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Efficacy of Patients with Tension Headache Physical Therapy

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Abstract – Tension-type headaches (TTH) include disorders with significant effects on life quality and cost-effectiveness. A randomised controlled trial assessment of the MEDLINE searches (from January 2002 to April 2012) was done. Included in adult patients and at least 11 years of age were studies of the English-language types (ETTH) and chronic tension-type headache(CTTH). The first study employing the sentences Effectiveness, Headache and Manual Therapy was conducted out (39 studies). A search has also been carried out that includes treatment phrases such as physical therapy, physical therapy, spinal manipulation (25 studies). Nine of the two searches satisfied inclusion requirements and statistically significant results were analysed: The following: myophasal releases, cervical traction, neck muscles trigger points and stretching of cervical chest muscles, superfluous heat, massage, connective tissue manipulation and vertebral cyronic mobilisation, spinal manipulation and cervical chestnut-occipital manual traction; 8) pressure release and muscular energy in the suboccipital muscle; 9) combination of cervical-thorax mobilizations, exercises, and posture correction. Massage focused on releasing the myofascial trigger point activity; All studies employed a mixture of several approaches and no therapies investigated individually; all studies additionally evaluated elements of TTH beyond pain intensity and frequency.

Keywords – Physical Therapy, Manual Therapy, Tension-Type Headache, Effectiveness

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1. INTRODCTION

In 2004, major headaches were introduced to the International Headache Society (IHS) for tension types of headaches (TTH). The most frequent kind of tensional headaches are episodes of strain headaches (ETTH) with a frequency of fewer than 15 days per month or chronic stress headaches (CTTH), with a rate of more than 15 days a month. The latter is also distinguished by its painful period between 30 minutes and 7 days. Headache should fulfil two or more of the following criteria, to be called chronic: bilateral positioning, non-pulsative pressure, mild or moderate pain, without increasing physical activity.

TTH is also an important field of visits to primary care. Because of its efficacy, both migraines and tension headaches are commonly self-treated with patients suffering from symptomatic medications. The patient may have major abnormalities both with the frequency and severity of the suffering. It also becomes a major difficulty for both the doctor and patient when it gets chronic. This condition is only diagnosed on the clinical data and no further diagnostic procedures are carried out to confirm TTH, thus it is usually done by excluding other illnesses. Prevalence rates vary from 22.65% to 30%, and have an impact on employment, social areas, everyday life and quality of life. The human and socio-economic cost of missed working days and/or days with lower efficiency are enormous. TTH may also have an impact on the quality of your life, damaging family, friends and coworkers connections. It might also result in family and social events being cancelled. According to recent research in Spain, 31% of those with headaches were disabled in the episode while 53% lowered the effectiveness of their everyday work. TTH is the most prevalent kind for Lenssink et al., 2004, a serious health issue with a substantial socioeconomic burden, based on all forms of headaches.

The incidence and prevalence in general population of primary headaches is considerable. The main forms of primary headaches include migraine and TTH. The social and health connections are not only significant but also have a substantial impact on the public health system. Due to them, various health experts get a high average number of visits and a number of medical prescriptions resulting in significant expenditures.

Headache is known as headache of any sort occurring in any place of the head. There are many distinct kinds and as many causes of headaches.

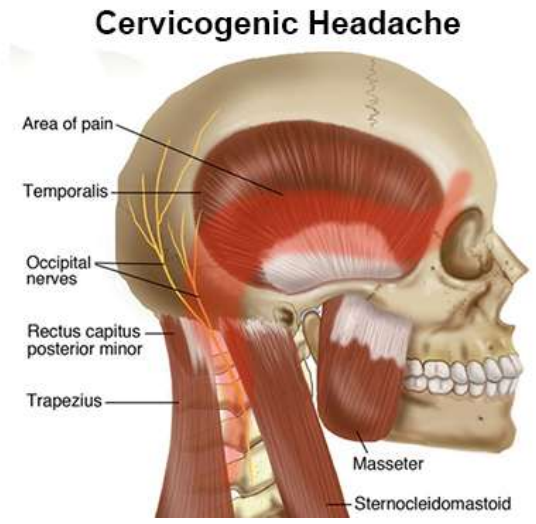
The International Society for Headache identifies many headache categories:

- Cervicotine Cervicotine (also called muscle-spasm headaches).
- Cluster and migraine.
- Neuralgia cranial, facial pain and other headaches.
- Secondary underlying headaches such as fever, viral diseases, sinus disorders or tumour or more severe conditions in rare circumstances. • Several diseases.
- Headaches are frequent in people with established neurological diseases, such as MS, stroke, traumatic brain injuries or spinal cord injuries.
- Persons with a known neurological problem are advised about headaches by their health workers.

Most headaches are innocuous and solve on their own, however severe headaches that often return might influence your everyday work and diminish your quality of life.

Almost every form of headache is treated well. The challenge is to identify the type of headaches, their cause and develop an adequate treatment plan that will decrease both their frequency and intensity. Physiotherapists are skilled in treating pain from a range of causes and may assist in identifying the sort of headache you are experiencing.

Physical therapists are experts in movement that improve their quality of life by means of practical care, patient education and movement. A physical therapist may be contacted immediately for an assessment. Visit your region to find a physical therapist Search for a PT.



2. METHODS

Between February and April 2012, randomised, controlled studies published between January 2002 and April 2012 conducted systematic searches of scientific literature on MEDLINE, PEDro, Cochrane and CINAHL. For this examination the starting words of search were: efficacy, tension headache and manual therapy, which were derived from MeSH. An second search was made using MeSH's keywords: treatment, physiotherapy, physical, physiological and spinal manipulation.

2.1 Study selection

Included in the studies: (1) in English, (2) adult patients, (3) the samples have not been less than 10, (4) ETTH and CTTH were diagnosed using IHS criteria. 5) included manual therapy methods done throughout one treatment session; 6) studies were assessed in 2002 to 2012; and 7) at least one of the following factors was: severity of pain, frequency of pain, and other headaches assessments.

2.2 Data extraction

Two reviewers selected the papers and extracted data. A first search was conducted with the use of the phrases efficacy, tensional type headache and manual treatment on randomised controlled trials with adult patients diagnosed with TTH (IHS criteria). This led to the acquisition and assessment of 39 studies. Checks have been eliminated since they are not the focus of research, though they have been discussed.

Furthermore, in the search: treatment, physiotherapy, physiotherapy, physiological and spinal manipulation were included the following MeSH words. 25 additional studies have thus been gathered and examined. One was eliminated because headache with vertigo symptoms was listed. Finally, the studies that met the criteria for inclusion were evaluated and assessed.

3. RESULTS

3.1 Study selection

64 possibly relevant papers, 7 excluding examinations, and a research examining both headache and diagnosis were discovered in the Search Strategy. Repeated studies have also been eliminated. The nine remaining research satisfied and assessed the inclusion criteria. The technique utilised in selecting the research is shown in Fig. 1.

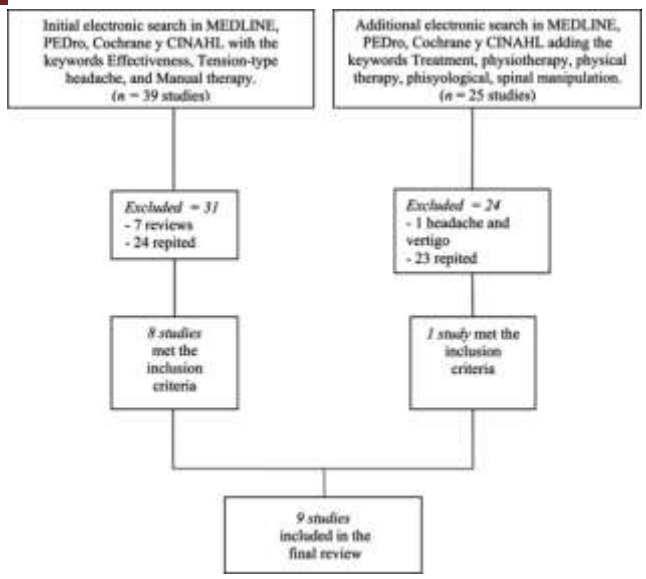


Fig 1: Flow diagram of study selection procedure

3.2 Interventions

The therapies included by each of the nine investigations were: (1) massage, myophasal release, traction, trigger-point therapy, stretching and relaxation; (2) superficial heating, massage, connective tissue and movement of the spinal cord; (4) initial gentle massage and progressive relief, with a gentle stretch of the shoulder, neck and pericranean, adding a daily home programme; 5) rhythmic, passive and cervical method-based mobilisation, rhythmic postural correction and lumbopelvic and cervical exercises; (1) (1); 5) 6) gradual muscular relaxation, joint mobilisation, functional, muscle, strain-country and cranial osteopathic treatment; 7) massage that concentrates on the activity of myofascial triggers. 8) release of pressure and muscular energy in suboccipital muscles; 9) mobilisation and postural correction of the cervical and thoracic spine.

3.3 Description of included studies

The features, findings and principal findings of the nine assessed research are summed up in Table 1 as follows.

Table 1: Characteristics of studies with MT and their efficacy (1)

Author	n	Treatment duration	Type of study	Treatment	Effect
Quinn and Chandler 2002	25	4 weeks	Trial without control group	Massage, myofascial inhibition, traction, trigger point therapy, stretching and relaxation	Frequency P=0.00 Pain Duration P=0.58 Intensity P=0.19
Demirturk et al., 2002	35	4 weeks	Comparative trial	G1: Superficial heat and massage + connective tissue manipulation G2: Superficial heat and massage + spinal Cyriax mobilization	Pain index, intensity and movement range P>0.05 in both groups.
Dunkin et al. 2002	30	4 weeks	Comparative pilot study	G1: Thoracic spinal manipulation G2: chiropractic manipulation and cervical occipital manual traction	Perception of pain, disability, CROM, frequency, intensity and duration p<0.05 in , both groups, but better results for manipulation without traction
Torelli et al. 2004	50	G1: 8 weeks treatment + 12 weks observación G2: 8 weeks observación + 8 weeks treatment + 12 observación	Comparative trial	G1: Treatment (gentle massage, progressive relaxation gentle stretching, and active exercises) + observation G2: Observation+ Treatment as G1	G1 and G2: Frequency reduced P<0.001 Compared G1 and G2 results in the CTTH compared with ETTH P<0.002 Intensity, duration, and consumption of medication no significats results in any group no results
van Ettekoven and Lucas, 2006	81	6 weeks	Randomized controlled trial	G1: Massage with friction, passive rhythm based on the Maitland Method, postural correction cervical, thoracic and lumbopelvic and craniocervical exercises G2: Treatment for control group was the same except for the absence of craniocervical training	G1: Frequency P=0.0001; Intensity P=0.001; Duration P=0.01; Quality of life P =0.001 G2: All parameters p>0.05
Andersen and Sonisca, 2006	26	3 weeks	Randomized controlled trial	G1: progressive muscular relaxation + treatment (3 session with + joint mobilization, muscle energy and strain/counterstrain techniques, osteopathy) G2: progressive muscular relaxation	G1: Frequency P<0.016 Intensity, degree of pain no results positive; degree of pain improved on 57.5%. G2: Degree of pain only improved on 15.6%.
Muruaka and Chandler, 2020	18	6 weeks	Pilot study one group	Massage focused on relieving myofascial trigger point activity	Frequency P<0.001 Intensity P<0.01 Duration P<0.05 Disability P<0.001
Toro-Velasco et. al., 2009	11	2 sessions	Pilot study	G1: Pressure release and muscle energy in suboccipital muscles G2: placebo treatment with ultrasound therapy	G1: Index of HRV P=0.01 Anxiety P=0.03 Hostility, anger P=0.04 Intensity P<0.05 G2: Parameters p>0.05
Castien et. al. 2011	82	8 weeks	Randomized controlled trial	G1: Mobilization of cervical and thoracic spine, postural correction exercises. G2: usual care by general practitioner	G1: Impact P<0.001 Disability P<0.001 Movement P=0.023 Algometry P<0.001 Strength P=0.011 G2: Parameters p>0.05

A headache treatment for 25 people aged between 18 and 55 years was conducted by Quinn and Chandler in 2002. The course of treatments was completed for four weeks, 2 times per week, and for thirty minutes per session: 3 minutes of preparatory warming of the tissues; 5 minutes of myofascial release; 2 minutes of cervical traction; five minutes of TrP in trapetious, sternocleidomastoid, suboccipital, slénius capitis and elevator scapulae. The corresponding results for frequency (P = 0.009), length of pain (P = 0.58), and severity of pain (P = 0.19) were retrieved after 4 weeks. Thus, the three steps following the manual therapy have been improved.

A comparison study of the effectiveness of two distinct manual therapy approaches has been carried out in TTH patients by Demirturk et. al. in 2002. In the study, 35 patients were randomly

allocated to two groups with a median age of 38.27 years. The treatment programmes were completed by only 30 patients. Both groups had superficial heat, bonding tissue handling in group 1 (n=15) and vertebral Cyriax mobilisation in group 2 (n=15). The programme consisted of 20 follow-up sessions over 4 weeks plus 1 month. The following parameters have been measured before and after treatment for the comparison of the effectiveness of the methods and a follow-up month: intensity of headache pain, cervical active motion range and pressure range of the pain. The results of the study showed that in both groups, all parameters improved significantly (P > 0.05). Thus, the measures were enhanced by both treatments.

Donkin et. al. conducted a study of thirty patients aged twenty to sixty-two in 2002 in two groups of fifteen people. In nine sessions over 4 weeks the therapy was conducted. Cervical or thoracic spinal manipulation in the first group, and 20 times cervical and chino-occipital manual traction in the second group. The McGill questionnaire, neck handicap index impairment, numeric pain intensity, and cervical movement range (CROM) as well as the daily pain frequency, severity, and duration register were examined for pain. In all daily pain metrics, the first group was also improved. The pain intensity (P = 0,042), pain perception (P = 0,082) and daily pain were increased in strength (P = 0.005) and frequency (P = 0,018) when compared with the second group, while the other characteristics were unaffected. The research shows that the most effective strategy is manipulation without traction.

Torelli et. al., 2004 assessed TTH physiotherapy outcomes in 50 individuals aged 18-70 years, 26 ETTH and 24 CTTH-diagnosed. Patients have been treated for eight weeks in physiotherapy: Group 1 with initial soft massage, slowing and light stretching, the introduction of an active shoulder, neck and pericranial exercise daily at-home programme plus 12 weeks of follow-up. Group 2 was observing for 8 weeks, then eight weeks of identical physiotherapy treatment with Group 1. In both groups a significant and equal decrease was shown between the headache frequency before and after treatment (P < 0.001). The findings for the CTTH in comparison to the ETTH were significant (P<0.002). Throughout the trial, the intensity, duration and medication were not altered and there were no changes between chronic headache stress or between episodic tension headache. The research was hindered by the absence of dual-blind structure.

The immediate effects on the variability of heart rates (CRT), mood and pressure pain thresholds (PPT) in CTTH patients were studied by Toro-Velasco et al. in 2009. The sample included 11 individuals aged 51 years on average (SD 15). Group 1 received experimental therapy and group 2 received ultrasound treatment with placebo (pressure release, 40 minutes of muscle energy in suboccipital muscles). Evaluation on temporal, suboccipital, upper trapezius, splenius capitis, sternocleidomastoid, levator scapulae and semispinal capitis was performed by the holter, the electrocardiogram and the PPT. With the questionnaire Mood States, the mood profile was examined The data were gathered immediately and 24 hours after the operation. Paired post-intervention comparisons showed that the treatment group had an increase in HRV (P=0.01) while no changes were found after placebo treatment (P=0.7). There have also been differences between tension-anxiety and hostility and anger (F = 5.3, P = 0.03) (F = 4.6, P =.04). Comparisons by pair demonstrated a reduction in pain intensity 24 hours after MT (P <0.05) but not after placebo surgery (P =0.9). A single session of MT therefore immediately increases the index of heart rate variability and decreases tension in cold and perceived pain in CTTH patients.

The Castien et. al. research conducted in 2011 examined the efficacy of MT in CTTH, including 82 randomly allotted subjects: 41 got MT therapy and 41 got medical practitioners' standard care. The MT therapy comprised of 8 weeks of mobilisation, exercises, and posture correction in the cervical and thoracic spine, each taking up to 9 sessions of up to 30 minutes. The assessment was based on headache effects test-6 (HIT-6), algometry, strength of the cervical flexors and cervical movement, as well as pain frequency, usage of medicines and headaches intensity, impact and impairment. Headache effects assessed. At the completion of the 8-week therapy, an assessment was carried out and 26 weeks were followed. For frequencies of MT (−6.4 days, 95% CI −8.3 to −4,5) and length (−5,3, 95% CI −9,5 to −1,2), the severity of headache (−1,8, 95% CI −3,1 to −0,7) were significant variations. After 8 weeks, pain in 87,5% of MT participants and the usual care group were decreased to 50 percent and 27,5% (Table 1). Differences among the groups in the frequency of headachen (−4.9 days, 95% CI –6.95% –2.98) and the effect of pain (P = 0.0 in favour of the group of the MT) were significant statistically after 26 weeks of follow-up. MT has therefore been shown to be more efficient than typical.

4. DISCUSSION

This review indicated that manual therapy may be an alternative to TTH therapies and treatments that are not fully efficient.

The research demonstrate that massage in combination with cervical exercises, myofascial methods, postural methods, cervical relaxation exercises, cervical mobility, mild and progressive stretching or TrP therapy may reduce pain rate, intensity and length and increase the movement distance. Relaxation and neck drills have been useful only in lowering CTTH pain frequency and not in ETTH. The studies that have been analysed using simply manipulations have shown favourable

outcomes but have no control group, or inadequate methodological quality, and there are no definitive findings of systematic reviews on their efficacy. However, when paired with massage this treatment looks to be successful.

Other authors have out a review of the efficiency of headache manipulation. The random studies comprised 8 and the Jadad scale was used to evaluate the validity of the scientific paper. Six studies and only 3 TTH treatment were included in the research. Since the study was restricted to not having a control group or simply a single blind control, the findings on successful spinal manipulation were not definitive.

In keeping with that, Fernandez de las Peñas et al. conducted, on a PEDro methodological basis, an examination of the efficacy of manual pain-reducing treatment. Manual treatment was employed in just six research. Proofs of scale shift according to PEDro from 2 to 8 (mean 5.8 SD = 2.1). Quality and outcomes An review of the trials indicated no beneficial impact on manual treatment in the reduction of TTH: spinal manipulation revealed evidence of efficacy (level 4). (level 3).

A systemic assessment of randomised controlled trials (RCTs) to establish the efficacy of kidney and spinal handling for individuals with TTH was conducted by Lenssinck et al. in 2004. A total of 8 RCTs were considered for physiotherapy or spinal handling in adult TTH. These research shows a number of operations, such as chiropractic manipulation of the spinal cord, manipulation of connective tissue or physiotherapy. Only two studies of good quality were regarded, however the outcomes were different. In several of the investigations, Due to clinical heterogeneity and low methodological quality, it seemed impossible to get solid findings. According to this research, either the efficacy of physiotherapy and spinal manipulation in people with TTH is supported or rejected. Table 2 displays many assessments studying the efficacy of MT in TTH.

Table 2: Summary of other systematic reviews of effectiveness of MT in CTTH

Author	Type of treatment	n	Results
Espí and Gómez, 2010	Drugs, manual therapy	15 studies	Joint therapy, functional techniques, with muscle relaxation have good results.
Astin and Ernst, 2002	Vertebral manipultaion	8 studies	Only 3 treated TTH and do not show conclusive results referring to effectiveness.
Fernández et al., 2006	Vertebral manipulation, massage, vertebral mobilization, manual traction, cranium therapy	6 studies	Studies utilising spinal manipulation demonstrated efficacy (level 4), however soft tissue technology demonstrated minimal evidence (level 3).
Lenssinck et al., 2004	Physiotherapy and spinal manipulation	8 studies	Insufficient evidence to support or refute the efficacy of physiotherapy and spinal manipulation in patients with TTH

As shown in this review, massage coupled with other methods of physiotherapy is typically successful but we still do not know if other forms of physiotherapy are individually useful. MT procedures are the same. However, few research have adopted certain MT-based physiotherapy strategies to treat headache, presumably because of the efficacy of pharmaceutical therapies' alleviation of pain. Therefore, further evidence-based trials are required to establish the efficacy of PT for TTH patients. Furthermore, it is not feasible to determine if equal outcomes would be shown for each therapy alone owing to the deployment of therapies combining numerous procedures.

The focus of this analysis was to identify alternative approaches of physiotherapy including manipulative manual therapy and evaluations that are essential in many domains such as quality of life, disability, pain and pain sensation effect and not just pain rate and pain intensity during crises that declines in the majority of treatments. The key weakness of this research is to ignore the danger of bias and reporting distortion.

5. CONCLUSION

Cervical exercises, relaxation, massage and postural exercises are useful in lowering TH symptoms such as pain frequency and intense pain and cranio cervical methods, thermotherapy, spinal movements and straying. The cervical range of motion has improved in studies that have utilised joint mobilisation. MT has further improved other metrics such as quality of life, effects and pain impairment, psychological factors. It would thus be appropriate to employ it both to enhance patients' quality of life and lower the disease's socioeconomic costs. However, all the papers evaluated and other prior evaluations include more than two strategies such that one of them is difficult to determine. Studies showing the efficacy of approaches on their own would thus be useful.

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