

Original Article

Factors associated with dengue hemorrhagic fever prevention practices: A cross-sectional study

Toto Harto¹, Roni Ferdi¹, Desta Rahmawati¹

¹ Program Studi Diploma III Keperawatan, Sekolah Tinggi Ilmu Kesehatan Al-Ma'arif, Ogan Komering Ulu, Indonesia

Abstract

*Corresponding Author:

Toto Harto

Program Studi Diploma III Keperawatan,
Sekolah Tinggi Ilmu Kesehatan Al-
Ma'arif, Ogan Komering Ulu, Indonesia
Email:
totoharto27@gmail.com

Keyword:

Attitude; Dengue Hemorrhagic Fever;
Environmental Factors; Knowledge;
Prevention Practices

© The Author(s) 2026

DOI:

<https://doi.org/10.52235/lp.v7i2.863>

Article Info:

Received : May 21, 2026
Revised : June 05, 2026
Accepted : June 14, 2026

Lentera Perawat

e-ISSN : 2830-1846
p-ISSN : 2722-2837



This is an Open Access article distributed
under the terms of the [Creative
Commons Attribution-NonCommercial
4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/).

Background: Dengue Hemorrhagic Fever (DHF) remains an important public health problem in tropical regions, including Indonesia. Community prevention practices are essential because dengue transmission is closely related to household behavior, mosquito breeding sites, and routine vector control activities. This study examined knowledge, attitude, and selected environmental factors as determinants of DHF prevention practices in Laya Village.

Methods: This study used a quantitative analytic design with a cross-sectional approach. The population consisted of 359 households in Laya Village. A total of 78 respondents were selected using the Slovin formula and proportional allocation across five neighborhood clusters. Data were collected using structured questionnaires measuring knowledge, attitude, environmental factors, and DHF prevention practices. Environmental factors included the presence of discarded items, the habit of hanging clothes, and the use of mosquito repellents. Data were analyzed using univariate analysis and the Chi-square test.

Results: Most respondents had good knowledge (61.5%), good attitudes (52.6%), good management of discarded items (76.9%), good practice regarding hanging clothes (56.4%), and good use of mosquito repellents (83.3%). However, DHF prevention practices were mostly categorized as poor (51.3%), followed by adequate (42.3%) and good (6.4%). Bivariate analysis showed a significant relationship between knowledge and DHF prevention practices ($p = 0.008$). Attitude ($p = 0.065$), presence of discarded items ($p = 0.119$), habit of hanging clothes ($p = 0.546$), and use of mosquito repellents ($p = 0.304$) were not significantly associated with DHF prevention practices.

Conclusion: Knowledge was significantly associated with DHF prevention practices, while attitude and the three environmental indicators were not significantly associated. Continuous health education, community empowerment, and routine mosquito breeding site control are needed to strengthen DHF prevention at the household and community levels.

Background

Dengue Hemorrhagic Fever (DHF) remains a major public health problem in tropical and subtropical regions because dengue virus transmission is strongly influenced by human mobility, vector density, climate variability, and household environmental conditions (Paz-Bailey et al., 2024). Aedes mosquitoes transmit dengue virus to humans through bites, and the transmission cycle can persist in communities with inadequate vector control practices (Kothari et al., 2025). Dengue infection can cause a wide clinical spectrum ranging from mild febrile illness to severe dengue with bleeding, plasma leakage, organ involvement, and death (Kalimuddin et al., 2025). Severe dengue may develop rapidly during the febrile phase, and delayed recognition can increase the risk of poor clinical outcomes (Sangkaew et al., 2021). Therefore, dengue prevention requires early community action, routine mosquito breeding site control, and consistent household-level protective behavior (Wong et al., 2022).

Indonesia continues to face a substantial dengue burden because environmental conditions, population density, rainfall patterns, and community behavior support Aedes mosquito breeding in many areas (Kementerian Kesehatan Republik Indonesia, 2023). The Ministry of Health emphasizes dengue prevention through mosquito breeding site eradication, environmental sanitation, household protection, and community participation in routine vector control activities (Kementerian Kesehatan Republik Indonesia, 2024). National prevention efforts require active household involvement because many Aedes breeding sites are located in water containers, discarded items, and domestic environments (Singh et al., 2023). Community prevention practices are important because dengue control cannot rely only on diagnosis, treatment, or vaccination strategies (Paz-Bailey et al., 2021). Thus, public health programs need to strengthen behavioral and environmental

interventions at the household and community levels (Farsiu et al., 2025).

South Sumatra Province continues to report dengue cases across districts and cities, and this situation shows that dengue remains a relevant public health concern at the regional level (Dinkes Sumsel, 2023). Ogan Komering Ulu District also records dengue cases in several public health center areas, and this pattern indicates that local dengue prevention programs still require strengthening (Dinkes OKU, 2023). Local health data are important because dengue risk may differ between communities due to variations in rainfall, sanitation, vector breeding sites, and household prevention habits (Istiqhlala, 2024). Laya Village in the working area of UPTD Tanjung Agung Public Health Center represents an important setting for analysis because community-based prevention practices may influence dengue transmission risk in this area (Dinkes OKU, 2023). Therefore, local evidence is needed to support more targeted dengue prevention strategies in the working area of UPTD Tanjung Agung Public Health Center (Kementerian Kesehatan Republik Indonesia, 2024).

Knowledge is an important predisposing factor because community members need adequate information about dengue transmission, mosquito breeding sites, warning signs, and prevention measures before they can perform preventive actions consistently (Heryanto & Meliyanti, 2022). Previous evidence shows that knowledge and attitude are related to dengue prevention behavior because both factors influence individual understanding, perceived risk, and willingness to participate in mosquito nest eradication (Wiwiet Susan Amelia et al., 2025). Health worker support also contributes to mosquito nest eradication behavior because health education can improve awareness and encourage routine household prevention practices (Sumantri, 2025). However, good knowledge does not always result in good practice when household routines, environmental barriers, and community norms do not support sustained behavior change (Ng et al., 2023). Therefore, studies on dengue prevention should examine knowledge and attitude together with environmental factors that shape daily household practices (Kothari et al., 2025).

Environmental conditions are also closely related to dengue prevention because *Aedes* mosquitoes can breed in stagnant water, unused containers, discarded items, and poorly managed household surroundings (Intan Manirah Niksan et al., 2025). The habit of hanging clothes may support mosquito resting places inside houses, and this condition can increase the possibility of human-vector contact in domestic settings (Kementerian Kesehatan Republik Indonesia, 2024). The use of mosquito repellents can reduce mosquito bites, but personal protection does not replace the need for environmental management and mosquito breeding site elimination (Wong et al., 2022). Household prevention practices should combine waste management, water container control, repellent use, and community clean-up activities to reduce dengue transmission risk (Singh et al., 2023). Thus, environmental indicators need to be assessed together with behavioral factors to understand dengue prevention practices more comprehensively (Farsiu et al., 2025).

Although many studies have discussed dengue prevention, evidence from specific local communities remains necessary because prevention behavior is influenced by local knowledge, household conditions, health promotion exposure, and environmental sanitation patterns (Ng et al., 2023). Previous Indonesian studies have examined knowledge, attitude, sanitation, and mosquito nest eradication behavior, but local evidence from Laya Village in the working area of UPTD Tanjung Agung Public Health Center remains limited (Heryanto & Meliyanti, 2022; Sumantri, 2025; Wiwiet Susan Amelia et al., 2025). This evidence gap is important because local public health centers need contextual data to design appropriate health education, household monitoring, and community-based dengue control programs (Kementerian Kesehatan Republik Indonesia, 2024). Therefore, this study aimed to determine the relationship between knowledge, attitude, and environmental factors with DHF prevention practices.

Methods

Study Design

This study used a quantitative analytic design with a cross-sectional approach. The design was selected to examine the relationship between

knowledge, attitude, environmental factors, and DHF prevention practices at one point in time.

Population and Sampling

The study was conducted in Laya Village, the working area of UPTD Tanjung Agung Public Health Center, Baturaja, in 2025. The population consisted of 359 households distributed across five neighborhood clusters: RT 1 = 86 households, RT 2 = 75 households, RT 3 = 77 households, RT 4 = 55 households, and RT 5 = 66 households. The sample size was calculated using the Slovin formula, resulting in 78 respondents. The sample was allocated proportionally according to the number of households in each cluster.

Variables and Instruments

The independent variables were knowledge, attitude, and environmental factors. Environmental factors consisted of three indicators: presence of discarded items, habit of hanging clothes, and use of mosquito repellents. The dependent variable was DHF prevention practice. Data were collected using structured questionnaires that had been tested for validity and reliability. Each variable was categorized according to the scoring criteria used in the study. Knowledge, attitude, and environmental indicators were categorized as good and poor, while DHF prevention practice was categorized as good, adequate, and poor.

Data Collection

Data were collected directly from respondents in Laya Village. Before completing the questionnaire, respondents received information about the purpose of the study, confidentiality of data, voluntary participation, and their right to withdraw. Respondents who agreed to participate completed the questionnaire with guidance from the researcher when clarification was needed.

Data Analysis

Data were analyzed using SPSS. Univariate analysis was used to describe the frequency and percentage distribution of each variable. Bivariate analysis was performed using the Chi-square test to determine the relationship

between each independent variable and DHF prevention practices. A p-value less than 0.05 was considered statistically significant.

Ethical Considerations

This study applied ethical principles of voluntary participation, informed consent, anonymity, confidentiality, and the use of data only for research purposes. Respondents were not identified by name in the dataset, and all responses were treated confidentially.

Results

A total of 78 respondents from Laya Village participated in this study. The results are presented in descriptive and bivariate tables to show the distribution of variables and their relationship with DHF prevention practices.

Table 1 shows that most respondents had good knowledge (61.5%) and good attitudes (52.6%). The majority also had favorable environmental indicators, including good management of discarded items (76.9%), good practice regarding hanging clothes (56.4%), and good use of mosquito repellents (83.3%). However, DHF prevention practice was mostly poor (51.3%), while only 6.4% of respondents were categorized as having good prevention practices.

Table 2 shows that knowledge was significantly associated with DHF prevention practices ($p = 0.008$). Meanwhile, attitude ($p = 0.065$), presence of discarded items ($p = 0.119$), habit of hanging clothes ($p = 0.546$), and use of mosquito repellents ($p = 0.304$) were not significantly associated with DHF prevention practices.

Discussion

This study found that knowledge was significantly associated with DHF prevention practices among respondents in Laya Village. The study also found that attitude was not significantly associated with DHF prevention practices. The study further showed that the presence of discarded items was not significantly associated with DHF prevention practices. The habit of hanging clothes also showed no significant relationship with DHF prevention practices. The use of mosquito

repellents was not significantly associated with DHF prevention practices. These findings indicate that knowledge was the main factor related to DHF prevention practices, whereas attitude and selected environmental indicators did not show statistically significant relationships.

The significant relationship between knowledge and DHF prevention practices indicates that knowledge functions as an important predisposing factor for household-level prevention behavior (Heryanto & Meliyanti, 2022). Adequate knowledge helps community members understand dengue transmission, mosquito breeding sites, and the importance of routine vector control activities (Kementerian Kesehatan Republik Indonesia, 2024).

Community members with better knowledge may recognize stagnant water, unused containers, and poor sanitation as potential sources of *Aedes* mosquito breeding (Intan Manirah Niksan et al., 2025). Knowledge also supports household decision-making because residents need clear information before they perform prevention practices consistently (Sumantri, 2025). Previous studies have shown that knowledge can influence dengue prevention behavior through awareness, perceived susceptibility, and perceived benefits of preventive action (Wiwiet Susan Amelia et al., 2025). Therefore, health education should translate dengue information into practical household actions that residents can apply in daily routines (Ng et al., 2023).

Table 1. Distribution of Knowledge, Attitude, Environmental Factors, and DHF Prevention Practices

Variable	Category	Frequency (n)	Percentage (%)
Knowledge	Good	48	61.5
	Poor	30	38.5
Attitude	Good	41	52.6
	Poor	37	47.4
Presence of discarded items	Good	60	76.9
	Poor	18	23.1
Habit of hanging clothes	Good	44	56.4
	Poor	34	43.6
Use of mosquito repellents	Good	65	83.3
	Poor	13	16.7
DHF prevention practice	Good	5	6.4
	Adequate	33	42.3
	Poor	40	51.3

Table 2. Relationship between Knowledge, Attitude, Environmental Factors, and DHF Prevention Practices

Variable	Category	Good n (%)	Adequate n (%)	Poor n (%)	Total	p-value
Knowledge	Good	0 (0.0)	24 (50.0)	24 (50.0)	48	0.008
	Poor	5 (16.7)	9 (30.0)	16 (53.3)	30	
Attitude	Good	5 (12.2)	18 (43.9)	18 (43.9)	41	0.065
	Poor	0 (0.0)	15 (40.5)	22 (59.5)	37	
Presence of discarded items	Good	4 (6.7)	29 (48.3)	27 (45.0)	60	0.119
	Poor	1 (5.6)	4 (22.2)	13 (72.2)	18	
Habit of hanging clothes	Good	4 (9.1)	18 (40.9)	22 (50.0)	44	0.546
	Poor	1 (2.9)	15 (44.1)	18 (52.9)	34	
Use of mosquito repellents	Good	4 (6.2)	30 (46.2)	31 (47.7)	65	0.304
	Poor	1 (7.7)	3 (23.1)	9 (69.2)	13	

The finding on knowledge also suggests that information alone may not be sufficient when

community practices remain mostly poor. Public health education should provide clear, repeated,

and practical messages about draining water containers, closing water storage, recycling discarded items, and monitoring mosquito breeding sites (Kementerian Kesehatan Republik Indonesia, 2024). Health workers should deliver dengue education through household visits, community meetings, school-based activities, and neighborhood-based mosquito nest eradication programs (Sumantri, 2025). Community cadres can strengthen prevention behavior because they can remind households to perform routine environmental cleaning and larval source reduction (Wong et al., 2022). Educational interventions should also use locally understandable language because community members may interpret dengue risk differently based on experience and exposure to previous outbreaks (Ng et al., 2023). Thus, knowledge improvement should be combined with behavioral reinforcement, community monitoring, and environmental support to improve prevention practices sustainably (Farsiu et al., 2025).

The non-significant relationship between attitude and DHF prevention practices indicates that a positive attitude does not always produce consistent preventive behavior. Attitude reflects individual evaluation of dengue prevention, but actual practice requires time, resources, family cooperation, and environmental support (Ng et al., 2023). Some residents may agree with dengue prevention messages, but they may not perform routine mosquito breeding site eradication because daily activities reduce their attention to household sanitation (Wiwiet Susan Amelia et al., 2025). Attitude may also fail to predict practice when residents perceive dengue prevention as a seasonal activity that is only important during outbreaks (Paz-Bailey et al., 2024). This gap between attitude and practice shows that dengue prevention requires practical cues, social encouragement, and routine supervision from health workers and community leaders (Sumantri, 2025). Therefore, intervention programs should move beyond attitude formation and should focus on converting positive perceptions into repeated household action (Kementerian Kesehatan Republik Indonesia, 2024).

The non-significant relationship between discarded items and DHF prevention practices may be explained by the limited variation of household environmental conditions in the study setting. Discarded items can provide breeding places for *Aedes* mosquitoes when they collect rainwater around houses (Intan Manirah Niksan et al., 2025). However, the influence of discarded items on prevention practices may become less visible when most households report good management of unused containers (Kothari et al., 2025). Self-reported environmental data may also reduce measurement precision because respondents can underreport poor sanitation conditions in their surroundings (Ng et al., 2023). Dengue risk is not determined only by visible discarded items because hidden containers, water storage habits, rainfall, and vector density can also support mosquito breeding (Singh et al., 2023). Therefore, future studies should combine questionnaire data with direct environmental observation and larval index assessment to capture household dengue risk more accurately (Wong et al., 2022).

The non-significant relationship between hanging clothes and DHF prevention practices also needs careful interpretation. Hanging clothes may provide resting sites for adult mosquitoes inside houses, especially when clothes are placed in dark and humid areas (Kementerian Kesehatan Republik Indonesia, 2024). However, this behavior may not show a strong statistical relationship with overall prevention practices when other practices such as draining containers, using repellents, and cleaning the environment vary across households (Kothari et al., 2025). Respondents may also interpret hanging clothes differently because some residents may refer to clean clothes in wardrobes while others may refer to used clothes in open spaces (Ng et al., 2023). This difference in interpretation can reduce the accuracy of measurement and weaken the observed relationship between hanging clothes and prevention practices (Farsiu et al., 2025). Therefore, future instruments should define hanging clothes more specifically and should distinguish between open hanging areas,

wardrobes, and laundry storage practices (Wong et al., 2022).

The non-significant relationship between mosquito repellent use and DHF prevention practices indicates that personal protection does not necessarily reflect comprehensive dengue prevention behavior. Mosquito repellents can reduce mosquito bites, but repellents cannot eliminate *Aedes* breeding sites in the household environment (Kementerian Kesehatan Republik Indonesia, 2024). Some households may use coils, sprays, lotions, or mosquito nets, but they may still neglect water container cleaning and discarded-item management (Singh et al., 2023). Repellent use may also depend on household income, product availability, concerns about smoke, odor, respiratory irritation, and safety for children or older adults (Ng et al., 2023). Dengue prevention requires combined strategies because personal protection, environmental management, and community-based mosquito nest eradication address different points in the transmission cycle (Wong et al., 2022). Therefore, public health programs should present repellent use as a complementary measure rather than the main strategy for DHF prevention (Kothari et al., 2025).

Overall, these findings highlight the importance of strengthening knowledge-based and community-oriented dengue prevention programs in Laya Village. Dengue control requires integrated actions because clinical management alone cannot prevent transmission at the community level (Robert et al., 2025). Public health centers should develop health education that emphasizes practical skills, household routines, and collective responsibility for mosquito breeding site eradication (Kementerian Kesehatan Republik Indonesia, 2024). Community empowerment can improve prevention practices because local participation supports environmental cleaning, risk communication, and routine household monitoring (Sumantri, 2025). The findings also suggest that future studies should assess broader determinants such as health education exposure, family support, water storage practices, rainfall, larval density, and community

participation (Farsiu et al., 2025). Therefore, strengthening dengue prevention in this setting requires collaboration between households, health workers, cadres, community leaders, and local government structures (Paz-Bailey et al., 2024).

Conclusion and Recommendation

This study concluded that knowledge was significantly associated with DHF prevention practices in Laya Village. Attitude, presence of discarded items, habit of hanging clothes, and use of mosquito repellents were not significantly associated with DHF prevention practices. These findings indicate that community knowledge remains an important foundation for improving household dengue prevention behavior. Public Health Center should strengthen continuous health education, household-based counseling, community cadre involvement, and routine mosquito breeding site monitoring. The community should improve daily prevention practices by eliminating stagnant water, managing discarded items, avoiding mosquito resting places, and using personal protection appropriately. Future researchers should use larger samples, direct environmental observation, and entomological indicators to obtain a more comprehensive understanding of DHF prevention practices.

Acknowledgement

The authors are grateful for participants in this study.

Funding Source

None.

Declaration of conflict of interest

The authors declare no competing interests.

Declaration on the Use of AI

No AI tools were used in the preparation of this manuscript.

Data Availability Statement

Data sharing is not applicable to this article.

References

- Agustina, W., & Angela, V. (2024). Management of hyperthermia with the application of tepid water sponge in pediatric patients with hyperthermia: A case study. *Indonesian Journal of Health Services*,

- 1(3), 95-105.
<https://doi.org/10.63202/ijhs.v1i3.14>
- Aung, M. T. T., Tangpukdee, N., Limkittikul, K., Keeratiwasin, R., Sukharom, R., Hattasingh, W., & Sirinam, S. (2024). Early-phase factors associated with pediatric severe dengue in the Thai-Myanmar cross-border region. *BMC Public Health*, 24(1), 1957.
- Aynekulu Mersha, D. G., Duijff, F., Langerak, T., Hakim, M. S., Martina, B., Goeijenbier, M., Dalm, V. A. S. H., van Lelyveld, S. F. L., & van Gorp, E. C. M. (2025). Effectiveness of antiviral, immunomodulatory and platelet-enhancing agents for treatment of dengue infection: A systematic review. *Virulence*, 16(1), 2587491.
- Bernal, C., Ping, S., Rojas, A., Caballero, O., Stittleburg, V., de Guillén, Y., Langjahr, P., Pinsky, B. A., Von-Horoch, M., Luraschi, P., Cabral, S., Sánchez, M. C., Torres, A., Cardozo, F., & Waggoner, J. J. (2023). Serum biomarkers and anti-flavivirus antibodies at presentation as indicators of severe dengue. *PLOS Neglected Tropical Diseases*, 17(2), e0010750.
- Castro, L. M., Fernandes, E. R., Quaresma, J. A. S., Lancelotti, C. L. P., Duarte, M. I. S., Carvalho, L. V., Penny, R., Vasconcelos, P. F. D. C., Mello, E. S., Sotto, M. N., & Pagliari, C. (2025). Histopathological alterations and dysregulation of type I interferon signaling in the human cerebral cortex during severe dengue. *Journal of Medical Virology*, 97(10), e70644.
- Che Isa, Z., Lim, J. A., Ain, A. M., Othman, F. A., Kueh, Y. C., Tew, M. M., Masnan, M. J., & Ibrahim, A. (2023). Clinical profiles and predictors of survival in severe dengue cases. *Singapore Medical Journal*.
- Chia, P. Y., Teo, A., & Yeo, T. W. (2022). Association of neutrophil mediators with dengue disease severity and cardiac impairment in adults. *Journal of Infectious Diseases*, 226(11), 1974–1984.
- Cunha MS, de Moura Coletti T, Guerra JM, Ponce CC, Fernandes NCCA, Rêzio RA, Claro IM, Salles F, Lima Neto DF, Sabino E. A fatal case of dengue hemorrhagic fever associated with dengue virus 4 (DENV-4) in Brazil: genomic and histopathological findings. *Braz J Microbiol*. 2022 Sep;53(3):1305-1312.
- Dinkes OKU. (2023). Profil Kesehatan Kabupaten Ogan Komering Ulu. Ogan Komering Ulu.
- Dinkes Sumsel. (2023). Profil Kesehatan Provinsi Sumatera Selatan. Palembang.
- Dong, B., Feng, S., & Feng, X. (2025). Advances in the epidemiology, pathogenesis, diagnostic methods, and vaccine development of dengue fever: A comprehensive review. *Viral Immunology*, 38(2), 53–60.
- Durbin, A. P., Van Wesenbeeck, L., Pierce, K. K., Herrera-Taracena, G., Ebone, L., Buelens, A., Lutton, P., Sabundayo, B. P., Van Eygen, V., De Clerck, K., Fetter, I., Voge, N. V., Fang, X., Goeyvaerts, N., Vandendijck, Y., Mayfield, J., Lenz, O., De Meyer, S., Kakuda, T. N., He, H., Amaro-Carambot, E., Akli, R. D., Carmolli, M., De Marez, T., Whitehead, S. S., Van Loock, M., & Rasschaert, F. (2025). Daily mosnodenvir as dengue prophylaxis in a controlled human infection model. *New England Journal of Medicine*, 393(21), 2107–2118.
- Enny, N. (2025). *Demam Berdarah Dengue (1st ed.)*. Wawasan Ilmu.
- Farina, J. M., Liblik, K., Iomini, P., Miranda-Arboleda, A. F., Saldarriaga, C., Mendoza, I., Zaidel, E. J., Rubio-Campal, J. M., Sosa-Liprandi, A., & Baranchuk, A. (2023). Infections and cardiovascular disease: JACC focus seminar 1/4. *Journal of the American College of Cardiology*, 81(1), 71–80.
- Farsiu, N., Zandi, K., Rukerd, M. R. Z., Charostad, J., Bashash, D., Ghafari, S., Pardeshenas, M., Shahri, M., Mirkamali, H., Hassandarvish, P., Nakhaie, M., & AbuBakar, S. (2025). Challenges in the prevention and treatment of dengue fever: An emerging issue. *American Journal of Tropical Medicine and Hygiene*, 113(6), 1185–1199.
- Goethals, O., Kaptein, S. J. F., Kesteleyn, B., Bonfanti, J. F., Van Wesenbeeck, L., Bardiot, D., Verschoor, E. J., Verstrepen, B. E., Fagrouch, Z., Putnak, J. R., Kiemel, D., Ackaert, O., Straetmans, R., Lachau-Durand, S., Geluykens, P., Crabbe, M., Thys, K., Stoops, B., Lenz, O., Tambuyzer, L., De Meyer, S., Dallmeier, K., McCracken, M. K., Gromowski, G. D., Rutvisuttinunt, W., Jarman, R. G., Karasavvas, N., Touret, F., Querat, G., de Lamballerie, X., Chatel-Chaix, L., Milligan, G. N., Beasley, D. W. C., Bourne, N., Barrett, A. D. T., Marchand, A., Jonckers, T. H. M., Raboisson, P., Simmen, K., Bartenschlager, R., Bogers, W. M., Neyts, J., & Van Loock, M. (2023). Blocking NS3–NS4B interaction inhibits dengue virus in non-human primates. *Nature*, 615(7953), 678–686.
- Gunale, B., Farinola, N., Kamat, C. D., Poonawalla, C. S., Pisal, S. S., Dhere, R. M., Miller, C., & Kulkarni, P. S. (2024). An observer-blind, randomised, placebo-controlled, phase 1, single ascending dose study of dengue monoclonal antibody in healthy adults in Australia. *The Lancet Infectious Diseases*, 24(6), 639–649.
- Heryanto, E., & Meliyanti, F. (2022). Hubungan Pengetahuan, Pekerjaan, Dan Penyuluhan Dengan Tindakan Kepala Keluarga Dalam Upaya Pencegahan Penyakit Demam Berdarah Dengue (DBD). *Lentera Perawat*, 2(1), 8–16. <https://doi.org/10.52235/lp.v2i1.156>
- Huang, Y.-J., Cheng, T.-L., Wang, Y.-T., Chen, C.-S., Leu, Y.-L., Chang, C.-S., Ho, C.-H., Chao, S.-W., Li, C.-T., & Chuang, C.-H. (2024). Exploring the therapeutic

- potential of DV-B-120 as an inhibitor of dengue virus infection. *Journal of Virology*, 98(4), e0125823.
- Intan Manirah Niksan, Akhmad Dwi Priyatno, Lilis Suryani, & Yusnilasari. (2025). Environmental Sanitation Analysis of Dengue Fever Disease. *Lentera Perawat*, 6(1), 162–168. <https://doi.org/10.52235/lp.v6i1.414>
- Istiqlala, D. R. (2024). Pemetaan kejadian kasus Demam Berdarah Dengue di Kabupaten Kediri tahun 2023. *Public Health Journal*, 1(2), 49–52.
- Jayarajah, U., Lahiru, M., De Zoysa, I., & Seneviratne, S. L. (2021). Dengue infections and the surgical patient. *American Journal of Tropical Medicine and Hygiene*, 104(1), 52–59.
- Kalimuddin, S., Chia, P. Y., Low, J. G., & Ooi, E. E. (2025). Dengue and severe dengue. *Clinical Microbiology Reviews*, 38(4), e0024424.
- Kangussu, L. M., Costa, V. V., Olivon, V. C., Queiroz-Junior, C. M., Gondim, A. N. S., Melo, M. B., Reis, D., Nóbrega, N., Araújo, N., Rachid, M. A., Souza, R. P., Tirapelli, C. R., Santos, R. A. S. D., Cruz, J. D. S., Teixeira, M. M., Souza, D. D. G., & Bonaventura, D. (2022). Dengue virus infection induces inflammation and oxidative stress on the heart. *Heart*, 108(5), 388–396.
- Kementerian Kesehatan Republik Indonesia. (2023). Profil Kesehatan Indonesia Tahun 2023. Jakarta: Kemenkes RI.
- Kementerian Kesehatan Republik Indonesia. (2024). Pedoman Pencegahan Demam Berdarah Dengue. Jakarta: Kemenkes RI.
- Kothari, D., Patel, N., & Bishoyi, A. K. (2025). Dengue: Epidemiology, diagnosis methods, treatment options, and prevention strategies. *Archives of Virology*, 170(3), 48.
- Liang, X., Dang, S., Liang, S., Li, Z., Su, R., Wu, J., & Deng, H. (2025). Safety of low-dose ibuprofen in non-severe dengue patients for managing fever is consistent with acetaminophen: A retrospective observational study. *Journal of Medical Virology*, 97(8), e70513.
- Moallemi, S., Lloyd, A. R., & Rodrigo, C. (2023). Early biomarkers for prediction of severe manifestations of dengue fever: A systematic review and a meta-analysis. *Scientific Reports*, 13(1), 17485.
- Muhsen, I. N., Galeano, S., Niederwieser, D., Koh, M. B. C., Ljungman, P., Machado, C. M., Kharfan-Dabaja, M. A., de la Camara, R., Kodera, Y., Szer, J., Rasheed, W., Cesaro, S., Hashmi, S. K., Seber, A., Atsuta, Y., Saleh, M. F. M., Srivastava, A., Styczynski, J., Alrajhi, A., Almaghrabi, R., Abid, M. B., Chemaly, R. F., Gergis, U., Brissot, E., El Fakih, R., Riches, M., Mikulska, M., Worel, N., Weisdorf, D., Greinix, H., Cordonnier, C., Aljurf, M. (2023). Endemic or regionally limited bacterial and viral infections in haematopoietic stem-cell transplantation recipients: A Worldwide Network for Blood and Marrow Transplantation review. *The Lancet Haematology*, 10(4), e284–e294.
- Naderian, R., Paraandavaji, E., Maddah, A. H., Keshavarzi, S., Habibian, A., Naderian, R., Hosseini, S. M., Oksenysh, V., & Eslami, M. (2025). Pathophysiology and clinical implications of dengue-associated neurological disorders. *Frontiers in Microbiology*, 16, 1536955.
- Ng, W. L., Toh, J. Y., Ng, C. J., Teo, C. H., Lee, Y. K., Loo, K. K., Abdul Hadi, H., & Noor Azhar, A. M. (2023). Self-care practices and health-seeking behaviours in patients with dengue fever: A qualitative study from patients' and physicians' perspectives. *PLOS Neglected Tropical Diseases*, 17(4), e0011302.
- Nitinai, N., Nasomsong, W., Chuerboonchai, W., Tweekittikul, A., Khingmontri, V., Panuvatvanich, B., Bangchud, T., Pongprajaroen, M., Roongfa-ngarm, T., & Vasikasin, V. (2024). Effect of montelukast in preventing dengue with warning signs among patients with dengue: A multicenter, randomized, double-blind, placebo-controlled trial. *PLOS Neglected Tropical Diseases*, 18(2), e0011927.
- Okpanachi, R. O., Omatola, C. A., Abraham, J. O., Okolo, M. O., Conco-Biyela, T., Onoja, A. B., & Adamu, A. M. (2025). Dengue virus infection amongst malaria and typhoid fever suspected acute febrile patients in the Niger river basin of Nigeria. *Scientific Reports*, 16(1), 1699.
- Paz-Bailey, G., Adams, L. E., Deen, J., Anderson, K. B., & Katzelnick, L. C. (2024). Dengue. *The Lancet*, 403(10427), 667–682.
- Paz-Bailey, G., Adams, L., Wong, J. M., Poehling, K. A., Chen, W. H., McNally, V., Atmar, R. L., & Waterman, S. H. (2021). Dengue vaccine: Recommendations of the Advisory Committee on Immunization Practices, United States, 2021. *MMWR Recommendations and Reports*, 70(6), 1–16.
- Pham, O. K., Duong, T. B., Phan, T. V., Truong, T. N., Ha, D. T. H., Nguyen, H. V., Hien, V. T. M., Dong, T. H. K., Vuong, N. L., Yen, L. M., Yacoub, S., Thwaites, C. L., & Tam, D. T. H. (2025). Severe dengue in adults: Clinical features from the 2022 dengue outbreak at a Vietnamese tertiary hospital. *PLOS Neglected Tropical Diseases*, 19(10), e0013589.
- Robert, S., Diabougou, P. S., Djibougou, A. D., Guy, D., Bagnall, R., & Ravel, F. (2025). Dengue diagnosis and impact on clinical management: A literature review. *PLOS Neglected Tropical Diseases*, 19(6), e0013196.
- Rothman, A. L., & Friberg, H. (2026). Dengue fever vaccines: Progress and challenges. *Annual Review of Pharmacology and Toxicology*, 66(1), 129–147.

- Sangkaew, S., Ming, D., Boonyasiri, A., Honeyford, K., Kalayanarooj, S., Yacoub, S., Dorigatti, I., & Holmes, A. (2021). Risk predictors of progression to severe disease during the febrile phase of dengue: A systematic review and meta-analysis. *The Lancet Infectious Diseases*, 21(7), 1014–1026.
- Setiawati, S., Ferdi, R., & Jian, L. W. (2024). Implementation of hyperthermia management with warm compress technique in fever convulsive children: A case study. *Indonesian Journal of Health Services*, 1(3), 106-115. <https://doi.org/10.63202/ijhs.v1i3.15>
- Singh, S., Verma, A. K., Chowdhary, N., Sharma, S., & Awasthi, A. (2023). Dengue havoc: Overview and eco-friendly strategies to forestall the current epidemic. *Environmental Science and Pollution Research International*, 30(60), 124806–124828.
- Sumantri, A. W. (2025). Relationship between knowledge, education, and support of health workers on mosquito nest eradication behavior in Kedaton community health center: A cross-sectional study. *Lentera Perawat*, 6(4), 641–648. <https://doi.org/10.52235/lp.v6i4.478>
- Talavera-Aguilar, L. G., Baak-Baak, C. M., Cetina-Trejo, R. C., Salazar-Vazquez, P. E., Tzuc-Dzul, J. C., Chi-Chim, W. A., Jimenez-Coello, M., Ortega-Pacheco, A., Melby, P. C., Aguilar, P. V., Walker, D. H., Cabada, M. M., & Garcia-Rejon, J. E. (2026). Surveillance for dengue virus and other pathogens in patients with acute undifferentiated febrile illnesses in Yucatan, Mexico, during the final phase of the coronavirus disease 2019 pandemic. *American Journal of Tropical Medicine and Hygiene*, 114(1), 161–169.
- Trivedi, S., & Chakravarty, A. (2022). Neurological complications of dengue fever. *Current Neurology and Neuroscience Reports*, 22(8), 515–529.
- Witte, P., Venturini, S., Meyer, H., Zeller, A., & Christ, M. (2024). Dengue fever—Diagnosis, risk stratification, and treatment. *Deutsches Ärzteblatt International*, 121(23), 773–778.
- Wiwiet Susan Amelia, Yulis Marita, & Husen, A. K. B. (2025). Relationship between Knowledge and Attitude towards Dengue Fever Prevention. *Lentera Perawat*, 6(1), 52–58. <https://doi.org/10.52235/lp.v6i1.424>
- Wong, J. M., Adams, L. E., Durbin, A. P., Muñoz-Jordán, J. L., Poehling, K. A., Sánchez-González, L. M., Volkman, H. R., & Paz-Bailey, G. (2022). Dengue: A growing problem with new interventions. *Pediatrics*, 149(6).
- Yang, J., Mosabbir, A. A., Raheem, E., Hu, W., & Hossain, M. S. (2023). Demographic characteristics, clinical symptoms, biochemical markers and probability of occurrence of severe dengue: A multicenter hospital-based study in Bangladesh. *PLOS Neglected Tropical Diseases*, 17(3), e0011161.
- Yuan, K., Chen, Y., Zhong, M., Lin, Y., & Liu, L. (2022). Risk and predictive factors for severe dengue infection: A systematic review and meta-analysis. *PLOS ONE*, 17(4), e0267186.
- Zambrano, A., Trilleras, J., Arana, V. A., Lima, K. M. G., Neves, A. C. O., Morais, C. L. M., Romero, C., Falconar, A. K. I., Muñoz, B. S., García, R., & Carmona, C. (2025). ATR-FTIR and multivariate analysis for differential diagnosis of dengue and leptospirosis: A feasibility study. *Scientific Reports*, 15(1), 34092.