

THE EFFECTIVENESS OF SWEDISH MASSAGE WITH LAVENDER OIL TO IMPROVE MUSCLE STRENGTH OF POST-STROKE PATIENTS.

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Abstract

One of the health problems in stroke patients that suffered motor deficits such as paralysis and weaknesses arising as a result of loss of voluntary control of the motor movement. This research was to determine the effectiveness of Swedish massage with lavender oil to improve muscle strength of post-stroke patients. The design of this research was "Quasi experimental design" with "Pre test-post test with control group". The research was conducted in the working area of Harapan Raya public health center. The total sample were 30 respondents who fit the inclusion criteria and were chosen by purposive sampling technique. Collecting data to provide observation sheet limb muscle strength measurements were carried out for 14 consecutive days. Measuring instrument that used in both groups was muscle strength scale of Medical Research Council Scale. The analysis used were univariate and bivariate analysis by using Wilcoxon and Mann Whitney test. The result showed that there was a significant increase of limb muscle strength in experimental group with p value $(0,000) < (0,05)$. Whereas in the control group was not found significant changes because it is not given treatment. It can be concluded that the Swedish massage with lavender oil was effective to improve limb muscle strength for post-stroke patients. Based on this research the therapy Swedish massage with lavender oil can be used as a non-pharmacological therapy to improve limb muscle strength in post-stroke patients.

Keywords : Muscle strength, post stroke, Swedish massage

BACKGROUND

Stroke is a disorder of the central nervous system are the most common and is the main cause of functional activity disorders in adults (Irfan, 2010).

Stroke patients suffered a nervous breakdown due to several factors that cause of reduced blood supply to the brain, brain tissue edema formation makes death in cells that are in the brain organ (Padila, 2012).

Hemiparesis state or hemiplegia is one factor that causes the loss of normal postural reflex mechanism in the extremities (Soeparman, 2004).

Limited motion recovery was positively correlated with the use of a weak limb, the

more often used the faster recovery extremity range of motion (Adam, 2011).

Therapy given to patients with stroke is pharmacologic therapy. However, non-pharmacological therapy has also now been deployed by some practitioners in Indonesia. Several non-pharmacological therapy that has been used for the recovery of stroke patients that reflexology therapy, water therapy (Sutrisno, 2012), speech therapy and physiotherapy (Junaidi, 2012)

Massage can be used to deal with hypertension, sinusitis, headaches, insomnia, hyperactivity, and for those with impaired blood circulation, heart disease, and stroke. On the physical side, useful to help massage the



body menstimulasi nervous system, muscles, and circulatory (Mangoenprasodjo, 2005)

Massage can stimulate the blood flow back to the muscles. However, massage is not recommended for those who suffer from inflammation of the arteries (phlebitis), thrombosis, and in patients whose body temperature rises, such as during a fever). There are five basic movements swedish massage are: effleurage (stroking), friction (a circular motion with pressure), petrissage (kneading), tapotement (hit), and vibration (Mangoenprasodjo, 2005).

Massage techniques using Aromatherapy is the most common and effective. Aromatherapy is a way of healing by using essential oils derived from plants (Mangoenprasodjo, 2005).

One of the essential oils that can be used in aromatherapy massage is lavender oil that contains linalool acetate (Buckle, 2001). Linalool acetate is able to relax and work the system relaxes nerves and muscles tense and commonly used for massage because the content aldehydnya which is irritating to the skin is only 2% and not toxic and provide a calming effect (Price, 2007).

The purpose of this study was to determine the effectiveness of the swedish massage with lavender oil to the extremity muscle strength in patients with post-stroke.

METHODS

The study design is a quasi-experimental design to study design pretest-posttest design with control group. Conducted in Puskesmas Harapan Raya Pekanbaru with a total sample of 30 respondents. Sampling using purposive sampling technique in accordance with the inclusion criteria, ie with a diagnosis of post-stroke patients who experience muscle weaknesses, limb muscle strength is at a value of 0-3, age range 40-70 years and are willing to become respondents. Data collection tool uses observation sheets extremity muscle strength measurements were carried out for 14 consecutive days. Analysis of the data used is the analysis of univariate and bivariate analysis using the frequency of using the Wilcoxon test and Man Whitney test to see the effectiveness of the swedish

massage with lavender oil to the extremity muscle strength in patients with post-stroke.

RESULTS

A. Univariate analysis

Table 1

Distribution Characteristics of Respondents

Characteristics	Experiment (n=15)		Control (n=15)		Value (n=30)		P
	n	%	n	%	n	%	
Age							
a. <45	0	0,0	1	6,7	1	3,3	1,000
b. 45-65	12	80,0	12	80,0	24	80,0	
c. >65	3	20,0	2	13,3	5	16,7	
Sex							
a. man	7	46,7	10	66,7	17	56,7	0,461
b. woman	8	53,3	5	33,3	13	43,3	
Last education							
a. elementary school	5	33,3	4	26,7	9	30,0	1,000
b. junior high school	8	53,3	10	66,7	18	60,0	
c. senior high school	2	13,3	1	6,7	3	10,0	
d. university	0	0,0	0	0,0	0	0,0	
Work							
a. not working	13	86,7	15	100	28	93,3	0,483
b. working	2	13,3	0	0,0	2	6,7	
Old suffered a stroke							
a. <2 years	1	6,7	0	0,0	1	3,3	0,999
b. 2-3 years	14	93,3	13	86,7	27	90,0	
c. >3 years	0	0,0	0	13,3	2	6,7	

Table 1 shows that the characteristics of the respondents including age, sex, education, past employment, and long-suffering a stroke in experimental and control groups are homogenous with p value (0.461 to 1.000) > (0,05).

B. Bivariate analysis

Table 2

Differences in muscle strength after being given the swedish massage with lavender oil in the experimental group and control

variable	Median	Min - Max	p value
Experiment	3,00	3 - 4	0,000
Control	2,00	2 - 3	

Based on the table 2 above, shows that there is significant influence swedish massage with lavender oil to the increased limb muscle strength.

Table 3

Differences in limb muscle strength in the experimental group before and after being given the swedish massage with lavender oil.

Variable	N	Median	Min-Max	p value
Pra intervention	15	2,00	2-3	0,000
Post Intervention	15	3,00	3-4	

Based on Table 3 above, shows that there are significant differences between the median muscle strength before (pre-test) and the median muscle strength after (post-test) granted swedish massage with lavender oil

Table 4

Differences in limb muscle strength in the experimental group before and after being given the swedish massage with lavender oil.

Variable	N	Median	Min-Max	p value
Pra Intervention	15	2,00	2-3	1,000
Post Intervention	15	2,00	2-3	

Based on Table 4 above, shows that there is no significant increase in the median muscle strength before (pre-test) and the median muscle strength without (post test) granted swedish massage with lavender oil.

DISCUSSION

1. Characteristics of Respondents

Along with the increase in age, the higher the overall decline in organ function that will impact different recovery among young stroke patients with older age (Adam, 2011).

Irdawati and Ambarwati (2009) in his study claimed that the incidence of stroke in men is higher by 79.2% compared to the percentage of women with a percentage of 20.8%. Gender unknown specifically affect post-stroke recovery, but the incidence of stroke gender men have a higher incidence

when compared to women (Damush, 2007; Adam, 2011).

The incidence of stroke is lower in women than men because women have the hormone estrogen plays a role in maintaining immunity to menopause and as protection or protection on the process of atherosclerosis. In men, testosterone can increase LDL levels, high LDL levels if it can increase blood cholesterol levels are a risk factor for degenerative diseases such as stroke (Bull, 2007).

Mubarak and Cahyatin (2009) states that education is essentially an effort to assist individuals in enhancing the ability of the behavior to achieve optimal health. Economic status of the external variables that affect people's health status. Economic factors affecting the client's reaction in the face of pain. Access to health care system is closely related to economic factors (Potter and Perry, 2009).

Patients with recurrent stroke which indicates the neurological system damage is more extensive than the man who had the first stroke. At the time of recovery of people with recurrent stroke takes time and practice longer (Adam, 2011).

2. Effectiveness swedish massage with lavender oil to the extremity muscle strength in patients with post-stroke.

The main effect of massage that stimulates blood circulation, improving blood circulation and accelerate the process of disposal of the results of combustion. Manipulation given to the muscles will increase the temperature of the body / hand so as to accelerate blood flow to the hand. Fatigue and muscle pain can be reduced when the flow of the blood vessels carrying fresh blood containing oxygen and nutrients Salvo (in Sitepu 2007) Movement of Swedish Massage starts from movement effleurage, this movement can stimulate the vegetative nerve system and blood vessels, causing vasoconstriction (widening). The second movement is friction, the movement triggers the disposal of the rest of the network, so that the nutrients can enter easily into the network (Nadya, 2012)

The third movement of this Swedish technique is petrissage, this movement helps emptying the glands under the skin, helps the formation of new fluid under the skin, making the muscles and skin elasticity increases. The fourth movement of vibration, this movement affects the nerve endings in the skin, subcutaneous tissue, muscle and connective tissue simultaneously help if there are clots or clots (including the process of healing and scarring) (Nadya, 2012). The fifth movement is tapotement, this movement to restore tone sagging muscles and to stimulate nerve ends and also the movement can refresh the muscles, improve blood circulation and lymph massage place (Graha, 2009). Adam (2011) in his research is about the effect of acupressure on muscle strength, stated that the average scores above extremities muscle strength after acupressure significantly different than the group that did not do acupressure. As well showed that acupressure can improve limb muscle strength with p value $(0.000) < (0.05)$. This suggests that non-pharmacological therapy can be used for the recovery of stroke patients experiencing residual symptoms such as hemiparesis.

Therapy Swedish massage with lavender oil increases muscle strength by means stimulating blood stream, lymphatic flow, and the nervous system. Increased venous return will help the efficient return of blood to the heart, and help drain the accumulated lactic acid in the muscles that help accelerate the elimination of lactic acid in the blood and muscles (Graha, 2009). Essential oils such as lavender can penetrate the deepest layers of the skin where the presence of blood and lymph vessels (lymph) to facilitate the flow of lymph (Mangoenprasodjo, 2005). Lavender oil containing linalool acetate is able to relax and work the system relaxes nerves and muscles tense (Price, 2007).

CONCLUSION

Intervention Swedish massage with lavender oil in the experimental group could improve limb muscle strength based on the Wilcoxon statistical test with p value $(0.000) < (0.05)$. In the control group there was no increase in muscle strength with median values

before and after a given intervention is 2.00 and based on the results obtained by Wilcoxon statistical test p value $(1,000) > (0,05)$. Mann-Whitney statistical test results obtained p value $(0.000) < (0.05)$, then there is a significant difference between the increase in limb muscle strength experimental group and the control group after being given Swedish massage with lavender oil. It can be concluded that the Swedish massage with lavender oil is effective in increasing muscle strength limb with p value $< .$

REFERENCES

- Adam, M. (2011). *Pengaruh akupresur terhadap kekuatan otot dan rentang gerak ekstremitas atas pada pasien stroke pasca rawat inap di RSUP Fatmawati Jakarta*. Diperoleh 04 Desember 2015 dari <http://lib.ui.ac.id>
- Buckle, J. (2001). *Aromatherapy and Diabetes*. *Diabetes Spectrum* vol.4 no: 3
- Dinata, C.A., Safrita, Y., & Sastri, S.G. (2012). *Gambaran faktor resiko dan tipe stroke pada pasien rawat inap di bagian penyakit dalam RSUD Kabupaten Solok, Selatan periode 1 Januari 2010- 31 Juni 2012*. Diperoleh 20 Juni 2015 dari <http://Repository.unri.ac.id>
- Graha, A, S. (2009). *Manfaat Swedish massage pada atlet yang mengalami kelelahan akibat latihan anaerob*. Diperoleh 19 Juni 2015 dari <http://Staff.uny.ac.id>
- Irdawati., & Ambarwati, W.N. (2009). *Hubungan antara pengetahuan dan sikap keluarga dengan perilaku dalam meningkatkan kapasitas fungsional pasien pasca stroke di wilayah kerja puskesmas Kartasura*. Diperoleh 19 Juni 2015 dari <http://Publikasiilmiah.unri.ac.id>
- Irfan, M. (2010). *Fisioterapi bagi insan stroke*. Yogyakarta: Graha Ilmu.
- Junaidi, I. (2012). *Stroke waspadai ancamannya*. Yogyakarta: Penerbit Andi.
- Mangoenprasodjo, S., & Hidayati, S. (2005). *Terapi alternative & gaya hidup*



- sehat. Yogyakarta: Pradipta Publishing.
- Marjoko, B.R. (2013). *Analisis status fungsional pasien stroke saat keluar ruang Merak II RSUD Arifin Achmad Pekanbaru*. Skripsi PSIK UNRI tidak dipublikasikan.
- Mubarak, W. I., & Cahyatin, N. (2009). *Ilmu Keperawatan Komunitas: Pengantar dan Teori*. Jakarta: Salemba Medika.
- Nadya Women Centre. (2012). *Swedish massage*. Diperoleh dari <http://nadyaspa.com> pada tanggal 06 April 2015.
- Notoatmodjo, S. (2007). *Promosi Kesehatan Dan Ilmu Perilaku*. PT.Rineka Cipta. Jakarta.
- Padila. (2012). *Keperawatan medikal bedah*. Yogyakarta: Nuha Medika.
- Panji, D. (2011). *Stroke bukan akhir segalanya*. Jakarta: Alex Media Komputindo.
- Potter, P. A., & Perry, A. G. (2009). *Buku ajar fundamental keperawatan*. (ed. 7). Jakarta: Salemba Medika.
- Potter, P. A., & Perry, A. G. (2010). *Buku ajar fundamental keperawatan*. (ed. 7). Jakarta: Salemba Medika.
- Price, S., & Price, L. (2007). *Aromatherapy for health professionals*. Elsevier. Diperoleh dari www.ebooksgoogle.com diakses pada tanggal 03 Februari 2015.
- Rachmawati, F. (2011). *Gambaran status fungsional pasien stroke saat masuk ruang rawat inap RSUD Arifin Achmad Pekanbaru*. Diperoleh 04 Desember 2014 dari <http://Repository.unri.ac.id>
- Sitepu, I. D. (2007). *Efektifitas massage terhadap penurunan kelelahan otot tangan operator puskom UNIMED*. Medan: Sekolah Pasca Sarjana Universitas Sumatera Utara.
- Soeparman. (2004). *Panduan senam stroke*. Jakarta: Puspaswara.

