

# An Integrated Community Education Approach to Prevent Dengue Fever Through Clean and Healthy Living Behaviors in The Karang Panjang Health Center Service Area

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## Abstract

Clean and Healthy Living Behaviour (PHBS) is one of the efforts that can be done in increasing awareness of clean living and maintaining public health. Integrated education activities for the community in the Karang Panjang Health Centre working area aim to increase public awareness and understanding of the importance of Clean and Healthy Living Behaviour (PHBS) in preventing Dengue Fever (DHF). This activity was carried out on 23 April 2024. The programme was implemented through a direct approach by visiting residents' homes, providing leaflets containing information related to PHBS, and conducting interactive education sessions. The education included practical steps in reducing the risk of spreading DHF, such as maintaining environmental hygiene, draining water reservoirs, closing water containers, and disposing of used items that can hold water. In addition, the community was encouraged to avoid mosquito bites and conduct larviciding. The results of this activity showed that the community became more aware of the importance of PHBS and more motivated to implement it in their daily lives. This activity is expected to strengthen dengue prevention efforts at the family and neighbourhood levels, and create a healthier community that cares about environmental hygiene and health.

**Keywords:** Dengue Fever, Health Education, Clean and Healthy Behaviour (PHBS).

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## I. INTRODUCTION

Health development aims to enhance individuals' awareness, ability, and willingness to adopt a healthy lifestyle to achieve optimal health status. The community is expected not only to be passive recipients of health services but also to take an active role as agents of health development by maintaining, preserving, and improving their health and contributing to society's overall well-being (Afrizal, 2023). One crucial aspect in achieving this goal is the implementation of Clean and Healthy Living Behavior (CHLB) within households, where every family member is expected to practice healthy behaviors in their daily lives (Wati & Ridlo, 2020).

Clean and Healthy Living Behavior comprises a series of efforts to create an environment that supports individuals, families, groups, and communities in adopting healthy attitudes and behaviors. These efforts are intended to sustainably maintain and improve public health status (Julianti et al., 2018; Natsir, 2019; Anhusadar & Islamiyah, 2020; Ananda et al., 2022). According to Larira et al. (2021), CHLB is designed to cultivate awareness regarding the importance of personal hygiene, environmental cleanliness, and healthy lifestyle habits, which include washing hands with soap, consuming nutritious food, engaging in regular physical activity, and adopting other healthy practices.

Promoting CHLB within communities aims to ensure that all individuals are informed, motivated, and capable of incorporating clean and healthy behaviors into their daily routines while actively participating in existing public health initiatives. The implementation of CHLB is particularly critical in preventing various diseases, including Dengue Hemorrhagic Fever (DHF). Preventive behaviors include

maintaining clean sanitation facilities, using safe and clean water, and regularly eliminating mosquito larvae from the household environment, particularly from uncovered water containers (Sawaluddin & Lidayanti, 2024).

Dengue Hemorrhagic Fever (DHF) is an endemic infectious disease prevalent in tropical countries and has garnered global attention due to its rapid spread (Saragih et al., 2019; Tosepu & Gunawan, 2025). According to Rahayu Ustiawan (2013), the disease is transmitted by female mosquitoes of the *Aedes* genus, primarily *Aedes aegypti*, although *Aedes albopictus* can also serve as a vector. These mosquitoes thrive in tropical and subtropical regions, allowing for the widespread transmission of DHF across various parts of the world. The disease is caused by four antigenically distinct dengue virus serotypes: DENV-1, DENV-2, DENV-3, and DENV-4. Dengue virus infection can produce a range of clinical symptoms, from mild fever to more severe conditions such as DHF and dengue shock syndrome, which can be life-threatening if not promptly treated. The incubation period of dengue infection typically ranges from 3 to 14 days, with an average of approximately 7 days, meaning symptoms may appear shortly after being bitten by an infected mosquito (Kurniawan & Hariaji, 2022).

Community empowerment through health promotion activities is essential to enhance the implementation of CHLB and prevent the transmission of DHF. These may include health education or awareness campaigns targeted at community members (Embisa & Ukratalo, 2025; Kaliky & Ukratalo, 2025). Health education is a key strategy in health promotion, significantly increasing public knowledge and facilitating behavioral changes toward healthier lifestyles (Nahak et al., 2022; Dyna et al., 2024; Embisa et al., 2025a). Through such educational interventions, individuals can better understand the importance of health maintenance and learn practical steps to adopt healthy living practices (Ichsan and Ukratalo, 2025). Research conducted by Abu-Baker et al. (2021) also highlights the effectiveness of health education in enhancing community understanding, thereby motivating behavioral changes toward improved daily habits and overall well-being.

## II. METHOD

This community service activity was carried out on April 23, 2024. The activities included the distribution of informational leaflets containing essential messages about Clean and Healthy Living Behavior (CHLB), as well as direct health education to the public on practical ways to maintain environmental hygiene and personal health to reduce the risk of disease transmission. The service team employed a direct engagement approach by visiting residents' homes and providing detailed explanations of daily preventive measures that can be easily implemented.

In addition, residents were allowed to ask questions regarding health issues and share the challenges they faced in adopting CHLB practices daily. This interactive element was intended to foster two-way communication and to better understand the needs and constraints of the community.

## III. RESULT AND DISCUSSION

The community service initiative was conducted in the service area of Karang Panjang Health Center (Puskesmas Karang Panjang), Ambon. The primary objective was to enhance public understanding and awareness of the importance of maintaining health and adopting healthy living practices daily. As the nearest health facility serving the community, Karang Panjang Health Center plays a vital role in disseminating health education and supporting efforts to improve the quality of life of the surrounding population.

At the initial stage, the service team engaged directly with the community through home visits. This door-to-door approach was selected to establish more personal and informal communication, enabling residents to speak more openly about the obstacles they encounter in maintaining their health (Ichsan & Ukratalo, 2025). By being physically present in the residents' living environment, the team could observe the actual conditions and gain insights into specific challenges faced by the community in adopting healthy living behaviors (Yushar et al., 2025). These observations provided valuable input for designing more relevant and needs-based educational interventions.

As part of the educational effort, each household visited received a leaflet containing key information on Clean and Healthy Living Behavior (CHLB), focusing on preventing Dengue Hemorrhagic Fever (DHF). The leaflets were written in clear and straightforward language and included practical guidelines such as maintaining environmental cleanliness, covering water storage containers, regularly cleaning bathtubs, and disposing of unused items that could serve as breeding grounds for *Aedes* mosquitoes



Figure 1. PHBS Leaflet for Dengue Fever Prevention

Following the distribution of the leaflets, the community service team continued the activity by providing direct education to residents regarding the importance of implementing Clean and Healthy Living Behavior (CHLB) within the family context, particularly as a preventive measure against Dengue Hemorrhagic Fever (DHF) (Figure 2). This educational session was delivered personally, using a friendly and communicative approach to ensure that the messages conveyed could be more easily understood and accepted by the community (Manery et al., 2024; Syuaib et al., 2025; Pangemanan & Tarangi, 2025; Afnil et al., 2025). During this session, the team explained several practical steps that each family member could apply, such as routinely cleaning water storage containers, tightly covering all water vessels, and disposing of unused items that may serve as mosquito breeding grounds. Additionally, residents were informed about the importance of maintaining a clean home environment, using clean water daily, and protecting themselves from mosquito bites through bed nets or mosquito repellent lotions.

The educational session was not solely one-directional. Residents were actively encouraged to participate in discussions and to share their personal experiences regarding hygiene and health maintenance practices. This interactive approach helped deepen the community's understanding of the benefits of CHLB while also motivating them to take a more proactive role in safeguarding their family's health and the surrounding environment to prevent the spread of DHF.





Figure 2. CHLB Education Session

During this education session, community members were allowed to ask questions and engage in open discussions about healthy lifestyle practices that can be applied daily, particularly to prevent diseases such as Dengue Hemorrhagic Fever (DHF). These discussions enabled participants to share their experiences, challenges encountered, and the solutions they had found in implementing Clean and Healthy Living Behavior (CHLB) within their respective environments.

The service team also provided in-depth explanations of practical actions that can be taken, including how to identify potential mosquito breeding sites, maintain thorough household cleanliness, and adopt additional preventive measures. Beyond information dissemination, the team encouraged community members to take an active role and to motivate one another in adopting CHLB practices, with the broader goal of fostering a clean and healthy environment on a sustainable basis.

Residents were urged to remain vigilant and proactive in preventing DHF transmission by ensuring environmental cleanliness inside and outside the home. A key emphasized strategy was the routine implementation of mosquito and larvae eradication efforts based on the 3M Plus principle: draining water containers, sealing water storage tightly, and recycling or disposing of used items that could hold water (Ustiaty et al., 2020). Additional recommended measures included keeping larva-eating fish, using larvicides, sleeping under mosquito nets, installing mesh on ventilation outlets, spraying insecticides, applying mosquito repellent lotion, and conducting regular mosquito larvae inspections, all of which can be adapted to local environmental conditions (Dewi & Azam, 2017).

Education plays a pivotal role in promoting behavioral change within communities. Through education, relevant health information becomes more accessible, thereby enabling individuals to better understand and consistently apply healthy lifestyle habits. Muchtar et al. (2023) noted that information acquired through educational activities serves as a foundation for individuals to shift their mindset and behaviors across various aspects of life—whether at home, in the workplace, or within their social circles.

The information delivered in these sessions was not merely theoretical; it was also practical and directly applicable to everyday life, supporting efforts to achieve improved health outcomes. According to Harahap et al. (2023), a strong understanding of CHLB is a crucial first step in preventing communicable and non-communicable diseases. Continuous education efforts involving community participation can significantly enhance public knowledge of the importance of environmental cleanliness, healthy eating habits, and adopting an active lifestyle.

With appropriate education and strong community engagement, CHLB becomes not merely a theoretical concept but an integrated part of daily routines. As a result, these healthy habits can help reduce the risk of disease, promote a cleaner environment, and ultimately improve the overall quality of life (Hudzaiifa et al., 2023; Imamah et al., 2024; Yunasti & Aspariyana, 2024).

#### IV. CONCLUSION

A comprehensive educational approach involving active community participation has proven effective in increasing understanding and awareness among residents regarding the importance of implementing Clean and Healthy Living Behavior (CHLB). The community received practical information on maintaining personal and environmental hygiene through various activities such as leaflet distribution, door-to-door visits, and interactive discussions. It was encouraged to become agents of change within their families and communities.

The active involvement of residents in the educational process fostered an equitable dialogue space where they could express opinions, share experiences, and collaboratively seek solutions to challenges such as limited sanitation facilities or ingrained habits that are difficult to change. Such

participatory methods build trust and empower communities to take ownership of their health and well-being sustainably.

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