



EVALUATION OF THE IMPLEMENTATION OF THE DENGUE FEVER (DBD) ERADICATION PROGRAM AT MANGASA HEALTH CENTER, MAKASSAR CITY

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ABSTRACT

Dengue Hemorrhagic Fever (DHF) is a disease caused by the dengue virus, transmitted by the *Aedes Albopictus* and *Aedes Aegypti* mosquitoes through their bites. Researchers identified that the Mangasa Health Center had a high number of cases, with 87 in 2021, which saw a significant decrease to 22 cases in 2022. Objective: His study aimed to understand the process, management, structure, implementation, and outcomes of the DHF eradication program at the Mangasa Health Center. The researcher employed a qualitative method with a descriptive approach. Data was collected through in-depth interviews with five informants selected using snowball sampling. The validity of the data was confirmed using source triangulation. The study found that human resources for the DHF program at the Mangasa Health Center were sufficient, involving surveillance officers, environmental health officers, health educators, and mosquito larva controllers (jumantik). Program activities such as mosquito nest eradication (PSN), larvicide distribution, focus fogging, health education, periodic larva inspections (PJB), and epidemiological investigations were carried out according to established procedures. Program achievements were near their targets: PSN reached 85% (target 90%), and PJB reached 90% (target 95%). However, health education was still significantly below its target at 67% (target 85%). Fogging and epidemiological investigations were conducted within a 100-meter radius (or 20 houses) of a patient's home, and larvicide (abate) was distributed to every house. The implementation of the DHF program activities at the Mangasa Health Center has been conducted according to established procedures. Despite some unresponsiveness from the community, the success of the program's activities is evident from the decrease in DHF cases in the working area of the health center.

Keywords: Program Evaluation; Dengue Hemorrhagic Fever (DHF); Eradication Program; Health Education

1. INTRODUCTION

Dengue Hemorrhagic Fever, often abbreviated as DHF, is a disease caused by the dengue virus. The *Aedes albopictus* and *Aedes aegypti* mosquitoes are increasingly common carriers of this virus. Transmission occurs when a mosquito bites and ingests the blood of a person already infected with the dengue virus. If this mosquito then bites another person, a high rate of virus

transmission will occur (Data and Information Center of the Ministry of Health RI, 2018). WHO data show that the incidence of dengue has increased sharply worldwide, from 505,430 cases in 2000 to 5.2 million in 2019. An estimated 390 million dengue infections occur annually, with 96 million being symptomatic. Another study estimates that 3.9 billion people are at risk of dengue infection. The virus is now endemic in more than 100 countries across WHO regions. The Americas, Southeast Asia, and the Western Pacific are the most affected, with Asia accounting for about 70% of the global disease burden. Indonesia is estimated to have the second-highest number of dengue cases among 30 endemic countries (WHO, 2023). From 2017 to 2021, the number of DHF cases in Indonesia has fluctuated. In 2017, there were 68,407 cases, which decreased in 2018 to 65,602 cases, and then increased again in 2019 to 138,127 cases. In 2020-2021, DHF cases declined again, with 103,509 cases in 2020 and 73,518 cases in 2021. This disease often causes Extraordinary Outbreaks (KLB) in several regions and is among the top 5 diseases with the highest frequency of outbreaks (P2PM Ministry of Health, 2021).

In the city of Makassar, the number of DHF cases has also fluctuated. In 2017, there were 135 cases, increasing to 256 cases in 2018. In 2019, reported cases continued to rise to 268, but in 2020, the number of cases decreased to 175. In 2021, DHF cases rose significantly again, with 1,346 cases in Makassar city, making it the city/regency with the highest number of DHF cases in South Sulawesi Province (Health Office, 2021). There are three public health centers in Makassar with high numbers of DHF cases. The center ranking first is Mangasa Public Health Center, where cases increased from 5 in 2017 to 8 in 2018. This was followed by a decrease to 3 cases in 2019, before a significant increase in the following years with 14 cases in 2020 and 87 cases in 2021 (Health Office, 2021). Pampang Public Health Center ranked second, with cases increasing from 8 in 2017 to 14 in 2018, then decreasing to 12 and 10 in 2019-2020, followed by a significant increase to 62 cases in 2021. Tamalate Public Health Center ranked last with the lowest number of cases, recording 4 cases in 2017, 7 in 2018, and 12 in 2019, followed by a decrease to 9 cases in 2020 before a significant increase to 49 cases in 2021. Based on the researcher's observations in the Tamalate District, Mangasa Sub-district, the increase in DHF cases was triggered by community members who raise ornamental fish (betta fish) and use mosquito larvae as feed for these fish.

The evaluation of the DHF Eradication Program (P2DBD) has been a focus in various regions. A study by Anis Faizah, et al. (2018) found that the evaluation at the Mojosongo Public Health Center in Boyolali Regency showed sufficient resources in the input variable but faced constraints in activity scheduling and a lack of official reports for each program activity. The process evaluation revealed that mosquito nest eradication (PSN) was not optimally implemented, and there were delays in the delivery of abate powder from the District Health Office, which was often received expired. For the output variable, out of 5 DHF Control Program indicators, 1 indicator had not met its target: the Larva-Free Rate (ABJ) at Mojosongo Public Health Center was only 67%, against an actual target of 95%.

Based on the background described above, previous research indicates that the DHF eradication program has not yet been effective and efficient in reducing DHF cases. Preliminary observations were conducted by the researcher at the Mangasa Public Health Center, Tamalate District, and found that activities related to the P2DBD program existed and had been carried out by the health center staff. However, since the program began in 2014, program evaluation had never been identified as being performed by the staff, making it a potential factor in the increase in DHF cases in 2021.

2. METHODS

This study utilized a qualitative research design with a descriptive approach, which was chosen to allow the researcher to explore the research topic in a detailed, comprehensive, and contextual manner. The descriptive qualitative method was considered appropriate because it enables the researcher to obtain a deeper and more meaningful understanding of various events, behaviors, perceptions, and experiences directly from the individuals involved in the program being evaluated. In this case, the primary aim of the study was to gain an in-depth understanding of how the Dengue Hemorrhagic Fever (DHF) eradication program was implemented within the working area of the Mangasa Primary Health Center (Puskesmas). More specifically, the study sought to evaluate the input, process, output, and outcome components of the program, ensuring that each aspect could be analyzed thoroughly to provide a complete picture of program execution. The research was conducted at the Mangasa Puskesmas, which is located in the Tamalate District of Makassar. This health center was purposively selected as the research site because it had recorded the highest number of DHF cases in Makassar in 2021. The high incidence of DHF in this area made it a relevant and strategic location for conducting a program evaluation study, as it would allow the researcher to understand how the eradication program functioned in a high-burden setting. The selection was, therefore, based on specific considerations related to the research needs rather than random choice, ensuring that the data collected would provide meaningful insights.

Informants for this study were selected using a snowball sampling technique, which is commonly used in qualitative research when the population of interest is limited or when potential participants are best identified by other knowledgeable individuals. Through this technique, the researcher initially approached one informant who met the criteria, and this person then recommended additional informants who were also directly involved in the DHF eradication program. In total, five individuals participated in the study, all of whom were chosen due to their direct roles, responsibilities, and knowledge regarding the DHF program. These participants included the Head of the Mangasa Puskesmas, the DHF Program Coordinator, an Environmental Health Officer, a Surveillance Officer, and a Community Larva Monitor (Jumantik). Each of these informants contributed unique and complementary perspectives that enriched the understanding of program implementation. Primary data was collected through face-to-face, in-depth interviews. The researcher used an interview guide consisting of open-ended questions designed to encourage informants to share comprehensive information about the planning, implementation, obstacles, and overall functioning of the DHF eradication program. This method allowed the researcher to explore each topic broadly and to follow up with probing questions when necessary, ensuring that every relevant detail could be captured through the interviews. The conversational nature of the interviews also allowed informants to express their experiences and opinions freely.

The data obtained from the interviews were analyzed using descriptive qualitative analysis. This involved several systematic steps, starting with transcribing the interview recordings into written form. The next step was data reduction, where the researcher selected, simplified, and organized the information by focusing on the most relevant findings related to the study objectives. These reduced data were then presented in a narrative format to illustrate the main themes that emerged from the interviews. Finally, conclusions were drawn based on the patterns identified, ensuring that the results were aligned with the research questions. To ensure the credibility and validity of the data, the study employed source triangulation. This validation method was conducted by comparing, contrasting, and verifying the information provided by one informant with the statements given by other informants. Through this cross-checking process,

the researcher could ensure that the information collected was reliable, consistent, and trustworthy. Triangulation strengthened the overall quality of the findings by minimizing bias and confirming the accuracy of the data. This study uses the term "participant" to refer to the individuals being researched. In qualitative research, the number of participants typically ranges from five to ten individuals. However, data collection may be concluded earlier, and no additional participants may be recruited if the point of saturation is reached. Saturation occurs when similar responses are repeatedly obtained from participants and no new information or themes emerge, indicating that further data collection is unlikely to contribute additional insights.

3. RESULTS AND DISCUSSION

1. Input

Based on the interviews conducted, it was found that the availability of health workers for the Dengue Hemorrhagic Fever (DHF) eradication program at the Mangasa Community Health Center (Puskesmas) was sufficient. The informants explained that the health workforce involved in the DHF control program (P2DBD) was considered adequate, as the implementation of the program was not solely carried out by the officer in charge of the DHF program but also involved coordination and collaboration with other divisions. However, despite the adequate availability of human resources, several obstacles were identified during the implementation of the DHF disease control program. The following are excerpts from the informants' statements:

"The number of personnel is sufficient. From the environmental health unit, it is usually only myself and Mrs. Ade who conduct field activities, and we are also assisted by larva monitoring volunteers (jumantik)."

(D, 54 years old, main informant)

"I believe it is already quite adequate, because in the DHF program as well as in other health programs, we divide tasks among various units. This is a common strategy used to optimize the utilization of available human resources. Each unit usually has its own roles and responsibilities."

(GARP, 37 years old, key informant)

2. Proses

a. Mosquito Nest Eradication (Pemberantasan Sarang Nyamuk - PSN)

Based on the interviews conducted, it was found that the DHF control program (P2DBD) has an established procedure for mosquito nest eradication. The informant's explanation regarding this matter is as follows.

"Before taking action, we first conduct an initial survey. We check mosquito breeding sites such as garbage disposal areas, bathtubs, dispensers, and plant pots. If larvae are found, abate is applied, followed by the implementation of 3M activities. After that, periodic monitoring is carried out. Larva monitoring volunteers are the ones who most frequently conduct the monitoring, and we also evaluate how effective this program is at the end of each month."

(D, 54 years old, main informant)

"The implementation of mosquito nest eradication must be carried out because it is one of the programs aimed at reducing the number of DHF cases. This activity is effective in reducing the population of mosquitoes that are at risk of transmitting the disease to the community."

(GARP, 37 years old, key informant)

b. Larvicide

Based on the interviews conducted, it was found that one method to prevent DHF cases is by distributing Abate to control the mosquito vector. The procedure for this larvicide distribution is carried out after program staff have surveyed the environment in an area with DHF cases. The following is the informant's explanation regarding larvicide.

This was corroborated by a supporting informant, who stated that periodic larvae monitoring is conducted twice a week to observe larval development. The application of larvicide is implemented according to a predetermined schedule, such as during the Mosquito Nest Eradication (PSN) and Periodic Larvae Monitoring (PJB) programs, as well as in response to periodic reports.

"...The larvicide used is abate, which is applied by adding or sprinkling it into standing water where mosquito larvae are found. The abate used here is in tablet form, with a dosage of one tablet for every 10 liters of water. After the application of abate, monitoring is conducted by larva monitoring volunteers (jumantik). In addition, we also distribute abate to households surrounding the residence of the DHF patient. This is usually carried out during epidemiological investigations (PE), when larvicide is applied in the area around the investigated house, as well as during the implementation of Mosquito Nest Eradication (PSN) and Periodic Larvae Monitoring (PJB) activities..."

(D, 54 years old, main informant)

"...The application of abate is carried out during the PSN and PJB programs, as well as when there are reported cases ..."

(AA, 54 years old, key informant)

c. Focus Fogging

Based on the interviews conducted, it was found that this fogging method primarily targets adult mosquitoes. An informant stated that focus fogging is carried out in the vicinity of each patient's home. The following is a quote from the interview with the informant on this matter.

"...Fogging is intended to kill adult mosquitoes as well as those that are breeding, in order to eliminate the transmission of the disease."

(D, 54 years old, main informant)

The informant also explained the procedures for implementing fogging activities. The following is the informant's statement regarding this matter:

"...For fogging, the first step is to identify the location after receiving reports from the community. After that, an epidemiological investigation (PE) is conducted. If a case is identified, it is immediately reported to the Health Office to carry out fogging. Usually, a response from the Health Office is received within two or three days. During the fogging implementation, supervision is carried out to ensure optimal coverage of the insecticide. We also advise the community not to enter areas that are still wet after fogging. After the activity, we conduct an evaluation to assess the effectiveness of fogging and determine whether there is a significant reduction in the mosquito vector."

(AA, 54 years old, key informant)

d. Health Education

Based on interviews conducted, it was found that health education regarding DHF (Dengue Hemorrhagic Fever) is carried out at Posyandu (integrated health posts), in schools, and sometimes through door-to-door visits. An informant also stated that the goal of this health education is to increase public knowledge about DHF, thereby making the DHF program implementation more effective.

"...Sometimes it is conducted at Posyandu, sometimes door-to-door together with larva monitoring volunteers (jumantik), or sometimes only by the jumantik themselves. It is also carried out in schools, but mostly at Posyandu."

(H, 55 years old, main informant)

The informant also stated that health education activities aim to increase community knowledge about Dengue Hemorrhagic Fever (DHF) so that the implementation of the DHF program can be more effective. The following is the informant's statement regarding this matter:

"...This health education is very important for disease prevention and control efforts, as it helps the community understand the importance of broader DHF control measures, including vector control ..."

(AA, 54 years old, key informant)

e. Periodic Larvae Inspection

Based on the interviews conducted, an informant described the procedure for periodic larvae inspection (Periodic Larvae Inspection - PJB). The following is the informant's statement on this matter. According to the informant, the implementation of PJB is necessary to reduce and prevent mosquito breeding, as well as to create a healthy and comfortable environment.

"...Initially, Mosquito Nest Eradication (PSN) is carried out by inspecting areas where mosquitoes commonly nest and breed. If larvae are found, larvicides are applied. This is followed by supervision by larva monitoring volunteers (jumantik), which is conducted weekly, with reports submitted monthly to ensure that the mosquito population is under control. If mosquitoes or larvae are found again, the eradication steps are repeated ..."

(D, 54 years old, main informant)

Based on the informant's account, the implementation of Periodic Larvae Monitoring (PJB) must be carried out to reduce and prevent mosquito breeding and to create a healthy and comfortable environment. The following is the informant's statement regarding this matter:

"...It is certainly very beneficial for the community because it reduces and prevents mosquito breeding and helps create a comfortable environment..."

(AA, 54 years old, key informant)

f. Epidemiological Investigation

Based on the interviews conducted, it was found that there is an established procedure for conducting an epidemiological investigation. According to an informant, this epidemiological investigation is carried out after a report of a DHF (Dengue Hemorrhagic Fever) case has been received.

"...The procedure begins with identifying cases reported by hospitals, laboratories, and larva monitoring volunteers (jumantik). After that, the epidemiological investigation (PE) form is completed following inspections at the patient's residence and 20 surrounding households..."

(D, 54 years old, main informant)

Based on the informant's account, epidemiological investigations are carried out after receiving reports indicating the presence of Dengue Hemorrhagic Fever (DHF) cases. The following is the informant's statement regarding this matter:

"...Epidemiological investigations are conducted after cases are detected, usually during the peak transmission season, and are also carried out whenever there are reports of cases..."

(AA, 54 years old, key informant)

3. Output

In interviews concerning the outputs of the DHF control program (P2DBD), each program implementer also described the program's achievements. The informant stated that an impact of the DHF control program (P2DBD) on the community is increased public awareness of maintaining environmental cleanliness, which in turn reduces mosquito breeding sites. Furthermore, the informant mentioned that another impact of the program's implementation is a decrease in DHF cases within the working area of the Mangasa Community Health Center (Puskesmas).

DISCUSSION

1. Input

Based on interviews conducted with informants, it was determined that the availability of health workers in the implementation of the Dengue Hemorrhagic Fever (DHF) control program at Mangasa Community Health Center (Puskesmas) is considered adequate. Informants emphasized that the health workers engaged in the DHF control program (P2DBD) are sufficient not only because the person in charge of the program manages the implementation, but also because there is coordination with multiple other divisions within the Puskesmas. This indicates that the P2DBD program is a cross-program and interdepartmental activity, involving collaborative efforts from different units, which strengthens program implementation.

The interviews also revealed that the implementation of the DHF control program faces several challenges, which can be grouped into internal and external factors. Internal factors include limitations in facilities, infrastructure, and equipment needed to perform activities efficiently. The workload of health staff was also highlighted as a factor that could hinder program effectiveness, especially when staff are assigned multiple responsibilities beyond DHF control, such as managing other infectious disease surveillance tasks. Another internal challenge is the limited availability of formal planning documents, which can serve as reference guides for standardized program implementation and evaluation.

External factors affecting program implementation include community participation, which, while generally cooperative, is not yet fully optimal. Certain environmental conditions, such as stagnant water and densely populated housing areas, facilitate the breeding of *Aedes aegypti* mosquitoes, making program efforts more challenging. These combined factors provide a comprehensive understanding of the program's inputs, illustrating that while human resources are adequate, other input components require attention to maximize program effectiveness.

In summary, input components are fundamental for program success, as described by Azwar (1996), who argued that the quality and sufficiency of inputs significantly influence the achievement of program objectives. In the case of the P2DBD program, human resources have been identified as sufficient; however, attention to infrastructure, equipment, and documentation is crucial to ensure that program goals can be effectively met.

2. Process

The process of implementing the P2DBD program involves transforming inputs into outputs through various management functions, including planning, organizing, executing, and evaluating activities. Process evaluation is essential to determine how well the program plan is executed, identify bottlenecks, and ensure continuous improvement (Azwar, 1996). According to Indonesia's national DHF control guidelines, the case management process starts with an epidemiological investigation conducted by surveillance personnel, followed by larvae inspection by environmental health officers, and health education by health promotion staff.

Research findings support these guidelines, showing that the program at Mangasa Puskesmas follows standard operating procedures for each activity. Additionally, these findings align with research conducted by Ulfa & Anwar (2023), which reported that program implementation is carried out through cross-program and inter-sectoral collaboration. This is an important strategy to optimize limited human resources, as it distributes responsibilities among multiple staff members, ensuring that program activities continue without interruption. However, this contrasts with findings from Rubianti et al. (2020), which indicated challenges in securing sufficient personnel for DHF surveillance activities. In their study, surveillance officers often had heavy workloads because they managed multiple roles, including nursing duties and monitoring other infectious diseases, in addition to DHF surveillance.

WHO (2023) highlights that continuous monitoring and evaluation are critical for program managers to assess the effectiveness and efficiency of interventions. Evaluation objectives include measuring program achievements, detecting progress, identifying problems, assessing effectiveness, and ensuring proper resource allocation (Hasibuan, 2021). Below, each key process within the P2DBD program is elaborated with detailed procedural information based on interviews and observations.

a. Mosquito Nest Eradication (PSN)

Mosquito Nest Eradication (PSN) is a comprehensive responsibility shared by both the government and the community, involving continuous monitoring and collaborative action. The DHF PSN initiative forms a critical component in dengue control strategies and typically follows the 3M Plus program: draining, covering, and burying potential breeding sites. The objective of PSN is to control the *Aedes aegypti* mosquito population and, in turn, reduce DHF transmission (Gita, 2021).

Interviews revealed that PSN activities begin with environmental surveys conducted by trained personnel to identify mosquito breeding sites. When larvae are detected, Abate larvicide powder is applied, and follow-up monitoring is performed periodically by larvae inspectors (jumantik). Informants emphasized that eliminating mosquito breeding sites significantly reduces the number of DHF cases and effectively lowers the *Aedes aegypti* population. The participatory approach, which involves educating the community to maintain clean water containers and eliminate stagnant water, has been shown to enhance the sustainability of PSN activities.

In addition, PSN is not a one-time effort; continuous monitoring, reporting, and reinforcement activities are essential to maintain low mosquito densities throughout the year.

This approach also ensures early identification of new breeding sites, which is crucial for preventing seasonal outbreaks during periods of high rainfall or increased temperature, conditions that favor mosquito reproduction.

b. Larviciding

Larviciding is a vector control strategy that involves applying insecticide powder to water storage containers and other areas where mosquitoes breed. This method is effective in eradicating larvae, thereby reducing the adult mosquito population and preventing the spread of dengue fever. According to the Ministry of Health of the Republic of Indonesia (2017), larviciding is carried out if residual DHF transmission occurs, the location meets larviciding criteria, the Larva-Free Rate (Angka Bebas Jentik – ABJ) is below 95%, or the region enters the DHF transmission season.

Interviews revealed that larviciding is implemented by Puskesmas staff upon receiving reports from the community or during routine environmental surveys. Staff distribute Abate powder to water containers in households, schools, and public areas. Periodic monitoring ensures that larvae levels decrease according to expectations. Despite its importance, documentation of larviciding activities in 2022 was not available, limiting the ability to evaluate implementation effectiveness. The lack of documentation highlights the need for systematic record-keeping to assess program consistency with planned activities.

Larviciding also serves as a preventive measure, particularly during the rainy season when mosquito breeding sites multiply. By targeting water containers and stagnant water, larviciding helps disrupt the mosquito life cycle and reduces the likelihood of dengue outbreaks. Furthermore, community engagement in larviciding activities, such as assisting with identifying breeding sites and applying larvicide under guidance, reinforces public awareness and responsibility for dengue prevention.

c. Focus Fogging

Focus fogging involves the targeted spraying of insecticides in areas surrounding confirmed or suspected DHF cases, generally within a 200-meter radius. Fogging is typically conducted in two cycles, with an interval of one week between applications, to ensure adult mosquitoes are effectively eliminated. The Ministry of Health (2017) states that fogging should be carried out only after epidemiological investigation confirms the presence of DHF cases.

Informants reported that before fogging, Puskesmas staff notify the District Health Office and supervise the area during application to ensure complete coverage. Residents are advised to avoid the treated area during the process. Focus fogging primarily targets adult *Aedes aegypti* mosquitoes to reduce the risk of disease transmission. This targeted approach is effective in controlling outbreaks while minimizing exposure to insecticides for non-target populations.

Fogging is also an essential component of outbreak response, providing rapid reduction of adult mosquito populations in high-risk areas. By combining fogging with PSN, larviciding, and community education, the program ensures a comprehensive approach to vector control that addresses all stages of the mosquito life cycle.

d. Health Education

Health education aims to inform communities about DHF transmission, symptoms, prevention methods, and the importance of environmental hygiene. The Ministry of Health (2017) recommends education at village, sub-district, and regency levels. Education is conducted by health workers in Posyandu, schools, and through door-to-door visits.

Observations indicate that health education was conducted according to guidelines; however, program achievement in this area was the lowest compared to other P2DBD activities, reaching only 67% of the 85% target. The lack of formal documentation on planning and evaluation further complicates the assessment of program effectiveness. Nevertheless, health education remains a critical component in fostering community participation and sustainability in vector control.

Education programs cover not only knowledge dissemination but also practical guidance on reducing mosquito breeding sites, such as cleaning, covering, and burying containers, using mosquito repellents, and employing physical barriers like mosquito nets. By empowering individuals with knowledge and practical skills, health education contributes to a long-term reduction in DHF risk.

e. Periodic Larvae Inspection (PJB)

Periodic Larvae Inspection (PJB) involves regular monitoring of potential mosquito breeding sites to identify and eliminate *Aedes aegypti* larvae. Health workers and trained community members conduct inspections weekly, examining approximately 100 randomly selected households per village or area.

The results are analyzed using the Larva-Free Rate (ABJ) indicator, representing the percentage of inspected locations free from mosquito larvae. Informants explained that PJB is vital to assess the effectiveness of PSN activities and to identify emerging breeding sites. The inspection results inform subsequent interventions, such as larviciding or targeted community education. PJB contributes to creating a clean and healthy environment while providing quantitative data to monitor program progress.

f. Epidemiological Investigation (PE)

Epidemiological Investigation (PE) is conducted after receiving reports of DHF cases. Activities include tracing additional suspected or confirmed cases, inspecting larvae in patients' homes and surrounding areas, and identifying environmental risk factors. PE aims for early detection of DHF cases, timely treatment, and prevention of outbreak escalation (Kejadian Luar Biasa – KLB).

Larvae inspections conducted during PE also identify new potential breeding sites, allowing preventive measures to be implemented promptly. The combination of PE with PSN, larviciding, and health education ensures a comprehensive strategy addressing both human cases and vector control simultaneously.

3. Output

Based on the interviews conducted, it was found that the success indicators for the dengue hemorrhagic fever (DHF) eradication and control program at the Mangasa Community Health Center (Puskesmas) include a decrease in the number of DHF cases, a reduction in DHF-related mortality, the effectiveness of implemented vector control measures, and inter-agency coordination.

An informant also stated that the program's achievements have nearly met their established targets. For example, Mosquito Nest Eradication (PSN) has reached 85% of its 90% target; the implementation of larviciding was reported as being quite good, involving the distribution of Abate to every household; fogging has been implemented according to standards, specifically covering a 100-meter radius around the homes of DHF patients; epidemiological investigations have been conducted thoroughly, covering approximately 20 houses surrounding

a patient's home (in front, behind, to the left, and right); and Periodic Larvae Inspection (PJB) has achieved a rate of 90%, against a target of 95%. The only program that remains significantly below its target is health education, which has only achieved 67% of its 85% target.

Based on the observations conducted, no documents related to program implementation planning, activity reports, or past evaluation results were found. As a result, the accuracy of the data presented by the informants could not be validated. Furthermore, the program's impact on the community could not be determined with certainty, as no specific interviews were conducted with the target beneficiaries. Since planning and evaluation documents were unavailable, these aspects could not be analyzed in-depth.

Evaluation aims to provide accurate information for decision-making regarding program planning, input components, implementation activities, and outputs, including the program's results and impacts. An evaluation cannot be properly conducted if a plan is not well-formulated, as it becomes impossible for implementers to determine the extent to which the program's execution aligns with the established plan.

4. CONCLUSION

Based on the results of the research conducted on the evaluation of the implementation of the dengue hemorrhagic fever eradication program at the Mangasa Community Health Center (Puskesmas), Tamalate Sub-district, Makassar City, in 2022, it can be concluded that the availability of human resources for the dengue hemorrhagic fever (DHF) eradication program at the Mangasa Health Center is sufficient. The program's implementation involves several personnel from various fields, such as surveillance officers, environmental health officers, health promoters, and *jumantik* (community mosquito larvae monitors). The implementation of mosquito nest eradication (PSN), larvicide application, targeted fogging, counseling, regular larva inspections (PJB), and epidemiological investigations has been carried out in accordance with established procedures. The obstacle in implementing the program is that the community is not responsive when health officers carry out the program. However, regarding the preparation of program planning, program evaluation results, and activity reports, the health center could not provide them. Therefore, it is not possible to conduct an in-depth review for evaluation because there are no guidelines or specific plans for program implementation to determine whether it has been carried out as implemented.

Based on the research conducted on the evaluation of the dengue hemorrhagic fever eradication program at the Mangasa Health Center in 2022, it can be concluded that while human resources are sufficient involving surveillance officers, environmental health officers, health promoters, and *jumantik* (community mosquito larvae monitors) there are significant issues with execution and documentation. Although program achievements were reported to be near their targets, with the notable exception of health education (67% of an 85% target), these accomplishments could not be verified. This was due to a critical lack of documentation, as the health center could not provide program plans, complete activity reports, or any formal evaluation results. There was a decrease in dengue fever (DF) cases in the working area of Mangasa Health Center in 2022, with a total of 22 cases. In contrast, in 2021, dengue cases reached 87 cases. However, to see how well the planning aligns with the program implementation, the related documents could not be provided by the Health Center. Therefore, the researcher could only review the program implementation process. It is hoped that this study can serve as a new reference for healthcare services, particularly to provide a comparison of decision-making systems in disease control.

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