

Effectiveness of Massage on Tension Type Headache Pain In Ages 25-50 Years

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Abstract

This research was conducted to determine the effectiveness of massage therapy on reducing tension headache pain in individuals aged 25-50 years. Tension headaches are a common condition characterized by dull, aching head pain and muscle tension in the head and neck. Manual therapy, particularly massage, is a non-invasive treatment that is relatively easy to apply and carries minimal side effects, making it an attractive option for pain relief. The aim of this study is to evaluate the extent to which massage therapy can alleviate tension headache pain in this specific age group. The research design employed a literature review method using the PICO framework and involved databases such as Google Scholar and PubMed. A total of 10 journals met the inclusion criteria and were analyzed. The results showed that massage therapy, when applied twice a week for four weeks with a duration of 45 minutes per session and using gentle pressure, had a statistically significant effect on reducing tension headache pain ($p < 0.05$). Based on these findings, it can be concluded that manual therapy massage is effective in reducing the severity of pain in individuals suffering from tension headaches, offering a viable treatment option for those seeking non-pharmacological pain management methods.

Keywords: massage, manual therapy, tension type headache, headache

INTRODUCTION

Headaches are one of the most common disorders globally, with the potential for severe disability. Tension headache (TTH) is a pain in the head and neck that feels uncomfortable. TTH can be associated with muscle tension. These headaches usually last a few minutes to a few weeks. The pain felt like a depressed and tight head ranges from mild to moderate, even though with regular physical activity the pain does not worsen.

The etiology of Tension Headache is not known for sure, but it is thought to be related to nutrition, prolonged contraction of the neck and head muscles, as well as genetic and environmental factors. Some of the risk factors that play a role in tension headaches include alcohol consumption, and traumatic brain injury.

Pathophysiology Headache is thought to be related to myofascial trigger points in the pericranial muscles that are overcontracted. In addition, autonomic dysfunction and nitric oxide can also underlie TTH. Trigger points, or stimulation points, are found in the skeletal muscles and

cause pain when pressed. The perikranial muscles are believed to be the point of stimulation involved in tension-type headaches (TTH). Excessive contraction of the pericranial muscles leads to ischemia, which causes progressively worse pain. The trigger point can be latent, meaning the pain only exists when it is acknowledged, or it can become more active, meaning the pain is always there.

Epidemiological data show that tension-type headaches, or TTH, are the most common form of headache worldwide. TTH is more common in women than men. Tension-type headaches (TTH) have a global prevalence of 26% and are the most common type of headache worldwide. By gender, the prevalence of TTH in males and females was 23.4% from 27.1%. TTH has been found to be up to 1.2 times more common in women. However, this difference in prevalence is smaller than migraines, where women are at three times greater risk.

The TTH is divided into three categories:

1. Infrequent period TTH (infrequent episodic): At least 10 attacks with stiff 1 attack per month or less than 12 sick head per year, sick head last 30 minutes to 7 days, no nausea (can be anorexia), photophobia or phonophobia (can be both, but not both).
2. Recurrent Episodic TTH: The diagnostic criteria for recurrent episodic TTH are the same as for infrequent episodic TTH, except that recurrent episodic TTH episodes must be 10 times ≥ 1 but < 15 days per month for a minimum of 3 months (≥ 12 and < 180 days per year) occurring, and criteria B-E are met in rare episodic TTH. If there is increased pericranial pain with manual palpation, the diagnosis is "generalized intermittent tension headache with pericranial tender".
3. Chronic TTH: Lasts a few minutes to days, pain is felt bilaterally and feels heavy and compulsive (pain may be mild or moderate, routine activities do not worsen), mild nausea may occur, and phorophobia or phonophobia may occur, headache occurs on average ≥ 15 days a day, monthly for > 3 months or ≥ 180 days per year and meets criteria B-D b) Attacks last for hours or may be continuous, bilateral and non-pulsing local pressure/tremors, mild to moderate pain intensity, activities are not aggravated by these routine activities. Like walking or climbing stairs.

There are around 99% of women and 93% of men with a range of 25-50 years of age experience headaches. About 78% of adults have experienced TTH at least once in their lives. The first symptoms that are commonly felt are pain and pain in the head, a feeling of pressure / pinching of the head, insomnia, fatigue easily, difficulty concentrating, and even irritability.

Massage term to art movement hands used for describing special manipulations of soft tissue body we. Manual therapy is therapy physical that requires special joint mobilization skills and procedural techniques. Manual therapy used to reduce pain Increase movement joints, reduce Swelling and increase network flexibility.

Posadzki et al. and Luedtke et al. found that although therapy manuals had a positive effect, there was insufficient evidence. However, studies involving various manual therapy techniques (manipulation, mobilization, soft tissue techniques) were applied in different regions of the spine (upper, middle or lower cervical spine), and studies with different treatment protocols and different measurements were included in this systematic review and meta-analysis.

Massage Treatment carried out by therapist at patients more or less give Contribution to good tranquility psychological and Physiological and mechanical system (Wijanarko & Riyadi, 2010). This technique can help reduce the pain that arises from TTH. The effects of this technique can trigger THA such as managing emotional tension/stress well.

There are several Literature Review or systematic review which discusses the effectiveness of massage reduce pain in headaches. Therefore, this study aims to find out the effectiveness of massage in reducing pain in headaches based on previous research journals.

Tension-type headaches (TTH) are one of the most prevalent forms of headache disorders globally, affecting a significant portion of the population. Despite its high prevalence, many individuals, particularly in the age group of 25-50, experience chronic pain and disability due to TTH. Conventional treatments, often relying on medication, may not always be effective in reducing the symptoms or may cause side effects, leading to a demand for alternative, non-invasive treatments. Manual therapy, particularly massage, presents a promising option due to its ability to alleviate pain without side effects. Given the widespread occurrence of TTH and the lack of consistent, non-pharmacological treatment options, research on the effectiveness of massage therapy in treating TTH is urgently needed to provide a reliable alternative for individuals suffering from this condition.

While there are several studies on the use of manual therapy, including massage, for pain relief, there is limited research specifically focused on its effectiveness in managing tension-type headaches. Most existing studies examine the general effects of massage on various types of pain but lack focus on the specific mechanisms of TTH relief. This research aims to fill that gap by systematically analyzing the role of massage therapy in reducing TTH-related pain based on previous studies and evaluating its impact on psychological and physiological relaxation. Furthermore, the research highlights the importance of myofascial trigger points and their role in pain management, which is often overlooked in broader pain studies.

The results of this study will contribute to expanding the understanding of non-invasive treatments for TTH. By demonstrating the effectiveness of massage in reducing pain, this research can help physiotherapists, healthcare providers, and patients consider manual therapy as a viable treatment option. Additionally, the findings could encourage the integration of massage therapy into primary healthcare practices as part of a comprehensive, holistic approach to managing tension-type headaches. This research also sets the stage for future clinical trials and encourages further exploration of alternative therapies in the management of chronic pain conditions.

METHODS

This research uses a literature review approach. Literature review is a systematic method that summarizes and evaluates knowledge or practice on a specific subject. This research question follows the PICO format: (P=population) of tension headache patients aged 25-50 years, (I=Intervention) Massage of trigger point release focusing on Myofascial trigger points in the face, neck, and back area, (C=Comparison) no comparison, (O=Outcome) Effective massage can reduce pain in Tension Headache patients aged 25-50 years and can improve their quality of life. The research journal articles reviewed were limited by inclusion and exclusion criteria, with journal entries having a span of time over the last 10 years

The author gets information based on journal databases such as PubMed, Google Scholar and if the database is locked, the author downloads it to the Sci-Hub database using the predetermined keyword, namely "Massage, Manual therapy, Tension type headache, Headache".

VAS (Visual Analogue Scale) is one of the pain rating scales first used in 1921 by Hayes and Patterson. It is often used in epidemiological and clinical research to measure the intensity or

frequency of various symptoms. For example, the amount of pain a patient feels ranges from no pain to extreme pain. From the patient's point of view, this spectrum appears continuously \pm their pain does not take discrete leaps, as suggested by the categorization of none, mild, moderate and severe. It is to capture the idea of this underlying continuum that the VAS is designed.

A standardized history test is a test that is given and scored in a consistent, or "standardized" way based on the experience of an intervention. The test is designed in such a way that the questions and interpretations are consistent and are given and scored in a pre-defined standard manner.

WMD (Weighted mean difference) In meta-analysis, the information collected can be dichotomous, or continuous. For the continuous variable we need to combine the measurements, where the mean, standard deviation and sample size in each group are known. This method assumes that all trials have measured outcomes on the same scale. The weighted mean can be calculated for the group before and after the intervention, and the difference in the weighted mean will be the difference between the initial and final values. Precision is not the only way to calculate weighted averages or weighted mean differences. Another simpler way is to weigh in on the numbers in the study.

Pain Pressure Threshold (PPT) used to measure the sensitivity of deep muscle tissue. The test determines the amount of pressure on a specific area where the ever-increasing non-pain pressure stimulus turns into a painful sensation of pressure. Varying pressures are applied from 0.5 to 1 kg/sec in a perpendicular direction relative to the muscles PPT does not have a standard protocol for administration and placement The equipment used varies with many handheld electric algometers. PPT has been used in a variety of patients and conditions, including musculoskeletal and neuromuscular disorders (e.g., Parkinson's disease, tension headaches, pelvic pain, low back pain, myofascial trigger points, sacral joint pain, knee osteoarthritis, skin moisture, shoulder pain, lateral epicondylitis).

RESULTS AND DISCUSSION

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Table 1. Study Characteristics 1

Reviewer	Participant		Intervention			Measurement	Result	Design Study
	Intervention Group	Control Group	Experimental Group	Control Group				
(Castien et al., 2013)	n = 41 18-65 years old	n = 41 18-65 years old	Manual Therapy	No intervention		Standardized History	P<.05	RCT
(Corum et al., 2021)	n = 15 19-48 years old	n = 15 19-48 years old	myofascial +exercise	release exercise		VASE	p < 0.001	RCT
(Damapong et al., 2015)	N=60 18-65 years old	-	Shouder Face Massage	Massage+	-	VASE	P < 0.05	RCT
(Mesa-Jiménez et al., 2015)	N=206 Unknown	-	manual therapy+pharmacological		-	WMD	P < 0.001	RCT
(Moraska et al., 2015)	N=184 18-59 years old	N=184 18-59 years old	Neck Massage		No Intervention	PPT	P < 0.002	RCT
(Turolla, 2018)	N=69 25-39 years old	-	Infra Red, Stripping and Stretching		-	VASE	p<0,0 5	Quasi Experimental
(Moraska)	N=5	N=2	Massage,Trigger Point	massage		PPT	P<0.0	RCT

et al., 2017)	Unknown	Unknown	release	and placebo-treated	5	
(Kamali et al., 2019)	N=44 Unknown	-	Dry Needling+ Friction Massage	-	VASE P<0.05 5	RCT

Based on a literature review study, the authors found that 866 sample results averaged between 18-65 years of age. Of the many Riview literature found, most of the literature uses RCT design and VAS measurement with p<0.05.

Table 2. Characteristics of Study II

Reviewer	Type of Intervention	Therapeutic Dosage				Duration Therapy
		F	I	T	T	
(Castien et al., 2013)	Mobilization, neck flexor isometric training/position correction	1 time/week	Patient Tolerance	Manual Therapy	30 minutes	8 weeks
(Corum et al., 2021)	Physical Activity	2 times/week	10 cm VAS	myofascial release +exercise	10 minutes until the myofascial tissue is released	4 weeks
(Damapong et al., 2015)	massage points effleurage, petrissage, friction	2 times/week	According to each patient's pressure threshold pain	Shoulder and face massage	45 minutes	4 weeks
(Mesa-Jiménez et al., 2015)	Spinal manipulation, exercises, position correction	1 time/week	headache diary	manual therapy+pharmacological	-	4-6 weeks
(Moraska et al., 2015)	effleurage and petrissage on the shoulders and neck	2 times/week	Gentle preassure	Neck Massage	45 minutes	6 weeks
(Turolla, 2018)	longitudinal muscle stretching	6 meetings	45-60 cm from the surface of the skin Patient tolerance	Infra Red, Stripping and Stretching	-	-
(Moraska et al., 2017)	effleurage and petrissage	2 times/week	Gentle preassure	Massage trigger point release	45 minutes	6 weeks

(Kamali et al., 2019)	effleurage, petrissage, friction	3 times/week	-	Dry Needling+ Friction Massage	60 minutes	3 weeks
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Based on research, researchers found that there are several massage movements that can be applied to people with tension headache with constipation such as Stroking, petrissage, effleurage, friction with a frequency of 1 time/week with a duration of 45 minutes for 4 weeks.

Table 3. Mean Of Study

Reviewer	Measurement	Group Experiment		Control Group		Significant
		Pre	Post	Pre	Post	
(Castien et al., 2013)	Standardized History	11.6 ± 11.1	13.1 ± 12.	11.5 ± 2.7	11.6 ± 2.8	P < .05
(Corum et al., 2021)	VASE	- 3.8 ± 1.5	- 3.5 ± 2.1	10.1 ± 6.1	- 6.1 ± 8.9	p < 0.001
(Damapong et al., 2015)	VASE	6.3 ± 1.20	2.60 ± 0.72	6.0 ± 0.94	2.90 ± 1.06	P < 0.05
(Mesa-Jiménez et al., 2015)	WMD	-2.18	-0.39	-1.43	-3.13	P < 0.001
(Moraska et al., 2015)	PPT	8.18± 6.6	11.6± 1.0	9.34± 6.9	11.5± 0.84	P < 0.002
(Turolla, 2018)	VASE	5,60	4,78	6,10	5,27	p<0,05
(Moraska et al., 2017)	IHS	15.0 ± 4.3	24.7 ± 7.7	15.7 ± 6.2	15.7 ± 6.2	p<0,05
(Kamali et al., 2019)	VASE	1.95 ± 2.08	2.85 ± 2.56	3.00 ± 2.31	4.22 ± 3.51	P<0.05

Based on the table above, when compared to the control group, the intervention group showed a good and significant improvement.

Discussion

Tension headache (TTH) is pain/discomfort in the head and neck, usually related to muscle tension. Last-minute recurring headaches for the week. TTH can affect people of all ages. Stress and emotional conflict are the most common triggers of TTH. Emotional disturbances are risk factors for TTH, while mental tension and stress are the most common causes of TTH. TTH is felt on both sides of the head as a constant or constant dull pain that varies in intensity and is accompanied by pain. Based on the multivariate analysis of the clinical picture, the diagnostic criteria for TTH with high sensitivity scores include no vomiting (99%), no nausea (96%), bilateral localization (95%), no photophobia. 94%). In contrast, high specificity scores were light intensity (93%), compression or binding quality (86%), not associated with phonophobia (63%), non-pulse quality (57%).

A number of recent studies have shown a possible link between myofascial TrP and chronic headaches and this study confirms this link in clinical settings. Myofascial TrP massage has also been shown to have a relaxing effect and lower muscle tension. In another study, non-specific massage was also found to have some effect on CTTH, but although the frequency and duration of headaches were reduced in this study, the intensity of the pain did not change. Since the

massage applied is non-specific and covers all neck and shoulder muscles, and no specific identified TrP, this could be the explanation for no change in pain intensity.(Berggreen et al., 2012).

In the study, the time spent on treatment differed between the intervention groups due to the greater number of sessions and longer session duration with manual therapy compared to usual general practitioner care. To evaluate the mediating effect of the time spent on treatment, treatment protocols with identical mobilization or exercise regimens but differences in duration or number of sessions should be investigated. (Castien et al., 2013).

There was a significant decrease in headache frequency in the myofascial release group only after treatment (-1.4 ± 2.0 ; $p = 0.023$). Significant differences in changes in headache frequency after treatment is achieved in the treatment group compared to the control group ($p < 0.001$) and at the third month of follow-up compared to the control group and the myofascial release group ($p = 0.014$, $p = 0.001$, respectively). The frequency of headaches as the primary outcome was significantly decreased both post-treatment (-3.3 ± 1.2 ; $p = 0.002$) and at the third month of follow-up (-3.0 ± 2.1 ; $p = 0.003$) in the manipulation group. There was a significant decrease in headache frequency in the myofascial release group only after treatment (-1.4 ± 2.0 ; $p = 0.023$). Significant differences in changes in headache frequency after treatment is achieved in the treatment group compared to the control group ($p < 0.001$) and at the third month of follow-up compared to the control group and the myofascial release group ($p = 0.014$, $p = 0.001$, respectively). (Corum et al., 2021).

Assessment time during initial, week 2, and week 4 treatment and at week 6 follow-up after the last treatment. VAS, violence network, and PPT results were compared in groups at week 2, week 4, and week 6 follow-up. The results showed a statistically significant increase in the mean score in both groups ($P < 0.05$). Presents a comparison-adjusted average and a 95% confidence interval for the outcome measure at each assessment point. (Damapong et al., 2015).

Four studies included chronic headaches and one was specifically conducted on frequent episodic TTH. The duration of treatment ranged from 4 to 6 weeks with 5-12 manual therapy sessions (average: 7.6 ± 3 sessions). Manual therapy programs include different treatment approaches: spinal mobilization or manipulation; low load stabilization training; soft tissue pressure relief; Postural correction/awareness. Interventional pharmacological drugs follow the accepted guidelines and are given for the same period of time from manual therapy. Most studies combine prophylactic treatment (e.g. tricyclic antidepressants) and acute therapy consisting of non-steroidal anti-inflammatory drugs. All studies included a follow-up period immediately after the intervention, while three trials included a follow-up period ranging from 18 to 24 weeks (mean: 21 ± 3 weeks) after intervention. (Mesa-Jiménez et al., 2015)

Group differences were observed in book daily from time to time observed to HA frequency ($P = 0.026$) but not for intensity or duration. Post hoc analysis showed that the frequency of HA decreased from Baseline to Massage ($P < 0.0003$) and placebo ($p = 0.013$), but not Found Difference Between Massage and Placebo. Patient reports of clinical changes that observed to reduce HA pain more on massage than on placebo group or waiting list ($p = 0.002$). Threshold the limit of tensile pain increases in All muscles tested with massage only (all $P < 0.002$). (Moraska et al., 2015).

The results showed that the average intensity of pain before 05:60 after the procedure decreased to 4.78 and the average intensity Sensitivity before 06:10 decreased to 5.27 after procedure. The results of the analysis show that exist differences in pain intensity ($p = 0.005$) and sensitivity ($p = 0.005$). that therapy infrared (IR), Stripping and Tension effective in reducing

intensity pain caused by headaches due to tension. Therefore, it is expected that patients who complain of pain and tension headaches will become more active and disciplined in effective pain relief treatment.(Turolla, 2018).

Massage participants attend weekly massage sessions during Weeks 5 to 10. Perceived stress and coping efficacy were assessed at Weeks 4, 10, and 13. Results: Compared to control participants, the exhibited massage participants had a greater increase in migraine frequency and sleep quality during the intervention week and 3 weeks of follow-up. A trend for the beneficial effects of massage therapy on perceived stress and coping success was observed. During the session, the massage leads to a decrease in anxiety, heart rate, and cortisol. Conclusions: The findings provide preliminary support for the benefits of massage therapy as a nonpharmacological treatment for individuals suffering from migraines. (Lawler & Cameron, 2006).

PPT increased over the study period in all four muscle sites tested for massage, but not the sham ultrasound or waitlist group ($P < 0.0001$ for suboccipitals; $P < 0.004$ for the upper trapezius). Post hoc analysis in the massage group showed (1) an initial and immediate improvement in PPT (all P values < 0.05), (2) a cumulative and sustained increase in PPT above baseline (all P values < 0.05), and (3) an immediate increase in PPT at the final (12th) massage treatment (all P values < 0.05 , except for the upper left trapezius, $P = 0.17$). Single and double massage applications improve PPT in MTrPs. MTrP pain threshold has a large capacity to increase; even after some massage treatments, additional advantages in PPT are observed. (Moraska et al., 2017).

As 40 patient TTH (5 men and 35 women) participated in the study. There was no statistically significant difference between the mean age groups (37.45 ± 12.57 Versus 33.70 ± 9.94 years, $P = 1/4 \pm 0.30$), high (164.35 ± 8.24 versus 165 ± 8.93 cm, $P = 1/4$), heavy (77.9 vs. 9.65 vs. 70.42 ± 13.00 kg, $P = 0.49$) or distribution gender (4 males and 16 females vs. 1 males and 19 woman $P = 0,15$). The clinical characteristics of participants before treatment are shown on. Because the pain threshold and right-sided flexion range differed significantly between the two groups at the start, we used ANCOVA for a comparison between the groups. (Kamali et al., 2019).

CONCLUSION

Stress and emotional conflict are triggers TTH is the most common. Emotional disorders be risk factors for TTH, while mental strain and stress are the causes TTH is the most common. The effectiveness of Massage manual Therapy for TTH shows that Massage Myofascial trigger points be an important component in the treatment of TTH and Delivering Results that Significant at $p < 0.05$ deep subtract pain experienced by patients Anonymous. With a frequency of 2x a week with a duration of 30 minutes carried out for 8 weeks. Massage Myofascial trigger points can also be done with other interventions such as Dry needling and exercise to reduce the pain.

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First publication right:

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