



OPTIMIZING STROKE PREVENTION EDUCATION AS AN EFFORT TO CONTROL STROKE INCIDENTS

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Article info	ABSTRACT
<p>Corresponding Author:</p> <p>Arum Dwi Ningsih arumdn87@gmail.com Universitas Bina Sehat PPNI, Mojokerto, Indonesia</p>	<p>Stroke is a health problem that can lead to death and long-term disability. Globally, stroke remains the leading cause of death and neurological deficits. The goal of community service activities is to increase public knowledge about the concept of stroke and its prevention efforts. The methods in this activity are activity coordination, team preparation and educational media, implementation of educational activities and evaluation and program sustainability. The results of community service activities with direct discussions and questions and conducting knowledge level evaluations using the Wilcoxon rank test statistical test are known to have a p value = 0.000 ($p < 0.005$). Therefore, it can be concluded that education on the concept of stroke and its prevention has an impact on increasing public knowledge so that it can change thinking and behavior to be more positive in maintaining body health conditions.</p>
	<p>Keywords: <i>Stroke, Education, Prevention Efforts</i></p>
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INTRODUCTION

Stroke is a health problem that can lead to death and long-term disability. Globally, stroke remains the leading cause of death and neurological deficit, with incidence rates continuing to rise, particularly in developing and lower-middle-income countries. Most strokes are associated with modifiable risk factors, such as hypertension, diabetes mellitus, dyslipidemia, obesity, smoking, physical inactivity, and other unhealthy lifestyles. Therefore, preventive measures through increased knowledge and changes in health behavior are crucial strategies for stroke control (Thielscher et al., 2026).

In Indonesia, stroke is the leading cause of death among adults and the elderly. Stroke accounts for approximately 15.4% of all deaths in Indonesia, with the dominant risk factors being hypertension, smoking, and hypercholesterolemia. The high incidence of stroke not only places a health burden but also impacts the social, psychological, and economic aspects

of families and the healthcare system. The economic burden of stroke is also significant, requiring acute care, long-term rehabilitation, ongoing treatment, and resulting in lost productivity for patients and their families. Stroke often results in permanent disability that reduces the patient's quality of life, necessitating effective preventive strategies to reduce the incidence and recurrence of stroke. (Rochmah et al., 2021).

One factor contributing to the high incidence and recurrence of stroke is the public's lack of knowledge about risk factors, early signs and symptoms of stroke, and the importance of managing chronic diseases. Research shows that health education can improve public knowledge about stroke prevention. After receiving health education, public knowledge scores regarding risk factor detection and stroke prevention increased, indicating that education is an effective intervention in increasing health awareness (Firmawati et al., 2023).

Furthermore, patients who do not undergo regular health check-ups after their first stroke have a significantly higher risk of recurrence than those who regularly monitor their health. Age, hypertension, obesity, and non-compliance with health check-ups are important determinants of recurrent stroke. This situation suggests that ongoing education is necessary not only for the general public but also for patients and their families at high risk of stroke or stroke recurrence (Trisetiawati & Yuniar, 2018).

As a referral hospital in Pasuruan Regency, Bangil Regional Hospital plays a strategic role in implementing promotive and preventive programs to reduce the incidence of stroke. However, stroke prevention education efforts still need to be optimized to increase patient, family, and community understanding of risk factors, early warning signs, and the importance of managing comorbidities. Optimizing health education is expected to increase public awareness of adopting a healthy lifestyle, conducting early detection, and complying with treatment and regular health check-ups.

METHOD

The implementation method for this community service activity was designed systematically and in stages to ensure the solutions offered could be implemented effectively and sustainably in addressing the problem of low public knowledge about stroke and its prevention. Several stages have been carried out, namely the preparation stage aimed at ensuring technical and administrative readiness before the activity is implemented. Activities at this stage include coordination related to permits and determining the activity location. The preparation of educational media (leaflets, posters, and presentation materials) that are appropriate to the characteristics of the target, then scheduling the time and division of tasks for the implementation team. The activity was implemented in the patient waiting room of the Anggrek inpatient ward at Bangil Regional Hospital. Then the next stage was screening the level of knowledge, after which education related to the concept of stroke and its prevention was conducted. The education was carried out for 60 minutes. The educational stages included an opening and introduction, the presentation stage, a question and answer session, and the awarding of rewards. After completing the education, the educator team gave a post-test in the form of questions to

measure the level of knowledge of the participants regarding the concept of stroke and its prevention.

RESULT AND DISCUSSION

RESULT

1. Univariate analysis

Table 1 Frequency Distribution of Respondent Characteristics

No.	Karakteristik Responden	F	%
1	Age		
	Middle Age	8	22.2
	Elderly	20	55.6
	Young Old	8	22.2
	Total	36	100
2	Gender		
	Male	16	44.4
	Female	20	55.6
	Total	36	100
3	Level of Education		
	SD	12	33.3
	SMP	13	36.2
	SMA	9	25
	PT	2	5.5
	Total	36	100
4	employment history		
	Working	20	55.6
	Not working	16	44.4
	Total	36	100

primary data source 2026

Based on table 1 regarding the general characteristics of respondents, most respondents are in the Elderly age group as many as 20 respondents (55.6%). Based on gender, the majority of respondents are female, namely as many as 20 respondents (55.6%). Most respondents have a junior high school education background as many as 13 respondents (36.2%). The largest number of respondents' work history is working status as many as 20 respondents (55.6%).

2. Bivariate Analisis

Table 2 Respondents' Knowledge Level before and after Providing Education on the Concept of Stroke and its Prevention

No.	Level of knowledge	Pre test		Post test		Statistical Test Results
		F	%	F	%	
1	Poor	20	55.4	0	0	p-value = 0,000 z = -6,937

2	Sufficient	16	44.6	10	27.8
3	Good	0	0	26	72.2
	Total		100	36	100

primary data source 2026

Based on table 4.2, it is known that before the education about the concept of stroke and its prevention efforts, most of the respondents' knowledge was in the poor knowledge category as many as 20 respondents (55.4%). After the educational activities about the concept of stroke and its prevention efforts, most of the respondents had a good level of knowledge as many as 26 (72.2%). Based on the results of the Wilcoxon Rank Test statistical analysis, it is known that the calculated Z is -6.937 and the p value = 0.000 ($p < 0.005$), it can be concluded that there is an influence of education about the Concept of Stroke and its prevention on the level of knowledge of respondents. Educational activities have a positive impact on respondents, namely increasing knowledge and efforts to prevent stroke incidents in the community.

DISCUSSION

Based on the results of the descriptive statistical tests listed in Table 4.2, it is known that the majority of respondents' knowledge before education was in the poor range (20 respondents (55.4%), and after education, the majority of respondents had sufficient knowledge (22 respondents (72.2%). This indicates an increase in knowledge among the majority of respondents after health education. These findings indicate that health education is an effective intervention in increasing patient and public understanding of stroke, its risk factors, signs and symptoms, and preventative measures.

This increase in knowledge after education occurred because the learning process enabled respondents to acquire new information that was previously unknown or not properly understood. Through systematic delivery of the material, respondents were able to understand the definition of stroke, modifiable risk factors such as hypertension, diabetes mellitus, dyslipidemia, smoking, obesity, and physical inactivity, as well as the importance of early detection and control of these risk factors. Good knowledge forms the basis for developing healthy attitudes and behaviors that support stroke prevention. (Firmawati et al., 2023).

The results of this study align with research by Yarden et al. (2022), which found that health education can improve stroke clients' knowledge and behavior in preventing recurrent strokes. After receiving the health education intervention, there was a statistically significant increase in knowledge scores in the intervention group. This study confirms that health education is an important strategy in improving individuals' abilities to prevent stroke (Yarden et al., 2022).

The findings of this study are also supported by research by Firmawati et al. (2023), which showed that providing education on stroke risk detection and prevention increased participants' knowledge scores from an average of 59.41 before education to 74.41 after education. This increase indicates that providing appropriate health information can

improve individuals' understanding of stroke risk factors and prevention measures (Firmawati et al., 2023).

The increase in knowledge observed in this study can also be explained by health behavior theory, which states that knowledge is a predisposing factor that influences changes in a person's behavior. Individuals with good knowledge about stroke will better understand the consequences of the disease, recognize risk factors, and be motivated to take preventive measures such as controlling blood pressure, maintaining a healthy diet, exercising regularly, quitting smoking, and undergoing regular health checkups (Emaliyawati et al., 2021).

However, despite increased knowledge following education, successful stroke prevention is not solely determined by increased knowledge. Family support, individual motivation, access to healthcare, and ongoing educational programs are essential for the knowledge gained to translate into tangible behavioral changes. Therefore, Bangil Regional Hospital needs to develop a regular stroke education program through a variety of educational media, such as leaflets, videos, individual counseling, and group outreach, so that the information provided can be better understood and remembered by patients and their families.

Overall, the results of this study demonstrate that education about stroke concepts and prevention has a positive impact on the knowledge levels of respondents at Bangil Regional Hospital. The better the education provided, the higher the level of knowledge, which is expected to support efforts to prevent primary and recurrent strokes.

CONCLUSION

Based on the results of community service activities on health education related to the concept of stroke and its prevention towards the level of knowledge at Bangil Regional Hospital, it can be concluded that the provision of education has an effect in increasing the level of knowledge of respondents regarding the concept of stroke and its prevention efforts. After being provided with education, respondents showed an increase in understanding regarding the definition of stroke, risk factors, signs and symptoms, complications, and preventive measures that can be taken to reduce the risk of stroke or recurrent stroke. Health education has proven to be an effective method in increasing knowledge because it is able to provide correct information, correct misunderstandings, and strengthen respondents' awareness of the importance of controlling stroke risk factors. The increased knowledge obtained is expected to be the basis for forming healthy attitudes and behaviors so as to support sustainable stroke prevention efforts.

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