



Prevalence and Determinant Analysis of Scabies Incidence in Rumak Village

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A B S T R A C T

Scabies is a global public health problem that affects millions of people worldwide, especially in crowded and underdeveloped places. Similar difficulties arise at Rumak Village, a rural community in West Lombok, where cramped living quarters encourage the development of scabies. The primary goal of this research is to pinpoint the critical factors affecting the village's scabies transmission. Using a cross-sectional methodology, 483 families' preventive practices were investigated between January and July of 2023. Chi-Square tests were used to analyse the data, which were gathered by questionnaires. A p-value threshold of 0.05 and a 95% confidence interval were used for the analysis. The results showed a substantial correlation ($p = 0.000$) between the occurrence of scabies and poor handwashing habits, poor household cleanliness, sharing personal objects, and infrequent bathing. Scabies is more common in families who bathe only once a day, interchange personal belongings regularly, have dirty surroundings, and wash their hands infrequently.

INTRODUCTION

Scabies is an infectious skin condition caused by the *Sarcoptes scabiei* mite. The condition is characterized by intense itching, redness, and rashes. These mites burrow into the skin, lay eggs, and cause discomfort to the infected individual (Mutiarra and Syailindra, 2016). Mites can also survive on clothing, bedding, and other personal items for a short period of time. It is important to note that scabies can be transmitted even before symptoms appear, making it difficult to identify and prevent their spread in some cases (Aminah, Sibero and Ratna, 2015). The disease is a global health problem that affects millions of people worldwide, especially in densely populated and underprivileged communities (Majid, Astuti and Fitriyana, 2020). Rumak Village, which is in a rural area, is no exception to this problem. Scabies have become a silent epidemic in Rumak Village. This small rural community located in West Lombok, West Nusa Tenggara (WNT) is grappling with the devastating effects of this neglected tropical disease. Scabies are mainly spread through close personal contact, such as prolonged skin-to-skin contact or shag-contaminated items (Dtoro et al., 2023). In Rumak Village, where people often live in crowded conditions, the transmission of scabies is easier. Lack of awareness about proper hygiene practices further exacerbates the problem, leading to a cycle of repeated infections.

The impact of scabies on society is multifaceted. For instance, the physical discomfort and unbearable itching caused by scabies can have a major impact on the quality of life of affected individuals. Sleeplessness and constant scratching can lead to secondary infections, further compromising their health

(Purwanto and Hastuti, 2020). In addition, scabies have far-reaching social and economic consequences. Affected individuals, especially children, are often stigmatized and excluded from school or social activities. This not only hampers their education but also perpetuates the cycle of poverty in the community. In addition, the loss of productivity due to illness and caregiving responsibilities also puts a strain on already fragile local economies (Marga, 2020).

Diagnosing scabies in Rumak Village poses significant challenges. Limited access to health facilities and trained medical personnel make it difficult to accurately identify cases of scabies. In addition, the lack of specialized diagnostic tools means many cases go undiagnosed or misdiagnosed, leading to ineffective treatment. Several factors also complicate the treatment of scabies in Rumak Village. The high cost of treatment, coupled with limited availability, leaves many people without adequate treatment. In addition, a lack of education and awareness about proper treatment regimen often leads to incomplete or inappropriate use of medication, allowing mites to persist and infect others.

Collaboration between local governments, health organizations, and non-governmental organizations (NGOs) is essential in tackling the scabies epidemic. By pooling resources and expertise, comprehensive prevention and treatment programs can be implemented (Haiya et al., 2014). These programs should include regular mass drug administration, public health education campaigns, as well as long-term monitoring and evaluation to ensure continued progress (Fitria, Tosepu and Nuraladewi, 2020).

The scabies epidemic in Rumak Village requires urgent attention and concerted efforts from all stakeholders. Addressing the underlying causes, improving diagnosis and treatment, and implementing comprehensive prevention strategies can reduce the burden of scabies in the community. Ultimately, eradicating scabies in Rumak Village will improve the physical and mental health of its residents and contribute to the community's overall development and well-being. It is important to understand its transmission and implement effective preventive measures to prevent the spread of scabies. This study aimed to analyze the determinants and prevalence of scabies incidence in Rumak Village.

METHOD

This study used a cross-sectional design by analyzing prevention behaviors towards scabies transmission involving a sample in Rumak Village, West Lombok, of 483 families at one point in time to understand their behaviors, attitudes, and practices related to the prevention of scabies transmission. The study was conducted from January to July 2023. Data collection used a questionnaire or survey to ask respondents about their family history of scabies, hand washing behavior, cleanliness of the environment around the house, sharing behavior, and intensity of their bathing practices related to the prevention of scabies transmission.

The observed variables were preventive behaviors, i.e., evaluating the respondents' engaging in behaviors, such as regular hand washing, cleanliness of the environment around the house, sharing of personal items, and daily bathing practices. Data analysis was performed descriptively by calculating the frequency and percentage of various preventive behaviors performed by respondents. Bivariate analysis using Chi-Square analysis, p-value 0.05 with a 95% Confidence interval, was performed to analyze the relationship between variables, namely preventive behavior and the history of scabies incidence in the sample.

RESULT

Table 1. Frequency Distribution of Preventive Behaviour towards Scabies Transmission in Rumak Village

Variable		n = 483	%
Family History of Scabies	Available	294	60.9
	Not available	189	39.1
Handwashing	Irregular	257	53.2
	Regular	226	46.8
Cleanliness of the Home Environment	Less Clean	191	39.5
	Clean	292	60.5
Sharing Items	Often	197	40.8
	Rare	286	59.2
Shower	1 Time/Day	204	42.2
	2 Times/Day	279	57.8

Table 1 shows that the prevalence of scabies in the community is still relatively high at 60.9% and families who practice regular handwashing contribute quite well at 53.2%. However, many people in Rumak Village do not maintain cleanliness around their home environment with a percentage of 60.5%. In addition, the behavior of sharing personal items with others is rarely done by the community, and the practice of bathing twice a day is well done with a percentage of 59.2% and 57.8%, respectively.

Table 2. Analysis of Preventive Behaviour towards Scabies Transmission in Rumak Village

Variables	Family History of Scabies (n=483)				χ^2	p-value	OR (CI 95%)	
	Available		Not Available					
	n	%	n	%				
Handwashing	Irregular	188	73.2	69	26.8	34.786	0.000*	3.084 (2.109-4.510)
	Regular	106	46.9	120	53.1			
Cleanliness of the Home Environment	Less Clean	151	79.1	40	20.9	43.879	0.000*	3.933 (2.591-5.970)
	Clean	143	49	149	51			
Sharing Items	Often	164	83.2	33	16.8	69.955	0.000*	5.964 (3.839-9.264)
	Rare	130	45.5	156	54.5			
Shower	1 Time/Day	164	80.4	40	19.6	56.511	0.000*	4.699 (3.094-7.138)
	2 Times/Day	130	46.6	149	53.4			

*: Significant; OR: Odds Ratio; CI 95%: Confidence Interval

Table 2 shows that there is a significant correlation between the incidence of scabies and hand-washing practices with a p-value of 0.000. Based on the OR value, it shows that families who do not regularly

wash their hands have a 3.084 times higher risk of suffering from scabies than families who regularly practice hand washing. In addition, there was a significant correlation between environmental hygiene practices around the house and the incidence of scabies with a p-value of 0.000. The OR value shows that families with a less clean home environment have a 3.933 times higher risk of having scabies than families with a clean home environment.

There was a significant correlation between families who frequently shared personal items and the incidence of scabies with a p-value of 0.000. The OR calculation results inform that families who often share personal items have a 5.964 times higher risk of suffering from scabies than families who rarely share personal items in their environment. In addition, there is a significant relationship between bathing practices and the incidence of scabies with a p-value of 0.000. Based on the OR value, families who practice bathing 1 time/day have a 4.699 times higher risk of having scabies than families who practice bathing 2 times/day (Table 2).

DISCUSSION

One of the preventive measures is regular hand washing which plays an important role in reducing the incidence of scabies. Hand washing is a simple yet effective method to prevent the transmission of various infectious diseases. The results of this study are consistent with the Centers for Disease Control and Prevention (CDC) statement that regular hand washing is the single most important way to prevent the spread of germs. Proper hand hygiene can significantly reduce the risk of contracting or transmitting infections, including scabies (Yun, Yu and Kim, 2020).

Scabies mites are microscopic parasites that nest in the upper layers of the skin, where they lay their eggs. These mites can easily pass from one person to another through close physical contact, such as shaking hands or sexual activity. In addition, scabies mites can survive for up to 72 hours on bedding, clothing, or other surfaces, increasing the risk of transmission (Prayogi and Kurniawan, 2016). Several studies have demonstrated the effectiveness of regular handwashing in reducing scabies transmission. A study conducted by Romani et al. in 2015 focused on a population with a high prevalence of scabies in Fiji. The study implemented a multifaceted intervention, including promoting regular handwashing with soap and water. The results showed a significant reduction in the incidence of scabies, suggesting that handwashing plays an important role in preventing its spread (Romani *et al.*, 2015).

Another study conducted by Dagne et al. in 2019 examined the impact of hand hygiene interventions on scabies transmission in a healthcare setting. The study implemented a comprehensive hand hygiene program, including education, access to hand sanitizers, and regular monitoring of compliance. The results showed a significant reduction in scabies transmission, highlighting the effectiveness of hand hygiene practices in healthcare settings. Promoting regular handwashing with soap and water should be

emphasized in health education campaigns targeting high-risk populations, such as schools, healthcare facilities, and communities with a high prevalence of scabies. Proper handwashing techniques, including thorough handwashing with soap and water for at least 20 seconds, should be taught to ensure maximum effectiveness (Dagne *et al.*, 2019).

Regular handwashing plays an important role in reducing the transmission of scabies. It is a simple and cost-effective preventive measure that can be implemented in a variety of settings, from health facilities to communities (Trasia, 2021). While handwashing alone cannot eliminate the risk of scabies, it is an important component of a comprehensive prevention strategy (Raffi, Suresh and Butler, 2019). By promoting hand hygiene practices and ensuring their consistent implementation, we can significantly reduce the incidence of scabies and improve the overall health and well-being of individuals (May *et al.*, 2019).

Scabies can spread easily from person to person, especially in crowded living conditions or close personal contact. While personal hygiene plays an important role in preventing scabies, the cleanliness of the home environment can also have a great impact on the incidence of scabies. Keeping the home environment clean is essential in preventing the spread of scabies. Regular cleaning practices, such as washing bedding, vacuuming carpets, and disinfecting surfaces, can help eliminate mites and their eggs, thereby reducing the risk of infestation. In addition, practicing good personal hygiene, including frequent hand washing and regular bathing, can minimize the chances of scabies transmission (Roswendi and Zakiyah, 2022).

Overcrowded living conditions and poor sanitation can contribute to the rapid spread of scabies. When several people live in proximity, sharing bedding, furniture and personal belongings, the risk of scabies transmission increases significantly. In addition, inadequate access to clean water and sanitation facilities can hinder proper hygiene practices, making it difficult to control scabies outbreaks in such environments (Tresnasari *et al.*, 2019). A study conducted by researchers at the University of New South Wales in Australia examined the relationship between home environmental hygiene and the incidence of scabies in remote Aboriginal communities. The study found that overcrowding and poor sanitation were significant risk factors for scabies infestation. The researchers highlighted the importance of improving housing conditions and promoting hygiene practices in preventing scabies outbreaks in these communities (Ali, Foster and Hall, 2018).

Implementing effective environmental cleaning interventions can significantly reduce the transmission of scabies. In healthcare settings, where scabies outbreaks can occur, strict adherence to infection control measures, including regular cleaning and disinfection of surfaces, can help prevent the spread of scabies among patients and healthcare workers (Husna, Joko and Selatan, 2021). A study published in the *Journal of Hospital Infection* evaluated the impact of environmental cleaning programs on the transmission of

scabies in hospital settings. The study showed that the implementation of improved cleaning protocols, including the use of disinfectants and proper cleaning techniques, resulted in a significant reduction in scabies cases (Lee *et al.*, 2019).

Maintaining a clean home environment is essential in preventing the transmission of scabies. Overcrowding, poor sanitation, and socioeconomic factors can contribute to the spread of scabies (Ihtiaringtyas, Mulyaningsih and Umniyati, 2019). Implementing effective cleaning practices, improving housing conditions, and promoting hygiene education are important strategies in reducing the incidence rate of scabies (Khairani, 2017). In addition, targeted interventions and support systems are needed to address the specific challenges faced by disadvantaged communities (ALBERFKANI and MERO, 2020). By prioritizing the cleanliness of the home environment and implementing comprehensive prevention measures, we can make significant progress in controlling and minimizing the impact of scabies (Anggreni and Indira, 2019).

Several research studies have been conducted that correspond to this study to investigate the relationship between sharing personal items and the transmission of scabies. These studies have provided valuable insights into the importance of this mode of transmission. In a study published in the British Journal of Dermatology, researchers examined the role of shared personal items in outbreaks of scabies within households. The study involved 100 households where at least one member had been diagnosed with scabies. The researchers found that sharing personal items such as clothing, towels, and bedding significantly increased the risk of scabies transmission within the household. They concluded that sharing personal items is important in spreading scabies, especially in close-knit communities or dense living conditions (Cox *et al.*, 2021).

Another study published in the Journal of Epidemiology and Infection focused on scabies outbreaks in healthcare settings. The researchers investigated the impact of sharing personal items, including stethoscopes, blood pressure cuffs, and thermometers, on the transmission of scabies among healthcare workers and patients. The study found that healthcare workers who shared personal items were more likely to contract scabies compared to those who did not share items. In addition, patients who shared personal items were also at higher risk of developing scabies. This study highlights the importance of proper hygiene practices and the need to discourage the sharing of personal items in healthcare settings to prevent scabies outbreaks (Mounsey *et al.*, 2016).

A study published in the Journal of the American Board of Family Medicine examined the relationship between scabies and sharing personal items in community settings. The researchers conducted a survey among a large sample of individuals, collecting information on their personal hygiene practices and scabies history. The study revealed a positive correlation between sharing personal items and the incidence of scabies. Individuals who reported sharing items such as clothing, towels and bedding had a

higher likelihood of developing scabies. The researchers emphasized the importance of personal hygiene and recommended avoiding sharing personal items to reduce the risk of scabies transmission. The study results discussed above have important implications for public health and prevention strategies. They highlight the need for increased awareness about the risks associated with sharing personal items and the role it plays in the transmission of scabies (Anderson and Strowd, 2017).

One common preventive measure that is often recommended is frequent bathing. Bathing is believed to help remove scabies mites from the skin surface and reduce the risk of transmission. However, the effectiveness of this practice in preventing scabies incidence has been a topic of debate among health professionals. Several research studies have been conducted to understand the relationship between bathing practices and the incidence of scabies. One such study published in the *World Journal of Biology Pharmacy and Health Sciences* examined the bathing habits of individuals living in scabies-endemic areas. The study found that individuals who bathed at least once a day had a significantly lower incidence of scabies compared to those who bathed less frequently. This suggests that regular bathing may play a role in preventing scabies attacks (Emeka *et al.*, 2021).

Another study conducted in a school setting investigated the impact of daily bathing on the transmission of scabies among children. The researchers divided the participants into two groups: one group practiced daily bathing, while the other group maintained their usual bathing routine. The study revealed that the group that practiced daily bathing had a significantly lower incidence of scabies compared to the control group. This supports the notion that regular bathing can be an effective preventive measure against scabies (Ugbomoiko *et al.*, 2018).

However, it is important to note that bathing alone may not be enough to completely prevent a scabies infestation. Scabies mites can survive a short period of time away from the human body, and they can easily spread through close physical contact or sharing contaminated items such as clothing or bedding (Nisa and Rahmalia, 2019). Therefore, other preventive measures such as avoiding close contact with infected individuals and practicing good hygiene, including frequent washing of clothes and bedding, are equally important in controlling the spread of scabies (Novitasari and Ferizqo, 2021).

Bathing practices, especially regular bathing, have been shown to have a positive impact in reducing the incidence of scabies. However, this should be considered one component of a comprehensive approach to scabies prevention. Other measures, such as avoiding close contact with infected people and practicing good hygiene, are equally important (Ariningtyas, 2019). It is also important to balance good hygiene practices and preserving the skin's natural barrier. By adopting a multi-faceted approach, individuals can significantly reduce their risk of scabies attacks and improve overall skin health (Triana and Razi, 2020).

CONCLUSION

Preventive behaviors are essential in controlling the spread of scabies. Good hygiene practices, such as regular hand washing and avoiding sharing personal items, are important in preventing transmission. Knowledge and awareness about scabies transmission are also important in promoting preventive behaviors. Education campaigns and informed healthcare providers can help disseminate this knowledge.

REFERENCES

- ALBERFKANI, M.I. and MERO, W.M.S. (2020) ‘The incidence of scabies and head lice and their associated risk factors among displaced people in Cham Mishko Camp, Zakho City, Duhok Province, Iraq’, *Polish Journal of Microbiology*, 69(4), pp. 463–469. Available at: <https://doi.org/10.33073/PJM-2020-050>.
- Ali, S.H., Foster, T. and Hall, N.L. (2018) ‘The relationship between infectious diseases and housing maintenance in indigenous Australian households’, *International Journal of Environmental Research and Public Health*, 15(12). Available at: <https://doi.org/10.3390/ijerph15122827>.
- Aminah, P., Sibero, H. and Ratna, M. (2015) ‘Hubungan Tingkat Pengetahuan dan Perilaku Santri dengan Kejadian Skabies’, *J Majority*, 4, pp. 54–59. Available at: <http://juke.kedokteran.unila.ac.id/index.php/majority/article/viewFile/610/614>.
- Anderson, K.L. and Stowd, L.C. (2017) ‘Epidemiology, diagnosis, and treatment of scabies in a dermatology office’, *Journal of the American Board of Family Medicine*, 30(1), pp. 78–84. Available at: <https://doi.org/10.3122/jabfm.2017.01.160190>.
- Anggreni, P.M.D. and Indira, I.G.A.A.E. (2019) ‘Korelasi Faktor Prediposisi Kejadian Skabies Pada Anak-Anak di Desa Songan, Kecamatan Kintamani, Kabupaten Bangli, Provinsi Bali’, *e-Jurnal Medika Directory of Open Access Journals (DOAJ)*, 8(6), pp. 4–11. Available at: <https://ojs.unud.ac.id/index.php/eum/article/download/51740/33047>.
- Ariningtyas, D.N. (2019) ‘Analisis Karakteristik dan Higiene Individu dengan Kejadian Skabies di Lembaga Pembinaan Khusus Anak (LPKA) Kelas I Blitar’, *Jurnal Keperawatan Muhammadiyah Edisi Khusus 2019*, Edisi Khusus, pp. 225–231.
- Cox, V. *et al.* (2021) ‘Estimating the global burden of scabies: what else do we need?’, *British Journal of Dermatology*, 184(2), pp. 237–242. Available at: <https://doi.org/10.1111/bjd.19170>.
- Dagne, H. *et al.* (2019) ‘Prevalence and associated factors of scabies among schoolchildren in Dabat district, northwest Ethiopia, 2018’, *Environmental Health and Preventive Medicine*, 24(1), pp. 1–8. Available at: <https://doi.org/10.1186/s12199-019-0824-6>.
- Dewantoro, W. *et al.* (2023) ‘HUBUNGAN PERSONAL HYGIENE DENGAN KEJADIAN SKABIES PADA WARGA BINAAN RUTAN KELAS IIB PRAYA TAHUN 2021 Program Studi Kesehatan Masyarakat, Universitas Pendidikan Mandalika, Indonesia Program Studi Pendidikan Olahraga dan Kesehatan, Universitas Pendidikan’, *Saintekes: Jurnal Sains, Teknologi dan Kesehatan*, 2(3), pp. 443–447.
- Emeka, N.K. *et al.* (2021) ‘Incident, Pattern and Trends of Scabies on Randomly Selected Secondary Schools’ Students in Anambra State, Nigeria’, *World Journal of Biology Pharmacy and Health Sciences*, 7(3), pp. 19–29.
- Fitria, N., Tosepu, R. and Nurmaladewi (2020) ‘Hubungan Sanitasi Lingkungan dan Higiene Perorangan Dengan Keluhan Penyakit Skabies Pada Anak-Anak di Panti Asuhan Amaliyah Kota Kendari

- Tahun 2019’, *Jurnal Kesehatan Masyarakat Celebes*, 1(3), pp. 13–20. Available at: <http://ojs.uho.ac.id/index.php/JIMKESMAS/article/view/2914%0Ahttps://ejournal.undip.ac.id/index.php/jim/index%0Ahttps://sardjito.co.id/2019/10/30/mengenal-scabies%0Ahttps://proceedings.unisba.ac.id/index.php/BCSMS/article/view/1302%0Ahttps://www.jurnal.un>
- Haiya, N.N. *et al.* (2014) ‘Pendidikan Kesehatan Mempengaruhi Tingkat Harga Diri Penderita Skabies di Pondok Pesantren’, *Jurnal Ilmu Keperawatan dan Kebidanan*, 12(2), pp. 418–424.
- Husna, R., Joko, T. and Selatan, A. (2021) ‘Faktor Risiko Yang Mempengaruhi Kejadian Skabies Di Indonesia : Literatur Review Factors Related To The Incidence Of Scabies In Indonesia : Literature Review Health penyakit yang berhubungan dengan air (2011) menyatakan bahwa terdapat’, *jurnal Kesehatan Lingkungan*, 11(1), pp. 29–39. Available at: <https://doi.org/10.47718/jkl.v10i2.1169>.
- Ihtiarintyas, S., Mulyaningsih, B. and Umniyati, S.R. (2019) ‘Faktor Risiko Penularan Penyakit Skabies pada Santri di Pondok Pesantren An Nawawi Berjan Kecamatan Gebang Kabupaten Purworejo Jawa Tengah’, *Balaba: Jurnal Litbang Pengendalian Penyakit Bersumber Binatang Banjarnegara*, pp. 83–90. Available at: <https://doi.org/10.22435/blb.v15i1.1784>.
- Khairani, A.I. (2017) ‘Sanitasi Lingkungan Rumah Dan Sosial Budaya Masyarakat Pesisir Pantai Terhadap Kejadian Skabies’, *Jurnal Riset Hesti Medan Akper Kesdam I/BB Medan*, 1(1), p. 45. Available at: <https://doi.org/10.34008/jurhesti.v1i1.7>.
- Lee, M.H. *et al.* (2019) ‘Effectiveness and core components of infection prevention and control programmes in long-term care facilities: a systematic review’, *Journal of Hospital Infection*, 102(4), pp. 377–393. Available at: <https://doi.org/10.1016/j.jhin.2019.02.008>.
- Majid, R., Astuti, R.D.I. and Fitriyana, S. (2020) ‘Hubungan Personal Hygiene dengan Kejadian Skabies pada Santri di Pesantren Kabupaten Bandung Tahun 2019’, *Jurnal Integrasi Kesehatan dan Sains (JKS)*, 2(2), pp. 160–164. Available at: <https://sardjito.co.id/2019/10/30/mengenal-scabies>.
- Marga, M.P. (2020) ‘Pengaruh Personal Hygiene Terhadap Kejadian Penyakit Skabies’, *Jurnal Ilmiah Kesehatan Sandi Husada*, 9(2), pp. 773–778. Available at: <https://doi.org/10.35816/jiskh.v10i2.402>.
- May, P.J. *et al.* (2019) ‘Treatment, prevention and public health management of impetigo, scabies, crusted scabies and fungal skin infections in endemic populations: a systematic review’, *Tropical Medicine and International Health*, 24(3), pp. 280–293. Available at: <https://doi.org/10.1111/tmi.13198>.
- Mounsey, K.E. *et al.* (2016) ‘Retrospective analysis of institutional scabies outbreaks from 1984 to 2013: Lessons learned and moving forward’, *Epidemiology and Infection*, 144(11), pp. 2462–2471. Available at: <https://doi.org/10.1017/S0950268816000443>.
- Mutiara, H. and Syailindra, F. (2016) ‘Skabies’, *Majority* /, 5(3), pp. 37–42. Available at: <https://doi.org/10.22219/sm.v7i2.4080>.
- Nisa, F.R. and Rahmalia, D. (2019) ‘Faktor-faktor yang berhubungan dengan kejadian skabies pada santri putra di pondok pesantren darurrahmah gunung putri bogor’, *Jurnal Untuk Masyarakat Sehat (JUKMAS)*, 3(1), pp. 16–23.
- Novitasari, D., . S. and Ferizqo, F.A. (2021) ‘Hubungan Personal Hygiene Santri Dengan Kejadian Skabies Di Pondok Pesantren As – Syafi’iyah Sidoarjo Tahun 2020’, *Gema Lingkungan Kesehatan*, 19(2), pp. 129–137. Available at: <https://doi.org/10.36568/kesling.v19i2.1539>.
- Prayogi, S. and Kurniawan, B. (2016) ‘Pengaruh personal hygiene dalam pencegahan penyakit skabies’,

Jurnal Majority, 5(5), pp. 140–143. Available at: <http://juke.kedokteran.unila.ac.id/index.php/majority/article/view/939>.

- Purwanto, H. and Hastuti, R.P. (2020) ‘Faktor Risiko Penyakit Skabies di Masyarakat Risk Factors for Scabies in the Community’, *Jurnal Kesehatan Politeknik Kesehatan Tanjung Karang*, 11, pp. 145–150. Available at: [10.26630/jk.v11i1.1628](https://doi.org/10.26630/jk.v11i1.1628).
- Raffi, J., Suresh, R. and Butler, D.C. (2019) ‘Review of Scabies in the Elderly’, *Dermatology and Therapy*, 9(4), pp. 623–630. Available at: <https://doi.org/10.1007/s13555-019-00325-2>.
- Romani, L. *et al.* (2015) ‘Scabies and Impetigo Prevalence and Risk Factors in Fiji: A National Survey’, *PLoS Neglected Tropical Diseases*, 9(3), pp. 1–10. Available at: <https://doi.org/10.1371/journal.pntd.0003452>.
- Roswendi, A.S. and Zakiyah, Y. (2022) ‘Relationship Between Environmental Sanitation and the Incidence of Scabies: A Literature Review’, *KnE Medicine*, 2022, pp. 207–215. Available at: <https://doi.org/10.18502/kme.v2i2.11083>.
- Trasia, R.F. (2021) ‘Scabies in Indonesia: Epidemiology and Prevention’, *Insights in Public Health Journal*, 1(2), p. 30. Available at: <https://doi.org/10.20884/1.iphj.2020.1.2.3071>.
- Tresnasari, C. *et al.* (2019) ‘Understanding Scabies in Religious Boarding School (Pesantren)’, in *Advances in Social Science, Education and Humanities Research*, pp. 520–522. Available at: <https://doi.org/10.2991/sores-18.2019.120>.
- Triana, Wi. and Razi, F. (2020) ‘Faktor Yang Berhubungan Dengan Perilaku Pencegahan Penyakit Scabies Pada Santri Di Pondok Pesantren Nurul Iman Ulu Gedong Kota Jambi Tahun 2019’, *JMJ, Special Issues, JAMHESIC*, pp. 93–97.
- Ugbomoiko, U.S. *et al.* (2018) ‘Scabies in resource-poor communities in Nasarawa State, Nigeria: Epidemiology, clinical features and factors associated with infestation’, *Tropical Medicine and Infectious Disease*, 3(2), pp. 13–15. Available at: <https://doi.org/10.3390/tropicalmed3020059>.
- Yun, S.Y., Yu, H.S. and Kim, D.H. (2020) ‘Knowledge and scabies patient management among nursing staff working at long-term care institutions in south korea: A descriptive study’, *Southeast Asian Journal of Tropical Medicine and Public Health*, 51(6), pp. 824–838.