



Empowering community health cadres to drive early stroke risk detection in Sedoa, Poso

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[🌐] <https://doi.org/10.31603/ce.14183>

Abstract

The prevalence of stroke as a Non-Communicable Disease (NCD) continues to rise globally and nationally, including in Poso Regency. The working area of the North Lore Community Health Center, particularly Sedoa Village, faces challenges such as limited healthcare access, a high elderly population, and low community knowledge about early stroke detection. Empowering health cadres is a crucial strategy to address these issues. This community service activity aims to enhance the knowledge and skills of health cadres in Sedoa Village in conducting early detection and initial emergency management of stroke. The methods employed include: 1) education about stroke disease, 2) training on the FAST (Face, Arm, Speech, Time) method for early stroke symptom detection, 3) practical training on blood pressure measurement, and 4) emergency management simulation. Evaluation results indicate a significant improvement in the health cadres' knowledge, where the percentage of cadres with poor knowledge in the pre-test (76.9%) dropped to 0%, with 100% achieving a good knowledge level after the intervention. Cadres also became skilled in performing stroke screening using the FAST method and blood pressure measurement. This program proved effective in enhancing the capacity of health cadres as the front line for early detection and rapid response to stroke incidents. The expected long-term impact is a reduction in disability and mortality rates due to stroke in Sedoa Village.

Keywords: Health cadres; Early detection; Stroke; FAST; Community empowerment

Pemberdayaan kader kesehatan masyarakat untuk mendorong deteksi dini risiko stroke di Sedoa, Poso

Abstrak

Prevalensi stroke sebagai Penyakit Tidak Menular (PTM) terus meningkat secara global dan nasional, termasuk di Kabupaten Poso. Wilayah kerja Puskesmas Lore Utara, khususnya Desa Sedoa, menghadapi tantangan seperti akses kesehatan yang terbatas, populasi lansia tinggi, dan pengetahuan masyarakat tentang deteksi dini stroke yang masih rendah. Pemberdayaan kader kesehatan menjadi strategi krusial untuk mengatasi masalah ini. Kegiatan pengabdian masyarakat ini bertujuan untuk meningkatkan pengetahuan dan keterampilan kader kesehatan di Desa Sedoa dalam melakukan deteksi dini dan penanganan awal kegawatdaruratan stroke. Metode yang digunakan meliputi: 1) edukasi tentang penyakit stroke, 2) pelatihan metode FAST (Face, Arm, Speech, Time) untuk deteksi dini gejala stroke, 3) pelatihan praktik pengukuran tekanan darah, dan 4) simulasi manajemen darurat. Hasil evaluasi menunjukkan adanya peningkatan pengetahuan kader Kesehatan dimana saat pretes 76,9% memiliki pengetahuan kurang menjadi 100% mencapai tingkat pengetahuan baik setelah intervensi. Kader juga menjadi terampil dalam melakukan skrining dengan metode FAST dan pengukuran tekanan darah. Program ini terbukti efektif dalam meningkatkan kapasitas kader

Contributions to
SDGs



Article History

Received: 16/07/25

Revised: 14/09/25

Accepted: 22/10/25

kesehatan sebagai garda terdepan untuk deteksi dini dan respons cepat terhadap kejadian stroke. Dampak jangka panjang yang diharapkan adalah penurunan angka disabilitas dan kematian akibat stroke di Desa Sedoa.

Kata Kunci: *Kader kesehatan; Deteksi dini; Stroke; FAST; Pemberdayaan masyarakat*

1. Introduction

Non-communicable diseases (NCDs) constitute a persistent global health crisis and remain the leading contributor to global mortality, with the majority (80%) of cases occurring in developing countries, including Indonesia (Boima et al., 2024). Among these NCDs, Stroke is particularly alarming, standing as the leading cause of death and disability worldwide (Câmara et al., 2025). Data confirms this severity in Indonesia as the Institute for Health Metrics and Evaluation (IHME) reported in 2023 that stroke is the primary cause of death, accounting for 19.42% of total deaths. Furthermore, Indonesia's Basic Health Research (Riskesdas) shows a concerning 56% increase in stroke prevalence, rising from 7 per 1,000 population in 2013 to 10.9 per 1,000 in 2022. This upward trend is also evident at the regional level, with a significant increase in stroke sufferers reported in Poso Regency (Dinas Kesehatan Sulawesi Tengah, 2023). As part of national efforts, the Indonesian Ministry of Health has established the Integrated NCD Development Post (Posbindu NCD) program to prevent and screen for NCD risk factors.

Stroke is medically defined as a condition resulting from the blockage of cerebral blood flow and oxygen, potentially leading to permanent brain damage (de Rooij et al., 2024). It can occur suddenly with rapid progression, characterized by local or global neurological deficits that can be fatal (Kristianingrum et al., 2024). While incidence increases with age, with an estimated 10% of ischemic strokes occurring in individuals under 50 (Diarti et al., 2023), its rise is strongly associated with modern lifestyle changes, including dietary shifts, unhealthy habits, and lack of exercise (Dorsch et al., 2025). Key risk factors also include age and chronic diseases like diabetes mellitus. According to the Central Sulawesi Provincial Health Office, Poso Regency has 576,620 individuals living with stroke, with 311,158 (54%) receiving healthcare services that meet the standards, exceeding the 2023 strategic plan target of 30% (Dinas Kesehatan Sulawesi Tengah, 2023).

The consequences of stroke are severe, often resulting in lasting physical and psychological sequelae such as physical disability, vision loss, cognitive impairment, and fatigue (Jagadish et al., 2024). For patients experiencing residual symptoms, like paralysis, slurred speech (dysarthria), difficulty swallowing (dysphagia), or inability to understand the speech of others, palliative care may be necessary, and the difficulty of recovery becomes a significant stressor for both the patient and the caring family (Isrofah et al., 2024). Moreover, stroke carries a substantial socio-economic burden due to job loss and high healthcare costs (Hidayati & Baequny, 2024; Veerbeek et al., 2011). Locally, observations in the Gemolong area show habits like smoking and consuming high-cholesterol foods, alongside a high prevalence of risk factors such as hypertension and diabetes mellitus. A concerning gap exists in public knowledge as interviews revealed that community members, including families of stroke patients, lack understanding of proper prevention and care for residual symptoms (Hudiyawati et al., 2023). People tend to seek health check-ups only when they experience complaints.

Given the principle that prevention is far better than cure (Kustiawan et al., 2024), early detection and emergency management are key strategies to reduce stroke mortality and disability rates (Hughes & Cummings, 2020). Community empowerment through health cadres emerges as an effective strategy to boost the capacity for early detection and initial emergency management, particularly in remote areas like the working area of the Wuasa Community Health Center (Puskesmas) in Lore Utara District, Poso Regency. This empowerment approach is strongly supported by global evidence (Dorsch et al., 2025). The use of the FAST (Face, Arm, Speech, Time) method, a simple screening tool, is well-documented in international literature (Rosaline et al., 2024), with research showing that public awareness campaigns using the FAST acronym significantly improve symptom recognition and lead to faster emergency calls (Prihati & Prasetyorini, 2023; Sarah et al., 2023).

Health cadres play a vital role as the frontline of community empowerment, especially in detecting stroke risks earlier and managing emergencies. They serve as educators, disseminating crucial information about stroke risk factors, such as hypertension, diabetes, smoking, and unhealthy eating habits, through community meetings, Integrated Development Posts (Posbindu), Integrated Health Service Posts (Posyandu), or home visits (Langingi et al., 2024). The collaboration between village health cadres and healthcare workers is expected to minimize disability and mortality among stroke patients. The intended impact of this empowerment is a clear increase in public awareness regarding early symptoms and risks of stroke, consequently reducing treatment delays due to swift community response (Tunik et al., 2024). Ultimately, the active role of trained cadres should foster greater community self-reliance in preventing and handling stroke emergencies, thereby reducing the burden on healthcare services (Maksuk et al., 2025).

This community service activity aims to address these challenges by identifying the current conditions, challenges, and potential for the program's success. The problems identified include the geographical and demographic situation of Sedoa Village, which lies within the working area of the North Lore Puskesmas. It is a mountainous region with relatively difficult access, especially during the rainy season. Health infrastructure is limited, and the considerable distance between the villages and the Puskesmas further complicates access. Compounding this, the area has a high elderly population, many of whom are at high risk for chronic diseases like stroke and diabetes (a major stroke risk factor) (Nowrin et al., 2023). The current health situation reflects a relatively high prevalence of stroke incidents among the elderly, limited public knowledge about stroke prevention, and suboptimal access to healthcare services for prevention and management (Upoyo et al., 2025). Although health cadres are essential as an extension of the Puskesmas, their current capacity for early detection and emergency management of stroke is still limited. Therefore, this project focuses on providing specific and continuous training to enhance their competencies regarding stroke symptoms, risk factors, and initial management.

2. Method

This community service activity involved providing education and training, facilitated by the local NCD (Non-Communicable Diseases) Responsible Nurse of the Puskesmas (Community Health Center) and the Village Head of Sedoa, as a form of partner

participation. The service team acted as facilitators and resource persons, while the Puskesmas and the Village Head were responsible for the location of the implementation, and the community participated as attendees. The activity was held at the Sedoa Village Office, North Lore District, Poso Regency, from June 25 to 26, 2025.

The method for implementing this community service activity was divided into three main stages: preparation, execution, and evaluation. The preparation stage began with obtaining formal permission from the Director of Poltekkes Kemenkes Palu through the Head of the Research and Community Service Center, followed by permission from the Head of the Wuasa Puskesmas and the Head of Sedoa Village. The team then coordinated with the PTM officer of Wuasa Puskesmas, the Sedoa Village officials, and local health cadres. After permission and coordination were complete, the team prepared educational materials in the form of booklets and presentations, pre-post test instruments to measure the cadres' knowledge level, and health screening equipment such as blood pressure monitors and blood glucose meters.

The execution stage of the activity was held at the Sedoa Village Office. Participants included the service team, the Head of Wuasa Puskesmas (as the head of the work area, along with the NCD program coordinator and cadres), the Head of Sedoa Village, and all village health cadres. The main activities included, first, education, where the team delivered material about stroke and first aid for a stroke attack. Second, discussion, held after the material presentation to actively engage participants. Lastly, training on early detection screening for stroke, where cadres were trained to use the FAST (Face, Arm, Speech, Time) method for early detection of stroke symptoms, including a simulation of stroke emergency management (stabilization and timely referral). Other training provided included measuring body weight, height, and blood pressure using a digital tensimeter. The entire simulation of the health examination process was followed by mentorship from the executing team for the cadres. Then, the evaluation stage was conducted as a follow-up step to assess the increase in the cadres' knowledge and skills before and after the intervention.

3. Results and Discussion

The community service initiative commenced with a preliminary meeting involving the village government and the local Public Health Center (Puskesmas), held prior to the main activities. The primary objective of this service was Empowering health cadres in the early detection of non-communicable diseases (Stroke) to improve the quality of life in Sedoa Village, North Lore District. The activities, conducted in Sedoa Village, North Lore District, on June 25-26, 2025, were structured around principles of partnership and active participation, ensuring the service team collaborated closely with partners in both design and implementation. The process of implementation with partners is outlined in the following phases.

3.1. Preparation stage

The initial stage focused on identifying needs and establishing a cooperative framework. As illustrated in [Figure 1](#), the service team began with coordination with the North Lore Community Health Center and the Sedoa Village Government, our main partners. This discussion highlighted a significant increase in Non-Communicable Diseases (NCDs),

particularly stroke, as a major health concern, compounded by a limited number of health workers.

Based on this participatory planning, the following activity plan was prepared. First, target participants. Identification of active and potential health cadres from Sedoa Village. Second, training materials. Focusing on the early detection of Stroke (NCDs) in line with the community service theme, ensuring the material was relevant to field needs and the cadres' level of understanding. Third, logistics and administration. The village government assisted by securing the meeting location (village hall/Posyandu) and disseminating information about the activity to residents.

3.2. Implementation stage

The implementation involved interactive training over two days. The activity began with an opening session led by representatives from the village government, the head of the community health center, and the service team leader. This was followed by the Educational Session, where material was delivered to the Sedoa Village health cadres (Figure 2). Health education is the application or implementation of education in the field of health. Operationally, health education encompasses all activities to provide and/or improve the knowledge, attitudes, and practices of individuals, groups, or communities in maintaining and improving their own health. The health education referred to in this activity is education related to non-communicable diseases, such as stroke, and how to perform early detection of stroke. Health education is any planned effort to influence others to raise awareness or change their attitudes in the health sector for the better.

The training comprehensively covered the definition of NCDs, their risk factors (hypertension, diabetes, etc.), and crucial steps to recognize early stroke symptoms using the local acronym "SEGERA KE RS." The resource persons included a nurse from the North Lore Puskesmas, who covered local health policies and clinical symptoms, and a health expert from the service team's institution, who delivered technical material on early detection and health promotion. A team facilitator ensured active participation throughout the lectures and Q&A sessions (Figure 3). The response from all partners, the Puskesmas, Village Government, and cadres, was overwhelmingly positive, with cadres expressing high enthusiasm and requesting follow-up training on emergency handling and other NCDs. The Puskesmas committed to providing continuous mentoring, while the Village Government promised support for follow-up activities like the Posbindu NCD (NCD Integrated Development Post).



Figure 2. Educational session



Figure 3. discussion and Q&A

The cadre demographics revealed that the majority (61.53%, $n=8$) were under 30 years old, all were female (100%, $n=13$), and most had a high school education (84.7%) (Figure 4). Crucially, the pre-intervention knowledge assessment showed that the majority (76.9%, $n=10$) had low knowledge (Figure 5), underscoring the necessity of the health education intervention.

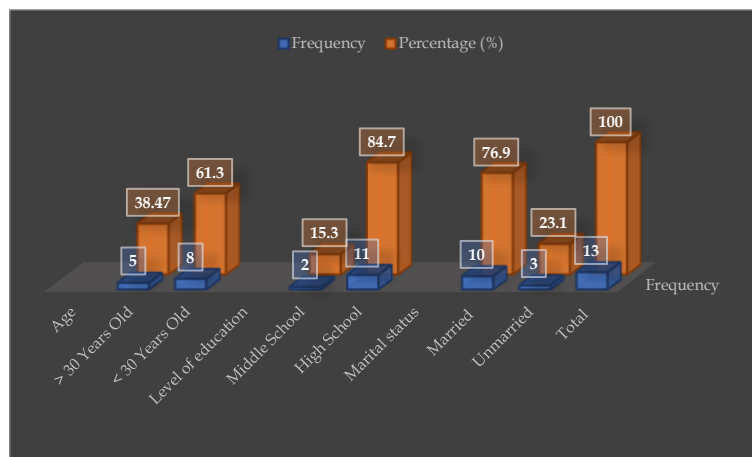


Figure 4. Distribution based on the characteristics of health cadres, Sedoa Village, North Lore District, Poso Regency

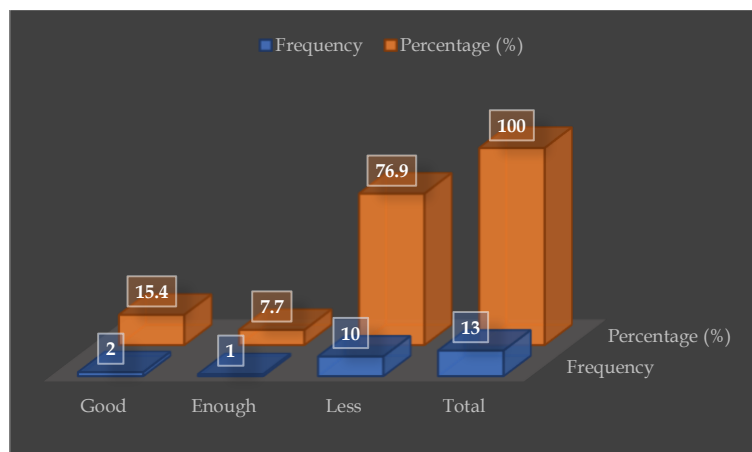


Figure 5. Distribution of knowledge before intervention among health cadres in Sedoa Village, Lore Utara District, Poso Regency

Following the education, the training shifted to practical skills, focusing on Stroke Early Detection Training. All 13 cadres were trained in the simple yet life-saving FAST (Face, Arm, Speech, Time) method. This training emphasized recognizing the physical signs (F, A, S) and understanding the critical role of time for immediate referral to maximize recovery chances during the "golden period." Components of FAST is as follows:

- a. F (Face): Ask the person to smile or show their teeth. Stroke symptom: One side of the face appears drooped or asymmetrical (facial muscle paralysis).
- b. A (Arm): Ask the person to raise both arms straight in front of them (horizontal position). Stroke symptom: One arm is weak, cannot be raised, or drifts downward slowly.
- c. S (Speech): Ask the person to repeat a simple sentence (example: "The sky is blue"). Stroke symptom: Slurred speech, unclear words, or an inability to understand/repeat words.
- d. T (Time): If any one of these symptoms is found, immediately take the person to the hospital or call emergency services. Note the time when the symptoms first appeared to assist medical treatment.

Other possible accompanying symptoms: Sudden and severe headache (like a "thunderclap"), vision disturbances (blurred vision or blindness in one eye), loss of balance or coordination (vertigo, difficulty walking). Actions to be taken are do not wait for the symptoms to go away on their own. Do not give any food or drink due to the risk of choking. Go immediately to the Puskesmas for further treatment ([Asmaria et al., 2023](#)). This approach aligns with research advocating for trained first responders to reduce critical pre-hospital delays ([Han et al., 2023](#)).

The second day continued with practical training on Physical Screening, where cadres learned to measure height, weight, waist circumference, and accurately check blood pressure using a digital tensiometer, including how to interpret the results for potential hypertension. This entire practical session, which involved the cadres conducting simulated health checks, is depicted in [Figure 6](#).



Figure 6. Training for health checks

3.3. Evaluation

The final stage involved monitoring and evaluation, conducted after all educational and practical interventions. The post-intervention knowledge re-measurement demonstrated a highly successful outcome ([Figure 7](#)), showing a significant increase in knowledge with 100% ($n=13$) of the health cadres achieving good knowledge. This result

validates the educational intervention and aligns with findings that such training significantly improves public knowledge of stroke (Han et al., 2023).

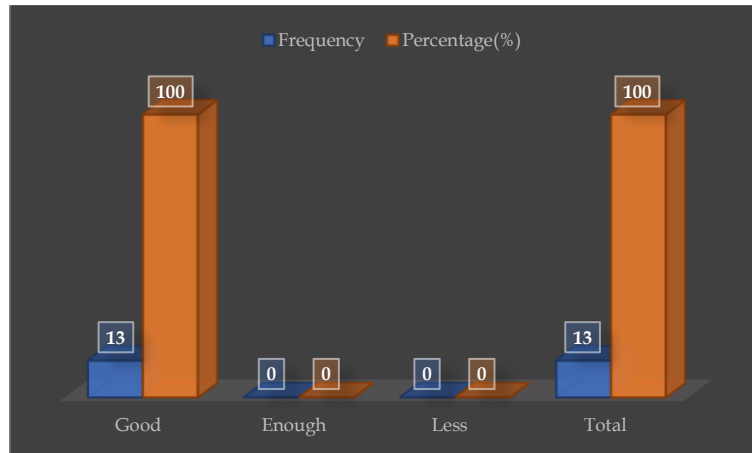


Figure 7. Distribution of knowledge after intervention among health cadres in Sedoa Village, Lore Utara District, Poso Regency

With adequate education and training, village health cadres can become effective first responders in stroke management, reducing adverse impacts and saving lives. This aligns with efforts to strengthen the primary healthcare system in Indonesia. The more trained cadres there are, the greater the chance of reducing stroke-related mortality and disability at the village level (Hariyanto et al., 2025). After receiving education and demonstrations on how to perform early detection of stroke, the health cadres were able to conduct early stroke detection screenings, perform blood pressure checks, and identify stroke risk factors.

Empowering these village health cadres is critical for strengthening primary healthcare in Indonesia, as they become effective first responders (Dunggio et al., 2022). Their enhanced skills in recognizing stroke symptoms (FAST), facilitating faster referral, providing basic first aid, and educating the community on risk factors are expected to reduce stroke-related morbidity and mortality at the village level (Sugiyarto, 2023). The overall achievement is that the cadres in Sedoa Village are now skilled to conduct early stroke detection and examinations at the local Posyandu (Integrated Health Service Posts).

3.4. Supporting factors

The success of the activity was largely due to strong supporting factors. Despite Sedoa Village's distance from urban centers, excellent cooperation and coordination among the Head of the Sedoa Puskesmas, the Village Head, and the NCD program coordinator at the Wuasa Puskesmas ensured the full attendance of all 13 cadres. Furthermore, participants were well-supported, receiving necessary facilities such as stroke management handouts, refreshments, transportation reimbursement, and practical screening tools like a digital tensiometer. Crucially, no inhibiting factors were encountered; the smooth implementation was guaranteed by the overwhelming enthusiasm and active participation of the health cadres, village government, and community health center staff.

4. Conclusion

The community service activities resulted in a significant increase in health cadres' knowledge following the educational intervention. All (100%) cadres demonstrated good knowledge of early stroke detection and initial emergency management using the FAST method, and they were able to independently perform both the detection and initial handling of stroke emergencies.

Acknowledgements

Expressions of gratitude are extended to the following individuals and institutions for their invaluable support in the implementation of this community service activity:

- a. The Director of Poltekkes Kemenkes Palu for granting permission to the Implementation Team to conduct this community service.
- b. The Head of the Health Office of Poso Regency for providing the Implementation Team with the opportunity to carry out activities in the area.
- c. The Head of the Lore Utara Community Health Center and the management of the Non-Communicable Diseases Program for their time, the opportunity provided, and their excellent cooperation with the Team throughout the process.
- d. The Head of Sedoa Village for the warm welcome and smooth cooperation that ensured the success of the activities.
- e. The health cadres in Sedoa Village, especially, for their participation and excellent cooperation during the activities.
- f. All the residents of Sedoa Village who enthusiastically participated in the activities carried out by the Service Team.

Author Contributions

Activity Implementation: REL, Ag, NR; Article Drafting/Writing: REL; Analysis of Community Service Impact: Ag; Article Revision: REL, Ag, NR.

Conflict of Interest

All authors declare that there are no financial or non-financial conflicts of interest associated with this article.

Funding

The community service activities were funded by a grant from the Health Polytechnic of the Ministry of Health, Palu.

References

- Asmaria, M., Hidayati, H., Sari, D. H. A., Yessi, H., Marni, L., Yuderna, V., & Armaita, A. (2023). Pelatihan deteksi dini stroke pada kader lansia dalam upaya

- pencegahan stroke di desa Pauh Barat Kota Pariaman. *Jurnal Abdimas Saintika*, 5(2), 169–172.
- Boima, V., Doku, A., Agyekum, F., Tuglo, L. S., & Agyemang, C. (2024). Effectiveness of digital health interventions on blood pressure control, lifestyle behaviours and adherence to medication in patients with hypertension in low-income and middle-income countries: a systematic review and meta-analysis of randomised controll. *eClinicalMedicine*, 69, 102432. <https://doi.org/10.1016/j.eclinm.2024.102432>
- Câmara, J., de Aguiar, S. C., Paulino, T., Faria, A. L., Bermúdez i Badia, S., Vilar, M., & Fermé, E. (2025). Comparing adaptive tablet-based cognitive training and paper-and-pencil cognitive training: a pilot randomized controlled trial with community-dwelling stroke survivors. *International Journal of Clinical and Health Psychology*, 25(3). <https://doi.org/10.1016/j.ijchp.2025.100627>
- de Rooij, A. M., Maier, A. B., Trompet, S., & Meskers, C. G. M. (2024). Pre-stroke activities of daily living do not predict functional decline after stroke in a cohort of community dwelling older subjects at risk for vascular disease. *Archives of Gerontology and Geriatrics*, 117, 0–5. <https://doi.org/10.1016/j.archger.2023.105174>
- Diarti, M. W., Wiadnya, I. B. R., Zaetun, S., & Jiwintarum, Y. (2023). Edukasi Dan Pelatihan Skrining Penyakit Tidak Menular (Ptm) Melalui Pemberdayaan Kader Dan Tenaga Kesehatan Di Posyandu Prima. *Jurnal Pengabdian Masyarakat Sasambo*, 5(1), 81. <https://doi.org/10.32807/jpms.v5i1.1444>
- Dinas Kesehatan Sulawesi Tengah. (2023). Profil Kesehatan Dinas Kesehatan Sulawesi Tengah. In *Profil Kesehatan Provinsi Sulawesi Tengah* (hal. 1–368).
- Dorsch, M. P., Flynn, A. J., Greer, K. M., Ganai, S., Barnes, G. D., & Zikmund-Fisher, B. (2025). A Web-Based Tool to Perform a Values Clarification for Stroke Prevention in Patients With Atrial Fibrillation: Design and Preliminary Testing Study. *JMIR Cardio*, 9, 1–11. <https://doi.org/10.2196/67956>
- Dunggio, A. R. S., Ruaida, N., Setyowati, S. E., & Ratulangi, J. I. L. (2022). Pemberdayaan Masyarakat Dalam Optimalisasi Gerakan Masyarakat Hidup Sehat (Germas) Untuk Mencegah Dan Mengendalikan Potensi Stroke. *J-Dinamika : Jurnal Pengabdian Masyarakat*, 7(1), 44–50. <https://doi.org/10.25047/j-dinamika.v7i1.3050>
- Han, X., Qin, Y., Mei, C., Jiao, F., Khademolqorani, S., & Nooshin Banitaba, S. (2023). Current trends and future perspectives of stroke management through integrating health care team and nanodrug delivery strategy. *Frontiers in Cellular Neuroscience*, 17, 1–15. <https://doi.org/10.3389/fncel.2023.1266660>
- Hariyanto, A., Christiani, M., & Niningasih, R. (2025). Upaya Pemberdayaan Masyarakat Peduli Stroke Dengan Pelatihan Deteksi Dini Stroke. *Spikesnas*, 04(02), 1382–1390.
- Hidayati, S., & Baequny, A. (2024). Pendampingan Keluarga Dalam Upaya Peningkatan Kualitas Hidup Lansia Untuk Mencegah Stroke Pada Lansia Hipertensi. *Jurnal Inovasi Masyarakat Terupdate*, 1(2), 1–9. <https://doi.org/10.31983/jimat.v1i2.11771>
- Hudiyawati, D., Muhlisin, A., Agustina, T., Yuniartika, W., Oktaviana, W., Faozi, E., Marfu'ah, S., & Anjarsari, R. (2023). Empowerment of Aisyiyah cadres in preventing and handling of stroke. *Community Empowerment*, 8(12), 2019–2026. <https://doi.org/10.31603/ce.10154>

- Hughes, A. K., & Cummings, C. E. (2020). Grief and Loss Associated With Stroke Recovery: A Qualitative Study of Stroke Survivors and Their Spousal Caregivers. *Journal of Patient Experience*, 7(6), 1219–1226. <https://doi.org/10.1177/2374373520967796>
- Isrofah, Wulandari, I. D., Nugroho, S. T., Martyastuti, N. E., Kurniadi, S., Barokatazzahro, A., Allyana, R., & Salwa, A. (2024). Empowering Palliative Care Health Cadres in the Homecare-Based Management of Post-Stroke Patients. *Community Empowerment*, 9(1), 44–52. <https://doi.org/10.31603/ce.10201>
- Jagadish, A., Natarajan, M., Guddattu, V., & Solomon, J. M. (2024). Prevalence of poststroke fatigue and its relationship with clinical characteristics among community-dwelling stroke survivors: A cross-sectional survey. *Clinical Epidemiology and Global Health*, 30, 101812. <https://doi.org/10.1016/j.cegh.2024.101812>
- Kristianingrum, N. D., Hayati, Y. S., Kartika, A. W., & Merdikawati, A. (2024). Penguatan Kapasitas Posyandu Lansia Melalui Strategi Promosi Kesehatan Dan Pemberdayaan Masyarakat Dalam Upaya Pengendalian Penyakit Tidak Menular. *JMM (Jurnal Masyarakat Mandiri)*, 8(4), 3764–3775.
- Kustiawan, R., Somantri, I., Djamiatul, H., & Cahyati, P. (2024). Pemberdayaan Kader Dalam Deteksi Dini Kesehatan Jiwa Di Wilayah Puskesmas Kawalu Kota Tasikmalaya. *Jurnal Abdimas Sangkabira*, 4(2), 274–280. <https://doi.org/10.29303/abdimassangkabira.v4i2.1046>
- Langingi, A. R. C., Pongantung, H., Terok, K. A., Watak, C. L., & Pagayang, Z. (2024). Pemberdayaan Masyarakat Dalam Upaya Pencegahan Stroke Di Kelurahan Taratara Satu. *Journal of Excellence, Humanities and Religiosity*, 1(2), 13–23. <https://doi.org/10.34304/joehr.v2i2>
- Maksuk, Kumalasari, I., & Amin, M. (2025). Community Empowerment in Early Detection of Hypertension in Farmers ' Groups and Communities Living in Agricultural Areas. *GEMAKES : Jurnal Pengabdian Kepada Masyarakat*, 5(1), 36–41. <https://doi.org/10.36082/gemakes.v5i1.1930>
- Nowrin, I., Mehareen, J., Bhattacharyya, D. S., & Saif-Ur-Rahman, K. (2023). Community-based interventions to prevent stroke in low and middle-income countries: A systematic review. *Health Sciences Review*, 9, 100123. <https://doi.org/10.1016/j.hsr.2023.100123>
- Prihati, D. R., & Prasetyorini, H. (2023). Pemberdayaan Kader Kesehatan dalam Upaya Deteksi Dini Stroke dengan Metode F.A.S.T di Kecamatan Tugu. *Jurnal Kreativitas Pengabdian Kepada Masyarakat (PKM)*, 6(6), 2291–2297. <https://doi.org/10.33024/jkpm.v6i6.9764>
- Rosaline, M. D., Anggraeni, D. T., Tobing, D. L., Florensia, L., Candra, W. D., & Yuananda, S. L. (2024). Edukasi Kesehatan “Kenali Tanda Dan Gejala Stroke Melalui Metode FAST” Di Kampung Grogol Kota Depok. *Jurnal Pengabdian Masyarakat Bakti Parahita*, 5(2), 1–9. <https://doi.org/10.54771/1j3azg51>
- Sarah, M., Ginting, D. B., & Silaen, H. (2023). Refreshing cadres for early detection of stroke using the be-fast method. *Prosiding Seminar Nasional Pengabdian Kepada Masyarakat: Peduli Masyarakat*, 3(2), 143–146.
- Sugiyarto. (2023). Pemberdayaan Kader Kesehatan Dalam Upaya Pencegahan Penyakit Tidak Menular Melalui Germas Dan Cerdik. *Bhakti Sabha Nusantara*, 2(2), 113–118. <https://doi.org/10.58439/bsn.v2i2.151>

- Tunik, Yulidaningsih, E., & Mandasari, Y. P. (2024). Pemberdayaan Kader Posbindu Ptm Desa Mlinjon Dalam Deteksi Dini Dan Pengendalian Faktor Resiko Stroke. *COMMUNITY: Jurnal Pengabdian Kepada Masyarakat*, 4(2), 162–169. <https://doi.org/10.51878/community.v4i2.3586>
- Upoyo, A. S., Rejeki, D. S. S., & Sutrisna, E. (2025). Pemberdayaan kader posyandu lansia untuk meningkatkan kemandirian keluarga dalam perawatan pasca stroke. *Jurnal Penelitian dan Pengabdian Kepada Masyarakat UNSIQ*, 12(1), 29–34. <https://doi.org/10.32699/ppkm.v12i1.7991>
- Veerbeek, J. M., Kwakkel, G., Van Wegen, E. E. H., Ket, J. C. F., & Heymans, M. W. (2011). Early prediction of outcome of activities of daily living after stroke: A systematic review. *Stroke*, 42(5), 1482–1488. <https://doi.org/10.1161/STROKEAHA.110.604090>



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