



Family Empowerment in Handling Limited Range of Motion of Extremities in Stroke Patients in Gheo Ghoma Village, Ende Regency

Maria Salestina Sekunda^{1*}, Rifatunnisa¹, Yustina Pacifica Maria Paschalia¹

¹Department of Nursing, Ende Kampus, Poltekkes Kemenkes Kupang, Ende, Indonesia.

Received: November 15, 2025

Revised: December 7, 2025

Accepted: December 18, 2025

Published: December 31, 2025

Corresponding Author:

Maria Salestina Sekunda

mariasekunda272@gmail.com

DOI: [10.29303/ujcs.v6i4.1367](https://doi.org/10.29303/ujcs.v6i4.1367)

© 2025 The Authors. This open access article is distributed under a (CC-BY License)



Abstract: Post-stroke care is the most difficult and longest type of care, requiring patience and calmness from both the patient and the patient's family. The goal of ROM (Range of Motion) exercises is to help clients build strength and maintain joint mobility. The methods used include providing information and simulating a range of motion exercises, which are then demonstrated again by family members. The community service activities were carried out over 2 days, on August 8-9, 2025, in Gheo Ghoma village. The results of the community service showed that most members were not aware of the range of motion and had never conducted ROM exercises for stroke patients. 85% of respondents had limited knowledge, and after receiving material on stroke management, knowledge increased to 92%. As for skills, in the pre-test stage, data showed that all respondents did not know how to manage stroke through a range of motion exercises, which was 92%, and in the post-test stage, results showed an improvement. Therefore, cooperation between families, healthcare workers, and village officials needs to be strengthened to help care for stroke patients.

Keywords: Empowerment, Family, Range of Motion, Stroke.

Introduction

Stroke can occur in anyone regardless of age. Stroke is the leading cause of disability and the third leading cause of death worldwide after heart disease and cancer, both in developed and developing countries. Stroke patients need proper treatment to prevent physical and mental disability (Kemenkes RI, 2018). Post-stroke patients need a long time to recover and achieve maximum adaptive function. Immediate therapy is needed to reduce further cerebral injury. One rehabilitation program that can be provided to stroke patients is joint mobilization with range of motion exercises (Khanevski et al., 2019).

Family members are the closest people to patients who provide the first response when a family member is sick. However, there are still many families who do not provide care for stroke patients because of the long treatment and therapy and because they do not know how to care for them. In addition, the achievement of family tasks and functions related to health is still not

optimal, making it difficult for families to recognize problems, decide on health measures for the family, care for family members, modify the environment, and use health facilities (M, 2018).

Post-stroke care is the most lengthy and challenging type of care, requiring patience and calmness from both the patient and their family (Fahlevi et al., 2020). Families need to support the patient's limitations in self-care, lifestyle changes, and the patient's ability to increase independence (Liu et al., 2020). Families must be actively involved in the overall stroke rehabilitation process. The beliefs accepted by the family are important for patients to develop compliance with medical programs (Smeltzer & Bare, 2002).

ROM exercises can help clients build strength and maintain range of motion. Physical balance and muscle tone exercises are performed on the parts of the body not affected by stroke (Yuliana & Jannah, 2022). Movement exercises for stroke patients are a prerequisite for achieving patient independence. Exercises are tailored to the patient's condition, and the main goal is awareness

How to Cite:

Sekunda, M. S., Rifatunnisa, & Paschalia, Y. P. M. (2025). Family Empowerment in Handling Limited Range of Motion of Extremities in Stroke Patients in Gheo Ghoma Village, Ende Regency. *Unram Journal of Community Service*, 6(4), 1057-1062. <https://doi.org/10.29303/ujcs.v6i4.1367>

of performing well-controlled movements, not the magnitude of the movements. A home-based rehabilitation program provided three times a week has a significant effect on stroke patients who are cared for at home (Cheng et al., 2018). Family support greatly influences stroke patients' motivation to exercise and plays a major role in increasing muscle strength and improving independence in activities of daily living after a stroke (Anggriani et al., 2020).

Based on the community service team's observations, Gheo Ghoma Village is one of the villages that are pretty far from health facilities. Limited health facilities and health workers mean that stroke patients are only cared for by their families at home, with all their limitations (Srinayanti et al., 2021). Stroke patients who are cared for by their families at home are still minimal and not optimal in performing neurorehabilitation, so many stroke patients experience a limited range of motion and become dependent on their families (Jona et al., 2022). Although families have provided care to patients, it has not been optimal because families do not perform range of motion (ROM) exercises, resulting in many stroke patients experiencing stiffness and limited range of motion, and some even experiencing complications such as decubitus and disability (Lindsay et al., 2019).

Families do not know how to perform ROM exercises and the benefits of doing them early on. Range of motion (ROM) is an exercise performed to maintain or improve the level of perfection of normal and complete joint movement to increase muscle mass and muscle tone (Balitbangkes RI, 2014). Mobilizing joints with ROM exercises can prevent complications such as pressure pain, contractures, thrombophlebitis, and decubitus, so early mobilization should be done regularly and continuously (Handayani et al., 2025). Providing early ROM exercises can increase muscle strength because it stimulates motor units. The more motor units involved, the greater the increase in muscle strength. If hemiparesis is not treated immediately, the patient will suffer permanent disability (Potter & Perry, 2009).

In the recovery of limbs weakened by injury, several factors influence the increase in muscle strength (Ariska et al., 2020). The duration of exercise can affect the results obtained. The duration of exercise depends on the patient's stamina. Good exercise therapy is exercise that is not tiring, not too long in duration, but with as many repetitions as possible (Amila et al., 2018). Repeated movement exercises require concentration to perform the movements repeatedly with the best possible quality. In the study, respondents also received a regular physiotherapy program according to their needs (Aspiati & Sihalo, 2022).

Repetitive and focused movements can build new connections between the motor system and activate spinal motor neurons, which is the basis for recovery in stroke (Beebe & Lang, 2009). Stroke patients are left without physical treatment to increase muscle and joint strength because their families do not know how to perform active or passive movement exercises.

Although family ties in the village of Gheo Ghoma are still powerful in caring for stroke patients, where the care is provided by the husband/wife/children/grandchildren and even in-laws, this can cause physical, psychological, economic, and social burdens (Natasya & Nooratri, 2024). Most families in Gheo Ghoma village work as farmers, fishermen, weavers, and laborers, so they will experience fatigue and stress if they have to care for stroke patients for a long period of time. This contributes to the decline in family welfare and causes problems for the family. The purpose of this community service activity is to help families learn and acquire the skills to perform range of motion exercises for stroke patients to prevent muscle and joint stiffness and increase the patient's range of motion.

The objective of this community service is to improve families' knowledge and skills in caring for stroke patients, preventing muscle stiffness and limited range of motion and enabling stroke patients to move and take care of themselves independently. The expected benefits of this community service are: Families are able to understand stroke prevention and management through active and passive range of motion exercises; Families are able to assist stroke patients in performing active and passive ROM; and Village governments, through posyandu cadres and health workers, can empower families and assist them in providing care to stroke patients.

Method

This community service activity was carried out through several methods, including educational lectures, training, and family assistance in performing a range of motion exercises. This activity was carried out offline in the village of Gheoghoma, beginning with a pretest to assess families' knowledge of stroke and its management, followed by the provision of information about stroke, a question-and-answer discussion session, and then a ROM exercise simulation to train family members so that they would have the skills and ability to perform ROM. At the end of the activity, a post-test was administered to assess participants' knowledge and skills in stroke and ROM management (Adiputra et al., 2021).

The activity was held for two days on August 8-9, 2025, at the home of a resident whose family member

had suffered a stroke in the village of Gheoghoma. The participants involved were 13 family members and 2 stroke patients, 1 health worker, and 1 cadre in the neighborhood. The evaluation of the activity was conducted after counseling, training, and assistance to family members, using an instrument prepared by the community service team to assess participants' responses to the PKM activity conducted by the Ende Nursing Study Program lecturer community service team (Notoatmodjo, 2018).

Result and Discussion

The community service activity was held on August 8-9, 2025, at the homes of stroke patients in the village of Gheoghoma, and was attended by 13 participants, family members of stroke patients. Knowledge in treating stroke patients is a very important factor in determining the success of total disability assistance. To date, there is no effective and efficient treatment for stroke due to its multi-causal nature (caused by many factors). Efforts to prevent complications are among the most effective and efficient ways to reduce and prevent a limited range of motion after stroke (Jessyca & Sasmita, 2021).

active and passive ROM training for people affected by stroke. Based on the problems faced by the partners, the solutions offered by the proponents through this Community Partnership program include:

1. Conducting education about stroke with the following materials: Stroke disease, Causes, Prevention, and treatment
2. Demonstrating range-of-motion exercises to post-stroke patients by watching a 15-minute video, Post-stroke passive ROM exercises, and Post-stroke active ROM exercises
3. ROM exercise assistance by volunteers and students to families
4. Repeated demonstration of ROM exercises by families to stroke patients.
5. Collaborating with health workers and the government in conducting education and ROM exercises for families of stroke patients in the village of Gheo Ghoma.

The community service team has provided training and assistance to families regarding a range of motion exercises for stroke patients. The community service team assists and trains family members to be able to perform a range of motion exercises on stroke patients and manage stroke patients to avoid muscle stiffness and muscle and bone weakness. The stages in the implementation of Community Service activities include:

A. Preparation Stage

During the preparation stage, coordination went well thanks to the responsiveness of the village government and the head of the Gheoghoma Health Center. The team carried out outreach and coordination to draw up activity plans, ensuring activities could proceed safely and smoothly. All team members worked together to prepare training materials on ROM, including questionnaires and a range of motion exercises for family members.

B. Implementation Stage

The implementation stage began with distributing questionnaires to assess families' knowledge and skills in preventing and treating stroke through learning about ROM procedures. The results of the pre- and post-activity questionnaires are as follows:

Table 1. Family Knowledge about Stroke Treatment and ROM

Family Knowledge	Initial		Final	
	n	%	n	%
Good	0	0	12	92
Fair	2	15	1	8
Poor	11	85	0	0
Total	12	100	13	100



Figure 1. Providing Education about Stroke and Range of Motion to Families of Stroke Patients



Figure 2. Providing Education about Stroke and Range of Motion to Families of Stroke Patients

Efforts to prevent a limited range of motion can be done, among others, through health education and

Table 1 shows that in the pre-stage, most respondents (85%) had insufficient knowledge; after being given material on stroke management and ROM, their knowledge of basic life support increased by 92%. Furthermore, regarding families' skills in handling stroke through a range of motion exercises, after the team conducted discussions and question-and-answer sessions, as well as demonstrations and redemonstrations of actions during ROM exercises.

Table 2. Respondents' Skills in Performing Range of Motion (ROM)

Family Skills	Initial		Final	
	n	%	n	%
Good	0	0	10	77
Fair	1	8	3	23
Poor	12	92	0	0
Total	13	100	13	100

Table 2 shows that in the pre-test stage, none of the respondents knew how to perform ROM exercises for a stroke (92%). In the post-test stage, after being given material and demonstrations, there was an increase in the family's skills in performing range of motion, namely 77%.

Knowledge and skills about stroke and ROM in the performing range of motion must be provided to family members, as they are the closest people to the patient and live in the same house, so they are expected to be able to provide care to stroke patients. Knowledge is the result of "KNOWING" and occurs after a person senses a particular object. Knowledge generally comes from sensations that occur through the five human senses, namely: sight, hearing, smell, taste, and touch, and most human knowledge is obtained through the eyes and ears. Complete information will be accepted by the family so that it is easy to understand. This information will help families make the right decisions about the necessary steps for stroke management and limited range of motion.

Families are the closest people to patients and provide the first response when a family member is sick. However, there are still many families who do not provide care for stroke patients because of the long treatment and therapy, and because they do not know how to care for them. In addition, the achievement of family tasks and functions related to health is not yet optimal, which is still an obstacle, making it difficult for families to recognize problems, decide on health measures for the family, care for family members, modify the environment, and use health facilities (Laely Ramdani, 2018). Stroke patients will experience limited mobility, namely the inability to move independently. This limitation can be identified in clients with limited limb movement or even complete immobilization. Range of motion exercises consist of two parts, namely active range of motion (the patient can move all joints through their full range of motion without assistance) and passive range of motion (the patient is unable to move all joints independently, so the nurse assists with the movement (Daulay & Hidayah, 2021).

Family involvement in caring for stroke patients can improve the patient's ability to perform a range of motion and prevent muscle and bone stiffness, thereby improving self-care (Norrving et al., 2018). The support provided by the family to stroke patients increases their self-confidence and prevents side effects such as depression, despair, sadness, and disappointment. If sadness persists and rehabilitation is not undertaken, the patient's condition will worsen (Sihaloho, 2009). Integrated and early ROM exercises are expected to restore function due to immobilization and prevent disability so that patients are no longer dependent on others⁸. This is in line with the results of a study by Herin Mawarti and Farid on the effect of passive ROM (Range of Motion) exercises on increasing muscle strength in stroke patients in 2013, which proved that there is a significant effect of passive ROM exercises on increasing muscle strength in stroke patients (Cahyanti & Utomo, 2021).



Figure 3. Demonstration and Redemonstration of Range of Motion to Families of Stroke Patients



Figure 4. Demonstration and Redemonstration of Range of Motion to Families of Stroke Patients

Through community service activities, it is hoped that the application will be in accordance with community service standards, namely applying, practicing, and cultivating science and technology to advance public welfare and educate the nation to achieve a high level of health. In the effort to implement the family empowerment program, which puts the family closest to the patient, it is hoped that they can sustain the program that has been developed. Cooperation between officers and families is important at this stage because sometimes well-planned plans go awry in the field.

The fundamental contribution of this community service activity is to increase the knowledge and skills of family members by providing information and training for families on stroke management by performing ROM exercises. The community service team of the Ende DIII Nursing Study Program, Kupang Ministry of Health Polytechnic, has offered several solutions related to the role of families in stroke management by performing ROM on stroke patients in Gheoghoma Village, Ende District. First, by providing education about stroke and ROM to increase families' understanding and skills in stroke management by performing range of motion exercises. The second solution is to conduct ROM training to improve families' skills in performing ROM care, thereby reducing and preventing muscle stiffness and weakness, and even disability.

The results of the activity show that most families have understood and can perform ROM, as evidenced by the questions, with 92% of respondents demonstrating good knowledge. In addition, during the training activities, families were able to perform range of motion exercises and obtained a score of 77%. Therefore, it is highly expected that health workers will continue to work with families, especially those suffering from stroke, to improve their knowledge and other skills to prevent disability in stroke patients by conducting continuous and routine training to increase knowledge and skills that will have an impact on preventing disability due to stroke.

Empowering families to perform range of motion exercises for stroke patients includes increasing families' understanding of stroke patient care to prevent disability and further complications. Through community service activities, it is hoped that the application will be in accordance with community service standards, namely applying, practicing, and cultivating science and technology to advance public welfare and educate the nation to achieve a high level of health.

The results of research conducted by Anggriani et al., (2020) revealed that the demonstration method was able to significantly increase knowledge. The success of health education can be supported by the availability of

tools or media to help facilitate the delivery of the material to be conveyed and make it easier for participants to digest the information (Anggriani et al., 2020).

Through the Community Service Program to integrate programs, cross-sector and cross-program through interprofessional collaboration. Community service is planned, facilitated, coordinated, and carried out by the Community Service Team of the Kupang Ministry of Health Polytechnic, Ende D III Nursing Study Program, through providing counseling, skills training, and assistance using booklets, videos, teaching aids, and assessment instruments. In this activity, the community service team will provide health education in the form of counseling to families on the management of muscle and bone weakness in stroke patients by conducting education and training on range of motion for families in Gheoghoma village, the working area of the Kotaratu Ende Community Health Center.

Conclusion

The results of the activity show that most families understand and can perform ROM. However, health workers need to continue assisting families to increase their understanding and support for stroke patients. In addition, continuous and regular training is needed to improve the knowledge and skills of other families who have family members with stroke.

Acknowledgments

The author would like to express his gratitude to the Director of the Kupang Ministry of Health Polytechnic, the Head of Gheo Ghoma Village, the Head of the Kotaratu Community Health Center, and the families of stroke patients who have provided support to the team so that they could carry out their community service activities safely and smoothly.

References

- Adiputra, I. M. S., Trisnadewi, N. W., Oktaviani, N. P. W., Munthe, S. A., Hulu, V. T., Budiastutik, I., Faridi, A., Ramdany, R., Fitriani, R. J., Tania, P. O. A., Rahmiati, B. F., Lusiana, S. A., Susilawaty, A., Sianturi, E., & Suryana. (2021). *Metode Penelitian Kesehatan*. Yayasan Kita Menulis.
- Anggriani, A., Aini, N., & Sulaiman, S. (2020). Efektivitas Latihan Range of Motion Pada Pasien Stroke di Rumah Sakit Siti Hajar. *Journal of Healthcare Technology And Medicine*, 6(2), 678. <https://doi.org/10.33143/jhtm.v6i2.974>
- Beebe, J. A., & Lang, C. E. (2009). Active Range of Motion Predicts Upper Extremity Function 3 Months After Stroke. *Stroke*, 40(5), 1772-1779.

- <https://doi.org/10.1161/STROKEAHA.108.536763>
- Cahyanti, A. N., & Utomo, D. E. (2021). Dukungan Keluarga dan Perilaku Penderita Hipertensi terhadap Pencegahan Stroke. *Jurnal Kesehatan*, 14(1), 87–97. <https://doi.org/10.23917/jk.v14i1.12058>
- Cheng, H. Y., Chair, S. Y., & Chau, J. P. C. (2018). Effectiveness of a strength-oriented psychoeducation on caregiving competence, problem-solving abilities, psychosocial outcomes and physical health among family caregiver of stroke survivors: A randomised controlled trial. *International Journal of Nursing Studies*, 87, 84–93. <https://doi.org/10.1016/j.ijnurstu.2018.07.005>
- Daulay, N. M., & Hidayah, A. (2021). Pengaruh Latihan Range Of Motion (ROM) Pasif Terhadap Kekuatan Otot dan Rentang Gerak Sendi Ekstremitas Pada Pasien Pasca Stroke. *Jurnal Kesehatan Ilmiah Indonesia (Indonesian Health Scientific Journal)*, 6(1), 22–26. <https://doi.org/10.51933/health.v6i1.395>
- Khanevski, A. N., Bjerkreim, A. T., Novotny, V., Næss, H., Thomassen, L., Logallo, N., & Kvistad, C. E. (2019). Recurrent ischemic stroke: Incidence, predictors, and impact on mortality. *Acta Neurologica Scandinavica*, 140(1), 3–8. <https://doi.org/10.1111/ane.13093>
- M, L. R. (2018). Karakteristik dan Periode Kekambuhan Stroke pada Pasien dengan Stroke Berulang di Rumah Sakit Margono Soekarno Purwokerto Kabupaten Banyumas. *Jurnal Keperawatan Muhammadiyah*, 3(1), 1–15.
- Norrving, B., Barrick, J., Davalos, A., Dichgans, M., Cordonnier, C., Guekht, A., Kutluk, K., Mikulik, R., Wardlaw, J., Richard, E., Nabavi, D., Molina, C., Bath, P. M., Stibrant Sunnerhagen, K., Rudd, A., Drummond, A., Planas, A., & Caso, V. (2018). Action Plan for Stroke in Europe 2018–2030. *European Stroke Journal*, 3(4), 309–336. <https://doi.org/10.1177/2396987318808719>
- Notoatmodjo, S. (2018). *Metodologi Penelitian Kesehatan*. PT Rineka Cipta.
- Potter, & Perry. (2009). *Fundamental Keperawatan*. Salemba Medika.
- Sihaloho, T. M. (2009). *Strategi Pengembangan Agribisnis Kopi di Kabupaten Humbang Hasundutan Sumatera Utara* [IPB University]. <https://repository.ipb.ac.id/handle/123456789/15147>
- Smeltzer, S. C., & Bare, B. G. (2002). *Buku Ajar Keperawatan Medikal Bedah Brunner & Suddarth (Edisi 8 Volume 1)*. EGC.