

Comparative Study of Instrument Assisted Soft Tissue Mobilization and Massage on Neck Pain

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Abstract

Objective: This review article aims to compare and analyse the effect of Instrument Assisted soft tissue mobilization and massage on neck pain.

Methods: This review analysed two databases i.e. (PubMed, google scholar), and extracted the studies of neck pain. Article published in the English language were included in the studies from 2016 to 2023. 10 studies were included in this review. Outcome measures used neck pain intensity, and neck disability, and secondary outcomes measure were quality of life (QOL), neck range of motion (ROM), visual analogue scale(VAS).

Result: Ten studies on 328 patients with neck pain comparing IASTM with Massage were included. Finding of the studies demonstrated that both IASTM and massage treatment were efficient in lowering neck discomfort and enhancing neck range of motion. IASTM showed significant improvement as compared to massage treatment in terms of minimising discomfort and enhancing neck mobility.($p=0.05$, $p=0.001$)

Conclusion: It can be inferred from the comparative study of instrument-assisted soft tissue mobilisation (IASTM) and massage on neck pain that both treatments are efficient in easing discomfort and enhancing range of motion in sufferers of neck pain. IASTM was significant to massage in terms of relieving pain and enhancing neck mobility. But it's crucial to remember that each intervention has its own distinct advantages and could be a better choice for some people depending on their requirements and preferences.

Keyword: Instrument-assisted soft tissue mobilisation (IASTM) , Massage, chronic neck pain , Myofascial pain of neck.

Introduction

The pathological form of cervical pain syndrome, which has a high epidemiological incidence rate and several etiological causes, is known as cervical pain syndrome. Among the above aetiological factors, postural pathological adaptations of the human body have been particularly linked to the development

of stress and pain conditions in the cervical region. These include muscle strains or ligament sprains, pathological adaptations of the cervical soft tissues, arthropathies, disc pathologies, and poor posture.¹ Trigger points are the source of the chronic pain in myofascial pain syndrome. It is linked to autonomic symptoms that impair the patient's physical capabilities as well as musculoskeletal issues

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(muscle spasm, limited range of motion (ROM), and diminished fibre extensibility).² The hypersensitive, palpable nodules known as myofascial trigger points are located along tight bands of muscle fibres. They frequently affect the neck and shoulder muscles. The muscle most usually affected is the trapezius. Trigger points in the neck are thought to be present in 85% of patients who visit pain clinics, and they affect women more frequently than males. While latent trigger points only create pain when touched and impede mobility, active trigger points induce continual discomfort at rest and are linked to referred pain patterns. Trigger points are the source of the chronic pain in myofascial pain syndrome. It is linked to autonomic symptoms that impair the patient's physical capabilities as well as musculoskeletal issues (muscle spasm, limited range of motion (ROM), and diminished fibre extensibility).⁴

Different therapy IASTM, massage, modalities, exercise are used to treat persistent neck discomfort.

IASTM is derived from the conventional Chinese medicine, which was called as "gua sha" in another source and as "strigil" in classical Greece and Rome. It is based on James Cyriax's cross friction massage, which is used to treat connective tissue issues as well as musculoskeletal issues. IASTM's primary goals are to lessen discomfort, promote soft tissue mobility, and enhance joint ROM and function. In other words, this technique causes micro trauma to give connective tissue its normal suppleness and functionality.³ IASTM, which is a helpful technique for treating trigger points and accompanying discomfort, is instrument-assisted soft tissue mobilisation. IASTM is the use of a specifically made device to soft tissue mobilisation, with the goal of minimising discomfort and enhancing ROM and function. IASTM allows for greater penetration to better reach fascia and remove limitations while reducing stress on the practitioner's hand.²

Strapping massage that concentrates on the skeletal muscle and fascia's deeper levels. Manually deactivating myofascial trigger points using a direct approach is said to be a reliable and secure technique.

When SM is applied to sore muscles, it can lead to ischaemia and reflexive hyperaemia. As a result of the increased local blood flow, the muscles and fascia are more flexible, adhesions are broken down, and pain perception is lessened.² Massage treatment frequently includes manipulating soft tissues with the hands, such as the muscles and tendons, in order to stimulate blood flow, relax tension in the muscles, and foster feelings of increased wellness. It is typical for patients to seek massage treatment from a massage therapist, physical therapist, or other competent health practitioner when they experience persistent neck discomfort and stiffness.² In this review article use different type of massage such as strapping massage, classical massage, ischemic compression massage, traditional soft tissue mobilization.

This is the first study related to IASTM and Massage.

The purpose of this study was to assess and evaluate the effects of instrument-assisted soft tissue mobilization (IASTM) and massage on neck pain.

Methods

For assessing the research studies on IASTM and massage for all type of neck pain, we used two electronic databases (Google Scholar and PubMed). All relevant studies had to be published in the English language between 2016 and 2023. For the IASTM and massage on chronic neck pain, myofascial neck pain, and neck syndrome, we looked at a total of 10 papers. Figure 1 shows the procedure used to determine eligible studies. Suitable research included RCT: Randomised controlled trial A RCT examines the results of two groups of individuals who were randomly assigned to either an intervention group (such as IASTM) or a control group (such as massage). There were no restrictions on the type, length, or duration of IASTM or massage. IASTM evaluation studies were among the eligible intervention studies:- Bat board (B-shaped), Hook board (S-shaped), Search board (c-shaped), Triangle board (A-shaped), and Big M board (M-shaped) as opposed to Swedish,

deep- tissue, Swedish, and classical massage. Common neck pain, chronic nonspecific neck pain, chronic mechanical neck pain, and myofascial pain syndrome of the neck are all examples of neck pain problems. Studies pertaining to other medical issues were not included.

Outcome measures used neck pain intensity, and neck disability and secondary outcomes measure were quality of life (QOL) neck range of motion (ROM), visual analogue scale(VAS). because all forms of neck discomfort were assumed to be assessed using these criteria.

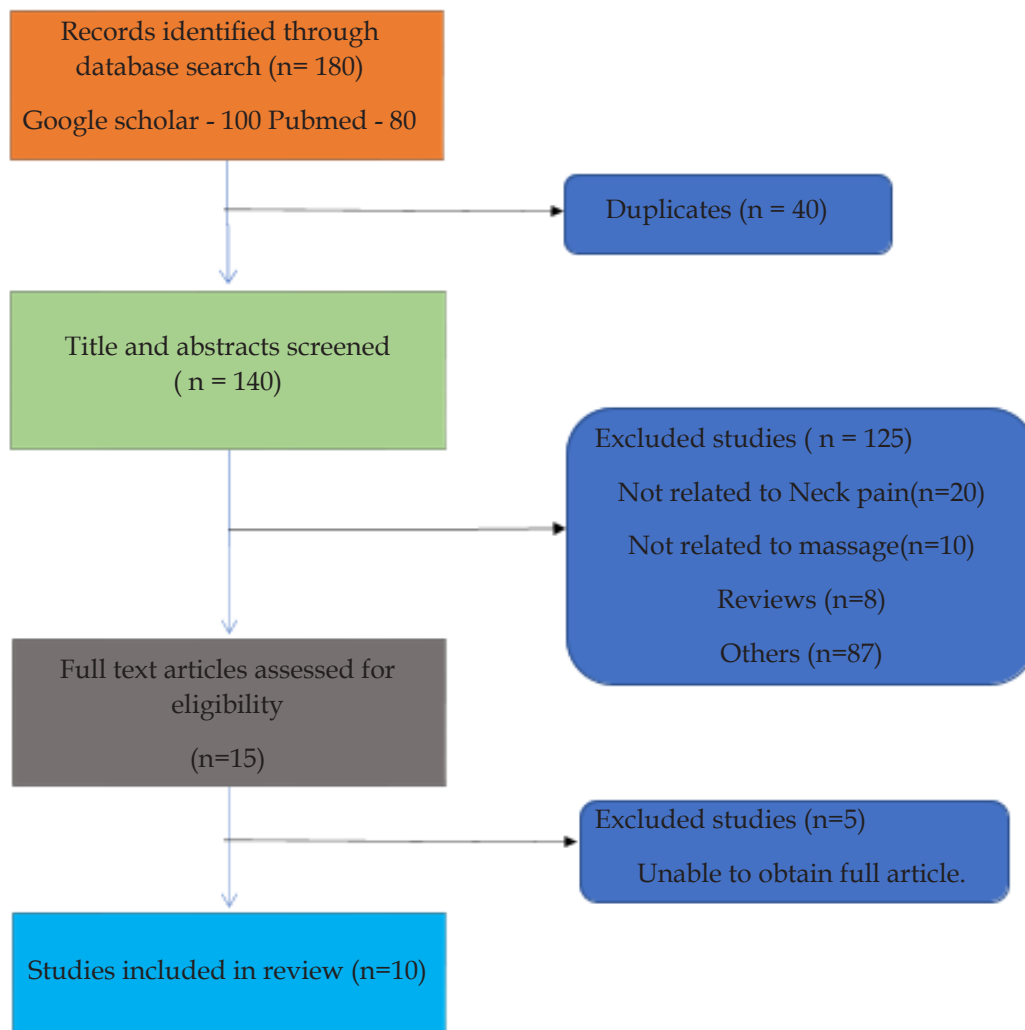


Fig: 1. Flow diagram of eligible studies

Table 1: Characteristics of Eligible studies

AUTHOR	YEAR	REGION	DESIGN	SAMPLE SIZE (MEAN AGE IN YEARS)	TYPE OF NECK PAIN	COMPARISION	PROGRAM LENGTH	OUTCOME MEASURES	RESULTS/CONCLUSION
Konstantinos Mylonas ¹ et al.	2021	Greece	Randomized	20 (43-65)	Cervical Vertebral Angle	IASTM+ Classical Massage Neuromuscular Exercise	4 Weeks	- VAS - Neck Disability Index	- Combined IASTM and classical massage give significantly greater improvement in CVA. - IASTM was give significant effect on cervical pain.- (P=0.080)
Hend A. Hamdy 2 et al.	2020	Egypt	Randomized Clinical Trial	30 (18-29)	Chronic Neck Pain	IASTM+Strapping Massage	4 Weeks	- VAS - Neck Disability Index - Pressure Pain Threshold	- IASTM has more effective methods for improving pain and function in patients with upper trapezius trigger points. - (p<0.001)
Zehra Güçhan Topcu ³ et al.	2022	Cuyprus	Randomized Clinical Trial	52 (10-11)	Chronic Neck Pain	IASTM + Classical Massage	6 Weeks	- ROM - Pressure Pain Threshold	- IASTM could be more effective for Neck Pain. - Long term effect gets with a combination of neck exercises. - (P>0.05)
Dr. Konstantinos Fousekis ⁴ et al.	2020	Greek	Randomized Clinical Trial	20 45-65	Mechanical Neck Pain	IASTM+Classical Massage Some set of exercise	4 Weeks	- VAS - NDI - ROM	- IASTM and classical Massage with some set of exercise can improve the neck pain and

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Dr. Rajas Edgaonkar ⁵ et al.	2020	India	Experimental Study	30 18-21	Chronic Myofascial Neck Pain	IASTM + Ischemic Compression Massage	2 weeks	- Numerical pain rating scale (NPRS) - Cervical range of motion - Pressure Pain Threshold	- IASTM Showed better result than ischemic compression in relieving trapezius trigger point or neck pain - (P<0.080)
HebatallaM. Said Zaghoul ⁶ et al.	2022	Egypt	Randomized Clinical Trial	30 (20-40)	Mechanical Neck Pain	IASTM + mobilization massage	4 weeks	- NPRS - CROM - NDI	- The upper thoracic spine mobilization was effective at increasing the range of motion of the cervical region, while the IASTM was effective at relieving pain and dysfunction in the cervical spine in patients with mechanical neck pain - (P<0.05)
Bonsol, John Paul ⁷ et al.	2022	California	Randomized	18-30	Neck pain	IASTM + Traditional Soft Tissue Mobilization	3 Months	- Neck disability index (NDI) -The visual analog scale (VAS)-	- In this systematic review found inconclusive evidence that the utilization of IASTM was

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Hasan Gercek ⁸ et al.	2022	Turkey	Randomized control Trial	39 (18-65)	Chronic Neck Pain	IASTM	6 Weeks	- VAS	<p>favorable over STM</p> <p>- The 7 results of the systematic review found IASTM to be an effective treatment for neck pain(p>0.05)</p> <p>- IASTM performed better than other groups analyzed in terms of VAS scores.</p> <p>- IASTM decrease VAS and increase joint position error.</p> <p>- (P<0.05)</p>
Erden Arzu ⁹ et al.	2020	Turkey	Randomized Clinical Trial	22 (36.86 + 10.28)	Myofascial Neck Pain	IASTM + Massage Physiotherapy intervention	4weeks	- VAS - NDI - QOL	<p>- There is found IASTM effect is more significant on neck pain as compare to massage.(p=0.05)</p>
Mohamed Serag Elden Mostafa ¹⁰ et al.	2019	Turkey	Randomized Clinical Trial	30 (25-40)	Mechanical Neck Pain	IASTM + Neuromuscular exercise proprioceptive isometric	4weeks	- VAS	<p>- IASTM has a favorable effect than conventional treatment in reduction mechanical neck pain.</p> <p>- (P<0.05)</p>

Results

Based on the provided information, a database search was conducted which resulted in the identification of 180 records. Out of these, 80 were found through Pubmed and 100 were found through Google Scholar. Upon screening the titles and abstracts of these records, 30 duplicates were identified and removed, resulting in a total of 140 unique records. Out of these, 125 records were excluded from the review for various reasons, including 20 not being related to neck pain, 10 not being related to massage, and 8 being reviews.

After this screening process, a total of 15 full-text articles were assessed for eligibility. Out of these, 5 articles were excluded as it was not possible to obtain the full article. Finally, 10 studies were included in the review.

328 participants from the final 10 qualifying trials were examined. Table 1 illustrates the main features of research that qualify.

In almost all investigations, the iastm significantly reduced the severity of neck pain, neck impairment, cervical range of motion, anxiety, and quality of life. The current study's findings support earlier meta-analyses and studies on the impact of ISTM on neck discomfort.

Conclusion

This evaluation was conducted to assess the effectiveness of IASTM and massage for treating different kinds of neck pain. As far as we are aware, this study is the first evaluation of IASTM and Massage for all type of neck pain. Only chronic neck discomfort or chronic neck pain were included in previous reviews. It was discovered that IASTM significantly reduced anxiety, improved pain tolerance, increased range of motion, and decreased the severity of neck discomfort and functional handicap. IASTM could be a helpful remedy for neck discomfort, however further study is required before making certain judgements. Included studies for neck pain found that IASTM performed better than massage.

Ethical Clearance: Not required as it is a review paper.

Source of Funding: Self

Conflict Of Interest: Nil

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