International Journal of Technology and Education Research

https://e-journal.citakonsultindo.or.id/index.php/IJETER

E-ISSN: 2986-0733

The Application Of A Combination Of Slow Stroke Back Massage (Ssbm) And Rubber Ball Grip Exercises To Increase Muscle Strength In Patients With Non-Hemorrhagic Stroke At Sofifi General Hospital

Enggar Ardiani Tagap[1], Amrih Widiati[2]

[12]Nursing Professional Study Program, Karya Husada University, Semarang

Corresponding Author: enggartagap21@gmail.com, amrihwidiati@gmail.com

Abstract

Non-hemorrhagic stroke often causes muscle weakness, which impacts mobility limitations and reduces patient independence. This study aims to describe the application of a combination of Slow Stroke Back Massage (SSBM) and rubber ball grip exercises to increase muscle strength in non-hemorrhagic stroke patients at Sofifi General Hospital. The study used a descriptive design with a case study approach. The study population was non-hemorrhagic stroke patients treated in the Crysan Ward of Sofifi General Hospital, with a sample of one patient selected using a purposive sampling technique. The research instruments included a nursing assessment format, observation sheets, medical records, vital sign measurements, and Manual Muscle Testing (MMT). Data were collected through interviews, observations, physical examinations, and documentation, then analyzed descriptively by comparing conditions before and after the intervention. The results showed an increase in right upper extremity muscle strength from an MMT value of 3/5 to 4/5 after three days of intervention. Patients also experienced increased mobilization ability, decreased blood pressure, and increased comfort. In conclusion, the combination of SSBM and rubber ball grip exercises has the potential to increase muscle strength and support the rehabilitation process of non-hemorrhagic stroke patients.

Keywords:Hand Grip Exercise, Muscle Strength, Non-Hemorrhagic Stroke, Rehabilitation, Slow Stroke Back Massage

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Technology and Education Research

https://e-journal.citakonsultindo.or.id/index.php/IJETER

E-ISSN: 2986-0733

INTRODUCTION

Stroke is a leading cause of death and disability worldwide. Most cases are non-hemorrhagic strokes caused by blockages in blood vessels in the brain, leading to neurological dysfunction. In Indonesia, the prevalence of stroke continues to rise and is a health problem requiring comprehensive treatment (Feigin et al., 2021; Indonesian Ministry of Health, 2024).

Motor impairments in the form of muscle weakness and hemiparesis are common effects experienced by non-hemorrhagic stroke patients. These conditions can hinder daily activities and reduce quality of life, requiring effective rehabilitation to restore motor function (Amila et al., 2022; Rahmawati et al., 2021).

Rubber ball grip exercises are a non-pharmacological intervention proven to improve upper extremity muscle strength in stroke patients. This therapy works by stimulating repeated muscle contractions, supporting the recovery of motor function (Rahmasari & Purwaningsih, 2023; Febrywati et al., 2025).

In addition to motor impairment, many non-hemorrhagic stroke patients experience hypertension, which can interfere with the rehabilitation process. Slow Stroke Back Massage (SSBM) is known to provide relaxation, improve blood circulation, and help lower blood pressure. However, research combining SSBM with rubber ball grip exercises is limited (Jamaludin et al., 2021; Marhamah & Rahani, 2023).

This study aims to describe the combined application of SSBM and rubber ball grip exercises to improve muscle strength in non-hemorrhagic stroke patients at Sofifi General Hospital. This research is important because muscle weakness remains a major problem in stroke patients. The novelty of this study lies in the combined application of both interventions to improve muscle strength while simultaneously supporting the patient's physiological condition during the rehabilitation process.

METHOD

This research uses a descriptive method with a case study approach to in-depth describe the application of a combination of Slow Stroke Back Massage (SSBM) and rubber ball grip exercises in non-hemorrhagic stroke patients experiencing upper extremity muscle weakness. This approach was chosen because it allows researchers to comprehensively understand the nursing care process and patient responses in a real-world context (Creswell & Poth, 2024; Sugiyono, 2022).

The study population was non-hemorrhagic stroke patients treated in the Crysan Ward of Sofifi General Hospital. The sample was selected using a purposive sampling technique,

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Technology and Education Research

https://e-journal.citakonsultindo.or.id/index.php/IJETER

E-ISSN: 2986-0733

namely a 60-year-old male patient who met the inclusion criteria of experiencing hemiparesis, being fully conscious, able to communicate, and willing to participate in the study (Sudaryono, 2023; Febrywati et al., 2025).

The research instruments included a nursing assessment form, observation sheets, medical records, vital sign measurements, and Manual Muscle Testing (MMT) to assess muscle strength. Data were collected through interviews, observations, physical examinations, and documentation, then analyzed descriptively by comparing patient conditions before and after the intervention (Emzir, 2023; Creswell & Poth, 2024).

The study began with an explanation and informed consent, followed by an assessment of the patient's condition and initial muscle strength measurements using the MMT. The patient was then given a combination of rubber ball grip exercises and SSBM, according to established procedures, throughout the treatment period (Rahmasari & Purwaningsih, 2023; Marhamah & Rahani, 2023).

Evaluation was conducted by observing changes in muscle strength, comfort levels, and patient responses after the intervention. The entire research process adhered to ethical research principles, including informed consent, data confidentiality, anonymity, honesty, fairness, benefit, and a professional commitment to protecting patient rights and safety (Emzir, 2023; Creswell & Poth, 2024).

RESULTS AND DISCUSSION

Supporting Data

Table 1 Laboratory Examination Examination on Sunday, November 2, 2025

Type of Examination	Results	Unit	Reference Value
Random Glucose	118	mg/dL	80-120 mg/dL
Total cholesterol	295	mg/dL	<200 mg/dL
HDL-Cholesterol	49	mg/dL	>45 mg/dL
LDL - Cholesterol	188	mg/dL	<130 mg/dL
Triglycerides	278	mg/dL	<140 mg/dL
WBC	8.90	$10^3/mm^3$	4.0-10.0
HGB	11.8	g/dL	12.0-16.0

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Technology and Education Research

https://e-journal.citakonsultindo.or.id/index.php/IJETER

E-ISSN: 2986-0733

Table 2 Medication Therapy

Type of Examination	Results	Unit	Reference Value
Random Glucose	118	mg/dL	80-120 mg/dL
Total cholesterol	295	mg/dL	<200 mg/dL
HDL-Cholesterol	49	mg/dL	>45 mg/dL
LDL – Cholesterol	188	mg/dL	<130 mg/dL
Triglycerides	278	mg/dL	<140 mg/dL
WBC	8.90	$10^3/mm^3$	4.0-10.0
HGB	11.8	g/dL	12.0-16.0

Table 3 Medication Therapy

No	Drug Name	Dose	Route	Indication
1.	NACL 0.9%	18 tpm	IV	Maintain hydration, electrolytes and medication administration.
2.	Citicoline	2x250 mg	IV	Prevents brain damage (neuroprotection) and helps the formation of cell membranes in the brain (neurorepair)
3.	Mecobalamin	2x1500 mg	IV	Treating peripheral neuropathy (peripheral nerves)
4.	Lansoprazole	2x30 mg	IV	Reduces stomach acid production and prevents irritation or stomach ulcers
5.	Atorvastatin	1x40 mg	Oral	Lowers cholesterol and prevents recurrent blood vessel blockages.
6.	CPG	1x75 mg	oral	To prevent blood clots and reduce the risk of recurrent stroke.
7.	Bisoprolol	1x2.5 mg	oral	To reduce the workload of the heart in stroke patients.
8.	Amlodipine	1x10 mg	oral	To lower blood pressure and help improve blood flow.

Table 4 Vital Signs

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Technology and Education Research

https://e-journal.citakonsultindo.or.id/index.php/IJETER

E-ISSN: 2986-0733

No	Type of Examination	Inspection Date & Time								
		Monday, 03-11/2025			Tuesday, 04-11/2025			Wednesday, 05-11/2025		
		Morning: 07.00	Noon: 12.00	Evening: 10:00 PM	Morning: 06.00	Noon: 12.00	Evening: 10:00 PM	Morning: 06.00	Noon: 12.00	Evening: 10:00 PM
1.	Blood pressure	140/90	130/80	140/80	130/80	120/80	120/90	120/70	130/80	110/70
2.	Pulse	77	80	89	78	76	77	75	82	80
3.	Breathing	18	20	22	20	20	21	17	18	21
4.	Temperature	36.7	37.1	36.8	36.7	37.1	36.9	37	37.0	36.8
5.	SPO2	96%	99%	98%	98%	96%	97%	97%	99%	99%

Table 5 Data Analysis

No	SYMPTOM	ETIOLOGY	PROBLEM
1.	Risk Factors: - The patient has a history of uncontrolled hypertension 5 years ago. - Not taking antihypertensive medication regularly - Initial blood pressure in the emergency room was 160/100 mmHg. - Smoking history 1 pack/day - Total cholesterol 200 mg/dl	_	Risk of Ineffective Cerebral Perfusion (D.0017)
2.	DS: - The patient said he had weakness in his right limbs. - The patient said it was difficult to move his right hand and he was unable to grip objects firmly. - The patient said he had difficulty walking and his daily activities had become limited since experiencing these complaints.	Neuromuscular Disorders	Physical Mobility Impairment (D.0054)

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Technology and Education Research

https://e-journal.citakonsultindo.or.id/index.php/IJETER

E-ISSN: 2986-0733

	DO: - Right side hemiparesis is visible - Muscle strength 3355/4455 - The ROM of the right extremity was limited, the patient appeared to have difficulty moving his right hand and foot actively. - Mobility is limited in bed and requires family assistance when moving or walking.		
3.	Risk factors: - Decreased muscle strength in the right extremity - Right-sided hemiparesis, - Balance disorders, difficulty walking, and needing assistance when changing positions and walking.		Risk of Falling (D.0143)

Table 6 Nursing diagnoses

No down payment	Day/Date	Nursing Diagnosis
1.	Monday, 03-11/2025	Cerebral Perfusion Risk is characterized by: History of hypertension for ± 5 years and not regularly taking antihypertensive medication, based on medical record data, initial blood pressure upon admission to the ER was 160/100 mmHg, history of smoking ± 1 pack/day since a young age, and hypercholesterolemia (total cholesterol >200 mg/dL).
2.	Monday, 03-11/2025	Mobility impairment related to neuromuscular disorders is characterized by the patient reporting difficulty moving his right hand and an inability to grip objects firmly. The patient reports difficulty walking and limitations in daily activities since experiencing these symptoms.
3.	Monday, 03-	Fall risk is characterized by: Decreased muscle strength in the

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

	11/2025	right extremity, right-sided hemiparesis, impaired balance, difficulty walking, and needing assistance when changing positions and walking.

Table 7 Nursing Care Plan

No	Nursing Diagnosis	Objectives & Outcome Criteria	Intervention	Signature
1.	Risk of Ineffective Cerebral Perfusion (D.0017)	After carrying out nursing actions for 3 x 24 hours, it is expected that cerebral perfusion will increase with the following outcome criteria: (L.02014) ▪ The level of awareness increases ▪ Headache complaints decreased ▪ Mean arterial pressure improved ▪ Intracranial pressure improves ▪ TTV is improving	**Intracranial Pressure Monitoring (I.06198)** OBSERVATION ▪ Identify the causes of increased ICT ▪ Monitor for increased blood pressure ▪ Monitor pulse pressure widening (difference between TDS and TDD) ▪ Monitor for decreased heart rate ▪ Breath rhythm monitor ▪ Monitor for decreased level of consciousness ▪ Monitor pupil response THERAPEUTIC ▪ Maintain a neutral head and neck position. ▪ Set the monitoring interval according to the patient's condition. ▪ Document monitoring results ▪ Minimize stimuli by providing a calm environment.	Enggar

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

			▪ Perform Slow Stroke Back Massage (SSBM) therapy according to procedure to increase relaxation and help lower the patient's blood pressure. EDUCATION ▪ Explain the purpose and procedures of monitoring ▪ Inform monitoring results, if necessary	
2.	Physical Mobility Impairment (D.0054)	After carrying out nursing actions for 3x24 hours, it is expected that physical mobility will increase with the following outcome criteria: (L.05042) ▪ Increased extremity movement ▪ Increased muscle strength ▪ Range of motion (ROM) increases	**Mobilization Support (I.05173)** OBSERVATION ▪ Identify any pain or other physical complaints ▪ Identify physical tolerance for movement ▪ Monitor heart rate and blood pressure before starting mobilization. ▪ Monitor general conditions during mobilization THERAPEUTIC ▪ Facilitate mobilization activities with assistive devices (e.g., bed rails) ▪ Facilitate the patient to do rubber ball grip exercises gradually to increase the strength of the upper extremity muscles that are experiencing weakness. ▪ Facilitate movement, if necessary	Enggar

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

			▪ Involve the family to help the patient improve movement. EDUCATION ▪ Explain the purpose and procedures of mobilization ▪ Recommend early mobilization ▪ Teach simple mobilizations that need to be done (eg: sitting in bed, moving from bed to chair)	
3.	Risk of Falling (D.0143)	After carrying out nursing actions for 3x24 hours, it is hoped that the level of falls will decrease with the following outcome criteria: (L.14138) ▪ Falling out of bed downhill ▪ Falling while standing downhill ▪ Falling while sitting down ▪ Falling while walking downhill	**Fall Prevention (I.14540)** OBSERVATION 1. I identification of risk factors for falls 2. Identify environmental factors that increase the risk of falls 3. Monitor the ability to transfer from bed to chair and vice versa. THERAPEUTIC 4. Orient the room to the patient and family 5. Make sure the wheels of the bed and wheelchair are always locked. 6. Install a handrail/safety bed 7. Set the bed to the lowest position 8. Use walking aids (e.g., wheelchair, walker) EDUCATION	Enggar

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Technology and Education Research

https://e-journal.citakonsultindo.or.id/index.php/IJETER

E-ISSN: 2986-0733

			9. Advise calling a nurse if assistance with moving is needed. 10. Recommend using non-slip footwear 11. Recommend concentrating on maintaining body balance	

Table 7 Nursing Implementation

Date	No. DX	O'clock	Implementation	Response Results	Initials
IMPLEMENTATION DAY 1					
03-11/2025	1.2	09.00	Assess complaints of headache, activity tolerance, level of consciousness, muscle strength, blood pressure, pulse, respiration, and patient pupil response.	DS: The patient said his head felt sore all the way to his neck and the right side of his body was weak. DO: BP 140/90 mmHg, Pulse 77x/minute, RR 18x/minute, GCS 15 (E4V5M6), isochoric pupils, decreased right extremity muscle strength	
	1	09.20	Maintain a neutral head and neck position and create a calm environment.	The patient appears comfortable and can rest.	
	3	09.40	Identifying risk factors for falls and the patient's ability to change position	The patient appeared to have weakness in his right extremity and required assistance when moving.	
	3	10.00	Install the bed handrail and set the bed to the lowest position.	Handrail installed and bed in low position	

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Technology and Education Research

https://e-journal.citakonsultindo.or.id/index.php/IJETER

E-ISSN: 2986-0733

	2	10.20	Facilitate patients to carry out simple mobilization gradually	The patient is able to sit up in bed with assistance.	
	2.	10:40	Facilitate gradual right hand rubber ball grip exercises	DS: The patient said that his right hand still had difficulty gripping the rubber ball firmly. DO: The patient is able to follow the exercise of slowly gripping a rubber ball, and the muscle strength of the right upper extremity is still 3/5.	
	1	11.00	Perform Slow Stroke Back Massage (SSBM) therapy for ±10 minutes	DS: The patient said he felt more relaxed. DO: BP 130/80 mmHg, patient appears calmer	
	2.3	11.20	Involve the family in helping with mobilization and maintaining patient safety during transfers.	Cooperative family helps patients	
	123	11.25	Provide education to patients and families regarding condition monitoring, mobilization, and fall prevention.	The patient and family said they understood the explanation given.	
	3	11.35	Encourage patients to ask for help when moving or walking.	The patient said he was willing to ask for help.	
	1	11.40	Documenting the results of monitoring patient conditions	The results of the observations are recorded in the nursing documentation.	
IMPLEMENTATION DAY 2					

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Technology and Education Research

https://e-journal.citakonsultindo.or.id/index.php/IJETER

E-ISSN: 2986-0733

04-11/2025	1.2	08.30	Monitor the patient's vital signs before nursing interventions	BP 130/80 mmHg, Pulse 78x/minute, RR 20x/minute, Temperature 37°C, SpO_2 98%	Enggar
	1	08.40	Monitor the patient's pulse pressure, heart rate, and breathing rhythm.	BP 130/80 mmHg with pulse pressure 50 mmHg, heart rate 78x/minute, regular breathing rhythm	
	1	08.50	Monitor the patient's level of consciousness and pupil response.	GCS 15 (E4V5M6), patient compos mentis, isochoric pupil 3 mm/3 mm light reflex (+/+)	
	1	09.00	Maintain a neutral head and neck position and adjust to a semi-Fowler position.	The patient appears comfortable and not anxious.	
	3	09.10	Identifying risk factors for falls and the patient's ability to change position	The patient still experiences weakness of the right extremity and requires assistance when changing positions.	
	3	09.20	Identifying environmental factors that increase the risk of falls	The patient's surroundings appear safe, the floor is not slippery and the lighting is adequate.	
	3	09.30	Make sure the bed wheels are locked and the bed is in a low position.	The bed wheels are locked and the bed is in a low position.	
	3	09.35	Installing a handrail/bed guard	Handrails are installed on both sides of the bed.	
	2	09.35	Identify the presence of pain or other physical complaints before	DS: The patient stated that his right arm and leg still felt weak. DO: The patient	

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Technology and Education Research

https://e-journal.citakonsultindo.or.id/index.php/IJETER

E-ISSN: 2986-0733

			mobilization.	appeared to be able to slowly move his right extremity.	
	2	09.40	Identifying the patient's physical tolerance when performing movements	The patient is able to sit on the edge of the bed for ±10 minutes with minimal assistance.	
	2	09.55	Monitor blood pressure and general condition before mobilization.	BP 130/80 mmHg, Pulse 80x/minute, patient appears cooperative	
	2	10.10	Facilitate patients to do rubber ball grip exercises gradually	DS: The patient said the right hand was still weak but gripped more easily than before. DO: The patient is able to hold a rubber ball for ±7 minutes, the muscle strength of the right upper extremity is still 3/5	
	2	10.30	Facilitate patients to perform simple mobilization and position changes.	The patient was able to sit and move his right leg slowly with assistance.	
	2	10.45	Involving the family in helping mobilize the patient	The family appears to be helping the patient when changing positions.	
	2.3	10:55	Teach patients simple mobilization and encourage them to ask for help when moving.	DS: The patient said he would ask for help when he wanted to move or go to the bathroom. DO: The patient appears to understand the instructions given.	
	3	11.10	Encourage patients to	The patient appeared	

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Technology and Education Research

https://e-journal.citakonsultindo.or.id/index.php/IJETER

E-ISSN: 2986-0733

			wear non-slip footwear and maintain body balance.	cooperative with the education provided.	
	3	11.20	Using walking aids/wheelchairs when mobilizing patients	The patient was moved using a wheelchair and family assistance.	
	1	11.40	Minimize environmental stimuli by creating a calm room atmosphere.	The patient's environment appears calm and the patient can rest.	
	1	11.50	Perform Slow Stroke Back Massage (SSBM) therapy for ±15 minutes according to procedure	DS: The patient reported feeling more relaxed and comfortable after the therapy. DO: BP before therapy was 130/80 mmHg and after therapy was 120/80 mmHg, pulse 76 beats/minute.	
	1	12.15	Explain the purpose and procedures for monitoring neurological conditions and blood pressure and provide information on the monitoring results.	DS: The patient stated that he understood the explanation given. DO: The patient and family appeared cooperative.	
IMPLEMENTATION DAY 3					
05-11/2025	2	08.35	Facilitate patients to perform simple mobilization and sit-stand exercises as tolerated.	The patient is able to sit and stand with minimal assistance for ±3 minutes.	
	2	08.45	Involving the family in helping mobilize the patient	The family appears to be helping and accompanying the patient during the exercise.	

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Technology and Education Research

https://e-journal.citakonsultindo.or.id/index.php/IJETER

E-ISSN: 2986-0733

	2.3	09.00	Educate patients to ask for help when moving and maintaining body balance.	DS: The patient said he would be careful and ask for help when walking. DO: The patient appears to understand the education provided.	
	3	09.10	Using a walking aid/wheelchair when assisting patient mobilization	The patient moved using family assistance and a wheelchair.	
	1	10.00	Minimize environmental stimuli by creating a calm room atmosphere.	The patient appears relaxed and can rest.	
	1	10.15	Perform Slow Stroke Back Massage (SSBM) therapy for ±15 minutes according to procedure	DS: The patient said the headache had reduced and the body felt more comfortable. DO: BP before therapy 120/70 mmHg and after therapy 110/70 mmHg, pulse 78x/minute	
	1	10.35	Explain the results of monitoring the patient's condition to the patient and family.	DS: The patient stated that he understood the condition and the recommendations given. DO: Patient and family appear cooperative	

Table 9 Nursing Evaluation

Date/Time	No. DX	Evaluation	Initials
DAY 1 EVALUATION			
03-11/2025 2:00 PM WIB	1	S: - The patient said the headache felt less severe than before.	

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

		- Patients said they felt more relaxed and comfortable after receiving back massage therapy. - The patient said he still felt weak on the right side of his body. O: - Consciousness compos mentis - GCS 15 (E4V5M6) - BP decreased from 140/90 mmHg to 130/80 mmHg - MAP improved from 106.7 mmHg to 96.7 mmHg - Pulse 78x/minute - RR 18x/minute - Right and left isochoric pupils - There was no decrease in consciousness - Light slurred speech is still visible - The face looks slightly asymmetrical on the right side. - Right extremity muscle strength is still decreasing - The patient appears calmer and can rest. A: - The issue of Ineffective Cerebral Perfusion Risk still needs to be monitored. Q: - Maintain Intracranial Pressure Monitoring (I.06198) interventions no. 2-9 and 11-13.	
	2.	S: - The patient said that his right hand and leg still felt weak when moved. - The patient said he was not yet able to walk alone and still needed help from his family when moving around. - The patient said the right handstill difficult to use to grip firmly. O: - Right upper extremity muscle strength 3/5 - Right lower extremity muscle strength 4/5 - Limited range of motion of the right extremity	

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Technology and Education Research

https://e-journal.citakonsultindo.or.id/index.php/IJETER

E-ISSN: 2986-0733

		- The patient is able to follow the boa laret gripping exercise - The patient is able to sit up in bed with assistance. - The patient is able to perform rubber ball grip exercises slowly. - Mobilization is still assisted by the family - The patient appears weak when changing positions. - Activity tolerance is still limited A: - The problem of Physical Mobility Impairment has not been resolved. Q: - Continue Mobilization Support intervention (I.05173) no. 1–11.	
	3	S: - The patient said he was still afraid to move alone because the right side of his body was weak. - The patient said he would ask for help from family or nurses when moving. O: - The patient appears to have right-sided hemiparesis. - Patient mobilization assisted by family - The patient is not yet able to walk independently - Bed handrail installed - Bed in lowest position - The patient's surroundings appear safe. - No falls occurred during treatment A: - Fall Risk Issues are still a risk Q: - Continue Fall Prevention intervention (I.14540) no. 1, 2, 3, 5, 6, 7, 8, 9, 10, and 11.	
DAY 2 EVALUATION			
04-11/2025	1	S:	

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

2:00 PM WIB		- Patients said their headaches were reduced and they felt more relaxed after the therapy. - The patient said he still felt weak on the right side of his body. O: - Consciousness compos mentis - GCS 15 (E4V5M6) - BP before therapy 130/80 mmHg and after therapy 120/80 mmHg - MAP before therapy 97 mmHg and after therapy 93 mmHg - Pulse 76x/minute - RR 18x/minute - Isochoric pupil 3 mm/3 mm light reflex (+/+) - There was no decrease in consciousness - The patient's environment appears calm. - The face looks a little asymmetrical on the right. - Light slurred speech is still visible A: - The risk of Ineffective Cerebral Perfusion is still being monitored, indicated by the presence of risk factors for hypertension and neurological deficits, but the patient's hemodynamic condition is improving. Q: - Maintain Intracranial Pressure Monitoring (I.06198) interventions no. 2–9 and 11–13.	
04-11/2025 2:00 PM WIB	2.	S: - The patient said that his right hand and leg still felt weak but a little lighter when moved. - The patient said it was easier to grip the rubber ball than before. O: - Right upper extremity muscle strength is still 3/5 - Right lower extremity muscle strength 4/5	

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

		- The patient is able to hold a rubber ball for ±7 minutes - The patient is able to sit on the edge of the bed for ±10 minutes with minimal assistance. - Mobilization is still assisted by the family - Range of motion of the right extremity is still limited - The patient appeared cooperative in following the mobilization exercises. A: - Physical Mobility Impairment has not been resolved but the patient shows better activity tolerance and mobilization exercise ability. Q: - Continue Mobilization Support intervention (I.05173) no. 1–11.	
04-11/2025 2:00 PM WIB	3.	S: - The patient said he would ask for help from family or nurses when he wanted to move or go to the bathroom. O: - The patient still experiences weakness in the right extremity. - Patients still need assistance when changing positions. - Bed handrail installed - Bed in low position - The patient's surroundings appear safe and non-slippery. - The patient appears to understand fall prevention education. - No falls occurred during treatment A: - The risk of falling is still high because the patient still experiences weakness in the right extremity and limited mobility. Q:	

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Technology and Education Research

https://e-journal.citakonsultindo.or.id/index.php/IJETER

E-ISSN: 2986-0733

		- Continue Fall Prevention interventions (I.14540) no. 1, 2, 3, 5, 6, 7, 8, 9, 10, and 11.	
DAY 3 EVALUATION			
05-11/2025 2:00 PM WIB	1.	S: - The patient said the headache had decreased, was no longer noticeable, and was more comfortable. - The patient said he was able to rest better. O: - Consciousness compos mentis - GCS 15 (E4V5M6) - BP before therapy 120/70 mmHg and after therapy 110/70 mmHg - MAP before therapy 87 mmHg and after therapy 83 mmHg - Pulse 78x/minute RR 20x/minute - Isochoric pupil 3 mm/3 mm light reflex (+/+) - There was no decrease in consciousness - The patient appears more relaxed. A: - Risk of Ineffective Cerebral Perfusion is resolved. Q: - Stop the Intracranial Pressure Monitoring intervention and continue monitoring the patient's general condition.	
	2.	S: - The patient said the right hand felt stronger and easier to move. - The patient said it was easier to sit and stand. O: - Right upper extremity muscle strength increased to 4/5 - Right lower extremity muscle strength remains at 4/5 - The patient is able to hold a rubber ball for ±10 minutes - The patient is able to sit and stand with minimal assistance.	

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Technology and Education Research

https://e-journal.citakonsultindo.or.id/index.php/IJETER

E-ISSN: 2986-0733

		- Range of motion of the right extremity increased - Patients appear more active during mobilization exercises. A: - Physical Mobility Impairment partially resolved. Q: - Continue gradual mobilization exercises and educate the family and patient to practice holding a rubber ball independently according to the patient's tolerance.	
	3.	S: - The patient said he would ask for help when he wanted to move or walk. O: - The patient still experiences mild weakness in the right extremity. - The patient is able to move with minimal assistance. Bed handrail installed - Bed in low position The patient's environment appears safe. - No falls occurred during treatment - The patient appears to understand fall prevention education. A: - Risk of falling resolved / Did not occur Q: - Stop the intervention	

DISCUSSION

Non-hemorrhagic stroke is a neurological disorder caused by a blockage in blood flow to the brain, resulting in decreased oxygen and nutrient supply, resulting in motor, sensory, and cognitive impairment (Feigin et al., 2021). In Mr. A's case, he was found to have right extremity weakness, mild slurred speech, facial asymmetry, and blood pressure of 140/90 mmHg. Based

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

on the assessment results, emerging nursing problems included the risk of ineffective cerebral perfusion, impaired physical mobility, and the risk of falls.

The primary intervention was rubber ball grip exercises to increase upper extremity muscle strength through repeated muscle contraction stimulation. After three days of implementation, muscle strength increased, as indicated by a Manual Muscle Testing (MMT) score of 3/5 to 4/5. These results indicate improved motor function, consistent with research by Rahmawati et al. (2021) and Hangkiho and Lumingkewas (2026), which found that repeated motor training can improve muscle strength in stroke patients.

In addition, patients were given Slow Stroke Back Massage (SSBM) as a supportive intervention. SSBM helps increase relaxation, comfort, and physiological stability by stimulating the parasympathetic nervous system, thus supporting the patient's rehabilitation process (Sartika et al., 2023). After SSBM, patients appeared more relaxed, comfortable, and more cooperative in participating in rehabilitation exercises.

Overall, the combination of rubber ball grip exercises and SSBM positively contributed to the improvement of the patient's condition. Rubber ball grip exercises played a role in increasing muscle strength, while SSBM helped create a more stable physiological state, thus supporting successful rehabilitation. However, the results were also influenced by standard hospital therapies such as antihypertensive medications and range of motion (ROM) exercises administered during the treatment period.

REFERENCE

Amila, A., Sembiring, E., & Rifami, E. (2022). Characteristics of stroke in young patients. JINTAN: Journal of Nursing Science, 2(2), 151–159.

Creswell, J. W., & Poth, C. N. (2024). Qualitative inquiry and research design: Choosing among five approaches (5th ed.). Sage Publications.

Emzir. (2023). Qualitative research methodology: Data analysis (Revised edition). Rajawali Pers.

Febrywati, H., et al. (2025). Application of rehabilitation exercises in non-hemorrhagic stroke patients. Indonesian Nursing Journal.

Feigin, VL, Stark, BA, Johnson, CO, Roth, GA, Bisignano, C., Abady, GG, Abbasifard, M., Abbasi-Kangevari, M., Abd-Allah, F., Abdelalim, A., & GBD 2019 Stroke Collaborators. (2021). Global, regional, and national burden of stroke and its risk factors, 1990–2019: A systematic analysis for the Global Burden of Disease Study 2019. The Lancet Neurology, 20(10), 795–820.https://doi.org/10.1016/S1474-4422(21)00252-0

Hangkiho, F., & Lumingkewas, M. (2026). Nursing care with ball grip exercise techniques to

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.

increase upper extremity muscle strength. Manado Scientific Health Journal, 5(1), 15–25.

Jamaludin, M., Mahmudah, RA, & Budi, I. (2021). The effectiveness of slow stroke back massage therapy on increasing physical mobility in post stroke patients: Literature review. In International Conference on Health and Science (Vol. 1, No. 1, pp. 405–411).

Ministry of Health of the Republic of Indonesia. (2024). Indonesia's health profile 2024. Ministry of Health of the Republic of Indonesia.

Marhamah, M., & Rahani, R. (2023). The effect of slow stroke back massage on the physiological condition of hypertensive patients. Indonesian Nursing Journal.

Rahmasari, D., & Purwaningsih, P. (2023). Effectiveness of rubber ball grip exercises on increasing muscle strength in non-hemorrhagic stroke patients. Journal of Medical-Surgical Nursing.

Rahmawati, I., Dewi, R., Pertami, SB, & Pasaribu, E. (2021). Hand exercise using a rubber ball increases grip strength in patients with non-haemorrhagic stroke. The Malaysian Journal of Nursing, 12(3), 32–36.https://doi.org/10.31674/mjn.2021.v12i03.005

Sartika, S., Putri, NK, Wenny, BP, Wijaya, NE, & Saifudin, IMMY (2023). Implementation of slow stroke back massage to reduce anxiety in patients with hemorrhagic stroke: A case study. SMART Nursing Journal, 10(2), 69–75.

Sudaryono. (2023). Quantitative, qualitative, and mixed method research methodology (Latest edition). Rajawali Pers.

Sugiyono. (2022). Quantitative, qualitative, and R&D research methods (2nd Edition). Alfabeta.

Utami, DNWS (2026). Application of rubber ball grip therapy as an effort to improve grip muscles in patients with non-hemorrhagic CVA infarction in the Edelweiss B Ward of Karsa Husada Batu Regional Hospital. Journal of Contemporary Nursing Research, 6(1), 35–46.

Copyright to the author of some rights reserved This work is licensed under aCreative Commons Attribution-ShareAlike 4.0 International License.