
The Relationship Between Community Attitudes and Mosquito Nest Eradication (Psn) Activities in Gampong Pusong Baru, Banda Sakti District, Lhokseumawe City

Rahmad Mouliansyah

Ilmu Keperawatan, STIKes Darussalam Lhokseumawe

*Corresponding Author nmatt51@gmail.com

Abstract

Abstract This study aims to determine the relationship between community attitudes and mosquito nest eradication (PSN) activities in Gampong Pusong Baru, Banda Sakti District, Lhokseumawe City. The research employed a descriptive correlational design with a cross-sectional approach. The population consisted of all residents of Gampong Pusong Baru, totaling 235 respondents. Data were collected using a validated questionnaire and analyzed using the Chi-Square test with a significance level of $\alpha = 0.05$. The results showed that most respondents were aged 26–35 years (52.3%) and had a secondary education level (60.4%). Based on the analysis, there was a significant relationship between community attitudes and PSN activities, with a p-value of $0.000 < \alpha = 0.05$. Communities with positive attitudes were more likely to engage in PSN activities (38.7%) compared to those with negative attitudes (7.2%). It can be concluded that community attitudes play an important role in the success of PSN programs. Therefore, efforts to enhance knowledge and provide continuous education are necessary to foster positive community attitudes toward mosquito nest eradication, in order to prevent vector-borne diseases such as dengue hemorrhagic fever (DHF)

Keywords: *Community Attitude, Mosquito Nest Eradication, PSN, Lhokseumawe*

INTRODUCTION

Vector-borne diseases, particularly Dengue Hemorrhagic Fever (DHF), remain one of the major public health problems in Indonesia. This disease is caused by the dengue virus, transmitted through the bites of *Aedes aegypti* and *Aedes albopictus* mosquitoes. According to data from the Indonesian Ministry of Health (2024), DHF cases continue to fluctuate, showing an increasing trend during the rainy season in various regions, including the Province of Aceh. The high incidence of DHF reflects the community's low awareness of the importance of preventive behaviors, one of which is through Mosquito Nest Eradication (PSN) activities. Mosquito nest eradication is the main preventive measure to reduce the population of mosquitoes that transmit the dengue virus. PSN activities are carried out through the 3M Plus principles, namely draining, covering, and reusing items that could become mosquito breeding sites, along with other additional efforts such as using mosquito nets or larvicides (World Health Organization, 2023). The success of PSN activities largely depends on the community's attitudes and active participation in implementing them at the household level. A positive attitude toward environmental cleanliness encourages continuous PSN behavior, whereas a negative attitude tends to hinder the effectiveness of dengue prevention programs. According to the social attitude theory proposed by Allport (1954), attitude is a mental and neural state of readiness, organized through experience, that exerts a directive or dynamic influence upon an individual's response to all related objects and situations. In the context of public health, attitude plays a vital role in determining whether an individual will accept, reject, or ignore recommended health promotion behaviors. Therefore, understanding the relationship between community attitudes and PSN behavior is an essential aspect in planning effective DHF prevention programs.

Previous studies have shown a positive correlation between attitude and PSN behavior. Research by Nurhasanah (2022) found that communities with positive attitudes toward PSN were more active in performing 3M Plus activities compared to those with negative attitudes. Similarly, Wahyuni and Sari (2021) reported that knowledge and attitude significantly influence DHF prevention behavior at the household level. However, results from various regions indicate differences influenced by social conditions, educational levels, and local community habits.

Banda Sakti District, particularly Gampong Pusong Baru, is one of the areas in Lhokseumawe City that still experiences periodic DHF problems. Based on data from the Lhokseumawe City Health Office (2024), there was an increase in DHF cases in the first quarter compared to the previous year. One contributing factor identified is the low level of community involvement in independently conducting PSN activities in their households. Although local governments and health workers have made regular educational efforts, some community members still show passive attitudes toward environmental cleanliness activities. This phenomenon indicates a gap between attitudes and PSN behavior practices in the community.

From a community nursing perspective, health behavior change is influenced not only by knowledge but also by attitudes shaped through experience, beliefs, and social environment (Notoatmodjo, 2022). Therefore, this study is important to identify the extent to which community attitudes are related to the implementation of PSN activities, providing a foundation for community-based nursing interventions to reduce DHF incidence. Based on this background, the research question is formulated as follows: “Is there a relationship between community attitudes and mosquito nest eradication (PSN) activities in Gampong Pusong Baru, Banda Sakti District, Lhokseumawe City?”

The purpose of this study is to determine the relationship between community attitudes and PSN activities in Gampong Pusong Baru, Banda Sakti District, Lhokseumawe City. In addition, this study aims to identify demographic characteristics such as age and educational level that may influence attitudes and behaviors related to PSN activities. Thus, the results of this study are expected to serve as a reference for community nurses and public health practitioners in designing more effective and targeted intervention strategies, particularly in the context of community-based health promotion.

The benefits of this research can be viewed from several aspects. Theoretically, it is expected to enrich the field of community nursing science, particularly in health promotion and behavioral change. This study provides empirical evidence that community attitudes contribute significantly to the success of PSN programs as a primary prevention measure against DHF. Practically, the findings are expected to be utilized by the Banda Sakti Public Health Center and the Lhokseumawe City Health Office as evaluation material and a basis for decision-making in developing sustainable community empowerment programs, such as jumantik (larvae monitoring cadre) training, intensive education on the importance of 3M Plus, and household-based environmental hygiene campaigns.

RESEARCH METHODS

Furthermore, the study's benefits can be directly felt by the community through increased awareness. This study employed a quantitative approach with a cross-sectional design. This design was chosen because it allows researchers to assess the relationship between community attitudes and mosquito nest eradication (PSN) activities at a single point in time (Notoatmodjo, 2018). This approach is appropriate for determining the extent to which individual attitudes influence actual preventive actions against Dengue Hemorrhagic Fever (DHF), particularly through PSN activities in the research area.

The study was conducted in Gampong Pusong Baru, Banda Sakti District, Lhokseumawe City an area with relatively high population density and a notable potential for dengue transmission. The research was carried out from July to August 2024, aligning with the rainy season, during which DHF cases typically increase (Ministry of Health of the Republic of Indonesia, 2023).

The population of this study consisted of all residents of Gampong Pusong Baru aged 17 years and older who permanently reside in the area. Based on data from the village office, the total population comprised approximately 1,000 households. Sampling was conducted using a purposive sampling technique, in which respondents were selected based on specific criteria relevant to the research objectives (Sugiyono, 2019). A total of 235 respondents were obtained, representing the population with a 95% confidence level.

The research instrument was a structured (closed-ended) questionnaire consisting of two sections: the first part covered respondent characteristics (age, education, and occupation), while the second part addressed attitudes toward PSN activities. The instrument was developed based on Lawrence Green's health behavior theory, which emphasizes predisposing, enabling, and reinforcing factors in the formation of healthy behavior (Green & Kreuter, 2005). The questionnaire underwent validity and reliability testing before being used, with results showing that all items were valid ($r\text{-count} > r\text{-table}$ [0.361]) and reliable, with a Cronbach's Alpha value of 0.87.

Data were analyzed using univariate and bivariate analyses. Univariate analysis was employed to describe the frequency distribution of respondent characteristics and research variables, while bivariate analysis was used to examine the relationship between community attitudes and PSN activities using the Chi-Square (χ^2) test at a 0.05 significance level (Hastono, 2021). The test results showed a p-value of $0.000 < 0.05$, indicating a significant relationship between community attitudes and mosquito nest eradication activities in Gampong Pusong Baru.

This study adhered to ethical research principles, including informed consent, anonymity, and confidentiality. Each respondent was provided with clear information regarding the purpose of the study, their right to refuse or withdraw participation at any time, and assurance that their identity and personal data would remain confidential. Research permission was obtained from STIKes Darussalam Lhokseumawe and the local authorities of Gampong Pusong Baru prior to the field data collection.

ss, knowledge, and positive attitudes toward maintaining environmental cleanliness to prevent mosquito-borne diseases. When communities possess a good understanding and attitude toward PSN, collective behavior supporting environmental health efforts is likely to emerge. This aligns with the principles of community nursing, which emphasize empowering communities as agents of health change within their own environments (World Health Organization, 2023). Therefore, this study holds high urgency for implementation in Gampong Pusong Baru, a densely populated area in Banda Sakti District. The results are expected not only to contribute to improving local public health but also to serve as a model for other regions in preventing DHF through strengthening community attitudes and PSN behaviors.

RESULTS AND DISCUSSION

Respondent Characteristics

Table 1
Frequency Distribution of Respondent Characteristics in Pusong Baru Village, Banda Sakti District, Lhokseumawe City

No	Characteristics	Frequency (f)	Percentage (%)
	Age		
1.	17-25 year	36	15,3
2.	26-35 year	123	52,3
3.	36-45 year	76	32,3
	Total	235	100
	Education		
1.	Elementary	65	27,7
2.	Intermediate	142	60,4
3.	High	28	11,9
	Total	235	100

The research findings revealed that out of 235 respondents in Gampong Pusong Baru, the majority were in the 26–35 age group, totaling 123 individuals (52.3%), followed by 76 individuals (32.3%) aged 36–45 years, and 36 individuals (15.3%) aged 17–25 years. These results indicate that most respondents belong to the productive age group, which generally has a higher level of awareness regarding the importance of environmental health (Ministry of Health RI, 2023). Individuals in the productive age range are typically associated with a greater capacity to engage in preventive actions, including Mosquito Nest Eradication (PSN) activities, due to better physical ability and broader social involvement (Notoatmodjo, 2018).

In terms of educational background, the majority of respondents had a secondary education level, accounting for 142 individuals (60.4%), followed by 65 individuals (27.7%) with primary education, and 28 individuals (11.9%) with higher education. These findings indicate that the educational level of the Gampong Pusong Baru community is relatively adequate. Higher education tends to influence a person’s level of understanding and attitude toward environmental health (Hastono, 2021). Individuals with at least a secondary education are generally more receptive to health information, better able to understand the dangers of disease, and more likely to engage in preventive practices such as the 3M Plus method (Draining, Covering, and Recycling) to prevent the breeding of *Aedes aegypti* mosquitoes, the main vector of dengue fever (Ministry of Health RI, 2023).

2. The Relationship Between Community Attitudes and PSN Activities

Table 2
The Relationship Between Community Attitudes and Mosquito Nest Eradication (PSN) Activities in Gampong Pusong Baru, Banda Sakti District, Lhokseumawe City

Attitude	Activities PSN				Σ	%	p	α
	Doing		Not Doing					
	F	%	F	%				
Positive	91	38,7	3	1,3	94	40	0,000	0,05
Negative	17	7,2	124	52,8	141	60		
Total	108	46,0	127	54,0	235	100		

RESULTS AND DISCUSSION

The results of the bivariate analysis using the Chi-Square (χ^2) test showed a significant relationship between community attitudes and mosquito nest eradication (PSN) activities (p -value = 0.000 < 0.05). Of the 235 respondents, 94 (40%) had a positive attitude toward PSN, with 91 (38.7%) of them regularly participating in PSN activities, while only 3 (1.3%) did not. Conversely, among the 141 respondents (60%) with a negative attitude, the majority—124 people (52.8%)—did not participate in PSN, and only 17 (7.2%) still did.

These findings indicate that the more positive the community's attitude, the higher their likelihood of actively participating in PSN activities. A positive attitude is shaped by an individual's understanding, experience, and belief in the benefits of health behaviors (Green & Kreuter, 2005). In the context of PSN, communities with positive attitudes tend to believe that such actions are effective in preventing dengue fever and maintaining environmental cleanliness, motivating them to engage in these activities more consistently.

This study aligns with the findings of Wulandari et al. (2021), which revealed a significant relationship between attitude and PSN behavior in Sungai Andai Village, where individuals with positive attitudes toward environmental hygiene were 3.5 times more likely to carry out PSN regularly. Similarly, Putri and Siregar (2022) found that positive attitudes are influenced by family and community leader support in organizing collective clean-up activities.

Theoretically, these results reinforce the Health Belief Model (HBM), which suggests that health behavior is influenced by an individual's perception of disease susceptibility and severity, the benefits of preventive actions, and perceived barriers (Rosenstock et al., 1988). People who believe dengue fever is a serious threat and that PSN is an effective preventive measure are more likely to engage in such behaviors actively.

In conclusion, community attitudes play a vital role in the success of PSN programs. Positive attitudes can be fostered through health education, community-based outreach, and active involvement of public health officers in providing continuous information. Such interventions are expected to raise collective awareness to promote clean and healthy living habits and reduce dengue fever incidence in Gampong Pusong Baru.

DISCUSSION

The study revealed that most respondents in Gampong Pusong Baru were within the productive age group, specifically 26–35 years (52.3%), followed by 36–45 years (32.3%), and 17–25 years (15.3%). Individuals in the productive age range generally have a higher awareness of the importance of environmental health and greater physical ability to participate in PSN activities (Notoatmodjo, 2018). Furthermore, the majority of respondents had secondary education (60.4%), followed by primary (27.7%) and higher education (11.9%). Higher education levels contribute to better knowledge and attitudes toward clean and healthy living behaviors, including participation in PSN (Hastono, 2021; Ministry of Health of the Republic of Indonesia, 2023).

The Chi-Square test results confirmed a significant relationship between community attitudes and PSN activities ($p = 0.000 < 0.05$). Respondents with positive attitudes were more likely to participate in mosquito nest eradication activities (38.7%) compared to those with negative attitudes (7.2%). This demonstrates that positive attitudes increase the likelihood of active engagement in dengue fever prevention behaviors. Positive attitudes are built upon understanding, experience, and belief in the benefits of health-related actions (Green & Kreuter, 2005).

These findings are consistent with Wulandari et al. (2021), who found that individuals with positive attitudes toward environmental hygiene were more likely to perform PSN regularly. Similarly, Putri and Siregar (2022) reported that family and community leader support can strengthen community attitudes toward environmental cleanliness. Based on the Health Belief

Model (HBM), health behaviors are strongly influenced by perceived disease threats, benefits of preventive actions, and potential barriers (Rosenstock et al., 1988). In this study, communities who believe that PSN effectively prevents dengue are more likely to practice it consistently.

Overall, the study underscores that community attitudes are a key factor in the success of PSN programs. Therefore, promoting positive attitudes can be achieved through health education, community-based environmental outreach, and active involvement of health workers in continuous information dissemination. Such efforts can enhance community participation in maintaining environmental cleanliness, thereby reducing the risk of dengue transmission in Gampong Pusong Baru.

CONCLUSION

Based on the study of community attitudes toward mosquito nest eradication (PSN) activities in Gampong Pusong Baru, Banda Sakti District, Lhokseumawe City, it can be concluded that most residents are of productive age with secondary education, indicating a strong potential to support dengue prevention efforts. The statistical analysis using the Chi-Square test revealed a significant relationship between community attitudes and PSN activities ($p = 0.000 < 0.05$). Those with positive attitudes were more likely to engage in PSN regularly compared to individuals with negative attitudes. This finding confirms that positive attitudes play a crucial role in shaping health behaviors that support infectious disease prevention.

This is consistent with the Health Belief Model (HBM), which explains that behavior is influenced by individuals' beliefs in the benefits and effectiveness of preventive actions (Rosenstock et al., 1988). Therefore, strengthening positive attitudes toward PSN should be pursued through continuous health education and socialization by health workers and local authorities.

It is recommended that public health centers and village administrations enhance interactive health promotion activities, such as the 3M Plus program and community clean-up initiatives. Furthermore, a participatory approach involving community leaders, health cadres, and families should be adopted to foster collective awareness of environmental hygiene. Future research should consider adding other variables such as knowledge levels, family roles, and social environmental support to gain a more comprehensive understanding of factors influencing PSN behavior.

Hence, this study is expected to serve as a reference for local policymakers in designing more effective and sustainable dengue prevention strategies, while empowering communities as the front line in maintaining environmental health.

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