



ORIGINAL ARTICLE

Forms of Support for the Provision of Exercise Therapy Education in Post Stroke: Study Delphi

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ABSTRACT

Introduction: Stroke is the second leading cause of death in the world after heart disease. Post-stroke patients experience an inability to meet their daily needs, so there is a great need for educational interventions in exercise therapy. The provision of exercise therapy requires support to increase patient motivation to exercise therapy. The purpose of the study is to identify the form of support for the provision of exercise therapy education in post-stroke. Method: Study Delphi to generate consensus. Results: Forms of support so that patients are willing to do the recommended exercises in the form of fostering trusting relationships, providing support, providing emotional support, and reward support (positive reinforcement) with the percentage of experts who agree above 80% both in the Delphi 3 round and peer group support 69%. Conclusion: The results of this study have produced a consensus that can be considered for support of exercise therapy education in post-stroke patients

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INTRODUCTION

Globally, stroke is the second leading cause of death after heart disease and the third leading cause of disability worldwide (Johnson et al., 2016). On average, patients die from stroke within 3 minutes and 45 seconds, which kills nearly 133,000 people every year (Benjamin et al., 2018). The highest estimated lifetime stroke risk by GBD (Global Burden of Disease) Region is in East Asia (38.8%), Central Europe (31.7%), and Eastern Europe (31.6%), and the lowest risk is in eastern sub-Saharan Africa (11.8%) (Roth et al., 2018).

The prevalence of stroke (Permil) in Indonesia based on diagnosis in the population aged ≥ 15 years in 2018 increased from 7% to 10.9% compared to 2013. The prevalence based on age characteristics

is 67% at the age of 75, 46.1% in the age range of 65 – 74, 33% in the range of 55-64, and 16.7% at the age of 45-54. (Riskesdas, 2018). The high prevalence of stroke will cause a lifelong disease due to permanent limitations due to neurological deficit disorders (Buijck & Ribbers, 2018).

Neurological deficits depend on the location and size of lesions that can cause motor or non-motor disorders but are more common in motor dysfunction that causes disability (Brewer et al., 2013). Disability experienced by stroke sufferers after stroke is about 50% hemiparesis of the extremities, 30% inability to walk without assistance (Gillen, 2015), as well as limitations in carrying out prolonged range of motion (Elmasry et al., 2016), weakened leg muscle strength (Cawood et al., 2016).

Post-stroke can also cause disturbances in controlling balance so that the incidence of fall risk increases (Mansfield et al., 2012). In this case, they will experience an inability to meet their daily needs (Rhoda, 2012; McKevitt et al., 2011; Zietemann et al., 2018). Daily activities are an indicator in the rehabilitation stage of post-stroke patients (Gialanella et al., 2015). The rehabilitation stage is a process of repairing or restoring physical function to increase independence (O'kane, 2019). One of the interventions carried out in the rehabilitation stage in post-stroke patients is exercise therapy. (Brenner, 2018). Exercise therapy is part of nursing interventions, including balance exercise therapy, muscle control exercise therapy, and joint mobility exercise therapy (Bulechek, Butcher, Docherman, & Wagner, 2013). In providing education on exercise therapy, a support system is needed. Good support is able to provide a source of strength to others, therefore in research to identify the form of support for the provision of exercise education in post-stroke.

MATERIALS AND METHODS

This study uses Delphi's study to produce a consensus from experts, especially neuroscientists. The Delphi types used are the e-Delphi type and modified Delphi. The e-Delphi type is carried out by providing questionnaires to experts to get an agreement. The Delphi study was carried out three times. Delphi round 1 is done by giving open-ended questions to the expert panel.

Inclusion criteria for experts in neurologists & physiotherapists, minimum Master's Degree last education, minimum work experience of less than 3 years. Experts consist of 2 neurologists, 1 medical rehabilitation specialist, 1 physiotherapist, 6 clinical nurses, 3 academic nurses. Recruitment was carried out by researchers who identified neurologists, medical rehabilitation specialists, physiotherapists, clinical nurses, and academic nurses who are experts in stroke management by the inclusion criteria. The question given in Delphi round 1 was, "What kind of support do you think is the provision of exercise therapy education for post-stroke patients?"

The questions were sent to the expert panel online (E-Delphi) through the WhatsApp application, and the questionnaire was made using the Google Form application. The Delphi round 2 questionnaire was obtained from the results of Delphi round 1, which was the answer of the expert panel. Delphi round 2 items that meet the content validity index (CVI) percentage of 80% are submitted to Delphi round 3. Delphi round 3 aims to produce an agreement from the expert panel regarding the components of the form of support in the provision of training therapy education that meets the CVI percentage of 80% and is relevant as a consensus document

All expert panels complete the online statement of willingness form. The research ethics permit 87/UN4.6.4.5.31/PP36/2021 was obtained from the Faculty of Medicine Ethics Commission, Hasanuddin University

RESULTS

Thirteen-panel participants completed the survey. Most of the participants are nurses experienced in treating stroke patients. Some are from other professions, including neurologists, medical rehabilitation doctors, and physiotherapists, who also have experience providing care to post-stroke patients. The characteristics of the participants are shown in Table 1

Table 1. Expert panel demographic data

Variable	n =13 (%)	Min-Max	Mean±SD
Age		32-71	43.77±9.39
Gender			
Man	8 (61.5)		
Woman	5 (38.5)		
Job Type			
Neurologist	2 (15.38)		
Rehabilitation specialist medik medic	1 (7.69)		
Nurse	9 (69.23)		
Physiotherapy	1 (7.69)		
Last Education			
Master's Degree	12 (92.3)		
Doctoral Degree	1 (7.7)		
Length of Work		6-40	22.15±8.94
Work Unit			
Health Center	3 (23.1)		
Hospital	6 (46.2)		
Practice/Clinic	1 (7.7)		
Educational Institutions	3 (23.1)		

Based on the demographic table above, the average age of experts is 43.77±9.39, with a minimum age of 32 and a maximum age of 71. The majority gender is 8 people, and the education is at most strata two (master's degree). The average working period is 22.15±8.94 (years), with a minimum working period of 6 years and a maximum of 40 years. Based on the work unit, the average working in a hospital is 6 people.

Table 2: DELFI results

NO	Questions for Experts	Delfi 1 Results	Delfi Results 2		Delfi 3 Results	
			n	(%)	n	(%)
1	Form your support so that patients are willing to do the exercises.	Fostering trusting relationships	13	100	13	100
		Providing support	13	100	13	100
		Providing emotional support	13	100	13	100
		Peer group support	12	92.31	9	69
		Reward support (positive reinforcement).	13	100	13	100

NO	Questions for Experts	Delfi 1 Results	Delfi Results 2		Delfi 3 Results	
			n	(%)	n	(%)

Based on Table 2: Forms of support so that patients are willing to do the recommended exercises in the form of fostering trusting relationships, providing support, providing emotional support, and reward support (positive reinforcement) with the percentage of experts who agree above 80% both in the Delphi round 3 peer group support 69%.

DISCUSSION

The study was conducted using the Delphi process to measure the assessment of a group of experts to make decisions, assess priorities, or make estimates, with this technique expecting experts to agree on a Venon (2009) agreement cited in (Grove, Burns, & Gray, 2013). Therefore, this research was conducted using the Delphi process to get agreement on the form of exercise performed at the homes of post-stroke patients. The number of research expert respondents came to the Delphi 3 round of 13 people. An optimal number of 7 to 12 is considered adequate (Phillips (2000) cited in Wilkes, Mohan, Luck, & Jackson, 2010).

The module development stage involves researchers involving health workers in various fields of expertise and work units. In the field of knowledge, neurologists, medical rehabilitation doctors, nurses, and physiotherapists provide recommendations for support for providing exercise therapy education as a result of intercollaboration between professions. Intercollaboration between professions can solve patient problems by improving the efficiency and continuity of patient care. Collaboration in healthcare is defined as healthcare professionals enhancing roles, working together, and sharing responsibilities to address a problem and make decisions in formulating and implementing treatment plans for patients and their patients. (Kartini et al., 2019). Effective inter coordination between professions in health services by providing patient care support to make decisions together (Mertens et al., 2021), To produce a form of support in providing exercise therapy education developed from various fields of expertise. In this study, experts with the last level of education, namely master's degree and doctoral degree, have a reasonably long work experience.

Based on the level of education and length of work of the 13 experts, it can be said that they are competent in providing services to post-stroke patients. The size of work or the period of service that a person has taken in carrying out work tasks and has carried out well is one measure of having work experience based on competence. Work experience is a process of forming a person's knowledge or skills per their competencies in carrying out work tasks. (Ranupandojo, 2015). Work experience affects the performance of improving health services to increase patient satisfaction. (Dhinta Feritsya Chita et al., 2022) Therefore, experts who have worked for a long time can contribute to the form of shamangy in providing education for post-stroke patients by having a lot of experience in providing services.

Based on the form of support so that patients are willing to do the recommended exercises in the form of fostering relationships of mutual trust, providing support, emotional support, and reward support (positive reinforcement) with the percentage of experts agreeing above 80% in both the 2nd and 3rd Delphi rounds unless peer group support is not included because experts who agree with

69% of the peer group support in the 3rd Delphi round. Experts do not recommend Peer group support because the respondents are post-stroke patients with limited activities to move and gather, so this is a consideration not to be used. peer group support experts disagree, in line with previous research, that it does not have the effect of providing group support and social support on increasing satisfaction with health services (Wang et al., 2022)., However, in this case, it is necessary to consider peer group support as a service provided to someone with a problem that aims to increase motivation and effective strategies and empower them to live a healthier/better life (Septiani et al., 2020). Meanwhile, providing education with positive feedback can increase learning concentration when receiving material (Wahyu & Saputra, 2020). Therefore, it is essential to have a form of shaman with positive feedback on the provision of exercise therapy in post-stroke, and experts also show agreement with the provision of emotional support in line with previous research explaining that the provision of emotional shamans can increase patient compliance with medication control (Rahmat et al., 2023). Fostering a relationship of mutual trust and providing support can increase confidence and positive feelings towards a person, which will increase the stability of the relationship of mutual trust. Previous research that began with the support of a relationship of mutual trust increased knowledge in the prevention and management of diarrhea (Pratama, 2021).

CONCLUSION

The results of this study have resulted in a consensus that can be used as a form of support for the provision of exercise therapy education for post-stroke patients.

REFERENCES

- Benjamin, E. J., Virani, S. S., Callaway, C. W., Chamberlain, A. M., Chang, A. R., Cheng, S., Chiuve, S. E., Cushman, M., Delling, F. N., Deo, R., De Ferranti, S. D., Ferguson, J. F., Fornage, M., Gillespie, C., Isasi, C. R., Jiménez, M. C., Jordan, L. C., Judd, S. E., Lackland, D., ... Muntner, P. (2018). Heart disease and stroke statistics - 2018 update: A report from the American Heart Association. In *Circulation* (Vol. 137, Issue 12). <https://doi.org/10.1161/CIR.0000000000000558>
- Brenner, I. (2018). Effects of Passive Exercise Training in Hemiplegic Stroke Patients: A Mini-Review OPEN ACCESS. *Sports Medicine and Rehabilitation Journal*, 3(3), 1036. http://www.remedypublications.com/sports-medicine/articles/pdfs_folder/smrj-v3-id1036.pdf
- Brewer, L., Horgan, F., Hickey, A., & Williams, D. (2013). Stroke rehabilitation: Recent advances and future therapies. *Qjm*, 106(1), 11–25. <https://doi.org/10.1093/qjmed/hcs174>
- Buijck, B., & Ribbers, G. (2018). The challenges of nursing stroke management in rehabilitation centres. In *The Challenges of Nursing Stroke Management in Rehabilitation Centres*. <https://doi.org/10.1007/978-3-319-76391-0>
- Cawood, J., Us, B. O. T., & Us, M. (2016). *Impact of post-stroke impairments on activities and participation as experienced by stroke survivors in a Western Cape setting*. 46(2), 10–15.
- Dhinta Feritsya Chita, Wasis Budiarto, & C. Sri Hartati. (2022). Analisis Pengaruh Pengalaman Kerja Dan Pelatihan Terhadap Mutu Pelayanan Dan Kinerja Tenaga Kesehatan Rumah Sakit Islam (Rsi) Surabaya. *EKONOMIKA45: Jurnal Ilmiah Manajemen, Ekonomi Bisnis, Kewirausahaan*, 9(2), 151–162. <https://doi.org/10.30640/ekonomika45.v9i2.216>
- Elmasry, M. A., Abd, Z., Mohammad, E.-L., Shehat, G. A., & Ghanem, H. M. (2016). Assessment of Musculoskeletal complications for Immobilized Stroke Patients at Assiut University Hospital. *IOSR Journal of Nursing and Health Science*, 4(July 2016), 2320–1940. <https://doi.org/10.9790/1959-04660106>
- Gialanella, B., Santoro, R., & Ferlucci, C. (2015). *Predicting outcome after stroke: the role of basic activities of daily living*. 147(2), 135–140. <https://doi.org/10.13140/RG.2.1.5129.4169>

- Gillen, G. (2015). What is the evidence for the effectiveness of interventions to improve occupational performance after stroke? *American Journal of Occupational Therapy*, 69(1), 1–3. <https://doi.org/10.5014/ajot.2015.013409>
- Johnson, W., Onuma, O., Owolabi, M., & Sachdev, S. (2016). Stroke: A global response is needed. *Bulletin of the World Health Organization*, 94(9), 634A–635A. <https://doi.org/10.2471/BLT.16.181636>
- Kartini, Hadiyanta, T. H., & Astanto, H. (2019). *Modul Penerapan Interprofessional Collaborative Practice (IPCP) Pada Kegiatan Ante Natal Care (ANC) Terpadu Di Puskesmas*. www.tcpdf.org
- Mansfield, A., Mochizuki, G., Inness, E. L., & McIlroy, W. E. (2012). Clinical correlates of between-limb synchronization of standing balance control and falls during inpatient stroke rehabilitation. *Neurorehabilitation and Neural Repair*, 26(6), 627–635. <https://doi.org/10.1177/1545968311429688>
- McKevitt, C., Fudge, N., Redfern, J., Sheldenkar, A., Crichton, S., Rudd, A. R., Forster, A., Young, J., Nazareth, I., Silver, L. E., Rothwell, P. M., & Wolfe, C. D. A. (2011). Self-reported long-term needs after stroke. *Stroke*, 42(5), 1398–1403. <https://doi.org/10.1161/STROKEAHA.110.598839>
- Mertens, F., Debrulle, Z., Lindskog, E., Deliens, L., Deveugele, M., & Pype, P. (2021). Healthcare professionals' experiences of inter-professional collaboration during patient's transfers between care settings in palliative care: A focus group study. *Palliative Medicine*, 35(2), 355–366. <https://doi.org/10.1177/0269216320968741>
- O'kane, D. (2019). *Rehabilitation after stroke*. 1–11. <http://neurovascularmedicine.com/rehabilitation.php>
- Pratama, B. N. (2021). *Peningkatan Pengetahuan Tentang Pencegahan Dan Penanganan Diare*.
- Rahmat, N. N., Isnawati, I. A., Tinggi, S., Kesehatan, I., Pesantren, H., Hasan, Z., & Pengobatan, K. K. (2023). Hubungan dukungan emosional keluarga dengan kepatuhan kontrol pengobatan pasien tbc paru dipuskesmas kedopak kecamatan kedopak kota probolinggo. *Journal Ilmu Kesehatan*, 1(2), 18–27.
- Ranupandojo. (2015). *Pengalaman Kerja Dalam Skala Pengukuran*. PT. Elix Median Komputindo.
- Rhoda, A. (2012). Limitations in Activity and Participation experienced by stroke patients: A Qualitative Inquiry. *South African Journal of Physiotherapy*, 68(3). <https://doi.org/10.4102/sajp.v68i3.20>
- Riskesdas. (2018). Hasil Utama Riset Kesehatan Dasar. *Kementrian Kesehatan Republik Indonesia*, 1–100. <https://doi.org/10.1177/0269216320968741> Desember 2013
- Roth, G. A., Feigin, V. L., Nguyen, G., Cercy, K., Johnson, C. O., Alam, T., Parmar, P. G., Abajobir, A. A., Abate, K. H., Abd-Allah, F., Abejie, A. N., Abyu, G. Y., Ademi, Z., Agarwal, G., Ahmed, M. B., Akinyemi, R. O., Al-Raddadi, R., Aminde, L. N., Amlie-Lefond, C., ... Murray, C. J. L. (2018). Global, regional, and country-specific lifetime risks of stroke, 1990 and 2016. *New England Journal of Medicine*, 379(25), 2429–2437. <https://doi.org/10.1056/NEJMoa1804492>
- Wahyu, Y., & Saputra, A. (2020). Pengaruh Bimbingan Kelompok Dengan Teknik Reinforcement Positif Dan Self Management Untuk Meningkatkan Konsentrasi Belajar. *Unimma Journal*, 12(1), 11–28.
- Zietemann, V., Georgakis, M. K., Dondaine, T., Muller, C., Mendyk, A. M., Kopczak, A., Hénon, H., Bombois, S., Wollenweber, F. A., Bordet, R., & Dichgans, M. (2018). Article early moca predicts long-term cognitive and functional outcome and mortality after stroke. *Neurology*, 91(20), E1838–E1850. <https://doi.org/10.1212/WNL.0000000000006506>