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An Analysis of A Rubber Ball Hand Exercise on Stroke Patient: Case Study

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ABSTRACT

Stroke is a clinical syndrome that initially arises suddenly, progressively rapidly, in the form of a global focal and neurological deficit that lasts 24 hours or more and or can directly cause death, and is solely caused by circulatory disorders to the non-traumatic brain. The main problem that arises in stroke sufferers is the destruction or death of tissue. One of the efforts to recover and assist the patient in movement is the need for action in nursing, namely exercises by grasping a rubber ball. The purpose of this nursing care plan is to analyze the management case in providing nursing care intervention for Mr.A with stroke with the application of a rubber ball hand-held intervention to increase muscle strength and weakness in the Wilayah Kerja Puskesmas Tarogong. The intervention of Nursing Care in stroke patients with the administration of rubber ball hand-held exercises. After being given nursing care with the intervention of providing rubber ball hand-holding exercises for 3 days, the patient muscle strength was raised. The initial muscle strength before the administration of the intervention was 3, and after being given the exercise of grasping the rubber ball was 4. Nursing care in stroke patients with the provision of rubber ball hand-held exercises can increase muscle strength to patients.

1. INTRODUCTION

Data on the incidence of stroke in the world is estimated at 15 million by 2018, in Southeast Asia it is estimated that the incidence of stroke is 4.4 million (WHO, 2022; Ismatika & Soleha, 2018). Based on the results of the Data and Information Center of the Indonesian Ministry of Health in 2019 the prevalence of stroke in Indonesia in 2018 was 2.1 million (Ministry of Health, 2019) the prevalence of stroke in West Java is 11.4%, lower than East Kalimantan, which is 14.7% (Pusdatin Ministry of Health, 2019) from these data it can be seen that stroke sufferers are still the highest number of non-communicable diseases In the work area of the Tarogong Primary Health Center, stroke is not included in the list of the top 10 diseases found. The Tarogong Health Center is a health service that was founded in 1975 with 4 assisted villages, namely Cimanganten Village, Jati Village, Tanjung Village and Pasawahan Village (Tarogong Primary Health Center, 2022).

Stroke is a condition where rapidly developing clinical signs are found in the form of focal and global neurologic deficits, which can be severe and last for 24 hours or more and or can cause death, without any other clear cause other than vascular (Ministry of Health, 2019) . Stroke patients, which make up 90% of the population, experience weakness in muscle strength. In order to prevent defects from occurring, stroke patients who experience weakness must be given a rehabilitation program (Anita 2018).

One of the post-stroke rehabilitation is home exercise which can be combined with the addition of a rubber ball as an intervention. This is in accordance with research conducted by (Budi, et. al., 2019). One of the nursing interventions that can be done to overcome the problem of hemiparesis in the upper extremities of stroke patients is to do active Range of Motion (ROM) exercises, namely rubber ball holding exercises. Ball gripping exercise is a therapy that can increase or stimulate sensory in the hands and send signals to the brain (Hentu, et al. 2018), applying a rubber ball grip to increase hand grip strength (Azizah, et. al. 2020; Alfinasari & Sudanti, 2020; Cantika, et. al, 2021).

2. METHOD

This intervention in nursing care was given to post stroke patients during the rehabilitation period by giving rubber ball grip exercises for 3 consecutive days. The study was carried out on February 22, 2022 at the home the patient who is 66 years old who has had a stroke for 3 years with a history of hypertension. The signs and symptoms felt by Mr. A at the time of assessment were Mr. A complaining of stiffness in his left hand and left leg. At the time of carrying out a physical examination, blood pressure was found to be 140/100 mmHg, muscle strength in the right hand was 5, left hand was 3, right leg was 5, left leg was 3. The implementation of exercise rubber ball as follows: give a round object (like a rubber ball); make corrections to the fingers so that they grip perfectly; Wrist joint position 45º; instruct the patient to hold for 5 seconds then relax; Repeat it 7 times (Faridah,& Kuati, 2018).

3. RESULTS AND DISCUSSION

The Implementation according to predetermined interventions with the patient's consent. The Implementation using the skills possessed by the author and patient resources, the intervention is carried out in accordance with the Indonesian Nursing Intervention Standards (SIKI) which are evidence-based/Evidence Based Practice (EBP). Implementation of hand-held exercises rubber ball which is carried out in accordance with evidence based practice to the patient obtained positive results. There was an increase in muscle strength and and decrease the stiffness after being given rubber ball grip exercises, from 3 to 4 muscle strength, with the intervention given for 3 days.

This is in accordance with the results of research conducted by Budi et al (2019), that after doing ROM exercises and holding rubber balls in this study it showed that there were differences in the strength of the extremity muscles in the shoulders (p value = 0.004), in the elbows (value p=0.000), on the hands (p=0.000), and on the fingers (p=0.004) of the patient. From these results it can be concluded that rom exercise therapy holding a ball using a rubber ball for 3 days can increase the strength of the upper extremity muscles of stroke patients who experience upper extremity muscle weakness.

A similar study conducted by Rahmawati et al (2021) stated that there was a significant difference in hand grip strength before and after intervention with a p-value of 0.000 (ά <0.05), which means that hand exercises using a rubber ball can increase upper extremity muscle strength. Rahmawati et al (2021), stated that there was a significant difference in hand grip strength before and after being given an intervention with a p-value of 0.000 (ά <0.05), which means that hand exercises using a rubber ball did increase upper extremity muscle strength.

In addition, the results of a study conducted by Hentu et al (2018), after the rubber ball grip exercise was carried out in this study proved effective in increasing muscle strength in stroke patients who experienced movement weakness (hemiparesis). muscle strength after the rubber ball grip therapy, where the results obtained the mean value: 14.93 in the intervention group and 13.00 in the control group. Where the previous results mean: the intervention group is 2.57 and for the control group the mean: 2,33.

4. CONCLUSION

Rubber ball handheld exercise can be used in patients with impaired physical mobility. This can be seen in an increase in muscle strength and a decrease in hand stiffness in stroke patients.

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