



## Effectiveness Of Ovitrap Socialization On Increasing Knowledge About How To Control Dengue Fever (Dhf) In Students At Smp Darma Medan

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### ABSTRACT

In 2022 in North Sumatra, the number of DHF cases reached 8,541 cases, an increase from 2,932 cases in 2021. Deaths due to DHF also increased, where in 2021 the death rate was 16 people to 60 people in 2022. One of the efforts to control Dengue Fever (DHF) is to increase efforts to eradicate the vector that transmits DHF. The purpose of this study was to determine the effectiveness of socialization of ovitrap making on the knowledge of participants (students) on how to control the population of mosquito vectors that cause Dengue Fever. Experimental method in the form of single case pretest-posttest design was used as the method in this study. The results obtained were an increase in student knowledge by 45% after socialization, with an average value before socialization of 6.3 and after socialization increased to 9.1. So that the Ngain score value is 0.77 with (%) 77%, which means that the Socialization of Ovitrap Making has effectiveness in increasing the knowledge of Darma Medan Junior High School students. The conclusion in this study is that the socialization carried out has an effectiveness that is useful for increasing students' knowledge and awareness of how to deal with Dengue Fever (DHF). The researcher suggested that the school continue to monitor the development of understanding about Dengue Fever.

**Keywords :** Dengue Fever, Environment, Devotion

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### INTRODUCTION

Cases of Dengue Hemorrhagic Fever (DHF) in an area illustrate how many DHF mosquitoes are in that area, the high number of DHF cases in an area is determined by the high population of *Aedes Aegypti* and *Aedes Albopictus* mosquitoes in an area. During the rainy season there are puddles of water that can be a breeding ground for mosquitoes, so that mosquitoes have a major role in increasing DHF cases during the rainy season. Other factors besides the presence of vectors that can influence DHF cases are environmental conditions, changes in housing density, behavior, and also high population mobility. (Prameswarie et al., 2024). DHF cases in Indonesia at the end of 2022

reached 143,000 cases, with West Java province as the province with the most DHF cases, followed by East Java and Central Java provinces. The number of cases above are only reported cases, it is estimated that only around 30% seek health services and some others experience misdiagnosis. Underreporting of DHF cases is caused by several obstacles such as operational, logistical, and technical in hospitals and health offices. The death toll reached 1,236 deaths due to Dengue Hemorrhagic Fever, with the distribution of deaths concentrated in the top 3 provinces of West Java, East Java, and Central Java with 58% of the total 1,236 deaths<sup>2</sup>. (Kemenkes RI, 2023). In North Sumatra, DHF cases reached 8,541 cases at the end of 2022, with 60 deaths. This number has increased drastically compared to the previous year 2021, which was 2,932 cases with 16 deaths (Dinas Kesehatan Sumatera Utara, 2023). Based on data taken directly from the Medan City Health Office, DHF cases in Medan City totaled 965 cases at the end of 2023, with 2 deaths. (Wahdaningsih & Hestiva, 2024)

The efforts to eradicate Dengue Fever by the Ministry of Health are divided into 3, namely: Early diagnosis and rapid treatment, Increasing disease surveillance activities and vector surveillance, and the most important thing is to increase efforts to eradicate vectors that transmit DHF (North Sumatra Health Office, 2022). Therefore, to increase knowledge and awareness about dengue fever and its preventive measures to the community, socialization and counseling to the community. (Wahdaningsih & Hestiva, 2024)

In a study conducted by (Virgianti et al., 2023), getting good results through counseling can increase public knowledge about DHF and how to deal with it. In this activity, they conducted counseling using Ovitrap media to educate the public on how to deal with mosquitoes. With counseling on making ovitraps, it is hoped that the community can make their own at home with simple materials, so that they can reduce the spread of dengue mosquitoes. SMP Darma Medan is a Private Junior High School, located in the Medan Johor area. In the first observation, the researcher looked at the school situation. The density of the school building with residential housing allows the school to have humidity that allows mosquitoes to nest. Uncovered trash cans also have the potential to become mosquito nests. The results of the self-awareness survey distributed by the researcher with the school's permission to students also found that there were several students who had suffered from DHF in the last 3 months. Therefore, the researcher carried out the Socialization of Ovitrap Making About How to Control Dengue Fever to Students at SMP Darma Medan. This aims to increase students' knowledge about controlling dengue fever.

## **METHODS**

Experimental method in the form of single case pretest-posttest design is the method used in this research. This design is useful to see the effectiveness of socialization in increasing students' knowledge about Dengue Fever Control Efforts. By using an instrument in the form of a questionnaire consisting of 10 questions taken from the knowledge questionnaire by (Nasution,

2019), students will be given a pre-test before the socialization begins. After the pre-test, the socialization material and ovitrap making practice were given. After the practice of making ovitraps, students continued with a post-test with the same questions as the pre-test, with the aim of seeing an increase in student knowledge after socialization. The population of this study was all students of SMP Darma Medan, the sampling method was total sampling with the provisions of the sample was grade 9, so the number of samples was 30 students. The test used in this study was the Ngain test by looking at the scores before and after socialization. This research has obtained permission from the faculty with letter number B.2809/Un.11/KM.I/PP.00.9/12/2024.

## RESULTS AND DISCUSSION

**Table 1.** Respondent Characteristics

Characteristics	Respondents	
	n	%
Gender		
Man	14	46.7
Woman	16	53.3
Class		
9	30	100
Age		
13 years old	1	3.3
14 years	23	76.7
15 years	6	20
Total	30	100

Based on table 1. Above, it shows the characteristics of the respondents, namely, all respondents totaling 30 (100%) male and female students who are grade 9 students. The male respondents totaling 14 (46.7%) respondents, and the female respondents totaling 16 (53.3%) respondents. With the age of each respondent, namely, 1 (3.3%) respondent is 13 years old, 23 (76.7%) respondents are 14 years old, and 6 (20%) respondents are 15 years old. Based on table 1. Above, it shows the characteristics of the respondents, namely, all respondents totaling 30 (100%) male and female students who are grade 9 students. The male respondents totaling 14 (46.7%) respondents, and the female respondents totaling 16 (53.3%) respondents. With the age of each respondent, namely, 1 (3.3%) respondent is 13 years old, 23 (76.7%) respondents are 14 years old, and 6 (20%) respondents are 15 years old.

**Table 2.** Pre-Test and Post-Test Results

Question	Correct Answer		Improvement
	Pre-test	Post-test	
Question 1	30 (100%)	30 (100%)	0 (0%)
Question 2	30 (100%)	30 (100%)	0 (0%)
Question 3	3 (10%)	25 (83.3%)	22 (73.3%)
Question 4	29 (96.7%)	30 (100%)	1 (3.3%)
Question 5	0 (0%)	13 (43.3%)	13 (43.3%)
Question 6	1 (3.3%)	27 (90%)	26 (86.7%)
Question 7	7 (23.3%)	30 (100%)	23 (76.7%)
Question 8	30 (100%)	29 (96.7%)	0 (0%)
Question 9	29 (96.7%)	29 (96.7%)	0 (0%)
Question 10	30 (100%)	30 (100%)	0 (0%)

Based on table 2. Above, it shows the results of the pre-test and post-test that have been conducted on respondents. It can be seen in question 1, question 2, question 8, question 9, and question 10 that there is no increase in correct answers because all students have answered correctly during the pre-test and also answered correctly during the post-test. The very large increase occurred in question 6, with an increase of 26 (86.7%) respondents answering correctly, so that at the time of the post-test the respondents who answered correctly were 27 (90%) respondents. An increase also occurred in question 7, question 3, question 5, and also question 4 with each increase of 23 (76.7%) respondents, 22 (73.3%) respondents, 13 (43.3%) respondents, and 1 (3.3%) respondents.

**Table 3.** Effectiveness of Socialization on Increasing Knowledge

Pre-Test Average	Post-Test Average	Gain Score	Gain Score (%)
6.3	9.1	0.77	77%

Based on table 3. Above, it can be seen that there was an increase in the average pre-test and post-test scores. The average pre-test score obtained by respondents was 6.3 and there was an increase after the socialization was carried out to 9.1. With this value, a Ngain test was carried out which aimed to see the effectiveness of the socialization activities that had been carried out, with a Ngain score of 0.77 and a Ngain Score (%) of 77%. From the Ngain value obtained of  $0.77 > 0.7$  and  $77\% > 76\%$ , the socialization carried out had high effectiveness in increasing students' knowledge about Dengue Fever.

The activity was carried out at SMP Darma Medan located at Jl. Karya Sehati No.6 Pangkalan Mansyur, Kec. Medan Johor, Medan City on Tuesday, December 17, 2024. The number of students

at SMP Darma Medan is around 300 students. The number of students who participated as participants and respondents of the activity were all 30 students in grade 9 aged 13-15 years.

The results of the Pre-test and Post-test conducted showed that the level of knowledge of respondents after being given counseling increased. It can be seen that the average value of respondents during the pre-test was only 6.3, but after socialization regarding DHF and also the Making of ovitraps, the knowledge of respondents increased with an overall average of respondents getting a score of 9.1. With the increase in the pre-test and post-test values, the Ngain Score test was carried out, getting a result of 0.77 and a Ngain Score (%) of 77%, which means that socialization regarding DHF and the making of ovitraps has an Effectiveness on respondents' knowledge.

These results are in line with research conducted by (Zubaidah et al., 2021) which states that counseling activities for students are effective in increasing knowledge about dengue fever. Teaching delivered through counseling about dengue fever and how to deal with it has been proven effective in increasing students' knowledge, attitudes and actions towards dengue fever control behavior. To change behavior, it can be used by increasing knowledge in order to stimulate behavior to change, where knowledge can be obtained from anything such as print or electronic media, participating in socialization or counseling.

In a study conducted by (Sukesu et al., 2024), it was stated that activities such as providing knowledge and training in making ovitraps are initiatives in preventing and controlling DHF. The activities carried out showed a significant difference in understanding about making ovitraps before and after training. To reduce the *Aedes Aegypti* population in efforts to control Dengue Fever, it can be increased by providing education and training simultaneously. In addition, the community needs to be involved to be active in prevention efforts through awareness campaigns and ongoing support.

## **CONCLUSION**

There was an increase in the knowledge of Grade 9 students of SMP Darma Medan after the socialization, so it can be concluded that the socialization was effective in increasing the knowledge of students of SMP Darma Medan about efforts to prevent and control *Aedes Aegypti* mosquitoes as a vector of DHF. The participants also have knowledge and skills in making ovitraps or egg traps, attractants and installing the ovitraps inside or outside the house independently. Even so, there is a need for monitoring or evaluation of students carried out by teachers or parties responsible for students and students in order to continue to monitor the development of students regarding Dengue Fever. It is hoped that future researchers will be able to monitor longer the development of students related to knowledge and behavior in efforts to prevent dengue fever.

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