Jurnal Psikologi | E-ISSN: 2302-1098
2025, Vol. 24, No. 2, 221-233
https://doi.org/10.14710/jp.24.2.221-233

Health knowledge, DHF risk, clean and healthy living behavior: A social psychology study in a highland community.

Hugi Cerlyawati[1], Endang Sri Indrawati[2], Anggun Resdasari Prasetyo[2], Faisal Ahmed[3]
[1]Faculty of Health Science, Universitas Dian Nuswantoro, Semarang, Indonesia
[2]Faculty of Psychology, Universitas Diponegoro, Semarang, Indonesia
[3]Urology Department, Ibb University, Ibb, Yemen

ABSTRACT

Background: Dengue Hemorrhagic Fever (DHF) is closely linked to environmental conditions and human behavior. In highland areas, geography, knowledge, and community values influence clean and healthy living practices. However, actual behavior in the field does not always match the level of understanding.

Purpose: To analyze the effect of knowledge and DHF risk on healthy house conditions as a representation of healthy living behavior in a highland village community.

Method: An observational analytical study with a cross-sectional design involving 335 respondents selected through simple random sampling. Data were collected using questionnaires and analyzed using Structural Equation Modeling-Partial Least Square (SEM-PLS).

Findings: Although 86.6% of respondents had good knowledge about healthy houses, only 52.5% lived in healthy house conditions. Knowledge significantly influenced healthy house conditions directly (t=3.214) and indirectly through DHF risk (t=2.771). DHF risk also had a significant effect (t=2.260). Demographic factors (education, occupation, gender) showed no significant influence. Field observations indicated generally good waste management, though gaps remained between knowledge and practice.

Implication: Community knowledge is essential but insufficient alone. Community-based interventions and empowerment initiatives are needed to strengthen sustainable healthy living behaviors and support DHF prevention.

KEYWORDS
Knowledge; Healthy Living Behaviour; Dengue Hemorrhagic Fever (DHF), highland geography, social psychology

ARTICLE HISTORY
Received 24 June 2025
Revised 21 August 2025
Accepted 22 October 2025

Introduction

Clean and Healthy Living Behavior can currently affect the spread of environmental-based diseases, one of them is Dengue Hemorrhagic Fever (DHF) (Fathary & Jazuli, 2022). DHF is a public health problem that can cause death and is often one of the Extraordinary Events so that it can cause panic in the community because it can be at risk of causing death and can spread quickly. DHF is still a health problem in urban and semi-urban areas (Anggraini et al., 2021). Several factors can influence the occurrence of DHF include the low immune status of community groups and the density of mosquito vectors due to the large number of mosquito breeding sites that occur during the rainy season (Onasis et al., 2024).

In addition, social influence theory also explains the importance of internal factors such as attitudes, and external factors such as social support and social control in changing health behavior. Research by Rathbone et al. (2023), confirms that descriptive norms (what others do) and injunctive norms (what is socially approved) play an important role in shaping health behavior decisions. When society believes that the act of maintaining cleanliness is a norm that is valued and carried out by many people, individuals are more motivated to participate, because of

CONTACT Hugi Cerlyawati ✉hugi.cerlyawati@dsn.dinus.ac.id Jl. Imam Bonjol No.207, Pendrikan Kidul, Kec. Semarang Tengah, Kota Semarang, Jawa Tengah 50131

Copyright © 2024 by The Authors. Published by Faculty of Psychology, Universitas Diponegoro. This an open-access article under the CC-BY-SA License (https://creativecommons.org/licenses/by-sa/4.0)

the need for social acceptance. In this context, a social psychology approach is very appropriate to be used to design community-based intervention programs that prioritize behavioral change through changes in social norms and perceptions (Abbas et al., 2022).

DHF is a disease caused by dengue virus infection. DHF is an acute disease with clinical manifestations of bleeding that can cause shock that can lead to death (Ramadhani et al., 2023). DHF is a disease caused by a virus from the Flaviviridae family which is transmitted through mosquito bites (arthropod borne disease) namely Aedes aegypti and Aedes albopictus with clinical manifestations of fever, muscle/joint pain accompanied by leukemia, rash, lymphadenopathy, thrombocytopenia (Winarti et al., 2025). DHF has two stages of dengue fever, namely the dengue fever stage, namely the early stage and the advanced stage. The difference between the two stages is that plasma leakage is found in blood vessel cells (Adinda et al., 2025).

Factors that can influence the incidence of dengue fever (Rojali et al., 2023), namely host factors, namely susceptibility and immune response: environmental factors, namely geographical conditions (altitude above sea level, wind, season, rainfall, and humidity); demographic conditions (population density, behavior, and customs). In addition, there is also a knowledge factor which is also a predisposing factor for behavior in the community, lack of knowledge can affect the behavior carried out (Dewi & Noviyana, 2022).

The incidence of dengue fever is closely related to environmental sanitation which causes the availability of breeding sites for the Aedes aegypti mosquito vector. In addition, poor community behavior related to dengue fever prevention efforts can be a factor in increasing morbidity and mortality due to dengue fever. These behaviors include waste management and the PSN Movement through 3M plus (Rojali et al., 2023). Mosquito Nest Eradication Behavior (PSN) is a Health Action that aims to prevent dengue fever. Preventive measures against dengue fever include draining water reservoirs at least once a week, tightly closing water reservoirs, disposing of or recycling used goods, keeping fish that eat mosquito larvae, installing wire mesh, not hanging clothes indoors, sleeping using mosquito nets, and using mosquito repellent (Rasjid & Nasrianti, 2019).

Clean and Healthy Living Behavior (PHBS) is one of the important indicators in reflecting the level of public health awareness and is the main pillar in efforts to prevent environmental-based diseases, such as Dengue Fever (DBD) (Hazanah, 2025). DBD is still a public health problem in Indonesia, especially in areas with high population density or environments with poor sanitation. This disease is transmitted by the Aedes aegypti mosquito which breeds in open clean water reservoirs and poorly managed environments (Manik et al., 2025).

Communities living in highland areas have unique geographic characteristics and social habits, which have the potential to influence their perceptions and behaviors towards environmental health (Shui et al., 2024). Several studies have shown that personality factors, knowledge, and local culture greatly influence how individuals respond to health risks, including in terms of maintaining the house environment and managing household waste (Amraeni & Nirwan, 2021). In addition, the high level of community knowledge regarding PHBS is not necessarily in line with actual practices in the field. Many people have understood the risks of diseases such as DHF, but have not fully implemented preventive measures such as managing waste properly, draining water reservoirs regularly, or maintaining environmental cleanliness (Karmilah et al., 2024).

Previous research results show that environmental sanitation conditions, especially household waste management, have a significant relationship with the incidence of DHF (Putri et al., 2024). This study was conducted in the Semarang area, and found that although the scope of household waste management is quite high, most people still practice improper waste disposal.

Copyright © 2024, Jurnal Psikologi, E-ISSN: 2302-1098

Waste such as plastic cups, cans, and used bottles are often left outside the house without adequate sorting and processing, so that it becomes a breeding ground for Aedes aegypti mosquitoes. This strengthens the assumption that community behavior in waste management plays a major role in preventing dengue fever. In line with these findings, Arsyad et al. (2020) in their research in Pontianak City found a significant relationship between the waste management system and the incidence of dengue fever. With a *p-value* of .029 (<.05), this study shows that poor environmental sanitation conditions can increase the risk of spreading dengue fever, especially if family behavior in maintaining a clean house environment is still low. In addition, research conducted by Yuniar et al. (2024) in Benai District, Kuantan Singingi Regency, also revealed something similar. The results of their study showed that family behavior and environmental sanitation had a significant effect on the incidence of dengue fever, especially in solid waste management. With a *p-value* of .025 (<.05), it was concluded that interventions on household behavior in maintaining environmental cleanliness were key factors in reducing the incidence of dengue fever.

Although most community members possess good knowledge about PHBS and the risks of dengue fever, their actual behavior in maintaining environmental cleanliness remains low (Khayru et al., 2024). This indicates a gap between cognition and behavioral practice, which needs to be further analyzed using a social psychology approach.

"This research becomes urgent because highland areas such as Tengaran have unique geographical conditions and social habits that may influence how communities internalize health knowledge. Few studies have explored the role of social psychological factors—such as group norms, risk perception, and knowledge internalization—in PHBS practices within this geographical context"(Febrianta et al., 2021).

Therefore, it is important to explore more deeply how public knowledge about health influences PHBS attitudes and behavior, especially in the context of DHF risk. In situations such as prevention of environmentally-based infectious diseases, such as dengue fever (DHF), social perceptions, group norms, and social pressure can influence individual decisions to implement clean and healthy living behaviors (PHBS). A study by Violato et al. (2022) and Bègue & Vezirian (2024) emphasized that individuals tend to follow social norms and show compliance with what is considered right by their social group. In rural communities, where social relations are close, the influence of collective norms is very large in shaping environmental cleanliness behavior, including participation in mosquito nest eradication activities.

Based on the background above, it can be concluded that social influence also explains the importance of internal factors such as attitudes and external factors such as social support and social control in changing health behavior (Albarracín et al., 2024). DHF is an acute disease with clinical manifestations of bleeding that can lead to chock and even death (Parveen et al., 2023). One effort to change community behavior to support health improvement is through Clean and Healthy Living Behaviors (PHBS). Therefore, the purpose of this study was to examine the relationship between knowledge and Clean and Healthy Living Behaviors (PHBS) with the risk of dengue hemorrhagic fever in communities living in highland geographic areas.

Method

Participants and Procedure

This study employed a quantitative design to examine the relationship between community knowledge, clean and healthy living behavior, and the risk of Dengue Hemorrhagic Fever (DHF). A total of 335 participants were selected through simple random sampling (Pribadi et al., 2025) from highland communities, consisting of 101 men (30.1%) and 234 women (69.9%).

Copyright © 2024, Jurnal Psikologi, E-ISSN: 2302-1098

Based on education level, 79 (23.6%) elementary school, 67 (20%) junior high school, 122 (36,4%) high school and 50 (14.9%) had college. Participation was voluntary, with respondents informed of their rights and guaranteed anonymity and confidentiality. As the study involved no medical or clinical procedures, ethical clearance was not required, though all ethical principles were followed. Data were gathered through structured interviews and direct observations using standardized questionnaires.

Table 1.
Demographic Characteristics of the Respondents

Category	Frequency (n)	Percentage (%)
Education		
Academic/College	50	14.9
High school	122	36.4
Junior high school	67	20
Elementary school	79	23.6
No school/did not finish elementary school	17	5.1
Gender		
Man	101	30.1
Woman	234	69.9
Job		
Laborer	40	11.9
Housewife	181	54
Private employee	29	8.7
Civil Servants	10	3
Self-Employed	75	22.4
Healty House Value		
Unhealthy house	159	47.5
Healthy house	176	52.5
Knowledge		
Poor	45	13.4
Good	290	86.6
Dengue Fever Risk		
Low risk	94	28.1
High Risk	241	71.9

Data Analysis

Data were analyzed using SPSS and Structural Equation Modeling–Partial Least Square (SEM-PLS) to evaluate both direct and indirect relationships between variables (knowledge → risk → healthy house condition). Descriptive statistics were used to summarize demographic and variable characteristics. Path coefficients and *t-values* (>1.96) were used to determine the strength and significance of relationships among variables.

Copyright © 2024, Jurnal Psikologi, E-ISSN: 2302-1098

Data were analyzed using SPSS and Structural Equation Modeling–Partial Least Square (SEM-PLS) to evaluate both direct and indirect relationships between variables (knowledge → risk → healthy house condition). Descriptive statistics were used to summarize demographic and variable characteristics. Path coefficients and *t-values* (>1.96) were used to determine the strength and significance of relationships among variables.

Measurements

Three instruments were employed to measure the main variables of this study: knowledge, dengue fever risk, and healthy house conditions.

1. Knowledge Questionnaire

   Knowledge regarding dengue prevention and healthy living practices was measured using a 16-item questionnaire developed by the researchers, based on the Clean and Healthy Living Behavior (PHBS) indicators issued by the Indonesian Ministry of Health and supported by previous studies (Putri et al., 2024). Each item was assessed using a Guttman scale (Yes = 1, No = 0), with example items such as "Do you routinely clean water containers at least once a week?" and "Do you know that Aedes aegypti mosquitoes breed in clean water?". Total scores were categorized as Poor (0–5), Fair (6–10), and Good (11–16). The instrument demonstrated good psychometric quality, with item–total correlation coefficients ranging from .45 to .81 (validity) and a Kuder–Richardson 20 (KR-20) reliability coefficient of .83, indicating high internal consistency.

2. Dengue Fever Risk Questionnaire

   The perceived risk of dengue infection was assessed using a standardized 18-item questionnaire adapted from the Regulation of the Minister of Health of the Republic of Indonesia No. 13 of 2015 concerning Environmental Health Services at Community Health Centers. Items were rated on a Guttman scale (Yes = 1, No = 0), reflecting environmental and behavioral risk factors related to dengue prevention. Example items included "Are there stagnant water puddles around your house?" and "Do household members use mosquito repellent while sleeping?". The Confirmatory Factor Analysis (CFA) demonstrated factor loadings between .52 and .79, and the Cronbach's alpha (α) coefficient of .86 indicated strong reliability and validity of the instrument.

3. Healthy House Assessment Form

   Healthy house conditions were evaluated through direct observation using the Healthy House Assessment Form, developed in accordance with the Technical Guidelines for Healthy House Assessment issued by the Indonesian Ministry of Health (2022). The assessment covered five components: building structure, ventilation, lighting, waste management, and sanitation. Each indicator was rated as "Meets Criteria" (1) or "Does Not Meet Criteria" (0). A total score of ≥75% was classified as healthy house, while scores below 75% were classified as unhealthy house. Inter-rater reliability testing using Cohen's κ yielded a coefficient of .91, demonstrating excellent agreement between observers.

Result

To examine the structural relationships among the study variables—knowledge, dengue fever risk, and healthy house conditions—a Partial Least Square–Structural Equation Modeling (PLS-SEM) analysis was conducted. This approach was chosen because it allows testing of both

Copyright © 2024, Jurnal Psikologi, E-ISSN: 2302-1098

direct and indirect effects while accommodating complex relationships among multiple variables. The model was analyzed using standardized path coefficients and *t-values* to determine the strength and significance of each relationship.

The resulting model of the direct and indirect effects among variables is presented in Figure 1 below.

Figure 1. Model of Direct and Indirect Effects among Knowledge, Dengue Fever Risk, and Healthy House Conditions Using PLS-SEM

Based on the results of the model analysis using Structural Equation Modeling Partial Least Square (SEM-PLS) in Figure 1 above, it was found that the relationship between public knowledge of the risk of dengue fever and healthy house environmental conditions showed a significant influence. This is evidenced by the t-value of 3.214, which is greater than the significance threshold of ±1.96, indicating that knowledge has a direct influence on healthy house conditions. In addition, knowledge also has an indirect effect through the dengue risk variable, which has a *t-value* of 2.771.

The DHF risk variable on healthy house conditions also showed a significant effect, with a *t-value* of 2,260. Meanwhile, exogenous or control variables such as gender, education level, and employment status did not show a significant effect, because all t-values on these variables were below the threshold of ±1.96. These findings indicate that individual knowledge, which in this context reflects aspects of personality related to awareness and attitudes towards cleanliness, plays an important role in determining the quality of the community's residential environment, especially in the context of preventing environmental-based diseases such as DHF.

Table 2.
Latent Variable Correlation Matrix

	Knowledge (X)	Healthy house (Y)	Risk of DHF (Z)
X	1.000	.079	-.154
Y	.079	1.000	-.014
Z	.154	-.014	1.000

Note: * Significant (*p*>.05)

Copyright © 2024, Jurnal Psikologi, E-ISSN: 2302-1098

Based on the results presented in Table 2, the model demonstrates very good discriminant validity, indicating that each latent variable is more strongly correlated with its own indicators than with other constructs. The relationships among latent variables were generally weak, with the highest correlation observed between Knowledge (X) and Healthy House Value (Y) (r = .079), suggesting a low but positive association. This means that higher levels of community knowledge tend to be associated with slightly better healthy house conditions. In contrast, Dengue Fever Risk (Z) showed negative correlations with both Knowledge (X) (r = –.154) and Healthy House Value (Y) (r = –.014), implying that as dengue fever risk increases, the level of knowledge and the quality of healthy houses tend to decrease, although the relationships were not statistically significant (p>.05). These results confirm that the model meets the criteria of discriminant validity and that the latent variables are distinct and not multicollinear.

In addition to the quantitative findings of the SEM-PLS model, field observations revealed a noticeable gap between knowledge and actual practice. Although 86.6% of respondents demonstrated good knowledge of healthy house standards, many were still found to dispose of waste improperly—such as leaving garbage unsorted, using open containers, or piling it in uncovered areas. These behaviors create stagnant water pools that serve as ideal breeding sites for Aedes aegypti mosquitoes, particularly during the rainy season. This finding aligns with Jasmine et al. (2025), who reported that improper solid waste management—such as discarded plastic cups, cans, and coconut shells that collect rainwater—significantly contributes to the spread of dengue fever despite high public awareness.

Structurally, the SEM-PLS model indicates that Knowledge (X) exerts both a direct and indirect influence on Healthy House Value (Y) through the mediating variable Dengue Fever Risk (Z). This relationship highlights the role of cognitive factors—specifically, knowledge and awareness—in shaping the quality of the physical living environment. These findings are consistent with Wulandari et al. (2021), who emphasized that family behavior and environmental hygiene practices significantly affect dengue incidence. Hence, incorporating psychosocial and behavioral dimensions into Clean and Healthy Living Behavior (PHBS) programs is crucial for developing effective and sustainable dengue prevention strategies. The results of the PLS-SEM path coefficient analysis among Knowledge (X), Dengue Fever Risk (Z), and Healthy House Behavior (Y) are presented in Table 4 below.

Table 3.
Path Coefficients among Knowledge, Dengue Fever Risk, and Healthy House Behavior

	Knowledge	Risk	Healthy House
Knowledge	.00	-.154	.079
Risk	.00	.00	-.002
Healthy House	.00	.00	.00

Note: * Positive coefficients indicate that an increase in the independent variable will increase the dependent variable, whereas negative coefficients indicate an inverse relationship.

Table 3 summarizes the direct relationships among three latent variables based on PLS-SEM analysis. Higher knowledge levels are linked to a lower risk of dengue fever (-.154) and positively influence healthy house behavior (.079). Conversely, perceived dengue risk slightly reduces community knowledge (–.086), while its effect on healthy house behavior is minimal (-.002).

Table 3 shows that Knowledge (X) positively influences Healthy House Behavior (Y) (β = .079), indicating that greater knowledge leads to better implementation of healthy practices.

Copyright © 2024, Jurnal Psikologi, E-ISSN: 2302-1098

Conversely, Knowledge (X) negatively affects Dengue Fever Risk (Z) (β = –.154), suggesting that higher knowledge reduces perceived or actual risk, likely due to increased confidence in managing health threats

Meanwhile, the Dengue Fever Risk (Z) variable had a very small and negative effect on Healthy House Behavior (Y) (β = –.002). This implies that risk perception alone is insufficient to motivate people to engage in consistent healthy house behaviors; in some cases, it might even reduce behavioral consistency if not supported by adequate knowledge and practical skills. Thus, the Knowledge variable emerges as a dominant determinant of healthy house behavior compared to risk perception.

Table 4.
Significance Test of Path Relationships (*p-value*) in the PLS-SEM Model

Relationship	***p-value***	**Significance**
Gender → Risk	.662	Not significant (p>.05)
Occupation → Risk	.334	Not significant (p>.05)
Education → Risk	.945	Not significant (p>.05)
Knowledge → Healthy House	**.001**	**Significant (p<.05)**
Knowledge → Risk	**.006**	**Significant (p<.05)**
Risk → Healthy House	**.024**	**Significant (p<.05)**

Note: * p<.05 = significant; p>.05 = not significant

The significance test results (Table 4) confirm that only the path from Knowledge → Healthy House, knowledge → risk, and risk → healthy house was statistically significant (p = .001 < .05), Demographic factors such as gender, occupation, and education do not have a significant influence on risk perception. In contrast, knowledge plays a crucial role in shaping both risk perception and healthy housing behavior. Furthermore, risk perception has been proven to act as a significant mediator in influencing healthy housing practices.

These findings suggest that improving community health behavior requires more than just information dissemination—it also demands psychological reinforcement, community empowerment, and supportive environments. In conclusion, Knowledge (X) remains the key driver of behavioral change toward maintaining healthy houses. However, effective public health interventions should also consider psychological dimensions, such as risk perception, to prevent a false sense of security. Therefore, integrated collaboration among health education, community psychology, and environmental policy sectors is essential to establish sustainable clean and healthy living behaviors (Astutik et al., 2025).

Discussion

In the context of public health, the results of this study provide an important contribution to the development of community psychology-based empowerment programs. Interventions that not only focus on changing the physical environment, but also shape community perceptions and beliefs about the importance of PHBS have proven to be more effective in the long term. A health education model that involves community leaders, health cadres, and local media will increase active community participation and strengthen social solidarity in maintaining environmental cleanliness. Therefore, collaboration between health workers, community psychologists, and village governments is needed to build a sustainable health ecosystem.

Interventions involving health cadres, community leaders, and local media have been proven to increase public understanding and active participation in clean and healthy living

Copyright © 2024, Jurnal Psikologi, E-ISSN: 2302-1098

behaviors (PHBS). This is in line with research by Hermansyah et al. (2024) which shows that the training of health cadres in dengue endemic areas is able to significantly increase knowledge and skills in vector control. In addition, the community psychology approach in the form of community empowerment has proven to be effective in forming positive perceptions and collective beliefs about the importance of maintaining environmental cleanliness. Buzzanell et al. (2025) found that community-based empowerment in Yogyakarta increases community participation in the implementation of PSN and reduces the risk of sustainable spread of dengue. This approach suggests that behavior change is easier to achieve when people feel they have a direct role in the intervention.

The social capital factor also plays an important role in maintaining the sustainability of health interventions. Research in Surabaya shows that communities with high social capital respond more quickly to potential dengue outbreaks through mutual cooperation and cross-sector coordination (Budiman, 2024). Collaboration between the community, health workers, and the village government strengthens the sense of belonging and increases community resilience to the threat of infectious diseases.

Furthermore, participatory education methods are more effective than one-way counseling (Koningstein & Azadegan, 2021). Nuryati et al. (2024) found that the application of the PSN triggering method in RW 4 Penagagan Village increased knowledge and community involvement more evenly, because health messages were packaged interactively. These results support the need for a contextual approach that is tailored to the socio-cultural characteristics of the community.

On the other hand, the success of interventions is also strongly influenced by the consistency of program implementation and cross-sectoral involvement. Misnawati et al. (2025) emphasized that the success of dengue prevention in Indonesia requires integration between the community, health workers, and local governments through strengthening the 3M Plus program, continuous education, and environmental monitoring. This shows that interventions are multisectoral, not just the responsibility of individuals or health sectors.

In addition to health education, the role of local media is also important in supporting the dissemination of information and the formation of public opinion. Dada et al. (2023) report that health cadres who collaborate with local media can increase the affordability of health messages and encourage wider community participation. Local media serves as an agent of change that bridges health messages with language and cultural symbols that are easily understood by the public.

Overall, the results of this study emphasize that PHBS is not only determined by the level of knowledge, but also influenced by daily habits, collective perceptions, and social environment support and public policies. Theoretical educational interventions need to be complemented by practical, participatory, and sustainable approaches in order to achieve consistent behavior change. Thus, cross-sector collaboration and strengthening community psychology are key in creating a sustainable and resilient public health ecosystem against the threat of dengue.

In addition to environmental and educational factors, people's internal motivation in adopting healthy behaviors is also related to psychological aspects, such as self-efficacy and risk perception. Research by Aung et al. (2023) found that education on dengue prevention accompanied by hands-on practice in maintaining house hygiene can increase individuals' confidence in the effectiveness of their own measures in preventing disease. This suggests that interventions need to target cognitive and affective aspects to strengthen the sustainability of health behaviors.

Copyright © 2024, Jurnal Psikologi, E-ISSN: 2302-1098

Furthermore, the effectiveness of health interventions is also influenced by cross-sectoral support, including educational institutions and civil society organizations. FH et al. (2024) emphasized that school and community-based participatory education have an important role in building collective awareness, particularly in groups of children and adolescents who are vulnerable to exposure to risky environments. Thus, dengue prevention is not only the responsibility of the health sector, but also part of social development involving all elements of society.

In conclusion, Clean and Healthy Living Behavior (PHBS) is not only determined by knowledge, but also by consistent daily habits and practices, especially in terms of waste management and environmental maintenance. Theoretical educational interventions need to be complemented with practical and participatory approaches in order to achieve sustainable behavioral change. According to Sari et al. (2022), a health counseling strategy that emphasizes community empowerment and strengthening social capital is able to foster a sense of belonging to health programs (Odesanmi et al., 2024). This is in line with the approach to sustainable health development that places the community as the main actor, not just the object of intervention.

Conclusion

The results of this study have important implications in the planning and implementation of public health promotion programs, especially in efforts to prevent DHF. The finding of a significant influence between community knowledge of DHF risk and healthy house conditions indicates that knowledge-based educational interventions remain important, but are not enough if not accompanied by the formation of habits and real actions in the field.

The finding of low levels of proper waste management practices despite high levels of knowledge indicates a gap between cognition and behavior, which is often found in information-based interventions. Therefore, the Behavioral Change Communication (BCC) and community-based empowerment approaches are very relevant to implement, so that the community not only understands the concept of healthy houses and dengue prevention, but is also able to internalize and apply these behaviors in everyday life.

Recommended intervention programs to promote healthy living environments should integrate practical, community-based strategies. One effective approach is health education that emphasizes direct practice, such as simulations of waste management and house environment cleaning, allowing residents to internalize hygienic behaviors through hands-on experience. In parallel, empowering local health cadres to provide routine assistance and conduct environmental monitoring at the neighborhood level (RT/RW) ensures sustained engagement and localized oversight. To strengthen systemic support, cross-sector collaboration among health centers, village governments, and community leaders is essential for designing incentive mechanisms that reward households maintaining healthy living standards. Finally, implementing a periodic environmental audit system—where community members actively assess the condition of their houses and surroundings—fosters collective responsibility and reinforces long-term behavioral change.

By strengthening the synergy between knowledge, attitudes, and real actions, efforts to prevent dengue fever and improve the quality of clean and healthy living for village communities, especially in highland areas such as Village X, can be more effective and sustainable.

Copyright © 2024, Jurnal Psikologi, E-ISSN: 2302-1098

Acknowledgement

The author would like to thank the parties who have helped in collecting data in this study. Thank are also addressed to the Dian Nuswantoro University environmental health study program for their assistance so that this study can be carried out.

References

Abbas, A., Ekowati, D., Suhariadi, F., Fenitra, R. M., & Fahlevi, M. (2022). Integrating cycle of prochaska and diclemente with ethically responsible behavior theory for social change management: Post-Covid-19 social cognitive perspective for change. In *Handbook of research on global networking post Covid-19* (pp. 130–155). IGI Global Scientific Publishing.

Adinda, H., Feby Auralya, T., Solikhah, F. A., & Charisma, A. M. (2025). Penyuluhan edukasi PHBS (Perilaku Hidup Bersih Dan Sehat) dan pencegahan DBD (Demam Berdarah Dengue) melalui upaya 3M di lingkungan masyarakat Desa Pedagangan Kecamatan Wringinanom. *Communnity Development Journal*, *6*(1), 418-423. https://doi.org/https://doi.org/10.31004/cdj.v6i1.35120

Albarracín, D., Fayaz-Farkhad, B., & Granados Samayoa, J. A. (2024). Determinants of behavior and their efficacy as targets of behavioral change interventions. *Nature Reviews Psychology*, *3*(6), 377–392. https://doi.org/10.1038/s44159-024-00305-0

Amraeni, Y., & Nirwan, M. (2021). *Sosial budaya kesehatan dan lingkungan masyarakat pesisir dan tambang*. Penerbit NEM.

Anggraini, D. R., Huda, S., & Agushybana, F. (2021). Faktor perilaku dengan kejadian Demam Berdarah Dengue (DBD) di daerah endemis Kota Semarang. *Jurnal Ilmu Keperawatan dan Kebidanan*, *12*(2), 344–349. https://doi.org/.https://doi.org/10.26751/jikk.v12i2.1080

Arsyad, R. M., Nabuasa, E., & Ndoen, E. M. (2020). Hubungan antara perilaku sanitasi lingkungan dengan kejadian Demam Berdarah Dengue (DBD) di wilayah kerja Puskesmas Tarus. *Media Kesehatan Masyarakat*, *2*(2), 15–23. https://doi.org/10.35508/mkm.v2i2.2498

Astutik, W. D., Sadiyah, V. K., & Siswanto, D. H. (2025). Counseling on clean and healthy living behavior in improving public health levels. *Journal of Social and Community Development*, *2*(1), 38–50. https://doi.org/10.56741/jscd.v2i01.889

Aung, S. H., Phuanukoonnon, S., Kyaw, A. M. M., Lawpoolsri, S., Sriwichai, P., Soonthornworasiri, N., & Jittamala, P. (2023). Effectiveness of dengue training programmes on prevention and control among high school students in the Yangon Region, Myanmar. *Heliyon*, *9*(6), 1-14. https://doi.org/10.1016/j.heliyon.2023.e16759

Bègue, L., & Vezirian, K. (2024). The blind obedience of others: A better than average effect in a Milgram-like experiment. *Ethics & Behavior*, *34*(4), 235–245. https://doi.org/https://doi.org/10.1080/10508422.2023.2191322

Budiman, D. (2024). *Strengthening risk communication for pandemic response to enhance global health security: Lessons from Indonesia's COVID-19 response* (Doctoral dissertation, Griffith University, Centre for Environment and Population Health, School of Medicine). https://doi.org/10.25904/1912/5197

Buzzanell, P. M., Craine, W., Murray, S., & Vail, M. (2025). Organizational communication research on employee communication. In *The Routledge Handbook of Employee Communication and Organizational Processes* (pp. 26–36). Routledge.

Dada, S., Aivalli, P., De Brún, A., Barreix, M., Chelwa, N., Mutunga, Z., Vwalika, B., & Gilmore, B. (2023). Understanding communication in community engagement for maternal and newborn health programmes in low-and middle-income countries: A realist review. *Health Policy and Planning*, *38*(9), 1079–1098. https://doi.org/https://doi.org/10.1093/heapol/czad078

Dewi, S., & Noviyana, A. (2022). Pencegahan anemia defisiensi besi pada remaja melalui penyuluhan gizi seimbang. *Jurnal ABDIMAS-HIP Pengabdian kepada Masyarakat*, *3*(1), 22–26. https://doi.org/10.37402/abdimaship.vol3.iss1.164

Fathary, J., & Jazuli, N. (2022). The analysis of environmental and behavioral factors associated with dengue hemorrhagic fever in Gading Campaka District Bengkulu City. *International*

Copyright © 2024, Jurnal Psikologi, E-ISSN: 2302-1098

Journal of Health, Education & Social (IJHES), *5*(11), 1–16. https://doi.org/10.1234/ijhes.v5i11.273

Febrianta, Y., Sriyanto, S., & Yuwno, P. H. (2021). A comparative study on Healthy and Clean Lifestyle (PHBS) in elementary school based on geographical location. *Dinamika Jurnal Ilmiah Pendidikan Dasar*, *13*(1), 14–19. https://doi.org/10.30595/dinamika.v13i1.9599

FH, W. M., Mu'afifah, A. N., Izza, E., Fadhilah, A. Z., Hanif, A., Septianti, N. L., Fanani, A. A., & Ridwan, A. (2024). Educating the community to prevent stunting through participatory action research. *Social Studies in Education*, *2*(2), 108–207. https://doi.org/10.15642/sse.2024.2.2.207-108

Hazanah, S. (2025). Longitudinal study of the effect of Clean and Healthy Living Behaviour (PHBS) on the incidence of communicable diseases in urban environments. *Miracle Get Journal*, *2*(1), 81–90. https://doi.org/10.69855/mgj.v2i1.118

Hermansyah, H., Susanti, H., Munazar, M., Taufik, T., & Usrina, N. (2024). Effectiveness of training in increasing knowledge of women's health cadres in dengue hemorrhagic fever endemic areas. *AICH: Aceh International Conference on Health*, *1*(2), 1-9. https://doi.org/10.30867/aich.v1i2.710

Karmilah, K., Sukaesih, N. S., & Hudaya, A. P. (2024). Studi korelasi pengetahuan dan sikap perawat mengenai pemanfaatan nyamuk wolbachia sebagai upaya pencegahan DBD di Kabupaten Sumedang. *ASJN (Aisyiyah Surakarta Journal of Nursing)*, *5*(2), 168–179. https://doi.org/10.30787/asjn.v5i2.1674

Khayru, R. K., Marsal, A. P., & da Costa, L. (2024). Legal coherence and institutional gaps in medical waste governance and public health protection in Indonesia. *International Journal of Service Science, Management, Engineering, and Technology*, *5*(3), 17–22. https://doi.org/10.2478/OSZN-2020-0006

Koningstein, M., & Azadegan, S. (2021). Participatory video for two-way communication in research for development. *Action Research*, *19*(2), 218–236. https://doi.org/10.1177/1476750318762032

Manik, E. K., Tarigan, D., & Tanjung, N. (2025). Pengabdian masyarakat pemberian edukasi tentang sanitasi lingkungan di di wilayah kerja Puskesmas Berastagi. *MAJU: Indonesian Journal of Community Empowerment*, *2*(3), 362–373. https://doi.org/10.62335/maju.v2i3.1154

Misnawati, M., Supriyadi, Y. J., & Irfai, M. (2025). The influence of community knowledge, attitude, and behavior on aedes larvae presence through 3M plus implementation. *Global Health & Environmental Perspectives*, *2*(1), 163–174. https://doi.org/10.61848/ghep.v2i1.125

Nuryati, T., Phounna, R., Feriningsih, W., Christine, S., Hasani, U., Izhar, J., & Ramdhita, F. (2024). Implementation of hygiene education through community empowerment for effective dengue hemorrhagic fever prevention: Case study in RW 4 Penagagan Village. *Jurnal Serambi Ilmu*, *25*(2), 374-398. https://doi.org/10.32672/jsi.v25i2.2453

Odesanmi, A. F., Olusegun, D. I., Babatunde, O. S., Asamu, F. F., Kayode, O. E., & Arowolo, O. T. (2024). Community service entrepreneurship, social capability, and sustainable development: A social capital perspective. *Ilorin Journal of Education*, *45*(1), 248–265. https://doi.org/10.1007/s42413-021-00112-y

Onasis, A., Awaluddin, A., Lindawati, L., & Irfan, A. (2024). Pengendalian sarang nyamuk dan kepadatan jentik aedes sp. di Kelurahan Kalumbuk Kecamatan Kuranji Kota Padang. *Jurnal Sehat Mandiri*, *19*(1), 224–234. https://doi.org/10.33761/jsm.v19i1.1361

Parveen, S., Riaz, Z., Saeed, S., Ishaque, U., Sultana, M., Faiz, Z., Shafqat, Z., Shabbir, S., Ashraf, S., & Marium, A. (2023). Dengue hemorrhagic fever: A growing global menace. *Journal of Water and Health*, *21*(11), 1632–1650. https://doi.org/10.2166/wh.2023.114

Putri, D. F., Triwahyuni, T., Rahmadhany, T. D., & Nusri, T. M. (2024). Knowledge, community behavior, and environmental factors in relation to the incidence of dengue hemorrhagic fever. *JKM (Jurnal Kebidanan Malahayati)*, *10*(1), 51–60. https://doi.org/10.33024/jkm.v10i1.6676

Ramadhani, F., Satria, A., & Sari, I. P. (2023). Implementasi metode fuzzy k-nearest neighbor dalam klasifikasi penyakit demam berdarah. *Hello World Jurnal Ilmu Komputer*, *2*(2), 58–62. https://doi.org/10.56211/helloworld.v2i2.253

Copyright © 2024, Jurnal Psikologi, E-ISSN: 2302-1098

Rasjid, A., & Nasrianti, N. (2019). Hubungan cuaca mikro dengan prevalensi penyakit Demam Berdarah Dengue di Kabupaten Bone tahun 2013-2015. *Sulolipu: Media Komunikasi Sivitas Akademika dan Masyarakat*, *17*(2), 25–31. https://doi.org/10.32382/SULOLIPU.V17I2.795

Rathbone, J. A., Cruwys, T., Jetten, J., & Barlow, F. K. (2023). When stigma is the norm: How weight and social norms influence the health-care we receive. *Journal of Applied Social Psychology*, *53*(3), 185–201. https://doi.org/10.1111/jasp.12689

Rojali, R., Restiaty, I., Lisa, D., & Setyadi, M. D. (2023). Hubungan perubahan iklim dengan kejadian Demam Berdarah Dengue (DBD) di Kota Administrasi Jakarta Timur. *Sulolipu: Media Komunikasi Sivitas Akademika dan Masyarakat*, *23*(1), 172–186. https://doi.org/10.32382/sulo.v23i1.427

Sari, R. K., Djamaluddin, I., Djam'an, Q., & Sembodo, T. (2022). Pemberdayaan masyarakat dalam upaya pencegahan Demam Berdarah Dengue (DBD) di Puskesmas Karangdoro. *Jurnal ABDIMAS-KU: Jurnal Pengabdian Masyarakat Kedokteran*, *1*(1), 25-33. https://doi.org/10.30659/abdimasku.1.1.25-33

Shui, Y., Yang, Y., & Liu, S. (2024). The impact of environmental literacy on the health level of rural residents: evidence from the mountainous areas of Sichuan, China. *Frontiers in Public Health*, *12*, 1-13. https://doi.org/10.3389/fpubh.2024.1465483

Violato, E., King, S., & Bulut, O. (2022). Conformity, obedience, and the better than average effect in health professional students. *Canadian Medical Education Journal*, *13*(1), 55–64. https://doi.org/10.36834/cmej.71970.

Winarti, N., Nugroho, H., & Lubis, V. H. (2025). Gambaran kejadian dengue hemorrhagic fever (DHF) pada anak di RS Permata Dalima Kecamatan Serpong Kota Tangerang Selatan tahun 2023. *Jurnal Kesehatan STIKes IMC Bintaro*, *8*(1), 34–40. https://doi.org/10.63448/7dk1ya91

Yuniar, V. T., Raharjo, M., Martini, M., & Nurjazuli, N. (2024). Hubungan pengetahuan dengan kejadian Demam Berdarah Dengue di Kota Lubuklinggau Sumatera Selatan. *Jurnal Kesehatan Lingkungan Indonesia*, *23*(2), 234–240. https://doi.org/10.14710/jkli.23.2.234-240

Copyright © 2024, Jurnal Psikologi, E-ISSN: 2302-1098