



Effect of Myofascial Release Technique Verses Conventional Therapy in Tension Neck Syndrome: A Research Protocol

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Study Pre-protocol

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ABSTRACT

Background: A pain in the neck and shoulder region is referred to as tension neck syndrome. Symptoms include neck and shoulder muscular discomfort, pain, tiredness, and stiffness, as well as headaches. Palpable stiffening patches, sensitive spots, and spasms on the trapezius or sternocleidomastoid muscles may be identified during the physical examination, which are commonly coupled with neck pain on the opposing side, as well as a decreased range of flexion, extension, or rotation. Tension neck syndrome is a prevalent occurrence among computer users.

Methods: The participants (n=30) will be recruited in the study suffering from tension neck syndrome and meeting the inclusion criteria. Two groups will be formed such that patients in group A will be treated by myofascial release technique whereas group B will be treated by conventional therapy. The protocol will cover 2 weeks of treatment. Regular assessment will be carried out. In the rehabilitation period, we will evaluate activity of daily living. Our outcome measures will be Neck Disability Index (NDI) and Visual Analogue Scale (VAS).

Discussion: Tension neck syndrome is more common in women than in men, and it is linked to computer users including office professionals, students, and others. Efficacy of the myofascial

release technique verses conventional therapy will be evaluated by using Neck Disability Index (NDI) and Visual Analogue Scale (VAS). The result of the study will significantly provide affirmation on using myofascial release technique verses conventional therapy in tension neck syndrome patients.

Keywords: Tension neck syndrome; myofascial release technique; conventional therapy; physiotherapy.

1. INTRODUCTION

Myofascial pain in the neck and shoulder region is known as Tension Neck Syndrome [1]. Symptoms include neck and shoulder muscular discomfort, pain, tiredness, and stiffness, as well as headaches [2]. Palpable stiffening patches, sensitive spots, and spasms on the trapezius or sternocleidomastoid muscles may be identified during the physical examination, which are commonly coupled with neck pain on the opposing side, as well as a decreased range of flexion, extension, or rotation [3]. Chronic neck discomfort (neck discomfort that lasts more than three months) is one of the most common symptoms of tension neck syndrome [4]. According to several researches, chronic neck pain is linked to a weakness in the deep cervical flexion muscles. Increased arterial stiffness impairs arterial buffering capacity, causing systolic blood pressure to rise and/or left ventricular hypertrophy [5]. As a result, arterial stiffness should be avoided at all costs. The myofascial system is a three-dimensional network of connective tissue that encompasses the entire body's muscles, organs, glands, and cells, as well as the circulatory, neurological, and musculoskeletal systems, and the digestive tract [6]. Myofascial release is a technique for treating myofascial limitations and restoring the extensibility of muscles, tendons, ligaments, fascia, and/or soft tissue [7]. This form of release can extend tendon and muscle while also alleviating soft-tissue adhesions and scar tissue, similar to stretching or massage. A prominent source of musculoskeletal discomfort in persons seeking therapy from manual therapists is said to be myofascial trigger points [8]. Myofascial trigger points are hypersensitive tender areas connected with a taut band of skeletal muscle that are painful on compression and stretch and cause a characteristic referred pain pattern, according to Simons et al [9]. Myofascial trigger points, which have motor, sensory, and autonomic components, are the hallmarks of myofascial pain. Disturbed motor function, muscular weakening as a result of motor inhibition, muscle stiffness, and reduced range of

motion are all motor features of active and latent myofascial trigger points [10]. Neck Pain is a common patient complaint [11]. The purpose was to summarise the studies on computer use and the risk of tension neck syndrome, as well as the effects of workplace therapies [12]. The synthesis was based on a thorough assessment of the quality of the reviews included, as well as a study of the data addressing the relationship between computer employment and upper extremity musculoskeletal diseases, as well as intervention recommendations [13]. Neck discomfort affects 30-50 percent of adults at some point during the year, and the average GP sees seven patients each week for neck or upper extremity issues [14]. Neck pain caused by faulty neurology (typically cervical radiculopathy) is significantly less prevalent, affecting only approximately 100 men and 60 women per 100,000. Lower motor neuron symptoms, such as arm discomfort, weakness, or sensory loss, may or may not be accompanied by neck pain as a result of this [15]. Upper and lower motor and sensory neuron problems in the arms and legs are caused by compression and the onset is usually minor. A Myofascial Release therapy is currently under development. Health-care practitioners have long employed the myofascial release technique to treat myofascial pain [16]. These studies are critical for determining the efficacy and usefulness of self myofascial release technique in the treatment of myofascial syndrome. Therapist and fitness professionals have implemented self myofascial release technique mainly via foam rolling as a recovery or maintenance tool [17]. Myofascial Release Technique is a type of manual therapy that includes stretching the myofascial complex with a low load and for a long time in order to restore ideal length, reduce discomfort, and enhance function. [18].

1.1 Aim

To find out the effect of Myofascial Release Technique verses Conventional Therapy in Tension neck syndrome patient population.

2. METHODOLOGY

2.1 Study Setting

The study will be carried out in Musculoskeletal-Physiotherapy OPD of Ravi Nair Physiotherapy College, Sawangi (Meghe), Wardha.

2.2 Study Population

Individuals with Tension Neck Syndrome.

2.3 Sample Size Calculation

Sample Size was calculated using G* power analysis, according to this the sample size of the study is n = 90. 45 in group A and 45 in group B.

Sample Size: 90.

2.3.1 Participants

The Inclusion Criteria of participants are under:

1. Patient willing to participate.
2. Age 20-60 years old.
3. Both males and females patients.

The Exclusion Criteria for participants are under:

1. Not willing to Participate.
2. Recent surgical procedure in cervical region.
3. Trauma.
4. Tumor.
5. Dysfunction of Neck.
6. Herniated Cervical Disk.

2.3.2 Participants timeline

As study duration is of 2 month and intervention duration is 2 weeks so participants will be enrolled mostly during one month of study so 2 weeks intervention will be completed successfully. Assessment will be done on 1st day of visit then in 1st week and last on 2nd week of intervention. Participant will have to visit 5 days a week for 2 weeks for treatment.

2.3.3 Recruitment

Those who fulfill the criteria will be recruited.

2.3.4 Implementation

Research coordinator and principal investigator will supervise randomization. Participants will be

asked to manually select from the envelope, sealed group allocation for the recruitment into either group.

2.3.5 Blinding

Tester(s) will be blinded to assign the subjects to the group. To ensure binding, subjects will be mandated not to reveal any details of their treatment to the tester

2.4 Study Procedure

Intervention for group A:

- Myofascial Release Technique are used to release the tension in the neck muscle and decrease the pain and reduce the spasm if present. MFR 1 set of 3 repetitions with 90 seconds hold for two weeks 5 times a week. The patient is in prone position the therapist sits at the head of the patient with his finger pads pointing down maintain a gentle pressure
- Isometric Exercise Exercises for cervical musculature 10 repetition with 5 seconds hold in all four directions.
- Scapular sets i.e retraction, elevation 10 repetition with 5 seconds hold.
- Chin Tucks 10 repetition with 5 seconds hold (ask the patient to pull the chin backwards hold and then release).
- Hot packs will be given for 25 min per day.

Intervention for group B:

- Trapezius Stretching Exercises: Sit tall with proper posture, shoulders down and straight. With one hand, grasp the seat's bottom Turn your ear to your shoulder until you feel a comfortable stretch on the other side of your neck. Repeat 10 time hold for 5 seconds.
- Suboccipital Stretching: ask the patient to sit straight do chin tuck and instruct the patient to do neck flexion hold the position for 30 seconds and repeat 3 times
- Retraction of Scapula ask the patient to sit in erect posture with both the shoulders by the side elbow flexed to 90* and forearm supinated then instruct the patient to pull both the shoulders behind with neck in neutral position hold and then relax.
- Upper Trapezius stretching is done 30 sec hold 3 repetitions.
- Strengthening exercises for cervical muscles 10 repetition with 5 sec hold.

- For chin tucks ask the patient to pull the chin backwards hold and then release.

2.5 Outcomes

Primary outcome measures-

1. Neck Disability Index: It's a questionnaire that's been created to help us learn more about how neck pain has impacted your capacity to function in everyday life. The Neck Disability Index Questionnaire consist of 10 item including pain intensity, personal care, lifting, reading, headaches, concentration, work, driving, sleeping and recreation.
2. Visual Analogue Scale: A visual analogue scale (VAS) is a type of psychometric response scale that can be used in surveys. It is the scale used for rating the pain intensity in experimental studies.

Secondary outcome measures-

1. Range of Motion: Range of motion is the ability to move freely. It is the quality or state of being mobile or movable.

2.6 Data Management

2.6.1 Data collection

Data from the trial will be kept in a secure, locked storage area with limited access for later review by a biostatistician, a researcher in charge.

2.6.2 Statistical analysis

Data of the subjects will be noted down and placed in a tabular form, and will be analysed with the help of latest version of SPSS latest version.

3. RESULTS

Successful completion of this study will provide evidence on the best treatment strategy out of individual Myofascial Release Technique or Conventional Physiotherapy in Tension neck syndrome patients and result of this study will lead us to better understanding on both treatments. The result of the study will significantly provide affirmation on using myofascial release technique verses conventional therapy in tension neck syndrome patients.

4. DISCUSSION

Tension neck syndrome affects more women than men and is associated to office employees, students, and those in other professions are all computer users. Efficacy of the myofascial release technique verses conventional therapy will be evaluated by using Neck Disability Index (NDI) and Visual Analogue Scale (VAS). The result of the study will significantly provide affirmation on using myofascial release technique verses conventional therapy in tension neck syndrome patients.

5. CONCLUSION

Once the data will be collected and analyzed. On the basis of the data the conclusion will be drawn.

CONSENT

As per international standard or university standard, patient's written consent will be collected and preserved by the author(s).

ETHICAL APPROVAL

The study will be carried out getting approval from Institutional Ethical Committee of Datta Meghe Institute of Medical Sciences, Deemed to be university.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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