



Effect of Role Play Intervention on Knowledge, Attitudes, and Actions in Mosquito Nest Eradication for DHF Prevention in Tanjung Morawa Health Center, Deli Serdang

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<p>Track Record Article</p> <p>Accepted: 26 Oktober 2024 Revised: 27 November 2024 Published: 9 December 2024</p> <p>How to cite : Marganda, S., Syaputri, D., Tanjung, N., & Manik, E. K. (2024). Effect of Role Play Intervention on Knowledge, Attitudes, and Actions in Mosquito Nest Eradication for DHF Prevention in Tanjung Morawa Health Center, Deli Serdang. <i>Contagion : Scientific Periodical of Public Health and Coastal Health</i>, 6(2), 1365–1372.</p>	<p style="text-align: center;">Abstract</p> <p><i>One of the endemic illnesses in Indonesia and other nations is dengue fever. Aedes genus mosquitoes, particularly Aedes aegypti, are the vectors of dengue fever transmission. The growth of Aedes aegypti mosquitoes is significantly influenced by the environment. The Tanjung Morawa Health Center's working environment demonstrates the existence of dengue fever-causing mosquito breeding grounds, including the buildup of trash in the shape of bottles, glasses, aqua, plastic, and discarded water holding cans. This study aims to determine the effect of the intervention of the role play method of DHF prevention efforts on increasing community knowledge, attitudes, and actions regarding the eradication of mosquito nests in the working area of the Tanjung Morawa Health Center, Deli Serdang Regency in 2024. This research is a Quasi Experiment research with Pre and Post Test design. The research was conducted in the working area of the Tanjung Morawa Health Center, Deli Serdang Regency, which was carried out in June 2024. The population in this study were all heads of families who had DHF patients in Deli Serdang Regency. Sampling used purposive sampling technique. Data collection using pretest and posttest questionnaires. This health research used standing banners and mosquito nest eradication demonstrations to improve knowledge, attitudes, and actions of the community in preventing DHF. Data analysis with bivariate analysis paired sample t-test. The results showed a significant difference in knowledge, attitudes, and actions before and after the intervention with the role play method (p-value=0.001 <0.05).</i></p> <p>Keywords: Action, Attitude DHF, Knowledge, Role Play Method</p>
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INTRODUCTION

Dengue fever is one of the endemic diseases in Indonesia and several countries. Dengue Fever (DHF) is transmitted through the bite of mosquitoes of the Aedes genus, especially Aedes Aegypti. Therefore, efforts to prevent DHF must be implemented now that the government has organized Mosquito Nest Eradication which is carried out by draining, covering, and recycling (Kemenkes RI, 2019).

The incidence of DHF in Indonesia in 2022 was 45.387 cases. Meanwhile, the number of deaths due to DHF reached 432 cases (Kemenkes RI, 2022). DHF cases were found in almost all districts/cities in North Sumatra Province. In 2021, the district/city with the highest number of DHF cases was Deli Serdang District with 803 cases, with 58 cases in the Tanjung Morawa Health Center working area (BPS Sumut, 2021).

The application of the role-playing method facilitates students in actively learning through enacting roles. This approach represents a form of experiential teaching, enabling

students to engage with real-world scenarios. The benefits of implementing the role-playing method include students' ability to identify real-life situations and integrate diverse perspectives and ideas (Noerjoedianto et al., 2023). This identification enables a pathway to transform students' behaviors and attitudes as they embrace each character they portray. Through role-playing, students are able to express their feelings freely, without the constraints of words or physical movements (Putri et al., 2022).

Learning through play and reflection is crucial for enhancing children's skills, including improving their memory retention (Noerjoedianto et al., 2023). Educational games and multimedia have been proven effective in enhancing children's health knowledge. Research Kosasih et al., (2021), indicates that multimedia is effective in improving children's knowledge and attitudes regarding dengue fever prevention.

Efforts to prevent Dengue Hemorrhagic Fever (DHF) among school-aged children can be implemented through the application of role-playing therapy, enabling children to understand DHF prevention measures. In this role-playing method, selected students can engage in activities such as acting as health educators on DHF, portraying DHF patients, or taking on the role of community members living near DHF patients. These role-playing activities can serve as a proactive approach to prevent and manage Dengue Hemorrhagic Fever effectively (Yakin et al., 2019).

Research Simanjuntak (2021), It was stated that there was an increase in the average scores from pre- to post-intervention using the role play method and game-based method, demonstrating a significant difference in improving mothers' behaviors regarding Dengue Hemorrhagic Fever (DHF). Research Nugroho (2019), It has been stated that health education using the role-play method positively influences the improvement of students' knowledge and attitudes. Green & Kreuter (2000) argue that learning processes that actively engage students result in knowledge that is more enduring and long-lasting.

The change in attitudes before and after the intervention indicates that, within a relatively short time, role-play training activities can influence a person's attitude transformation. This aligns with the principles of the role-play method, which aims to foster critical thinking in individuals (Badar et al., 2019). Based on the issues outlined above, it is necessary to conduct research on the impact of the role-play intervention method in preventing Dengue Hemorrhagic Fever (DHF) to improve the community's knowledge, attitudes, and practices regarding mosquito breeding eradication in the Tanjung Morawa Health Center Work Area, Deli Serdang Regency.

METHODS

This study is a quasi-experimental research with a one-group pre-test and post-test design. The study aims to examine the effect of the role-play intervention method on improving the knowledge, attitudes, and practices of the community in the Tanjung Morawa Health Center Work Area, Deli Serdang Regency.

The research will be conducted in the Tanjung Morawa Health Center Work Area, Deli Serdang Regency, during June 2024. The population of the study includes 803 Dengue Hemorrhagic Fever (DHF) patients in Deli Serdang Regency. The sampling technique used is purposive sampling, focusing on individuals who meet specific criteria relevant to the study.

The inclusion criteria for this study are as follows: individuals aged ≥ 18 years, residing in or living within the Tanjung Morawa Health Center Work Area, willing to participate in the study by signing informed consent, in good physical and mental health to undergo the intervention activities, and committed to completing all stages of the study, including the pre-test, intervention, and post-test. The exclusion criteria for this study include individuals with health conditions that limit participation, such as severe physical or mental disorders, inability to attend more than one intervention session, prior involvement in similar programs or training related to mosquito breeding eradication, and lack of full active participation.

Data collection in this study is conducted through pre-test and post-test questionnaires to assess the community's knowledge, attitudes, and practices regarding mosquito breeding eradication before and after the role-play intervention. Direct observation is used to record actual 3M activities (Draining, Covering, and Burying) using a structured observation sheet. Structured interviews are employed to explore community motivations and barriers to implementing mosquito breeding eradication practices.

This health-focused research utilizes tools such as standing banners and demonstrations of mosquito breeding eradication techniques to enhance community knowledge, attitudes, and practices in preventing Dengue Hemorrhagic Fever (DHF). These methods aim to provide a comprehensive understanding of the intervention's impact while actively engaging the participants in meaningful learning experiences.

The data analysis used in this study involves the paired sample t-test with a confidence level of 95% ($\alpha = 5\%$) if the data follows a normal distribution. If the data is not normally distributed, the Wilcoxon signed-rank test will be applied, also with a confidence level of 95% ($\alpha = 5\%$).

RESULTS

Based on this study, it includes knowledge, attitudes, and actions of mosquito nest eradication in the community before and after the provision of intervention with the role play method regarding mosquito nest eradication in the community in Tanjung Morawa A village, Deli Serdang Regency. On the questionnaire sheet there are 28 question items. 10 items about knowledge, 10 items about attitudes and 8 items about actions. Correct is given a value of 1 and incorrect is given a value of 0.

Table 1. Differences in Knowledge, Attitudes, and Practices of the Community Before and After the Role-Play Intervention

Variable	Pretest	Posttest	Mean Difference	P-value
Knowledge	5.03	8.95	3.92	0.001
Attitude	5.89	9.58	3.69	0.001
Action	4.18	7.53	3.35	0.001

Based on the results of the study, it is known that there is an increase in the average knowledge, attitudes, and actions of the community after the intervention in the form of roleplay. The average knowledge of the community before the intervention was 5.03 and after the intervention was 8.95. The average community attitude before the intervention was 5.89 and after the intervention was 9.58. The average community action before the intervention was 4.18 and after the intervention was 7.53. Based on Table 1. it turns out that there is a significant difference in knowledge, attitudes, and actions before and after the intervention with the role play method ($0.001 < 0.05$). The differences that occur illustrate an increase in knowledge, attitudes, and actions. It can be concluded that intervention using the role play method can improve community knowledge, attitudes, and actions in eradicating mosquito nests.

DISCUSSION

The influence before and after intervention using the roleplay method on community knowledge, attitudes and actions

Health promotion encompasses all forms of combined health education and interventions designed to facilitate behavior change and create an environment conducive to health. One effective approach to health education for school-aged children is the role play method. Role-playing aims to provide a broader perspective on adopting new behaviors. This method can be implemented using two approaches: structured role-playing and spontaneous role playing (Saputra et al., 2019). The structured approach emphasizes the learning process through observing, practicing, imitating or conceptualization, and sharing experiences during role playing analysis. In contrast, the spontaneous approach focuses more on conceptualization while minimizing the analytical component (Nursalam et al., 2008).

Knowledge is the result of human sensing or the result of someone knowing an object through the senses they have (eyes, nose, ears, and so on) and knowledge measurement can be done by interview or questionnaire asking about the content of the material to be measured from the research subject or subjects (Notoadmojo, 2018). From the results of the study, the average value of knowledge before the role play intervention was 5.03 after the intervention the average value was 8.95 so that there was an increase with a percentage of 78.9%. in line with the theory according to Notoatmodjo (2018), there is an increase in knowledge due to the results of human sensing through objects seen. With the roleplay method, people can interact and simulate real situations regarding the eradication of mosquito nests. In this case, the role play method can increase public knowledge regarding the eradication of mosquito nests. This is demonstrated by the rise in value both before and after the role-playing session. Knowing is the outcome of knowing, which happens when people experience a certain object. Human eyes and hearing are the primary sources of knowledge. Everybody knows something different. Numerous elements, such as age, education, media exposure, socioeconomic status, and social and economic ties, affect an individual's degree of knowledge.

The role-play method intervention in Dengue Hemorrhagic Fever (DHF) prevention holds significant potential in enhancing community knowledge, attitudes, and practices regarding mosquito breeding eradication. This method allows participants to actively engage in simulations of real-life scenarios, thereby deepening their understanding and skills in implementing effective prevention measures (Kurniawan et al., 2022).

During the implementation of role play, the community was very interested in participating in mosquito nest eradication activities which caused the community to remember the messages they had felt while doing and seeing the role play that occurred. so that the posttest results increased. Knowledge is the result of remembering something, including remembering events that have been experienced either intentionally or unintentionally and occurs after someone makes contact or observes an object (Utari et al., 2023; Himah et al., 2018)

According to Notoatmodjo (2018), attitudes have three main components, namely: awareness, feelings, and behavior. From the results of the study, the average attitude value before the role play intervention was 5.89 after the intervention, the average value was 9.58 so that there was an increase of 62.6%. The increase in attitudes in this study was due to self-awareness from the community regarding the prevention of mosquito nest eradication. Attitude is a reaction or response that is still closed from a person to a stimulus or object. Attitudes cannot be seen directly, but can only be interpreted first from closed behavior. Attitudes clearly show the suitability of reactions to certain stimuli. Role play method intervention in preventing

mosquito nest eradication has a positive impact on improving community attitudes towards preventing mosquito nest eradication. The increase in attitudes that occurs in the community is likely due to the knowledge gained being able to create understanding and belief in their needs as respondents who must behave in a clean and healthy way. After the intervention, the delivery of information is more attached and makes people more interested in doing and paying attention to it. The advantages of the role play method are that it can be strongly and lastingly memorable, because of the pleasant experience and arouse passion and optimism in the community and create a sense of togetherness.

According to Sury et al., (2021), Action is an act that is done or carried out from the results of someone's observations when seeing or listening to something. Action is carrying out or practicing something after someone makes an assessment or opinion. One of the factors that drives a person to act is influenced by knowledge, attitudes, beliefs and values. From the results of the study, the average value of action before the role play intervention was 4.18 after the intervention, the average value was 7.53 so that there was an increase of 80.1%. The increase in action occurred due to the results of direct observations by the community who saw and carried out role plays about eradicating mosquito nests.

Based on research Nafi'a et al., (2024), Research shows that the role-playing method is effective in increasing elementary school students' knowledge of Dengue Hemorrhagic Fever (DHF) prevention. This improvement highlights the potential of role-playing as an interactive learning approach to enhance students' understanding and bridge knowledge gaps. The findings align with previous studies that emphasize the effectiveness of interactive and immersive learning methods in significantly improving students' learning outcomes and their comprehension of subject matter. This demonstrates that role-playing not only fosters engagement but also promotes a deeper understanding of preventive health measures (Syahfitri et al., 2023).

Research Simanjuntak (2021), The effectiveness of Dengue Hemorrhagic Fever (DHF) counseling using the role-play method and simulation games on maternal behavior in Medan Deli District has been demonstrated. The results indicate that both methods significantly improved DHF prevention behaviors, with an average knowledge increase of 1.40 for the role-play method and 1.53 for the simulation game method. These counseling activities play a crucial role in driving changes in knowledge and behavior, emphasizing the importance of interactive and engaging approaches in public health education (Bawole et al., 2018). Research Gasong et al., (2022), It's stated that there is a strong relationship between knowledge and

attitudes toward a person's actions. The higher the level of knowledge an individual possesses, the better their attitudes and actions tend to be.

CONCLUSIONS

The results of this study concluded that there were significant differences in knowledge, attitudes, and actions before and after intervention with the role play method. The differences that occur illustrate an increase in knowledge, attitudes, and actions. It is expected that the community will play a more active role in controlling *Aedes aegypti* vector larvae through mosquito nest eradication efforts and develop knowledge and be proactive in carrying out 3M actions and changing habits that can trigger the presence of mosquito larvae and apply them in everyday life.

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