

THE EFFECT OF TRADITIONAL THAI MASSAGE ON CHRONIC LOW BACK PAIN

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ABSTRACT

Chronic low back pain is a common and significant health problem, with 70-85% of people suffering from low back pain at some point in their lives, and more than 50% of adults suffering from this condition every year. Low back pain recurrences are expected, with the percentage of subsequent low back pain ranging from 20% to 44% within one year for the working population up to 85% lifetime recurrence. Study Objective is To determine the effect of giving traditional Thai massage on the reduction of Chronic Low Back Pain.

This type of study is a quasi-experimental with a pretest-posttest control group design. The number of samples in this study was 16 samples. The treatment group sample was given traditional Thai massage, and the control group was given no treatment, carried out for four weeks with a frequency of exercise twice in 10 days. Statistical analysis used the Wilcoxon signed test and the Mann Whitney test.

There was a significant effect on reducing pain and disability with a p-value <0.05, but there was no significant effect on the control group. Meanwhile, for the different effects, there were differences in the effect between the treatment group and the control group on pain reduction, but there was no significant difference in the effect on disability between the treatment group and the control group. As a conclusion, there is a difference in traditional Thai massage on reducing chronic low back pain myogenic pain.

Keywords: Chronic low back pain, myogenic LBP, traditional Thai massage

INTRODUCTION

A common problem that most people experience at some point in their life is Low Back Pain. According to Norasteh (2012), LBP's prevalence has increased from 4.4% to 33%, from 3.9% to 65%, and from 11% to 84%. Differences in prevalence ranges can be due to variations in area, age, lifestyle, social situation, and study methodology. Also, the economic burden of LBP is hefty.

Chronic low back pain is a common and significant health problem, with 70-85% of people suffering from low back pain at some point in their lives, and more than 50% of adults suffering from this condition each year. Low back pain recurrence is expected, with the percentage of subsequent low back pain ranging from 20% to 44% in 1 year for the working population up to 85% lifetime recurrence (Netchanok et al., 2012).

The prevalence of musculoskeletal diseases based on diagnosis by health workers in Indonesia is 11.9%, and based on diagnosis or symptoms is 24.7% (Arwinno, 2018). Chronic low back pain is defined as a chronic condition of low back pain that lasts for at least three months or longer. Difficult to treat, impairs quality of life, limit physical activity, and reduces psychosocial well-being. As a result, several complementary and therapeutic alternatives have been used to manage low back pain (Netchanok et al., 2012).

Something no one can deny is that life is not just one state. There is joy, sorrow, jokes, as well as laughter. There are healthy, but also sometimes sick. Rasulullah ﷺ said, "It is not a Muslim who is afflicted by a disease or the like unless Allah will shed his sins along with him, like a tree that sheds its leaves." (Narrated by Bukhari and Muslim). So medicine and doctors are the only ways to achieve healing, whereas healing only comes from Allah. In this case, someone who is suffering from low back pain, the way to achieve his recovery is by doing Thai massage. According to Paolucci (2019), Chronic Low Back Pain is one of the leading causes of disability worldwide. This was said by 26 studies included in the review (14 articles on Pilates, six on McKenzie, one on Feldenkrais, three on Global Postural Rehabilitation, and two on Proprioceptive Neuromuscular Facilitation).

Several techniques are available to treat LBP symptoms, such as heat therapy, cold therapy, ultrasound therapy, acupuncture, spinal traction, and massage, including traditional Thai massage (Petering & Webb, 2011). Thai massage (TM) is a treatment technique of applying short, continuous, and specific pressure to the imaginary 'Sen Sib' line along with passive stretching. TM's advantages in chronic low back pain myogenic effectively reduce pain, disability, and increasing back flexibility (Buttagat et al., 2019). TM can cause physiological changes in the tissue being treated, and the rest of the respondent's body, such as changes in the brain's electrical activity, increased muscle flexibility, and increased blood circulation. Viravud et al. (2017) revealed that TM could improve blood circulation, which can be seen from skin temperature and blood flow characteristics. At the same time, Buttagat et al. (2011) said that TM is associated with a significant increase in parasympathetic activity (increased heart rate variability), which can increase physical and mental relaxation.

Saetung et al. (2013) showed that Thai Massage could reduce levels of substance "P" and reduce pain in respondents with NSLBP (Non-specific Low Back Pain). TM can improve relaxation, remove toxins from muscle mass, reduce muscle tension, and increase muscle elasticity (Buttagat et al., 2019).

METHODS

This study used a quasi-experimental method using pretest and posttest approaches with control group design. This study was conducted at the Mickey Collection Convection, Colomadu District. The study was conducted for four weeks with details of 2 times therapy in 10 days in December 2019.

The population in this study were 16 Convection workers in the Colomadu District. The study sampling technique was purposive sampling, where the sampling was based on inclusion criteria, exclusion criteria, and drop-out criteria. Inclusion criteria: 1) Workers with complaints of low back pain that lasted at least three months (chronic phase). 2) Age 30-60 years, 3)

negative SLR test, change in posture, 4) Did not have medical records from the hospital, 5) good in communication, and 6) willing to be a respondent. Exclusion criteria: 1) had a fracture/dislocation of the lumbar area, 2) Osteoporosis, kidney disease, fever, infectious skin disease, open wounds, muscle/tendon injury, and 3) had a history of serious diseases such as cancer. Drop out criteria: 1) the respondent did not complete the series of exercises according to the program, 2) was unable to attend treatment during the study, 3) did not attend more than one time in a row.

The sample size in this study based on inclusion and exclusion criteria was found in 16 people. Eight respondents were given traditional Thai massage, and eight respondents were in the control group without treatment. The independent variable in this study is Traditional Thai Massage (TM). The dependent variable in this study was the reduction in pain in chronic low back myogenic pain. Traditional Thai massage is performed in various positions such as supine lying, prone lying, side-lying, and sitting positions and performed in a duration of 30 minutes, with therapy sessions of 1 to 2 days in 10 days (Buttagat et al., 2019). The traditional Thai massage technique uses the therapist's body weight to apply gentle, gradual pressure. (Buttagat et al., 2016).

Members who are given Thai Massage are the legs, lower back, and upper back areas. There are many basic hand techniques used by therapists throughout the TM. These pressure ranges are used, and involve proper body mechanics on the practitioner (Sacalguero & Roylance, 2011). Chronic low back pain (CLBP) is a chronic pain syndrome in the lower back area, which lasts for at least three months. CLBP is the second leading cause of disability worldwide to become major welfare and economic problem. The prevalence of CLBP in adults has increased by more than 100% in the last decade and continues to increase dramatically in the aging population, affecting men and women in all ethnic groups, with a significant impact on functional capacity and work activities. It can also be influenced by psychological factors, such as stress, depression and / or anxiety (Allegrì, 2016).

Low Back Myogenic Pain is low back pain caused by mechanical loads on the back, causing pain in the muscles. Myogenic LBP can be caused by excessive activity, such as the wrong sitting position, bending over too long for a long duration, resulting in disrupting activities while working. CLBP in this panel is measured using the NRS (Numeric Rating Scale) and the Oswestry disability index (ODI). NRS is a single 10-point numeric scale.

Response options / scale. A 10-point numerical scale (NRS 10) with 0 representing no pain and 10 representing another pain extreme such as pain as bad as we imagine. Respondents were asked to report pain intensity in the last 24 hours or average pain intensity (Hawker et al., 2011). Before carrying out a pain examination using NRS, the study subjects were given an explanation of how to use NRS.

Oswestry Disability Index (ODI)) was used to assess the functional disability of each LBP respondent. It consists of 10 sections, and each section is scored on a scale of 0–5, with 5 indicating the most significant defect. ODI is considered a standard testing tool for LBP functional results (Buttagat et al., 2019). Interpretation of scores: 1) 0-20% minimum disability: Respondents can handle most life activities. Usually, no treatment is indicated other than advice on lifting, sitting, and exercising; 2) 21-40% moderate disability: Respondents experienced more pain and difficulty when sitting, lifting, and standing ; 3) 41-60% severe disability. Pain remains

a major problem in this group, but daily life activities are affected; 4) 61-80%, back pain affects all aspects of the respondent's life. Positive intervention is required, and 5) 81-100%, respondents are bed-bound or exaggerate the symptoms.

DISCUSSION

The data obtained were analyzed with SPSS software with the Wilcoxon-test to determine the effect and the Mann Whitney test to determine the difference in influence. Characteristics of respondents based on age

Table 1. Characteristics of respondents by age

Age (years)	Treatment group		Control group	
	F	%	F	%
31-40	2	25,0	2	25,0
41-50	5	62,5	5	62,5
51-60	1	12,5	1	12,5
Total	8	100,0	8	100,0

Based on table 1, the respondent's age in the treatment group and the control group obtained the same results, namely 41-50 years (62.5%) and at least 51-60 years (12.5%).

The study sample data is based on pain measurement using a numeric rating scale before and after Thai massage treatment and without Thai massage.

Tabel 2 VAS score of pain

Group Treatment	NRS						
	NRS score	F	%	Minimum	Maximum	mean	SD
Pre-test	0-4	1	3,1	4	8	6	1,309
	5-7	6	18,8				
	8-10	1	3,1				
Post-test	0-4	6	18,8	2	5	3,38	1,188
	5-7	2	6,3				
	8-10	8	25,0				
Control							
Pre-test	0-4	0	0	5	7	5,88	0,835
	5-7	8	25,0				
	8-10	0	0				
Post -test	0-4	2	6,3	4	7	5,25	1,035
	5-7	6	18,8				
	8-10	0	0				

Based on table 2, the pre-test numeric rating scale have a minimum value of 4 and a maximum value of 8 with a mean of 6 and a standard deviation of 1.309. Respondents in the

treatment group with traditional Thai massage for four weeks with a frequency of two times in 10 days experienced a significant reduction in pain. Based on the control group respondents in the minimum pre-test value of 5 and a maximum value of 7 with a mean value of 6 and a standard deviation of 0.835. The data is processed in SPSS to determine the effect of traditional thai massage on chronic low back pain myogenic.

Tabel.3 ODI score

Group Treatment	ODI						
	ODI	F	%	Minimum	Maximum	Mean	SD
Pre-test	0-20%	2	25,0	20%	30%	25,25	3,991
	21-40%	6	75,0				
	41-60%	0	0				
Post-test	0-20%	7	87,5	10%	22%	17,25	3,955
	21-40%	1	12,5				
	41-60%	0	0				
Control							
Pre-test	0-20%	3	37,5	20%	26%	22,13	2,295
	21-40%	5	62,5				
	41-60%	0	0				
Post-test	0-20%	6	75,0	18%	25%	20,63	2,066
	21-40%	2	25,0				
	41-60%	0	0				

Based on table 3, the treatment groups in the ODI pretest had a minimum value of 20% and a maximum value of 30% with an average of 25.25% and a standard deviation of 3.991. Respondents in the treatment group with traditional thai massage for 4 weeks with a frequency of 2 times in 10 days experienced a significant reduction in functional disability. In this study, a test was conducted to determine the effect of the treatment group given traditional Thai massage and the control group. By using the Wilcoxon signed test effect. The results of the effect test are shown in the table 4.

Table 4 Wilcoxon test of VAS and ODI

	Group	Mean range	SD	P-value	conclusion
VAS score	Treatment-	2,62	0,744	0,000	Ha accepted
	Control	0,63	0,744	0,049	Ha rejected
ODI	Treatment	8	2,777	0,000	Ha accepted
	Control	1,5	1,690	0,049	Ha rejected

Based on the results of the table above, it is known that the test results used the Wilcoxon signed test with a result of 0.0001, which means <0.05 . These results indicate that H_a is accepted, which means that there is a significant effect in the treatment group given traditional

Thai massage, while in the control group, the results show 0.049 ($p > 0.05$) there is no significant effect on reducing pain and reducing the level of disability.

In this study, a different effect test was carried out between the treatment group that was given the application of traditional Thai massage and the control group without being given treatment. The test used to determine the difference in effect test was Mann Whitney. The Mann Whitney test results is on the table 5.

Table 5 Mann Whitney test of VAS and ODI

	Group	N	Mean (%)	SD	Levenes test	P-value
VAS score	Treatment	8	3,38	1,188	0,594	0,005
	Control	8	5,25	1,035		
ODI	Treatment	8	17,25	3,955	0,046	0,051
	Control	8	20,63	2,066		

Based on table 5 above, it is known that the results of the different effect tests using the Mann Whitney test. If the test yields a value <0.05 , it means that there is a difference in the effect between the treatment group given traditional Thai massage and the control group without treatment. For the pain scale, the difference can be seen from the difference in the mean values shown in the table. The treatment group has a mean value of 3.38%, and the difference in mean value in the treatment group is 2.62%, which means that the reduction in pain that occurs in the treatment group is 2.62%. The mean value in the control group was 5.25%, and the difference between the mean value in the control group was 0.63%, which means that the reduction in pain that occurred in the treatment group was 0.63%.

ODI in the treatment group has a mean value of 17.25%, and the difference in mean value in the treatment group is 8%, which means that the decrease in the level of disability that occurs in the treatment group is 8%. The mean value in the control group was 20.63%, and the difference in mean value in the treatment group was 1.5%, which means that the decrease in the level of disability that occurred in the treatment group was 1.5%.

In this study, a sample of 16 people from the data obtained the lowest age description, namely 32 years, then the highest 54 years. This study shows that the age of the treatment group and the control group is at most 41 years old, and over.

Low back pain (LBP) is one of the major disabling health conditions among adults or the elderly. While most LBP cause among adults are nonspecific and self-limiting, seniors are likely to develop specific and / or chronic LBP pathologies. LBP is given physical and psychosocial changes related to their age (Wong, 2017).

In general, musculoskeletal complaints appear at the working-age 25-65 years old. Complaints began to be felt starting at the age of 35 years and continued to increase with age. This is because the strength and endurance of the muscles began to decline. (Rohmawan and Hariyono, 2017). Chronic Low Back Pain (CLBP) is defined as pain that persists for more than three months, or longer than the expected healing period. It is one of the most common musculoskeletal problems in modern society (Poulucci, 2019).

This pain interferes with a person's work performance and reduces the individual's well-being or comfort. Low back pain is also the most common cause of activity restrictions and a person's absence from work, and this will certainly be a burden apart from the individual himself, and families, communities, industry, and government (Sidemen, 2016).

In this study, pain in respondents with chronic low back pain myogenic was described by NRS. Before the study, pain measurement was used to assess respondent's pain felt by respondents in carrying out their daily activities.

ODI Chronic Low Back Pain is one of the leading causes of disability worldwide. There is evidence that depression, anxiety, and external loci of control are negative predictors of functional disability in lower back respondents.

The literature reveals that disability is a complex and multifactorial phenomenon and is associated with high economic costs. In chronic LBP, functional disability can be partly explained by factors unrelated to the disease itself, such as psychosocial and professional factors, and can have personal effects. Professional limitations and family. The study found that 65% of the participants had functional disabilities, and more than 80% had moderate to severe functional disabilities. Respondents with LBP ten reported physical discomfort and functional limitations, as well as low levels of physical activity and decreased social participation (Pereira, 2016).

In this study, disabilities in respondents with chronic low back pain myogenic were described by ODI. Measurement of disability before the study was used to assess respondent's level of disability in carrying out daily activities.

The data analysis, it was obtained the effect of traditional Thai massage, namely in the treatment group on pain and disability, low back pain $p = 0.000$ ($p < 0.05$), which means that H_0 is accepted. From this statement that there is an effect of traditional thai massage on the reduction of chronic low back pain myogenic in the treatment group. The result of the value of the control group is 0.049; this shows the value of $p > 0.05$. From this statement, the control group without treatment had no effect on the reduction of chronic low back pain myogenic.

Giving traditional Thai massage has an effect on reducing pain. This is in line with a study conducted by (Tarwaka, 2004), where while providing traditional thai massage therapy, it is carried out by paying attention to postures such as yoga, where it will produce stimulation of visceroreceptor cells that are sensitive to stretching. These receptor cells send sensory impulses to the autonomic central nervous system, resulting in emotional equilibrium, which causes the individual's vigorous activity to decrease, and relaxation occurs. Gentle pressure massage and at the end of the therapy session are given passive stretches to improve circulation. The body receives better nutrition than no treatment, thus increases oxygen supply and increases the removal of metabolic waste, thereby reducing spasms and reducing pain and disability.

On the other hand, Thai massage techniques are based on the theory of health and healing energy balance using deep tissue massage with acupressure, which focuses on the line of energy flowing in the body called 'Sen Sib' Palming and thumbing are used to move energy along the path. Traditional Thai massage is considered a healing massage for diseases and aims for energetic balance (Netchanok, 2012).

Based on the statistical test using the Mann Whitney test between the treatment group and the control group, the pain scale value $p < 0.05$, means that there is a difference between the

treatment group and the control group. Administration of traditional Thai massage significantly affected the reduction of pain in chronic low back pain compared to the control group.

In the ODI results, the treatment group had more significant results in reducing disabilities for daily life with minimal disability results. The popularity of alternative medical treatments for many conditions has increased over the past few years, and massage has been documented as one of the most commonly used alternative treatments for back pain. Traditional Thai Massage (TTM) is a deep massage with prolonged pressure (5-10 seconds per point) on the muscles along with passive stretching. A pressure massage along the body's ten main energy channels or "penny" line is believed to release blocked energies, increase awareness and vitality. Gentle stretching of joints and muscles relieves tension, increases flexibility, and induces a state of deep calm (Mackawan, 2007).

CONCLUSION

The conclusion of this study is that there are differences in the treatment group's effect and the control group. There was a significant effect on reducing pain and disability with a p-value <0.05, but there was no significant effect on the control group. Meanwhile, for the different effects, there were differences in the effect between the treatment group and the control group on pain reduction, but there was no significant difference in the effect on disability between the treatment group and the control group.

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