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RESEARCH ARTICLE
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"COMPARISON BETWEEN SUB-OCCIPITAL MYOFASCIAL RELEASE AND CERVICAL STRENGTHENING EXERCISE IN NECK PAIN"

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ABSTRACT

Background: There are several treatments for lowering neck discomfort, but only a handful of them provide an instant effect. Sub occipital myofascial release and neck strengthening exercises are practical, fast, straightforward, and simple to do. The immediate impact of sub occipital myofascial release and cervical strengthening exercise has been investigated in research. However, there was a lack of research comparing the two approaches and determining their relative impact on neck discomfort. Therefore, the purpose of this research is to determine the immediate benefits of sub occipital myofascial release and cervical strengthening exercise in reducing neck discomfort and increasing joint range of motion. **Materials & Methods:** Total 30 patients with neck discomfort will be randomly randomized to two research groups. Group-A (n=15) get sub occipital myofascial release and Group-B (n=15) will receive cervical strengthening. The topic will be screened according to the inclusion and exclusion criteria. Before the research written permission form will be sought from all individuals via that adequate description of the process, purpose and risk/benefits was given to all subjects. **Results:** According to the results of our investigation, there was a discernible split in the scores both groups received before and after the intervention. When compared with the participants in Group 2, who participated in cervical strengthening exercise, the (SUB-Occipital Myofascial RELEASE) treatment group had significantly more beneficial results. This demonstrates that the Sub-Occipital Myofascial Release technique is superior for treating neck discomfort. **Conclusion:** According to our findings, there was a significant difference between the pre- and post-intervention ratings for both groups. Participants in the (SUB-Occipital Myofascial Release) therapy group fared better than those in Group 2 who did cervical strengthening exercises. That the Sub-Occipital Myofascial Release method is better at relieving neck pain .

1. INTRODUCTION

Symptoms of neck discomfort are not universally recognized in the medical community. The most common kind of neck discomfort is non-specific. It's described as "pain with a postural or mechanical base, frequently referred to as cervical spondylosis." Facet joint pain, nerve pain, referred pain, and bone pain are all forms of neck pain that may be characterized as either muscular, muscle spasm, headache, or referred pain. Each kind has its own aetiology, diagnosis, and treatment. Nearly two-thirds of people will have neck stiffness at some time in their lives, and that number is

expected to rise in the coming years(1).

According to several research, "mean point prevalence of 7.6 percent to mean lifetime prevalence of 48.5 percent" are the ranges for neck pain. Studies show that women are more prone than males to have pain in their necks(2). A total of seven bones, C1-C7, make up the neck. There are many different types of osteoarthritis, but osteoarthritis is the most common, coming from wear on the cartilage that separates the bones, causing pain and stiffness. Small joints called facets link the vertebral facets together. Sternocleidomastoid and trapezius are two big neck muscles that provide large-scale neck motions. Most often, these tissues induce neck strain or ligament sprain, which includes overstretching or tearing of the structures in the neck and shoulders, respectively(3).

Functional control and sensation may be provided to different parts of the body by cervical spine nerves, depending on where they are located in the spine. Cervical nerves C1, C2, and C3 are among the eight. Among their functions are forward, backward, and sideways movements of the head and neck(4). C4 regulates upward movement of the shoulder and the diaphragm's strength, while C5 helps govern the deltoids and biceps of the upper body. Specifically, C6, C7, and C8 assist in controlling the wrist extensors, as well as the triceps and wrist extensors, while C6 also provides some innervation to the biceps. Compression or inflammation of one of the spinal cord's peripheral nerves may cause discomfort and feelings like tingling, which can aid in the identification of the affected nerve. The neck bears the weight of the head and is flexible enough to enable rotation, flexion, extension, and lateral flexion of the head. In addition, diseases of the neck may cause pain and restrict mobility of the neck's various joints. Many things may lead to pain in the neck(5).

Many different techniques are used in myofascial release, which was pioneered by Andrew Taylor Still and his early students. Both direct and indirect strategies are used. During direct MFR operations, the restrictive barrier is engaged and then the tissue is constantly loaded until it releases/relaxes. Stretching myofascial tissues during warm-up or rehabilitation is a fairly common example of this. By gliding damaged tissues away from the barrier, we may achieve free mobility by indirect MFR. Suboccipital myofascial release reduces fascial tension and aids in resolving muscle imbalances(6).

When the muscles in the neck and upper back become weaker, the head sags forward and additional stress is put on the cervical spine, which may result in neck discomfort. Strengthening these muscles may aid in posture improvement and bring the head closer to neutral (with the ears directly over the shoulders). Scalene and suboccipital muscles (side of neck and top of neck) are particularly effective when combined with strengthening of deficient postural muscles, such as the upper thoracic extensors and deep cervical flexors. There is a substantial dearth of research comparing the efficacy of Sub-Occipital Myofascial Release to that of Cervical Strengthening Exercise(7).

2. STATEMENT QUESTION

Is There Any Effects of Sub-Occipital Myofascial Release and Cervical Strengthening Exercise In Neck Pain?

3. AIMS AND OBJECTIVES OF THE STUDY

- The purpose of this study is to explore the effect and comparison of sub occipital myofascial release and cervicalstrengthening exercise in neck pain
- To find out the immediate effect of sub occipital myofascial release in neck pain.
- To find out the immediate effect of cervical strengthening exercise in neck pain
- To compare the immediate effect of sub occipital myofascial release and cervical strengthening exercise in neck pain.

3. HYPOTHESIS

ALTERNATIVE HYPOTHESES:

- This present study is hypothesized that both sub occipital myofascial release and cervical strengthening has no effect in improving neck pain.

NULL HYPOTHESES :

- This present study is hypothesized that both sub occipital myofascial release and cervical strengthening has significant effect in improving neck pain.

4. METHODOLOGY

4.1 Type of study: Experimental study
4.2 Sampling: Random sampling will be done on the basis of inclusion and exclusion criteria
4.3 Area of Project: People living in the Greater Noida, India
4.4 Sampling Method:

- **No of Sample:** 30 subjects will include on the basis of inclusion and exclusion criteria.
- **Groups**: Two groups (15 subjects in each group)
- **Sample place:** Multicentric Grounds

4.5 Inclusion Criteria:
Both males and females Age 18 to 40 years adults.
Subjects clinically diagnosed with mechanical neck pain along with referred pain to unilateral upper limb Specific causes of NP (conditions with neurological involvement such as myelopathywith weakness, numbness and sensory loss

4.6 Exclusion Criteria:
Sclorosis, Lordosis, kyphotic, congenital deformitiesAny surgical innervation fractures Listhesis
Instrumentation: VAS

4.7 Procedure
Total 30 patients with neck discomfort will be randomly randomized to two research groups. Group-A (n=15) get sub occipital myofascial release and Group-B (n=15) will receive cervical strengthening. The topic will be screened according to the inclusion and exclusion criteria. Before the research written permission form will be sought from all individuals via that adequate description of the process, purpose and risk/benefits was given to all subjects.

4.7.1 Cervical strengthening-

1. Active range of motion exercise
2. Neck isometric
3. Neck retraction exercise
4. Neck stretches

Figure 4.1 Images of therapy

5. RESULT

According to the results of our investigation, there was a discernible split in the scores both groups received before and after the intervention. When compared with the participants in Group 2, who participated in cervical strengthening exercise, the (SUB-Occipital Myofascial Release) treatment group had significantly more beneficial results. This demonstrates that the Sub - occipital Myofascial Release technique is superior for treating neck discomfort .

TABLE NO 1: DEMOGRAPHIC DESCRIPTIVE STATISTICS.

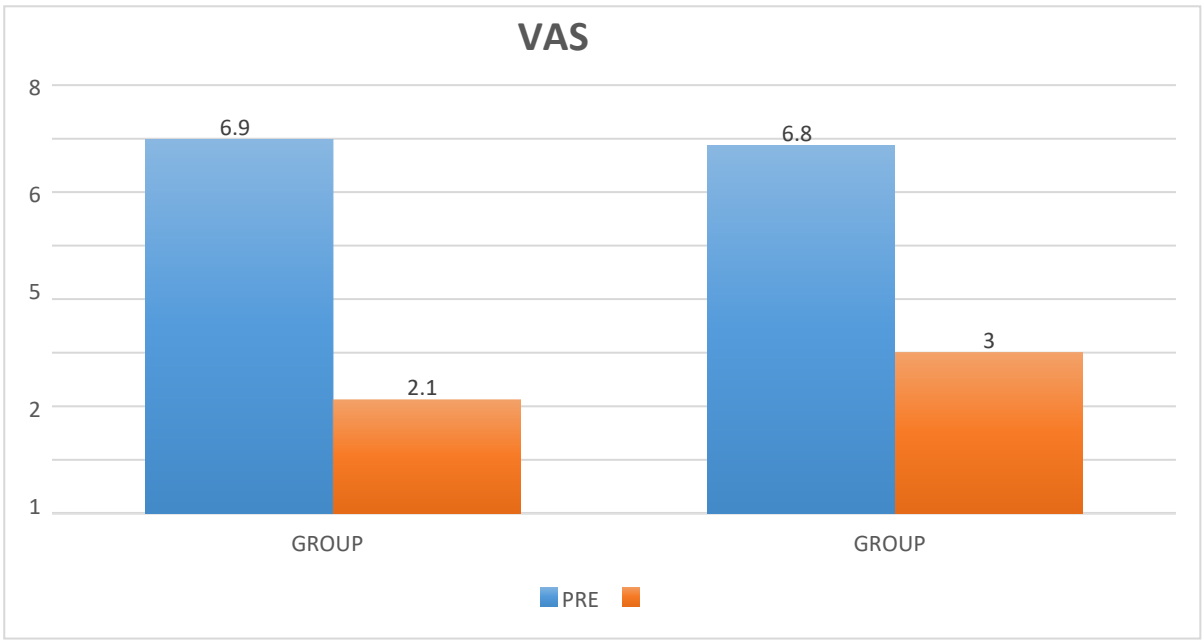
VARIABLES **Sub-Occipital Myofascial Release**	**n** **technique is superior for treating**	**MEAN±SD** **Neck Disconnect**
AGE	15	33.56±1.78
WEIGHT (kg)	15	63.87±9.54
HEIGHT(cm):	15	170.67±9.627

TABLE NO 2: GENDER RATIO

	MALE(n)	**FEMALE(n)**
GROUP 1 (n 15)	9	6
GROUP 2 (n 15)	8	7

TABLE NO 3 VAS SCORE (PRE-POST)

	GROUP 1		GROUP 2	
	PRE	**POST**	**PRE**	**POST**
MEAN±SD	6.98±0.89	2.12±0.73	6.87±0.23	3.00±0.01
T-TEST	1.887		2.876	
P VALUE	P <0.05		P <0.05	



GRAPH NO 1- VAS score (PRE-POST)

6. DISCUSSION

There was a distinct divide in the scores that both groups obtained before and after the intervention, as shown by the findings of our analysis. When compared with the individuals in Group 2, who engaged in cervical strengthening exercise, the outcomes of the therapy group that received (Sub-Occipital Myofascial Release) were considerably more helpful. The effectiveness of the Sub-Occipital Myofascial Release therapy in alleviating neck pain is shown by these findings. Another investigation along these lines was carried out in 2018 by Amita Aggarwal et al. Myofascial release is the subject of research being conducted in the suboccipital and SCM regions of the brain in an effort to determine whether or not it may alleviate neck discomfort and facial headaches. 60 individuals diagnosed with FHP and neck discomfort were split randomly between two groups for the purpose of conducting a double-blind, placebo- controlled experiment. Patients in one group underwent MFR for the suboccipital and SCM muscles, while patients in the other group were given ergonomic advice, hot packs, and neck isometrics over the course of three sessions. Both groups received treatment for their symptoms. At each of the subsequent visits, the following measurements were taken: the cranial-vertebral angle (CVA), the shoulder angle (NPRS), the neck range of motion (NDI), and the shoulder angle (SRA) (NPRS). It has been shown that myofascial release of the suboccipital and sternocleidomastoid joints is more effective than conventional therapy in reversing the forward head posture and alleviating neck discomfort. Additionally, Dr. L. Rameshor Singh and colleagues 2014 - In this particular research project, an effort was undertaken to determine whether or not myofascial release combined with positional release is useful in the treatment of tension headaches. There was a total of 28 persons who were allowed to participate in the research after they had filled out an informed consent form and satisfied the inclusion and exclusion criteria set out by the clinical trial. The participants were divided into two groups, denoted by the letters A and B. (HDI). According to the findings of the research, both methods were effective in reducing the symptoms of TTH and preventing the development of functional limits in patients who utilized them. According to the most recent

research, the most effective treatment for those who suffer from severe headaches of the tension kind is a technique known asmyofascial release.

7. LIMITATIONS OF THE STUDY:

1.) The sample size included in the study could have been more.
2.) The physical activity performed could be more vigorous.

8. CONCLUSION

According to the results of our study, there was a discernible gap between the ratings both groups had given before to and after the completion of the intervention. Those who took part in the treatment known as SUB-OCCIPITAL MYOFASCIAL RELEASE fared much better than those who were assigned to Group 2, which consisted of cervical strengthening exercises. It is clear from this that the Sub-Occipital Myofascial Release technique is superior to other approaches when it comes to alleviating pain in the neck.

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