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THE EFFECT OF TASK-ORIENTED GAIT TRAINING PROGRAM ON IMPROVE THE WALK ABILITY IN POST STROKE PATIENTS

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Abstract Stroke is the lead cause, can lead to a decline in the quality of life of patients. For example, common stroke problems include balance, endurance, walking speed, cognitive function. The aims to determine the impact task-orient walking. Trainthe changes in balance, endurance, walking speed, cognitive function and walking ability of patients after stroke. This is using two post-test and pre-test design methods. This study evaluated the balance, endurance, walking speed, cognitive function, and walking ability of patients after stroke. This study was conducted at RSKD South Sulawesi (Stroke Center) Makassar and RSUD Haji Makassar. A total of 15 patients aged 40 years or older were diagnosed with post-stroke motor dysfunction, and medical records of planned physical therapy were confirmed. The sample adopts a purposeful sampling method. Balance was measured with the BBS, endurance was measured with a 6 minutes walk test (6MWT), walking speed was measured with a 4-m timed walk (walking speed test), and walking ability was measured with a modified functional gait classification. Measurements were taken before the intervention, after the treatment group. The research results of the intervention group showed that the effected of task-oriented gait training was significantly better than that of the controls groups.

Keywords task-oriented training, balance, endurance, walking speed, cognitive function, walking ability.

1. PRELIMINARY

Stroke is the lead cause of disability and death world, and can lead to a decline in the quality. For example, common stroke problems include balance, endurance, walking speed, cognitive function, and walking ability. This study aims to determine the impact walking. Training the changes in balance, endurance, walking speed, cognitive function and walking ability of patients after stroke. This study evaluated the balance, endurance, walking speed, cognitive function, and walking ability of patients after stroke. This study was carried out at RSKD South Sulawesi (Stroke Center) Makassar and RSUD Haji Makassar. A total of 15 patients aged 40 years or older were diagnosed with post-stroke motor dysfunction and the medical records of planned physical therapy were confirmed. The sample adopts a purposeful sampling method. Balance is measured with the enduranced is walk test (6MWT), gait speed is measured with the 4-m timed walk (walking speed test), and Gait ability is measured using the Enhanced Functional Gait Measurement Category (mFAC). Measurements were taken before the intervention, after the treatment group. The results intervention group research showed that the effect gait training was significantly better than that.

Based on the 2018 increased from 7% per million to 10.9% per million. The highest prevalence of stroke based on diagnosis by health professionals was in North Sulawesi (14.4%), followed by DI Yogyakarta (14.6%), East Kalimantan (14.7%) Bangka Belitung (12%), DKI Jakarta (11.5%), West Sumatra (10.7%), Papua (4.1%), NTB (8%), while South Sulawesi
(10.5%) per mile.

Research shows that the effect of task-oriented gait training is significantly better than that of the control group.

According to the 2018 National Basic Health Research, the prevalence of stroke diagnosed by medical staff in Indonesia has increased from 10.9%. According to the diagnosis of healthcare professionals, the area with the highest prevalence of stroke is North Sulawesi (14.4%), followed by Yogyakarta (14.6%), East Kalimantan (14.7%), Bangka Belitung (12%), Jakarta (11.5%), West Sumatra (10.7%), Papua (4.1%), NTB (8%), and South Sulawesi
(10.5%) miles.

Strok is the lead cause disabilities globally, most common (Mir and Albaradie, 2014). The activity most affected by). Fortunately, the ability to walk quickly has improved in the first 2 weeks after a stroke (Jeon et al., 2015). However, for most people, regaining walking ability is sometimes not perfect. A record of 810 people returned to their homes after the

rehabilitation program,
people, their average walking speed is not even enough to safely cross the road, or even unable to safely cross the road. people.
There is increasing evidence that high-intensity task-oriented training (Jeon et al., 2015) can improve the walking ability of stroke patients to a higher level than other task-oriented training methods . Work area, which has recently been shown to be helpful to a small group of chronic stroke groups (Wevers et al., 2009). The impacted of the program on the wider stroke population and the early stages is unclear.
According to second-hand data in April 2018, there are currently about 20 patients who have difficulty walking after a stroke in outpatient clinics of the Stroke Central Hospital and the Makassar Haji Regional General Hospital.
Based on, the author is interest in studying the effects and benefits of task-orienting gait training on improving.

Design and Research Time

This research was carried out at Dadi Province Specialty Hospital of South Sulawesi Province (Stroke Center) Makassar and Haji Makassar Regional General Hospital from May to July 2019. East Quasi-experimental study.

Population and Samples

The population are first year post-stroke patients who have been previously treated at Dadi Special Hospital (Center for Stroke) in South Sulawesi Province, Makassar and Hospital Regional General Haji Makassar. The sample size in this study used 30 patients, and a sampling technique using the purpose-based sampling method was used.

Data acquisition instrument

The acquisition of data on balance, endurance, speed, cognitive function and ability to walk was performed twice, that is, before giving the training plan and two days after finishing the task-oriented training plan.

Data analysis

Before the parameter test, the data normality and homogeneity test were carried out. To analyze link train on the changes of intermediate and dependent variables, Mann Whitney's test was performed. Descriptive statistics is expressed as mean ± standard deviation, while categori data are express as frequence and percentage. Statistical analysis was performed.

Sample Characteristics

Table 1 shows gender of post-stroke patients intervention group was. The age distribution shows that there are 8 people (53.3%) in the 4159-year-old age group, and 7 people (46.7%) in the 60-year-old and above age group. In the control group, the sexes of post-stroke patients were at most 10 males (66.7%) and females at most 5 (33.3%). The age distribution shows that there are 11 people (73.3%) in the 4159-year-old age group, and 4 people (26.7%) over 60 years old.Table 1 Demographic characteristics the sample of post stroke sufferers at the Special Hospital of South SulawesiProvince Dadi (Stroke Center) Makassar and the General Hospital of the Haji Makassar Region

Sample Characteristics	Intervention		Control	
	n	%	n	%
Gender				
Man	7	46.7	10	66.7
Women	8	53.3	5	33.3
amount	15	100.0	15	100.0
Age				
41-59 years	8	53.3	10	66.7
	7	46.7	5	33.3

60 years and above amount	15	100	15	100

2. DISCUSSION

This study indicates that the training of the march with work ants has a significant impact on the patient's balance variation after stroke. Work works to improve the corresponding skills in specific tasks. The difference in how the task was withdrawn depends on the relative emphasis position. In theory, the trunk control exercise can strengthen the trunk muscle, which provides a fund to stabilize the central muscles of the body, which thus increases the and distal parts of the extremities (Wee et al., 2015). The stability of the body improves the performance of the central muscle. One of them is to reduce the intraperitoneal pressure of the abdominal muscle to increase shoulder stability during trunk control operations, which supports the start of the motor impulse process and improves the most stable enabled exercises (Kusnanto et al., Et al. Al ., 2016).

Jin et al. (2003) The treatment of treatment of patients with stroke on the surface of the movement reported that homeostatic was improved. Leroux et al. (2006) Taskorientes Training with chronic stroke reported that the BBS score was significantly improved. These results are consistent with the results of this study, which shows that Taskoriente's training can improve balance. These results also indicate that Taskoriente's training affects the balance and weight change of patients with stroke. More research is required to determine the factors that affect balance, such as vestibular function, depositors, musculuskeeper and cognition (Bhkim et al., 2012).

The resulting of this study are similar to those report by Kim et al. (K. Kim et al., 2017), task-oriented gait training improves the results of the 6-minute walk test and is effective for chronic stroke patients. Walking ability as measured by the 6-minute walk test is associated better qualiti of life and is a good predictor of the ability of patients to walk after a stroke.

In muscle, the number and size of mitochondria have also increased, so aerobic ATP production in muscle may increase. In addition, it increases the concentration of myoglobin in the muscles, which can increase the speed of oxygen transport and the diffusion of oxygen in the mitochondria. What has changed is that the rate of consumption of muscle glycogen is reduced to the next maximum level of work. As mitochondrial oxidation potential increases and glycogen storage increases in muscle, the ability to oxidize carbohydrates subsequently increases (Hall, 2016).

Al, (2005) suggested that the improvement of the 6-m walk test distance should exceed 13% to have clinical significance. Our research results show that both groups have significantly improved. The average distance of the experimental group increased from 20.13 m to 31.33 m, an increase of 55.63%, while the control group increased by 2.1%. There was a significant difference between the 6-minute walk test groups ($p = 0.000$). This result may be due to the use of increasing intensity and frequency and other appropriate training in the task-oriented gait training program. After the intervention, the two groups were and 10m WT (10-minute walk test), but the improvement of the 1 group was greater than that of the control group.

For task-oriented strength training (Yang et al. al., 2006). These results are similar to the results of this study, indicating that task-oriented tasks can effectively interfere with the walk able of stroke patients. The cognitive function of stroke patients affects the way they run. They must have the cognitive ability to understand and learn commands to recover successfully. Interference between motor control activities when performing two tasks at the same time (eg, cognitive tasks and gait) is an important therapeutic environmental factor that can independently improve the function of patients with neurological diseases. Therefore, the therapist must include cognitive therapy in the rehabilitation plan.

The calculation of using to assess walking ability is based on the score of the mos independent level (supervision or physical assistance required for walk), ranging from 0 to 7. For homework, it can effectively improve the walking ability of patients after stroke. This is because presynaptic enhancement mechanism inhibits the overactive stretch reflex in the spastic muscle, reduces the co-contraction spastic antagonist, and stops the arbitrary commands that fall on the motor neurons of the paralytic muscle.

RESULTS

Different Sample

Table 2 shows is a significant effect of the balance with a value of p = 0.000 (<0.05) from 42.13 ± 1.598 to 53.00 ± 1.464, there is a significant effect of pre and post test endurance. test with a value of p = 0.000 (<0.05) from 20.13 ± 1.598 to 31.33 ± 1.447, there is a significant effect of walking speed with a value of p = 0.001 (<0.05) from 0.482 ± 0.075 to 1.034 ± 0.203, there is a significant effect of walking speed with a value of p = 0.001 (<0.05) from 25.60 ± 1.595 to 30.00 ± 0.000, there is a significant effect from the ability to walk with a value of p = 0.000 (<0.05) from 5,000 ± 0,000 to 7.00 ± 0,000.

Table 2 The results of the analysis of differences in balance, endurance, walking speed, cognitive function, the ability to walk in post stroke patients in the intervention group at the Special Hospital for the Province of South Sulawesi Dadi (Stroke Center) Makassar and the General Hospital of the Haji Makassar Region

Variable	n	Mean	SD	P-value
Balance				
Pre Test	15	42.13	1,598	0.001 *
Post Test	15	53.00	1,464	
Durability				
Pre Test	15	20.13	1,598	0,000
Post Test	15	31.33	1,447	**
Running Speed				
Pre Test	15	0.482	0.075	0.001 *
Post Test	15	1,034	0.203	
Cognitive Function				
Pre Test	15	25.60	1,595	0.001 *
Post Test	15	30.00	0,000	
Ability to Walk				
Pre Test	15	5.00	0,000	0,000
Post Test	15	7.00	0,000	**

* Wilcoxon test; ** Paired t test

Table 3 shows that a significant effect of balance with a value of p = 0.000 (<0.05) from 42.27 ± 1.033 to 43.67 ± 1.175, effect endurance. test with a value of p =0.000 (<0.05) from 20.00 ± 1.309 to 24.20 ± 1.082, there are a significant effect of walking with a value of p = 0.001 (<0.05) from 0.457 ± 0.063 to 0.548 ± 0.829, there is a significant effect of cognitive function pre test and post test with a value of p = 0.000 (<0.05) from 26.07 ± 1.831 to 28.20 ± 1.740, there is a significant effect from the ability to walk pre test and post test with a value of p = 0.000 (<0.05) from 5,000 ± 0,000 to 7.00 ± 0,000.

Table 3 The results of the differences in balance, endurance, walking speed, cognitive function, the ability to walk in patients with post stroke pre test and post test control group at the Special Hospital of South Sulawesi Province Dadi (Stroke Center) the General Hospital of the Haji Makassar Region

Variable	n	Mean	SD	P-value
Balance				
Pre Test	15	42.27	1,033	0,000 **
Post Test	15	43.67	1,175	
Durability				
Pre Test	15	20.00	1,309	0,000 *
Post Test	15	24.20	1,082	
Running Speed				
Pre Test	15	0.457	0.063	0.001
Post Test	15	0.548	0.829	**
Cognitive Function				
Pre Test	15	26.07	1,831	

Post Test	15	28.20	1,740	0,000 **
Ability to Walk				
Pre Test	15	5.00	0,000	0,000
Post Test	15	5.60	0.632	**

* Wilcoxon test; ** Paired t test

Table 4 shows the results of the Man Whitney hypothesis test. From the comparison of the differences in balance, endurance, gait speed, cognitive function and walking ability between, that is, a p value <0.005 means that there is a significant difference the difference of the treatment groups. In the control group, the treatment group did better than the control group on variables such as balance, endurance, walking speed, cognitive function, and ability to walk.

Table 4 Differences in the effect of changes in balance, endurance, walking speed, cognitive function, and walking ability of post-stroke sufferers between the two groups at the Special Hospital of South Sulawesi Province Dadi (Stroke Center) Makassar and the General Hospital of the Haji Makassar Region

Variable	n	Mean	SD	P-value
Balance				
Intervention	15	10.87	1,302	0,000 *
Control	15	1.40	0.737	
Durability				
Intervention	15	11.20	1,082	0,000 *
Control	15	4.20	1,207	
Running Speed				
Intervention	15	0.552	0.162	0,000 *
Control	15	0.090	0.072	
Cognitive Function				
Intervention	15	4.40	1,594	0,000 *
Control	15	2.13	1,245	
Running function				
Intervention	15	2,000	0,000	0,000 *
Control	15	0.600	0.632	

Note: * Man Whitney test

3. CONCLUSIONS AND SUGGESTIONS

Providing task-oriented gait training can affect balance, endurance, gait speed, cognitive function, and changes in patients' ability to walk after stroke. The balance, endurance, walking speed, cognitive function, and walking ability levels of patients in the two study groups after stroke have improved significantly. The results of the intervention better than those of the control group. Only 30 samples were used in this study, so a large sample size is needed for future research. The results obtained are more accurate. Consideration should be given to adding time to the study to observe significant changes in balance, endurance, walking speed, cognitive function, and the ability to walk in patients after stroke.

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