



Education and Socialization of Mosquito Nest Eradication with 3M Plus Movement to Students and Teachers at SMA Negeri 1 Binjai District, Langkat District, North Sumatera, Indonesia

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ABSTRACT

Until now, there has been a tendency for dengue fever patients to increase, and its transmission has become one of Indonesia's most common public health problems. Getting rid of mosquito nest eradication (MNE) with the 3M Plus Movement regularly, which includes draining water reservoirs, burying used items, and closing water reservoirs, which make it harder for mosquitoes to breed, can stop the spread of dengue. Even though this disease can attack all groups, several studies have shown that children and teenagers are more susceptible to dengue fever, so it is essential to make efforts to increase understanding and education for school-aged children, including high school students and teachers, who must work together to prevent dengue fever. As a result, the community service team from the Medical Faculty of Universitas Sumatera Utara carried out this activity using an outreach strategy that included questions and answers with students about MNE, Clean and Healthy Living Behavior, and other topics as well as the actual implementation of 3M Plus. A good understanding of MNE among students and teachers allows for the formation of awareness of MNE's significance in the school environment, which is the outcome of this activity.

Keyword: Dengue Fever, Mosquito Nest Eradication, 3M Plus movement, High School Students



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1. Introduction

Currently, healthcare efforts in Indonesia have yet to be implemented in a comprehensive, integrated, and sustainable manner. The high incidence of disease outbreaks, one of which is the dengue hemorrhagic fever (DHF) outbreak, is an example of a case that shows that healthcare programs that are promotive and preventive are still not in line with and have not been implemented well with the Healthy Indonesia Program, which focuses on disease prevention, because all regions in Indonesia are at risk of contracting dengue fever [1]. Until now, there has been a tendency for the number of dengue fever patients to increase and spread, so it has become one of Indonesia's most common public health problems. As both an endemic and epidemic disease, dengue fever is found almost worldwide, especially in tropical and subtropical countries. An increase in dengue vector activity is usually associated with high rainfall, which causes large pools of water, especially in places that can become water reservoirs when it rains, making it easy for dengue to spread to humans through vectors, namely the bite of the *Aedes aegypti* mosquito and *Aedes albopictus* [2]. Several studies show that children and adolescents are more susceptible to dengue fever compared to other age groups, although this disease can attack anyone regardless of gender and age.

Various efforts can be made to stop the transmission chain of dengue fever, such as improving environmental quality (sanitation), reducing the *Aedes aegypti* mosquito population, preventing disease, and providing immediate treatment for dengue patients. Nonetheless, increasing knowledge, awareness, attitudes, and behavioral changes regarding dengue fever are crucial to monitor, as they will significantly aid in efforts to break the chain of dengue transmission. [3]. Re-cultivating the behavior of mosquito nests eradication (MNE) with the 3M Plus Movement regularly is an effort to reduce the number of extraordinary cases of dengue fever in disease prevention and control. Regular 3M movements, such as draining water reservoirs, burying used goods, and closing water reservoirs, effectively reduce mosquito breeding sites. This movement was expanded to include changing the water in flower vases, bird drinkers, or other similar places once a week, repairing water channels and gutters that are not running smoothly, closing holes in bamboo/tree pieces, sprinkling larvicide powder, raising larvae-eating fish, installing gauze wire, and ensuring adequate room lighting and ventilation [4]. Considering children's vulnerable immune systems and lack of knowledge about infectious diseases, especially environmental-based ones, dengue fever attacks children very quickly. School-age children are susceptible to change because they are in a phase of growth and development. At this stage, a child's condition is susceptible to stimuli, so educating, directing, and instilling good habits, including healthy living habits, is easy. In addition, at school age, children make realistic and critical observations. This shows that they have reached the stage of maturity and can think logically and critically. They also have great curiosity and desire to learn [5]. Therefore, it is essential to make efforts to increase understanding and education for students and teachers of SMA Negeri 1, Binjai District, Langkat Regency, so that they have healthy living behavior, know what MNE is, and how to properly eradicate mosquito nests, understand further, and implement it properly the Re-civilizing the 3M Plus

2. Implementation Methods

As a solution to this problem, the service team made an active effort to increase the knowledge and skills of students and teachers at SMA Negeri 1 Binjai District, Langkat Regency, regarding mosquito nest eradication and the 3M Plus Movement to reduce the incidence of disease. The Community Service Team comprises lecturers and students from the Faculty of Medicine, Universitas Sumatera Utara. The main goals are to get students and teachers to work together, make them more aware of how vital MNE is at school and home, and improve health facilities and infrastructure in schools by doing things like providing larvicide powder, keeping fish that eat larvae, making sure there is enough lighting and airflow, and planting plants that keep mosquitoes away and stop mosquitoes from making nests.

In general, activities consist of 4 stages, namely:

1. Stage I Education process, socialization about MNE. This process was carried out over 4 days, using teaching methods such as lectures, questions and answers. The topics given are about the meaning of MNE, the benefits of MNE, the application of MNE
2. Phase II Complete the facilities and infrastructure, including providing abate powder, installing wire mesh on ventilation, planting mosquito repellent plants, building larvae-eating fish ponds (1 week)
3. Stage III 3M Plus Movement Implementations (2 days)
4. Stage IV Submission of posters, leaflets and other educational media

After these community service activities, students and teachers will be more aware of the importance of eradicating mosquito nests. They will continue to implement the 3M Plus Movement at school or in the home environment. A survey was conducted to assess the sustainability of school supervision and supervision of the 3M Plus Movement, which was carried out randomly. This survey was conducted one month after the community service program.

3. Results and Discussion

In this activity, counseling was carried out to a total of 61 students of SMAN 1 Binjai. This activity was carried out on June 20 2024 according to the agreed schedule, starting at 09.00 am until 11.30 am in the classroom. This activity using two-way methods , where after the material is presented, students can be actively involved by answering questions in discussion session. This activity opened with a welcoming speech by Prof. Dr. Rina Amelia, MARS, Sp.KKLP as chair FK USU Community service and SMAN 1 Binjai principal as seen in Figure 1.



Figure 1. Opening remarks by Prof. Dr. dr. Rina Amelia, MARS, Sp.KKLP and SMAN 1 Principal

The event continued with the presentation of several materials including, 3M Plus, Clean and Healthy Living Behavior, prevention of Smoking and Drug Adolescence, and Introduction to Cervical Cancer which can be seen in figure 2 and followed by a question and answer session in figure 2.



Figure 2. material counseling by medical faculty students



Figure 3. Discussion session with students



Figure 4. Handing over prizes to students



Figure 5. Group photo of the Community Service Team with Teachers and Students of SMAN 1 Binjai

In the presentation of the material provided, it was seen that the students were very enthusiastic about listening to the material presented by the service team. They sat quietly and enthusiastically followed the counseling activity. At the end of each material presentation, as a form of evaluation of the information provided, the service team asked simple questions related to the material that had been delivered. Students were given questionnaire about Mosquito Nest Erradication With 3M Plus. Among 61 students participating, the results were 43 students with good knowledge level and 18 students with poor knowledge level of Mosquito Nest Erradication With 3M Plus.

Table 1. Students Characteristics

	N	%
Gender		
Male	15	24,6
Female	46	75,4
Knowledge Level		
Good	43	70,5
Poor	18	29,5
Total	60	100

In the implementation of this activity, the community service team provided health facility supplies to the SMAN 1 Binjai school, such as tensimeters and stretchers as well as supplies of various types of medicines. The event went smoothly and was closed with a prayer and a group photo which was all ensured in the form of photos and videos.

4. Conclusion

Hands-on practice regarding mosquito nest eradication with the correct 3M Plus is expected to be remembered and practiced in the daily lives of teachers and students. Education on 3M Plus mosquito nest eradication is important to be instilled early on so that it can be implemented and reduce the incidence of dengue hemorrhagic fever in the surrounding environment. Based on the survey

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