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Effectiveness Of Rom Exercise In Minimizing Delirium In Stroke Patients At Ciamis Hospital

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ABSTRACT

Purpose: this study aims to determine the effectiveness of ROM in minimizing the occurrence of delirium in stroke patients at Ciamis Hospital. **Methods:** this study used a cohort study approach with the type of prospective cohort which was carried out for approximately 3 months. **Results:** the number of stroke patients with delirium obtained by the researchers was 14 people, the results of the Wilcoxon test analysis showed that there was no significant difference in the level of delirium in respondents before and after giving ROM to stroke patients with delirium with a p value of 0.180 > 0.05. **Conclusions:** the respondent's delirium level before doing ROM on average is hypoactive delirium, the respondent's delirium level after doing ROM is on average hypoactive delirium. and after ROM is done.

Keywords: Derilium,stroke,ROM

Introduction

Stroke is an acute neurologic dysfunction disease, with a sudden onset of symptoms and signs consistent with a focal area of brain dysfunction. Lack of family knowledge and delays in medical care can have a significant impact on disability and high mortality rates. According to information taken from the World Health Organization (WHO, 2016). stroke kills one person every six seconds in the world. It is estimated that every year, 15 million people suffer from stroke. Of which 5 million sufferers experience disability and 5 million other sufferers die.

Meanwhile, in Indonesia, stroke was the highest cause of death in 2014 RI Ministry of Health (2022). At the provincial level in West Java it was 11.4% and based on doctors' diagnoses according to districts/cities in West Java Province 2018, compliance with controls to health service facilities in the Ciamis area community of stroke patients who routinely had their health checked was only 21.87% and those who did not 30.71% had their health checked. In 2021, based on the medical records of the Ciamis Regency General Hospital, the number of stroke patients treated in the Mawar room was 355 people, with 177 stroke patients diagnosed with infarction or hemorrhagic stroke.

Research conducted by Peter Nydahl, Gabriele Bartoszek, Andreas Binder, Laura Paschen, Nils G. Margraf, Karsten Witt and Andre Ewers on stroke patients in German Primary Stroke Units from October 2015 to February 2016 stated that the prevalence of delirium in patients stroke in the German Primary Stroke Unit which was screened using CAM three times a day, delirium was found in 5.4% on the morning shift, 6.8% on the afternoon shift and 8.6% on the night shift, 24% of patients were only delirious, patients with

mixed delirium was 57.7%, followed by 19.7% in the hyperactive form, and 18.3% in the hypoactive form, patients with delirium experienced more complications and a tendency toward worse rehabilitation. This research shows that there are quite high numbers of hyperactive, hypoactive and mixed behavior in delirium patients (Chan et al, 2017). Therefore, there is a need for an in-depth analysis of the relationship between severity and the incidence of delirium in stroke patients, both hemorrhagic and non-hemorrhagic strokes (Wulan & Erlida, 2020).

Delirium is a complex syndrome characterized by appearing over a period of hours or days and tends to fluctuate in severity over time. Approximately 1.1 million European (EU) residents suffer a stroke every year. By 2025, around 1.5 million European Union people are expected to experience a stroke each year and similar estimates have been reported from all continents. The etiology of stroke has been reported in approximately 85% of cases ischemic, 10% hemorrhagic and 3% due to subarachnoid hemorrhage.

Delirium occurs due to a lack of physical mobility, therefore ROM exercises for stroke patients are highly recommended. Range of motion (ROM) training is a form of exercise in the rehabilitation process which is considered to be quite effective in reducing the risk of delirium. This exercise is one form of fundamental intervention that nurses can carry out to prevent delirium conditions (Palandeng, 2013).

According to Murtaqib, (2013) in (Muriyati et al., 1970)Mobilization in stroke patients aims to maintain range of motion (ROM) to improve respiratory function, blood circulation, prevent complications and maximize self-care activitiesStroke patients should exercise several times a day to prevent complications. The earlier the rehabilitation process is started, the more likely the patient is to experience delirium (National Stroke Association, 2009).

Methods

This research uses a cohort study approach of the Prospective Cohort type. This prospective cohort observes the causes and then traces them forward to see what is caused by the causes, and the research design used in this research is an experimental design with a pretest-posttest control group design. This research was conducted from March to May 2023. At Ciamis Hospital. The general aim of this research is to determine the "Level of Effectiveness of ROM in Minimizing the Occurrence of Delirium in Stroke Patients at Ciamis Hospital".

Results

a. Univariate Analysis

Table 1. Description of the Level of Delirium in Stroke Patients Before ROM

Delirium	F	%
Hypoactive	11	78.6%
Mild hyperactivity	3	21.4%
Total	**14**	**100%**

According to the research results above, the number of stroke patients with hypoactive delirium was 11 people (78.6%) and mild hyperactive delirium was 3 people (21.4%).

Table 2. Description of the level of delirium in stroke patients after ROM

Delirium	F	%
Hypoactive	10	71.4%
Mild hyperactivity	2	14.3%
Negative	2	14.3%
Total	**14**	**100%**

According to the research results above, the number of stroke patients with delirium after ROM was 10 people (71.4%), hypoactive with mild hyperactive delirium 2 people (14.3%). And there were 2 patients with negative delirium (14.3%).

Table 3.Description of Delirium Levels in Stroke Patients Before and After ROM

Group	Delirium Value			
	Pre		Post	
	Mean	Elementary School	Mean	Elementary School
Intervention	1.21	0.426	1.57	1,089

Based on table 4.4, it was found that the average delirium score before ROM was given was 1.21 and after ROM was given was 1.57.

Table 4. Normality Test for Delirium Values in Stroke Patients Before and After ROM

Normality			
Intervention	**Mean**	**Elementary School**	***p-value***
Pre	1.21	0.426	0.56
Post	1.57	1,089	

Based on table 4.5, it is found that all delirium data is not normally distributed, namely the p-value < 0.05. So it was concluded that the bivariate analysis was continued using a parametric test, namely the Wilcoxon test.

b. Bivariate Analysis

Table 5. Wilcoxon Non-Parametric Test of effectiveness before and after ROM in delirium stroke patients

Intervention		Mean	Elementary School	Enhancement	*P Value*
Pre		1.21	0.426	1.50	0.180

Post	1.57	1,089

According to the table above, the Wilcoxon test results show a p value of 0.180, so Ha is rejected and Ho is accepted. There is no significant difference in the level of patient delirium between before ROM exercises and after ROM exercises.

Discussion

a. Univariate Analysis

1. Respondent Characteristics
   a) Age

      In this study, data was obtained on the age range of 4 respondents aged 46-60 years, 8 people aged 61-75 years, 2 people aged >75 years. According to research from Most stroke sufferers occur in the age range >55 years.

      Based on research results from 14 respondents, the majority suffered from ischemic stroke, namely 14 people (100%). According to the results of research conducted by(Laily, 2017)The incidence of ischemic stroke reaches 80-85%, while hemorrhagic stroke is around 20%. This can be concluded so that ischemic strokes occur more frequently than hemorrhagic strokes.

   b) Gender

      The gender of the respondents obtained in this study was mostly male, namely 8 people and 6 women. In this study, more men had strokes than women. In line with research that men are at higher risk of stroke than women, with a ratio of 1.3: 1, but at age > 45 years the ratio of stroke rates for men and women is almost the same.

   c) Education

      In this study, the education level of the respondents was obtained, namely elementary school as many as 9 people (64.3%) and junior high school as many as 5 people (35.7%). Based on research stated that even a low level of education can prevent a person from thinking critically resulting in a lack of knowledge or understanding of the disease and that the higher the education, the better the knowledge.

   d) Work

      In this study, researchers divided the types of work into unemployed, self-employed/trader, domestic worker, and other jobs. The results of this research show that 4 people (28.6%) do not work, 3 people are domestic workers (21.4%), 4 people are self-employed/traders (28.6%) and 3 people (21.4%) work in other jobs.

      The relationship between work and the incidence of stroke is linked to stress risk factors, people who work usually have their own levels of stress. Moreover, if this stress factor is associated with other risk factors, such as obesity, high blood pressure and smoking habits, it will be even more significant.

   e) Marital status

      In this study, 10 respondents were married (71.4%), 3 were widows (7.1%) and 1 was a widower (21.4%). According to research conducted The majority's marital status is married. Being married can be beneficial for stroke patients because the patient will receive more care and attention from their partner.

According to research from stated that generally stroke patients are married and live together so that strokes often occur in married elderly people. This can influence behavioral patterns in daily life and depend on the partner.

f) Types of Strokes

Based on research results from 14 respondents, the majority suffered from ischemic stroke, namely 14 people (100%). According to the results of research conducted by The incidence of ischemic stroke reaches 80-85%, while hemorrhagic stroke is around 20%. This can be concluded so that ischemic strokes occur more frequently than hemorrhagic strokes.

The results of another study conducted also concluded that there were more respondents with ischemic stroke, namely 72 people, while hemorrhagic stroke was only 17 people. So ischemic strokes are more common than hemorrhagic strokes.

g) Stroke History

There were 2 people with a history of stroke in this study and 12 people with no history of stroke or a first stroke. This is in line with research . namely 23 people (76.7%) had a history of a first stroke, while 7 people (23.4%) had a history of recurrent stroke.

2. Description of the Level of Delirium in Stroke Patients Before ROM

In this study the average delirium before ROM was 1.21. Delirium is categorized into 3, namely hypoactive delirium, mild hyperactive delirium and severe hyperactive delirium.

From the frequency table, respondents in this study experienced two types of delirium, namely hypoactive delirium and mild hyperactive delirium. Based on the level of delirium before ROM, 11 people experienced hypoactive delirium and 3 people experienced mild hyperactive delirium.

3. Description of Delirium Level After ROM

After ROM, the average patient delirium was 1.57. Meanwhile, the level of delirium after ROM was carried out, 10 respondents experienced hypoactive delirium, 2 people experienced mild hyperactive delirium, and 2 respondents were declared negative for delirium.

This is in line with the statement which states that between hypoactive delirium and hyperactive delirium, more respondents experienced hypoactive delirium compared to hyperactive delirium.

b. Bivariate Analysis

As the aim of this research is determine whether ROM exercises are effective in minimizing delirium in stroke patients. So the research results obtained by the researchers were that there was no significant difference before and after giving ROM to stroke patients with delirium with a p value of 0.180 > 0.05. So it can be concluded that Ha is rejected and Ho is accepted. These results are not in line with the research conducted(Ferry & Conscience, 2022)which stated that there was an effect of range of motion (ROM) training on limb muscle strength in non-hemorrhagic stroke patients with a significant value of p=0.008 in the intervention group and p=0.5 in the control group.

In addition, according to (Syahrim et al., 2019) ROM exercises are very effective in increasing muscle strength, where this exercise can be done 3-4 times a day for a period of 14 days by nurses or patients' families. According to research, several basic principles of doing ROM exercises are that they should be repeated approximately 8 times and at least once a day, ROM is also done slowly and carefully so that the patient does not get

tired when planning ROM exercises, ROM is also done taking into account the patient's age, diagnosis, vital signs and duration of patient bed rest.

Conclusion

The average level of delirium of respondents before ROM was carried out was hypoactive delirium. The average level of delirium of respondents after ROM was hypoactive delirium. In this study, ROM exercises were considered less effective in minimizing delirium in stroke patients because there was a less significant reduction in delirium scores before and after ROM.

Suggestion

For Educational Institutions It is hoped that the results of this research will be used as a reference source or additional literature, especially in the field of medical-surgical nursing. For institutions where research is conducted It is hoped that nurses will pay more attention to muscle strength in stroke patients by doing ROM exercises. For Other Researchers It is hoped that other researchers can use this research as a literature review or reference in conducting research, especially regarding ROM and delirium. Or adding other factors that can reduce the patient's delirium score.

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