024) Based on these findings, it is clear that personal hygiene is the variable most strongly associated with high scabies incidence. These findings suggest that preventive interventions should prioritize improving personal hygiene behaviors through health education, increasing access to sanitation, and changing daily practices such as bathing frequency, changing clothes, and washing bedding.(Azzolina et al., 2025)

2) Contact History

Contact history is one of the factors most frequently associated with scabies. Direct skin-to-skin contact with an infected individual has been shown to be the primary transmission mechanism. Contact history has the most significant influence on the appearance of scabies symptoms, as demonstrated by a very high Wald value and a strong statistical association between contact exposure and infection. This suggests that physical contact is a highly efficient transmission route because mites can be transferred quickly during close interactions.(Girma et al., 2024; Melese et al., 2023) Contact history includes not only direct contact but also indirect contact through shared personal items. A 2022 study of adult individuals in Bangladesh reported that the practice of sharing clothing, towels, and bedding significantly contributed to the increased incidence of scabies, especially in groups with poor hygiene habits. The study explained that mites can survive for several days on fabric surfaces, so the risk of transmission remains high even without direct physical contact.(Bogino et al., 2023)

The study conducted by(Sinaga et al., 2024) also emphasized the importance of contact history in the spread of scabies. The review found that nearly all cases of scabies in high-prevalence groups involved some form of contact, whether physical contact, bed sharing, or sharing personal items. The review highlighted that frequency of contact plays a greater role than duration, suggesting that brief but intense interactions, such as sleeping close together or repeated handshakes, can significantly increase the risk.(Kim et al., 2024b; Tavoletti et al., 2025) Contact history is also influenced by housing conditions and social interaction patterns. In crowded environments, contact between individuals occurs more frequently, accelerating the spread of mites. Close contact with fellow residents in a confined space is highly correlated with new scabies incidents. Furthermore, gathering in large groups or engaging in shared activities in enclosed spaces also increases the probability of transmission.(Alvikri & Yudhastuti, 2024) These results indicate that contact history is a very strong risk factor, both direct contact and indirect contact through contaminated objects. Social interaction patterns, the habit of sharing personal items, and neighborhood density are contributing factors that increase the impact of contact history on the emergence of scabies. These findings emphasize that prevention strategies should emphasize reducing high-risk contacts, increasing education about transmission, and implementing a habit of not sharing personal items to break the chain of infection.

3) Residential Density

Overcrowding is an environmental factor that plays a significant role in increasing the risk of scabies. Recent literature suggests that crowded spaces create conditions that facilitate more frequent physical contact, accelerating the transmission of mites. The study you uploaded in 2023 showed that most respondents lived in living conditions with less than or equal to 1.5 square meters of space per person. This condition was shown to be significantly associated with scabies incidence. Although multivariate analysis showed that overcrowding was not the dominant factor, the findings still indicate that crowded living conditions facilitate transmission, particularly through unavoidable contact between individuals.(Kim et al., 2024b; Tavoletti et al., 2025)

Overcrowding increases the frequency of direct and indirect interactions that can potentially lead to scabies transmission. The study showed that in situations where many people share a single room with limited ventilation, the risk of exposure increases due to the high level of physical proximity. In some cases, close sleeping arrangements and a lack of space between beds contribute to the spread of scabies in crowded environments.(Melese et al., 2023)Occupancy density frequently appears as a supporting variable in various studies related to contact history. A multi-occupancy room increases the frequency of direct contact, while sharing facilities such as beds, blankets, and chairs increases the potential for indirect transmission. This study confirms that crowded spaces accelerate the spread of scabies, especially if occupants' personal hygiene is also poor.

Occupational density interacts with other environmental factors such as humidity, ventilation, and lighting. Crowded spaces typically have poorer air circulation, warmer temperatures, and higher humidity, allowing mites to survive longer on surfaces. These microclimatic conditions increase the chances of mites surviving outside the human body and increase the risk of transmission through personal items or bedding. This indicates that overcrowding is a risk factor that amplifies scabies transmission, both directly and indirectly. Interventions to reduce the risk of transmission should consider more spacious sleeping arrangements, improved ventilation, and reducing the number of occupants in a room to break the chain of transmission.(Alvikri & Yudhastuti, 2024)

4) Knowledge

Knowledge about scabies is a crucial factor influencing behaviors related to prevention and treatment of the disease. Recent literature indicates that a low level of understanding of transmission methods, clinical symptoms, and prevention efforts significantly contributes to the high incidence of scabies. This suggests that a lack of accurate information makes individuals less likely to practice good hygiene and avoid risk factors that can lead to infection.(Afifa et al., 2022; Sinaga et al., 2024) Limited knowledge leads to delays in recognizing early symptoms of scabies, such as itching at night and the appearance of lesions in the interdigital area. This delay leads sufferers to continue contact with others without taking precautions, accelerating the spread of the disease. The study also highlighted that individuals with higher levels of education tend to have better awareness of personal hygiene and avoid behaviors that increase the risk of infection.

Most scabies cases in high-prevalence populations occur in groups with low levels of understanding of the disease. The study showed that knowledge of transmission mechanisms and control methods is essential for reducing the incidence of scabies. Health education, accurate information, and education on personal hygiene have been shown to improve preventive behavior.(Fauziah & Suparmi, 2023) Knowledge not only influences individual behavior but also plays a role in the ability to detect disease in the immediate environment. Individuals with good knowledge tend to more quickly identify symptoms in themselves or family members, allowing for earlier action such as avoiding physical contact, not sharing personal equipment, and seeking prompt treatment. Conversely, a lack of knowledge causes individuals to continue their normal activities despite experiencing early symptoms, ultimately increasing the risk of transmission within a social group.(Sinaga et al., 2024) Health education programs are one of the most effective interventions for reducing the incidence of scabies. Health education, accompanied by demonstrations of personal hygiene practices, is expected to increase knowledge and gradually change behavior, especially among groups with limited access to information.

CONCLUSION

This literature review indicates that the incidence of scabies is influenced by a combination of behavioral, environmental, and individual knowledge factors. Personal hygiene has been shown to be the most consistent determinant, with inadequate hygiene habits such as infrequent bathing, infrequent changes of clothing and bedding, and sharing of personal items significantly increasing the risk of infection. A history of contact, both direct and indirect through contaminated objects, emerged as a very strong risk factor and has repeatedly been found to be the primary

cause of the spread of scabies in various populations. Housing density also plays a significant role because it increases the frequency of interactions between individuals, facilitating the transfer of mites. Physical environments such as poor ventilation and high humidity also prolong the survival of mites outside the human body, increasing the opportunity for indirect transmission.Meanwhile, low levels of knowledge regarding symptoms, transmission mechanisms, and prevention strategies make individuals more vulnerable to exposure and less likely to take appropriate preventive measures. Overall, the literature from 2022 to 2025 consistently concludes that scabies management interventions must be multidimensional. Improving personal hygiene, reducing risky contact, improving environmental conditions, and providing comprehensive health education are key components in breaking the chain of transmission. Structured and sustainable prevention efforts are needed to reduce the prevalence of scabies in various community groups, especially in high-risk environments.

REFERENCES

Afifa, A. N., Hilal, N., & Cahyono, T. (2022). Hubungan personal hygiene dan kepadatan hunian dengan kejadian skabies pada warga binaan pemasyarakatan (wbp) di lembaga pemasyarakatan x. *Buletin Keslingmas*, *41*(2), 70–76.

Alvikri, A. A., & Yudhastuti, R. (2024). HUBUNGAN SANITASI LINGKUNGAN DAN PERSONAL HIGIENE DENGAN PENYAKIT SKABIES DI PONDOK PESANTREN : LITERATURE REVIEW 2014 – 2024. *Jurnal Kesehatan Tambusai*, *5*(3), 9576–9592.

Azzolina, V., Schauer, F., Pilz, J. F., Zink, A., Eyerich, K., & Pilz, A. C. (2025). Scabies Management Outcomes: Identification of Risk Factors for Treatment Success or Failure. *Dermatology Practical and Conceptual*, *15*(2). https://doi.org/10.5826/dpc.1502a5077

Bogino, E. A., Woldegeorgis, B. Z., Wondewosen, L., Dessu, B. K., Obsa, M. S., Kelbiso, L., Galtore, T. E., Kidane, W., & Kelboreid, A. G. (2023). Scabies prevalence and its associated factors among prisoners in southern Ethiopia: An institution-based analytical cross-sectional study. *PLoS Neglected Tropical Diseases*, *17*(12). https://doi.org/10.1371/journal.pntd.0011826

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

Girma, A., Abdu, I., & Teshome, K. (2024). Prevalence and determinants of scabies among schoolchildren in Africa: A systematic review and meta-analysis. In *SAGE Open Medicine* (Vol. 12). SAGE Publications Ltd. https://doi.org/10.1177/20503121241274757

Gupta, S., Thornley, S., Morris, A., Sundborn, G., & Grant, C. (2024). Prevalence and determinants of scabies: A global systematic review and meta-analysis. In *Tropical Medicine and International Health* (Vol. 29, Issue 12, pp. 1006–1017). John Wiley and Sons Inc. https://doi.org/10.1111/tmi.14058

Kim, D. H., Kim, Y., Yun, S. Y., Yu, H. S., Ko, H. C., & Kim, M. W. (2024a). Risk factors for scabies in hospital: a systematic review. *BMC Infectious Diseases*, *24*(1). https://doi.org/10.1186/s12879-024-09167-6

Kim, D. H., Kim, Y., Yun, S. Y., Yu, H. S., Ko, H. C., & Kim, M. W. (2024b). Risk factors for scabies in hospital: a systematic review. *BMC Infectious Diseases*, *24*(1). https://doi.org/10.1186/s12879-024-09167-6

Melese, F., Malede, A., Sisay, T., Geremew, A., Gebrehiwot, M., Woretaw, L., Atanaw, G., Azanaw, J., Melese, M., & Feleke, H. (2023). Cloth sharing with a scabies case considerably explains human scabies among children in a low socioeconomic rural community of Ethiopia. *Tropical Medicine and Health*, *51*(1). https://doi.org/10.1186/s41182-023-00544-6

Sinaga, G. A., Fannisa Azzahra, F., Putrian, L., Febriyanti, S., Kedokteran, F., & Kesehatan, I. (2024). Literature Review: Faktor Risiko Kejadian Skabies Selama Pandemi COVID-19 di Berbagai Wilayah Indonesia. *Jurnal Pendidikan tambusai*, *8*(1), 16044–16056.

Skayem, C., Askour, M., Gary, C., Hemery, F., Mahé, E., Caux, F., Dupin, N., Senet, P., Belan, A. G., Hillion, B., Meni, C., Saiag, P., Bellaud, G., Bleibtreu, A., Lariven, S., Bollens, D., Descamps, V., Molina, J. M., Bouchaud, O., … Bernigaud, C. (2023). Severe Scabies: A French Multi-centre Study Involving 95 Patients with Crusted and Profuse Disease and Review of the Literature. *Acta Dermato-Venereologica*, *103*. https://doi.org/10.2340/actadv.v103.5351

Tavoletti, G., Avallone, G., Sechi, A., Cinotti, E., Veraldi, S., Micali, G., Lacarrubba, F., Marzano, A. V., & Nazzaro, G. (2025). Scabies: An updated review from epidemiology to current controversies and future perspectives. In *Travel Medicine and Infectious Disease* (Vol. 67). Elsevier Inc. https://doi.org/10.1016/j.tmaid.2025.102878