Psychoeducation through home care strengthens family coping in elderly stroke rehabilitation

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Abstract

Post-stroke patients undergoing rehabilitation require family assistance to perform their daily activities. The family's responsibilities as caregivers can create psychological, social, physical, and financial burdens, highlighting the need for coping strategies that enhance the ability of families and caregivers to alleviate these burdens without jeopardizing their health. Family caregivers are important in providing psychoeducation to post-stroke rehabilitation patients through home care. The aim of this study was to evaluate the effectiveness of home care in improving family coping strategies for elderly individuals undergoing stroke rehabilitation. A quasi-experimental design was implemented with a pre-post-test and control on 64 families, selected by purposive sampling. Data were collected using a closed questionnaire and analyzed through t-tests (univariate and bivariate) and multivariate analysis of covariance (MANCOVA). The research results showed significant differences in knowledge before and after being given psychoeducation through home care (p=0.001), with a difference in average value of 0.9183, and family coping scores with a p-value of 0.035, with a difference in average value of 1.100. Providing psychoeducation through home care can significantly enhance family coping mechanisms when caring for elderly patients undergoing stroke rehabilitation. As an independent nursing intervention, psychoeducation, delivered in the context of appropriate home care, plays a crucial role not only in empowering families but also in optimizing the environment for recovery.

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Key words: elderly; family coping; psychoeducation; home care; stroke rehabilitation.

Contributions: AN, conceptualization, data curation, formal analysis, methodology, validation, visualization, writing – original draft, review & editing; YM, conceptualization, investigation, methodology, validation, review & editing; SD, conceptualization, methodology, formal analysis, validation, and writing – original draft, review & editing; RR, methodology, visualization, writing – review & editing; ESS resources, investigation, and writing – review & editing.

Conflict of interest: the authors declare no potential conflict of interest.

Ethics approval and consent to participate: the research was approved by the Health Research Ethics Commission, Poltekkes Kemenkes Jakarta III. During the study, the researchers focused on the ethical principles of autonomy, beneficence, justice, and non-maleficence.

Consent for publication: written informed consent was obtained for anonymized patient information to be published in this article.

Availability of data and materials: all data generated or analyzed in this study are included in this published article.

Received: 28 October 2024.
Accepted: 17 March 2025.
Early view: 16 May 2025.

Healthcare in Low-resource Settings 2025; 12(s2):13308
doi:10.4081/hls.2025.13308

Introduction

Stroke is one of the diseases that most often causes a decrease in functional abilities in patients, causing severe dependency.[1] It has become a global issue, causing 17 million deaths each year, and is estimated to be the leading cause of death and disability in the world by 2020.[2,3] Stroke is a complex condition that affects both the individual and their environment, including the family who cares for them (family caregiver).[4] The family's responsibilities as caregivers can create burdens, including psychological issues as well as social, physical, and financial challenges.[5] Thus, there is a need for coping strategies to increase the ability of families and caregivers to reduce the burden without endangering the family's health in the form of psychosocial support and family-centered psychoeducational interventions.[6,7] Implementing effective coping strategies to reduce the burden on families of stroke survivors can also be achieved by implementing educational programs and muscle relaxation. This is in accordance with research that stated that education and muscle relaxation programs can reduce anxiety, depression, and the burden of care for caregivers of stroke survivors.[8]

Research regarding the effects of home-based stroke rehabilitation on increasing the functional abilities and independence of stroke survivors has been conducted in several countries, such as Denmark,[9] Thailand,[10] and Norway,[11] with varying rehabilitation models and outcomes.

Comprehensive stroke treatment to increase independence and minimize dependency in stroke patients can be achieved through a rehabilitation program.[12] Family and health worker support factors are closely related to patients' compliance in participating in medical rehabilitation activities after experiencing a stroke.[13] In addition, providing health education through exercise and utilizing multimedia resources, along with family support, facilitates this process. This is because, with the development of Information

and Communication Technology (ICT), health education media are becoming increasingly diverse. Multi-interactive media are particularly engaging, as they make health education more interesting through the combination of animated images and sound.[14,15] The influence of interactive multimedia on students' ability to understand mathematical concepts demonstrates that such tools positively affect concept comprehension, which is the focus of this research.[16]

Home rehabilitation programs help stroke patients recover skills lost due to their condition.[17] These programs aim to optimize the patient's condition and increase their independence and functional ability in performing basic daily activities while also assisting the patient in adapting socially and mentally. One crucial factor that needs attention is how the family supports the patient. Family support encompasses the acceptance and actions of family members, including informational support, assessment support, instrumental support, and emotional support.[18] This indicates a relationship between the family's role in caring for and motivating post-stroke patients and the patients' compliance in participating in rehabilitation.[19] Effective and adaptive coping strategies can serve a protective role in alleviating distress for families or caregivers. This study aimed to determine the effect of home care on improving family coping in older people undergoing stroke rehabilitation.

Materials and Methods

Study design

The research employs a quantitative approach using a quasi-experimental design with pre- and post-tests, including a control group. The intervention consists of psychoeducation delivered through multimedia formats such as PowerPoint presentations, images, and videos. The educational session lasted for two sessions of 50 minutes each. It began with a pre-test to assess participants' baseline knowledge, followed by a psychoeducational intervention focused on stroke recurrence prevention and family coping strategies. After the session, a post-test was administered to evaluate knowledge improvement. The results showed a significant increase in knowledge, with an 80% improvement observed. This was followed by family support activities aimed at assisting in the rehabilitation care of stroke patients.

Study participants

The population of this study comprised families who had elderly individuals undergoing stroke rehabilitation through home care and resided in the Cakung District Community Health Center area. The total sample included 30 families in the intervention group and 30 in the control group who met the inclusion criteria: stroke rehabilitation patients receiving home care who were able to collaborate, willing to participate as respondents, and capable of reading and writing. The exclusion criteria included families without elderly individuals in stroke rehabilitation, inability to collaborate, unwillingness to participate as respondents, and inability to read and write.

Variables, instruments, and data collection

The independent variables comprised five demographic factors: age, sex, education level, occupation, and relationship with the elderly. The implementation period was from March to June 2022. Data collection was carried out pre- and post-intervention by filling out a questionnaire, namely, before and after the intervention, as well as from the results of observations carried out on family health care (assistance) for elderly people undergoing stroke rehabilitation using an observation book.

The data collection method employed a structured questionnaire consisting of multiple-choice items with four response options: strongly agree, agree, disagree, and strongly disagree. The questionnaire included 15 items assessing problem-solving coping, 20 items measuring self-management learning, and 20 items evaluating family burden in caring for elderly individuals undergoing stroke rehabilitation through home care. The research method used

Table 1. Participants' characteristics (n=60).

Variable	Intervention group		Control group		p
	N	%	N	%	
Age					0.56
≤60 yrs	24	80	24	80	
>60 yrs	6	20	6	20	
Gender					0.40
Man	8	26.7	7	23.3	
Woman	22	73.6	23	76.7	
Level of education					0.06
Elementary school	5	16.7	7	23.3	
Junior high school	8	26.7	9	30.0	
Senior high school	17	56.7	9	30.0	
College	0	0	5	16.7	
Work					0.44
Self-employed	5	16,7	3	10	
Civil servants	0	0	1	3.33	
Employee	4	13.3	5	16.7	
Housewife	19	63.3	19	63.3	
Not Working	2	6.7	2	6.7	
Relationship with the elderly					0.00
Child	14	46.7	27	90	
Grandchild	7	23.3	1	3.33	
Son-in-law	9	30	2	6.67	

a pre- and post-test with a control plan for 30 families selected using purposive sampling. Data was collected using a closed questionnaire.

Data analysis

A research instrument was used to collect primary data, which was then analyzed using both descriptive and inferential statistical methods. Descriptive analysis was conducted to examine respondent characteristics, including age, gender, education, occupation, and ethnic background. Inferential analysis involved t-tests (both univariate and bivariate) to assess differences between groups, along with multivariate analysis using multivariate analysis of covariance (MANCOVA) to evaluate the influence of multiple variables simultaneously.

Ethical clearance

The study received authorization from the DKI Jakarta Health Office and successfully passed an ethical review conducted by the Jakarta III Poltekkes Kemenkes Research Ethics Committee. Written informed consent was obtained from all participants in the study.

Results

Table 1 presents the distribution of research characteristics for 60 participants, divided into intervention and control groups, with a p-value indicating statistical significance. In terms of age (p=0.56), both groups have an identical distribution, with 80% under 60 years old and 20% over 60, showing no significant difference. Gender distribution (p=0.40) is also similar, with women being the majority in both groups (73.6% in the intervention group and 76.7% in the control group). Regarding education level (p=0.06), more participants in the intervention group completed senior high school (56.7%), while the control group had a higher proportion of participants with junior high school education (30%) and college education (16.7%). Although the p-value is slightly above 0.05, it suggests a possible difference in education levels. Employment status (p=0.44) is comparable between groups, with housewives being the largest category (63.3% in both groups), followed by self-employed individuals, employees, and those not working, indicating no significant variation. However, the relationship with the elderly (p=0.00) shows a statistically significant difference. In the control group, the majority of members are children of the elderly (90%), whereas in the intervention group, only 46.7% are children, with a higher representation of grandchildren (23.3%) and sons-in-law (30%). In conclusion, while most characteristics are evenly distributed between groups, the relationship with the elderly differs significantly, suggesting a potential influence on the intervention outcomes.

Table 2 presents statistical analyses of various scores related to family ability, coping, and stroke rehabilitation knowledge in both intervention and control groups. The family ability score shows a significant improvement in the intervention group (p=0.001), with an increase from 72.97 to 75.25. In contrast, the control group experienced a minimal increase, from 63.50 to 63.78, which was not statistically significant (p=0.634). The score for increased coping also significantly improved in the intervention group (p=0.000), rising from 69.25 to 76.50, whereas the control group showed only a minor increase, from 60.06 to 61.34, which was not statistically significant (p=0.091). Regarding ability/skills to improve coping, the intervention group exhibited a statistically significant improvement (p=0.020), while the control group did not. Similarly, knowledge of stroke rehabilitation increased significantly in the intervention group (p=0.000), whereas the control group showed little change.

Discussion

Family assistance for patients undergoing stroke rehabilitation

Table 2. Multivariate analysis.

Variable	Group	Mean	SD	95% CI	T	p
Family Ability Score	Intervention group	3.39	-3.50 – -1.05	-3.80	0.00	
	Before	72.97				
	After	75.25				
	Difference	-2.281				
	Control group	3.30	-1.47 – -0.91	-0.48	0.63	
	Before	63.50				
	After	63.78				
	Difference	-0.281				
Increased coping	Intervention group	6.87	-9.72 – -4.72	-5.96	0.00	
	Before	69.25				
	After	76.50				
	Difference	-7.250				
	Control group	4.15	-2.77 – 0.21	-1.74	0.09	
	Before	60.06				
	After	61.34				
	Difference	-1.281				
Ability/skills to improve coping	Intervention	-22.812	3.39	-3.67 – -0.32	2.31	0.02
	Control	-0.2812	3.30			
Knowledge of stroke rehabilitation	Intervention	-7.250	6.872	-8.80 – -3.13	2.28	0.00
	Control	-1.281	4.152			

is essential due to the complex nature of stroke and its associated challenges. Families often face significant challenges, sacrificing time and effort to seek information and support as part of the caregiving and healing process. Research on family relationships with elderly individuals shows that the responsibility most often falls on the children. This is largely due to the deep emotional bonds between parents and their children, as well as the sense of duty and obligation children feel toward their aging parents.

To ensure the best possible care, families – particularly adult children – can choose to collaborate with skilled nursing facilities. These partnerships can support families in providing high-quality, professional care tailored to their loved ones' needs. Middle-aged adults, in particular, often find themselves in the pivotal role of caregivers as their parents begin to experience the challenges of aging.[20]

A study has also shown that families caring for post-stroke elderly individuals recovering from a stroke must adapt holistically, encompassing biological, psychological, social, and spiritual aspects.[21] Family, as a source of social support, can be a key factor in implementing stroke rehabilitation. One study found a relationship between family support and the independence of stroke patients;[22] if family support is strong, the respondent will be more independent. Family plays an important role in providing care, serving as a nursing caregiver for those with vulnerabilities, including all family members affected by physical disabilities, such as chronic illnesses.[18]

One alternative solution to the problem is through home care activities, as home care is a health service provided continuously and comprehensively to individuals and families in their own environment. This support helps families improve, maintain, or restore health while maximizing independence and minimizing disability due to stroke. The research results illustrate that the p-value is 0.000, which means psychoeducation services through home care significantly influence family coping in caring for the elderly with stroke rehabilitation. This is consistent with previous research, which found that implementing home care can strengthen the role of the family and increase family independence in providing optimal care at home.[23] Similarly, enhancing the role and responsibilities of family health can boost family independence in caring for post-stroke patients.[24]

The results provide an overview of the need for family support and the importance of effective strategies to alleviate the burden on families assisting stroke patients during their rehabilitation. Previous research states that to encourage caregivers to utilize practical coping skills, appropriate programs must be designed and implemented to support them.[25,26] Effective use of coping skills to reduce levels of personal burden can improve caregivers' physical health and psychological well-being.[13,7]

Psychoeducation significantly reduces the burden experienced by caregivers of stroke survivors.[27,28] When providing home care for stroke patients, nurses play a crucial role by offering both psychoeducational support and caregiver resources.[29] The family, as a primary source of social support, can be a key facilitator in promoting effective rehabilitation in the home setting. Early initiation of rehabilitation at home has been shown to reduce disability and enhance quality of life. Compared to standard care, home-based stroke rehabilitation is also more cost-effective. However, unresolved family conflicts can worsen the caregiving environment and negatively impact both patient recovery and caregiver well-being.

Conclusions

Home care-based psychoeducation demonstrated a measurable impact on the coping strategies employed by families, with notable differences observed between the intervention and control groups. Specifically, the intervention group showed a greater average increase in problem-solving coping scores. Improvements were also recorded in attitudinal aspects, and a significant difference emerged in stroke rehabilitation activities, particularly in the area of skill development. These findings indicate that providing psychoeducation through home care has a significant effect on enhancing the coping abilities of families caring for elderly individuals undergoing stroke rehabilitation. Family-centered health services delivered *via* home care can help alleviate the burden faced by caregivers. Promoting healthy coping mechanisms through structured psychoeducation not only supports the health and recovery of elderly stroke patients but also enhances overall family well-being and productivity.

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