Empowerment-Based Stroke Education to Enhance the Quality of Life (Qol) of Post-Stroke Patients in Kediri City

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Empowerment-Based Stroke Education to Enhance the Quality of Life (Qol) of Post-Stroke Patients in Kediri City

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Abstract

Stroke is a non-communicable disease and one of the primary causes of disability and mortality worldwide. Post-stroke disability may impair activities of daily living (ADL), communication abilities, and social interactions, thereby increasing the need for long-term care and affecting both patients' QoL and the psychological well-being of their families. Promotive strategies can help post-stroke patients manage their health conditions more effectively while fostering adaptive coping mechanisms for living with chronic illness. This study aimed to examine the impact of stroke empowerment education on improving the QoL of post-stroke patients in Kediri City. This study employed a quasi-experimental research design using a pre-test and post-test with control group. Participants were selected through purposive sampling. A total of 328 respondents were included in the study, consisting of 164 participants in the intervention group and 164 in the control group. Data were collected using the Stroke-Specific Quality of Life Scale (SSQOL) questionnaire. The results of the Wilcoxon Signed-Ranks Test indicated a p-value of 0.000 ($p < 0.05$), leading to the rejection of the null hypothesis (H_0). The findings of this study demonstrate that stroke empowerment education contributes to improving the QoL of post-stroke patients in Kediri City. It is recommended that this program be sustained as a structured intervention within primary healthcare services to enhance care delivery and support better quality of life for post-stroke patients.

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INTRODUCTION

Stroke is a non-communicable disease and one of the primary causes of disability and mortality worldwide (Cheema et al., 2025). Stroke has a multidimensional impact on sufferers, including changes in physical function, psychological well-being, and social relationships (Venketasubramanian et al., 2022). Disabilities after stroke can affect activities of daily living (ADLs), communication skills, and even social interactions, increasing the need for care and impacting the patient's QoL and the psychological burden on their family (Muhammad Muzaffer Nawaz et al., 2022; Tiwari, 2021). According to (Bártlová et al 2022), the QoL of post-stroke patients is influenced by a number of aspects, including limitations in physical function, changes in emotional and psychological conditions, and the role of family support in the patient care process in the home environment.

The prevalence of degenerative diseases such as stroke has increased significantly in recent decades worldwide (Handayani et al., 2022). According to the latest data from the World Health Organization, stroke remains the leading cause of disability and the third leading cause of death globally, with an estimated 93.8 million stroke cases reported in 2021 and approximately 11.9 million new cases occurring each year. Indonesia is also affected by this growing global trend (Feigin et al., 2024). Based on data from the Ministry of Health of the Republic of Indonesia (2019), East Java is among the five provinces in Indonesia with the highest number of stroke cases. In 2018, there were approximately 867.997 stroke cases in East Java, with a death toll of approximately 123.611. In 2021, there were approximately 3.105 stroke cases in Kediri and the number is estimated to continue increasing from year to year.

Stroke is a condition associated with a range of clinical outcomes, including recovery with residual disability, mortality, or survival accompanied by a risk of recurrent stroke (Atalan et al., 2021). Many patients develop neurological impairments, such as limb weakness or communication difficulties, which often necessitate long-term care and ongoing rehabilitation to optimize functional recovery (Chen et al., 2024). According to Hu et al (2024), post-stroke patients often face various challenges after experiencing a stroke attack, including physical impairments, depression, limited understanding of stroke, and low family support. These factors may influence patients' capacity to develop effective coping strategies for managing their health condition, which can ultimately lead to a decline in the QoL among post-stroke patients.

The condition experienced by stroke patients requires a complex adjustment process to the health changes that occur (Jafari-Golestan et al., 2021). Therefore, stroke rehabilitation plays an important role in helping restore motor and cognitive functions so that patients can return to performing daily activities independently (Kolmos et al., 2021; Li et al., 2024). The adaptation process in stroke patients can support the development of adaptive coping mechanisms in dealing with changes in health conditions. Effective coping mechanisms play a role in improving health status and supporting patient recovery success (Nobahar et al., 2020; Wu et al., 2023). According to Bai & Chen (2025), post-stroke rehabilitation not only focuses on improving physical function but also needs to consider patients' ability to adapt to the changes they experience. This adaptation includes adjustment to physical limitations, changes in social roles, and emotional challenges that arise after stroke (Feigin et al., 2024; Fugazzaro et al., 2021).

An promotive strategies enables post-stroke patients to manage their health conditions more effectively and helps them develop coping mechanisms for dealing with chronic illness (Dharma et al., 2018; Ika et al., 2023). This approach contributes to improved quality of life because patients gain the ability to understand their health condition, increase self-confidence, and actively participate in the recovery process (Sahely et al., 2023). Health promotion–based rehabilitation has been shown to have a significant relationship with improvements in physical function, psychological well-being, and social adaptation among post-stroke patients. Research by Cassidy et

al (2023), showed that promotive interventions can enhance QoL and increase patient participation in long-term disease management. This result is in line with the findings reported by Hreha et al (2022), who found that promotive strategies for post-stroke patients are essential in helping individuals identify early warning signs of recurrent stroke, cope with post-stroke complications, and improve their independence in carrying out daily activities. Promotive approaches that include health education, skills training, and continuous support can improve patients' understanding of their health condition, enabling them to detect symptom changes early and take appropriate action (Hasanah et al., 2022; Magi et al., 2024). In addition, this strategy encourages patients to remain active in rehabilitation programs, maintain self-motivation, and increase engagement in self-care. Optimal QoL in post-stroke patients can be achieved when individuals are able to maintain their personal integrity through a stable adaptation process to changes in health conditions. According to (Zhao et al., 2020), the adaptive ability is strongly influenced by patients' capacity to respond to internal and external stimuli arising from physical limitations, changes in social roles, and emotional challenges during recovery. Adaptive behavioral responses help patients accept their health condition, build positive coping strategies, and sustain more effective social interaction and participation in social roles (Hu et al., 2024).

This study seeks to examine the impact of stroke empowerment education on improving the quality of life of post-stroke patients in Kediri City.

METHOD

This study applied a quasi-experimental design using a pre-test and post-test control group approach which participants were selected through purposive sampling from post-stroke patients within the service areas of Community Health Centers in Kediri City. The research was conducted on July 2024. The study involved 328 respondents, with 164 assigned to the intervention group and 164 to the control group. Inclusion criteria required participants to have adequate communication abilities and no severe cognitive impairment.

The pre-test and post-test assessments were performed using the Stroke-Specific Quality of Life Scale (SSQOL) questionnaire, consisting of 12 Likert-scale items. The stroke empowerment education was administered twice within a two-month period. The Wilcoxon Signed-Ranks Test was used to analyze differences in respondents' quality of life before and after the stroke empowerment education intervention. This study received ethical approval from Ethics Committee of Health Faculty Institut Ilmu Kesehatan Bhakti Wiyata Kediri in June 2024 with reference number 06/FKes/TK/VI/2024.

RESULT

The study produced the following results:

Table 1. Charactristics of Respondents

Respondents Characteristics	Intervention Group		Control Group	
	n	%	n	%
Age				
a) 36 - 45	42	25,6%	47	28,6%
b) 46 - 55	58	35,3%	51	31,1%
c) 56 – 65	43	26,2%	40	24,3%
d) > 65	21	12,9%	26	16%
Total	164	100%	164	100%
Gender				
a) Male	78	47,5%	91	55,4%
b) Female	86	52,5%	73	44,6%
Total	164	100%	164	100%

Employent				
a) Not working	64	39%	76	46,3%
b) Working	100	61%	88	53,7%
Total	164	100%	164	100%
Level of education				
a) Elementary school	66	40,2%	40	24,3%
b) Junior high school	37	22,5%	59	35,9%
c) Senior high school	41	25%	48	29,2%
d) Higher education	20	12,3%	17	10,6%
Total	164	100%	164	100%
History of other disease				
a) Hypertension	71	43,2%	69	42%
b) Hearth disease	41	25%	50	30,4%
c) Diabetes Mellitus	52	31,8%	45	27,6%
Total	164	100%	164	100%
Duration of stroke illness				
a) > 1 year	76	46,3%	90	54,8%
b) < 1 year	88	53,7%	74	45,2%
Total	164	100%	164	100%

Based on Table 1, the age distribution of respondents was predominantly 46–55 years in both groups, accounting for 35.3% of participants in the intervention group and 31.1% in the control group. Regarding gender, most participants in the intervention group were female (52.5%), whereas the control group consisted predominantly of male participants (55.4%). The majority of participants in both the intervention and control groups were employed. In terms of educational background, most participants in the intervention group had completed elementary school (40.2%), while junior high school was the most common education level in the control group (35.9%). A history of hypertension was the most prevalent comorbidity in both groups, reported by 43.2% of participants in the intervention group and 42.0% in the control group. Regarding the duration of stroke illness, most participants in the intervention group had experienced stroke for less than one year (53.7%), whereas the majority of participants in the control group had been living with stroke for more than one year (54.8%).

Table 2. Distribution of Quality of Life Before and After Stroke Empowerment Education

Variable	Intervention Group				Control Group			
	Before		After		Before		After	
	n	%	n	%	n	%	n	%
Good quality of life	59	35,9	104	63,4	42	25,6	50	30,4
Poor quality of life	105	64,1	60	36,6	122	74,4	114	69,6
Total	164	100	164	100	164	100	164	100

Based on Table 2, prior to the implementation of stroke empowerment education, most respondents in the intervention group demonstrated poor quality of life, with 105 respondents (64.1%) categorized in this group. Similarly, in the control group, the majority of participants also reported poor quality of life, comprising 122 respondents (74.4%).

Following the implementation of stroke empowerment education, the intervention group experienced an improvement in quality of life. Most respondents in this group were categorized as having a good quality of life, totaling 104 individuals (63.4%). Conversely, the control group showed no notable improvement, with the majority of participants, 114 respondents (69.6%), continuing to report poor quality of life.

Data analysis using the Wilcoxon test produced a p-value of 0.000 ($p < 0.05$), demonstrating that stroke empowerment education significantly improved the quality of life of post-stroke patients in Kediri City.

DISCUSSION

Based on the study findings, prior to the implementation of stroke empowerment education, only 59 respondents (35.9%) in the intervention group were categorized as having a good quality of life, whereas 105 respondents (64.1%) experienced a poor quality of life.

Stroke not only results in neurological deficits but also influences a person's capacity to carry out daily activities, sustain social roles, and adjust to changes in health status (Abbasian et al., 2024). Individuals recovering from stroke often experience mobility restrictions, limb weakness, cognitive decline, communication difficulties, and emotional disturbances such as depression and anxiety. These challenges can reduce QoL by increasing dependence on others for everyday activities (Babkair et al., 2023). A study by Adigwe et al (2024), found that the QoL of stroke patients is greatly affected by physical functioning, psychological well-being, social relationships, and the individual's degree of independence in daily activities. In addition, a study by Bártlová et al (2022), showed that post-stroke patients with mobility limitations have a greater risk of experiencing poor QoL due to dependence on family members and reduced social participation.

Based on the study findings, following the implementation of stroke empowerment education in the intervention group, an improvement in QoL was observed among the 164 respondents. Of these, 104 respondents (63.4%) were categorized as having a good quality of life, while 60 respondents (36.6%) continued to experience a poor quality of life. Statistical test results indicated that stroke empowerment education had a significant effect on improving the quality of life of post-stroke patients in Kediri City.

The stroke empowerment education is an empowerment-based educational approach that focuses on improving patients' ability to understand their health condition, recognize risk factors, and enhance self-management skills. This intervention allows patients to take active role in the rehabilitation process and participate in decisions related to their healthcare (Lynch et al., 2025). As reported by Cassidy et al (2023), showed that stroke patient empowerment programs can improve rehabilitation motivation, increase patient involvement in therapy, and enhance the social and psychological functioning of post-stroke patients.

The promotive approach has advantages because it considers patients' needs holistically. Post-stroke patients require long-term support to cope with changes in self-identity, social functioning, and psychological conditions (Kwame & Petrucka, 2021). Empowerment approach addresses these broader adjustment needs. Empowerment approach not only focuses on physical exercise but also helps patients adapt to changes in social roles and build self-confidence. Rehabilitation support that incorporates psychosocial components has been proven to enhance independence, improve social participation, and increase the QoL of post-stroke patients (Zhou et al., 2023).

Consistent with the research of Gao et al (2024) and Dharma et al (2018), multicomponent interventions have positive effects on the physical

and psychological domains of QoL, particularly when rehabilitation programs are implemented continuously and involve various therapeutic approaches. Rehabilitation approaches that combine physical exercise, psychological support, health education, and social interventions provide more comprehensive provide greater improvements in the quality of life of post-stroke patients compared to therapies that address only a single aspect of rehabilitation (Gao et al., 2024; Kernan et al., 2021).

Empowerment-based adaptive rehabilitation not only provides health education but also helps patients develop healthy lifestyle behaviors, improve treatment adherence, and enhance their ability to independently monitor their health condition. Research by Lynch et al (2025) and Rössler et al (2020), showed that self-management interventions for stroke patients can improve QoL by enhancing symptom control, stress management, and patient self-confidence. Furthermore, these results align with the study by Taft et al (2021) which reported that health promotion interventions for post-stroke patients significantly enhance QoL by improving adaptive capacity and health management skills. Structured educational programs enable patients to understand the importance of continuous rehabilitation, lifestyle modification, and long-term complication prevention.

CONCLUSION

Based on the study findings, it can be concluded that prior to the implementation of stroke empowerment education, only 59 respondents (35.9%) in the intervention group had a good quality of life, while 105 respondents (64.1%) experienced a poor quality of life. After the intervention, there was an improvement in the intervention group, with 104 respondents (63.4%) classified as having a good quality of life and 60 respondents (36.6%) still in the poor category. The Wilcoxon test results showed a p-value of 0.000 ($p < 0.05$), indicating that stroke empowerment education had a significant effect on improving the quality of life of post-stroke patients in Kediri City.

SUGGESTION

Stroke empowerment education is recommended to be continued as a structured intervention within primary healthcare services to enhance post-stroke care and improve patients' quality of life.

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CONFLICTS OF INTEREST

The authors state that there are no conflict of interest that may affected the implementation, findings or interpretation of this study.

AUTHOR CONTRIBUTIONS

Christina Dewi contributed to the design, data collection and manuscript preparation. Meanwhile, Giovanni Iga Firmanda was responsible for the translation and publication process of the manuscript. All authors reviewed and approved the final manuscript.

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