

Strengthening Stroke Recovery in Yogyakarta: The Synergistic Role of Physiotherapy, Family Support, and Educational Empowerment

Gian Lisuari Adityasiwi

Universitas Negeri Semarang

Corresponding author: gian@students.unnes.ac.id

Abstract: Special Region of Yogyakarta is the region in Indonesia with the second highest number of stroke patients. Stroke is a disease that requires long-term rehabilitation after the patient returns home. **Method:** The research method used is a qualitative method. The methods used are conducting a literature review and holding focus group discussions with healthcare workers. **Result:** Based on discussions with nurses and doctors at community health centers (puskesmas) in Yogyakarta City, they also feel confused when asked by patients' families about how to perform movement therapy so that their stroke-affected relatives can regain their activities. The community health centers (Puskesmas) in Yogyakarta City do not have physiotherapists, who play a crucial role in the rehabilitation process of post-stroke patients. Families of patients are unable to go to the hospital for post-stroke rehabilitation due to financial constraints or difficulties with transportation and the effort required to take the patient to the hospital. Every community health center in Yogyakarta should have a physiotherapist. Additionally, families need simple care guidelines for post-stroke patients so they can assist in helping patients regain functional activities.

Keyword: Stroke recovery, Physiotherapy, Family support, Educational in healthcare

INTRODUCTION

Stroke is a neurological disease that affects the blood vessels in the brain and is the leading cause of disability worldwide.(Strilciuc et al., 2021). In developed countries like the United States, stroke accounts for one in twenty-one deaths. There is one death every 3 minutes and 17 seconds. Addition to causing high mortality rates, stroke is also a leading cause of long-term disability.(Mukundan & Seidenwurm, 2018).

The decline in quality of life and the highest mortality rates due to stroke are in Asia compared to Europe, America, and Australia. Stroke in Asia is a serious issue, with the incidence rate varying between 116 and 483 per 100,000 people per year. Based on epidemiological studies of stroke in Asia, Japan and Singapore have the lowest rates of stroke mortality and burden, while Indonesia ranks highest with a rate of 193.3 per 100,000 person-years (Burden of 3,382.2 per 100,000 people). (Turana et al., 2021)

In 2018, the prevalence of stroke in Indonesia, based on doctor diagnoses, was 10.9% among individuals aged 15 years and older, which is estimated to be 2,120,362 people.(Kementerian Kesehatan

RI Badan Penelitian dan Pengembangan Kesehatan, 2019) Based on Global Burden of Disease (GBD) data, the prevalence of stroke in 2016 ranged from 17% to 22.9%. The Indonesian Health Survey (SKI) 2023 data shows that the prevalence of stroke in Indonesia reached 8.3 per thousand, or per 1,000 people aged over 15 years, in the previous year. (Badan Penelitian dan Pengembangan Kesehatan, 2019)

Post-stroke training can achieve optimal muscle and cardiovascular strengthening through repetitive exercise interventions. Additionally, the benefits of these repetitive exercise. (de Sousa et al., 2018). Training as early as possible, such as intensive sit-to-stand exercises for two weeks, can improve the abilities of stroke patients. (de Sousa et al., 2019)

Stroke is a catastrophic disease, meaning it causes severe and profound damage to body movement functions, requiring immediate medical attention and long-term care after the patient is discharged from the hospital. After returning home from the hospital, families often face confusion in managing or caring for stroke patients, especially if the patient is unable to perform functional activities such as sitting, standing, or walking. This paper will discuss how families in the Yogyakarta city area undertake efforts to support the recovery of post-stroke patients after they return home.

METHOD

The research method used is a qualitative method. The methods used are conducting a literature review, holding focus group discussions with healthcare workers, and interviewing families of post-stroke patients in Yogyakarta. This study that describes the conditions of stroke patients, their families, and all those involved in post-stroke recovery in the city of Yogyakarta. The interview data was collected in August 2024.

RESULT

Stroke in Indonesia occurs more frequently in women than in men, with the highest incidence among individuals over the age of 65. The province of DIY ranks second in terms of stroke prevalence, following East Kalimantan, which has the highest number of stroke cases. The population of DIY is 3.7 million people, with approximately 577,000 of them being elderly residents. This is what can lead to the high incidence of stroke cases. The prevalence of stroke in DIY can be considered high due to the large elderly population. According to data from the Central Bureau of Statistics (BPS) in 2022, the elderly population reached 15.75%, an increase from 13.08% in 2010. Based on age groups, the prevalence of stroke in individuals aged 65–74 years is 5.78%, and for those aged 75 and older, it is 6.16%, while in

other age groups under 65 years, none exceed 4%. (Badan Penelitian dan Pengembangan Kesehatan, 2019)

The characteristics of stroke patients based on data from 2018 in DIY show that a majority are female and many are over the age of 65. In terms of education, most stroke patients have not attended school, and regarding employment, many stroke patients in Yogyakarta are unemployed. (Badan Penelitian dan Pengembangan Kesehatan, 2019)

Karakteristik	Stroke			N tertimbang
	%	95% CI(%)		
Kelompok umur (th)				
15-24				1.727
25-34	0,04	0,01	0,26	1.752
35-44	0,47	0,20	1,14	1.602
45-54	1,33	0,85	2,07	1.528
55-64	3,22	2,20	4,69	1.180
65-74	5,78	4,08	8,12	638
75+	6,16	4,04	9,27	421
Jenis kelamin				
Laki-laki	1,42	1,07	1,88	4.325
Perempuan	1,50	1,17	1,92	4.523
Pendidikan				
Tidak/belum pernah sekolah	3,88	2,40	6,20	524
Tidak tamat SD/MI	2,60	1,72	3,90	780
Tamat SD/MI	2,09	1,37	3,20	1.257
Tamat SLTP/MTS	0,95	0,57	1,60	1.634
Tamat SLTA/MA	0,88	0,53	1,46	3.434
Tamat D1/D2/D3/PT	1,35	0,83	2,20	1.219
Pekerjaan				
Tidak bekerja	3,78	2,92	4,89	2.045
Sekolah	0,02	0,00	0,16	854
PNS/TNI/Polri/BUMN/BUMD	1,47	0,70	3,05	335
Pegawai swasta	0,18	0,05	0,74	1.337
Wiraswasta	0,95	0,54	1,65	1.452
Petani/buruh tani	1,42	0,84	2,42	1.303
Nelayan	0,00	0,00	0,00	6*
Buruh/sopir/pembantu ruta	0,33	0,12	0,95	1.218
Lainnya	2,67	1,19	5,89	299

In the Special Region of Yogyakarta, less than 50% of stroke patients regularly attend follow-up check-ups at healthcare facilities. When viewed in terms of educational background, the majority of post-stroke patients who attend regular check-ups are those with higher education education (65.89%), whereas only 26.13% of patients who never attended school regularly visit healthcare facilities. In Indonesia, from an occupational perspective, only 34% of patients working as farmers or agricultural laborers return for regular check-ups, in contrast to 53.3% of patients employed as civil servants, military

personnel, police officers, or employees of state-owned or regional-owned enterprises who consistently come for follow-up care. (Badan Penelitian dan Pengembangan Kesehatan, 2019)

In the city of Yogyakarta, there are 18 community health centers (puskesmas), and none of them currently have a physiotherapist. Based on the Keputusan Menteri Kesehatan Republik Indonesia HK.01.07/MENKES/1047/2024 regarding the Standards of Equipment for Strengthening Primary Healthcare Services at Community Health Centers, Health Service Units in Villages/Districts, And Integrated Service Posts, various strategic measures are being implemented to enhance health efforts, making it easier for the community to access healthcare services. One way to achieve this is by providing easier access to healthcare by bringing services closer to the community. This requires the availability of rooms and equipment that can support the health needs of the community, including physiotherapy rooms and equipment that can assist in the rehabilitation process for patients needing rehabilitation services, such as post-stroke patients. (Menteri Kesehatan Republik Indonesia, 2024)

Based on interviews with doctors and nurses at community health centers in the Yogyakarta area, they often receive families of patients who come to them seeking guidance on how to perform exercises for their relatives who are undergoing post-stroke rehabilitation. Unfortunately, they do not know the appropriate exercises for patients during rehabilitation, as the expertise of doctors and nurses differs from that of the post-stroke rehabilitation team. Healthcare professionals who can provide education and training for post-stroke patients are physiotherapists.

Since there are currently no physiotherapy services at the primary level, doctors and nurses at community health centers in Yogyakarta have discussed with the research team and inquired about the availability of guidebooks or videos that could be shared with families of stroke patients. They hope that these resources can help families support their loved ones in becoming more independent and facilitate their recovery. The healthcare professionals at the puskesmas are unable to provide solutions to the numerous questions from community members struggling with these conditions. Unfortunately, to date, there is still no guide available to support the conditions of these patients.

Many stroke patients and their families are unsure about how to provide post-stroke care. Additionally, many make the mistake of seeking alternative treatments, such as massage, which only offers relaxation effects, when what is truly needed is exercise to improve functional mobility. Many patients also do not return for follow-up appointments. Upon examining the educational levels of the patients, it is evident that many have low education. This indicates a relationship between education level and attitudes toward health conditions.

Doctors and nurses at the primary level have advised families to bring the patient to the hospital or to call a physiotherapist to their home. However, the families have expressed that they do not have

much time to take the patient to the hospital and also face economic limitations in calling a physiotherapist or rehabilitation team to their home.

The minimum wage (UMK) in Yogyakarta is Rp2,492,997.00. If a family member suffers a stroke, significant expenses are likely to arise. For example, a patient who has just been discharged from the hospital and is unable to mobilize will need diapers, medications, and specialized food through a tube (if there are swallowing difficulties). A pack of diapers containing 5 units costs around Rp60,000.00. Daily usage is at least 2 to 3 diapers, resulting in a daily expense of approximately Rp30,000.00. Over a month, this amounts to about Rp900,000.00 for diapers.

The cost of meals in Yogyakarta is approximately Rp30,000.00 per day, totaling around Rp900,000 for food over the course of a month. The home care service rate in Yogyakarta is Rp150,000. If they hire a physiotherapist twice a week, that would cost Rp1,200,000.00. Stroke is more common in individuals who are not working. This certainly complicates the rehabilitation process, as rehabilitation requires significant financial resources. Additionally, the cost of medications can be very challenging, especially if the patient does not have BPJS (the national health insurance). This situation makes it quite difficult for families with a stroke patient.

The results of interviews with stroke patients and their families in Yogyakarta reveal numerous problems that extend beyond physical rehabilitation or economic issues. Some stroke patients experience anxiety about not receiving attention from their partners, concerns about being unable to engage in sexual relations, and anxiety that leads to increased conflict within the household. Another factor that complicates the situation is when the patient's motivation decreases while the family demands a quick recovery. Such issues can lead to conflicts between the patient and their caregivers. Additionally, patients may feel embarrassed to return to society because they have not yet accepted their condition.

DISCUSSION

The community, especially families of stroke patients or those with a family history of stroke or stroke risk factors, requires post-stroke education that is prepared well in advance. This education is essential to equip them with the knowledge and skills needed to manage recovery, provide proper care, and implement preventive measures. Early preparation can help families better support their loved ones during rehabilitation and reduce the risk of recurrent strokes through lifestyle changes and appropriate health management.

Based on the collected literature, improving education post-stroke is not sufficient solely for the physical rehabilitation process; education is also needed in various aspects of life, such as psychological, social, and economic factors.

1. Health education related to psychosocial aspects can include dyadic psychoeducation. This education provides knowledge about stroke as well as self-care skills or caregiving programs, aiming to improve health outcomes for individuals with a partner who has suffered a stroke. Therefore, an intervention focused on family psychoeducation is necessary. The Family Dyadic Psychoeducation Intervention (FDPEI) is an effective method for improving psychosocial and functional outcomes for stroke survivors and their family caregivers during the transition from hospital to home. (Mou et al., 2023)
2. Providing education on the importance of cardiovascular maintenance, such as through aerobic exercise, is essential for maintaining the cardiovascular system. This education should be promoted, particularly in developing countries where awareness of the importance of aerobic exercise is still low. Aerobic exercise can aid in stroke recovery and overall health. Stroke survivors with residual symptoms may continue to face difficulties and obstacles, and they should be monitored and receive social support while engaging in these activities, particularly concerning safety and individual capabilities. (Prout et al., 2017)
3. Education for the recovery of independence in post-stroke patients involves training. The training provided can include: mobility (transferring from bed to chair, walking on flat surfaces, going up and down stairs), self-care (personal hygiene, eating, dressing, bathing), and bowel/bladder control (controlling bowel movements, controlling urination, using the toilet), etc (Chu et al., 2020)
4. Stroke patients are at risk of falling due to balance disturbances and decreased muscle strength in the extremities. Therefore, the presence of physiotherapy or occupational therapy is necessary to provide education through training related to the Stepping On program for fall prevention in post-stroke patients. (T. Xu et al., 2019)
5. Education in the economic field, for example, regarding the importance of comprehensive health insurance coverage and improving equity in health policies, is crucial. This education should be comprehensive, targeting both the community and healthcare teams. (L. Xu et al., 2024)

Education that can be provided when patients are discharged from the hospital includes informing them about the most common issues faced after leaving, such as disease self-management, self-care programs, and scientific diet plans. One effective form of education is through videos for patients to study, allowing them to deepen their understanding of the necessary health knowledge. (Chen & Xiang, 2022)

CONCLUSION

The team involved in providing education for post-stroke recovery includes not only the rehabilitation team focused on movement and bodily function recovery, but also various other elements.

This includes a psychology team to support the mental health of the patient, as well as the relationships between the patient and their family, and the patient's relationship with their work environment. It is also important to involve a team that can assist with financial matters, such as an insurance team, to ensure that the post-stroke recovery process can receive appropriate solutions.

Strengthening stroke recovery in Yogyakarta requires a multifaceted approach that leverages physiotherapy, family support, and educational empowerment. By fostering collaboration among healthcare providers, patients, and families, we can create a supportive environment that enhances recovery outcomes. Future initiatives should focus on implementing integrated programs that address the unique needs of stroke survivors and their families, ultimately leading to improved quality of life and reduced disability.

The recommendation of this study is that it is necessary to implement the Indonesian Minister of Health's Decree HK.01.07/MENKES/1047/2024 regarding the Standards of Equipment for Strengthening Primary Healthcare Services at community health centers, health service units in villages/districts, and integrated service posts in Yogyakarta. Establishing physiotherapy services at every puskesmas in the Yogyakarta area can reach the smallest communities by providing education to the public, particularly to families who are in the recovery process after a stroke.

Conflict of Interest

The author declare that they have no conflict of interest.

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