



“Correlation Of Scapular Dyskinesia, Neck Pain And Neck Disability In Academicians With Trapezitis”

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ABSTRACT

Introduction: An abnormal movement of the scapula during shoulder movement is termed as scapular dyskinesia and is a forgotten cause of pain and dysfunction. Moreover, structural damage to the cervical spine will also cause neck impairment which leads to neck discomfort. Academicians have to take classes which put them into altered posture during their working hours thus leading to neck pain and disability in and around trapezius.

Purpose of study: The aim of the study to find out correlation of scapular dyskinesia, neck pain and neck disability in academicians with trapezitis.

Need of the study: Academicians have to performed tasks and work during lectures they will be in altered postures, this study will provide overview of risk of major problem in academicians having trapezitis. This study will help in understanding the impact of scapular dyskinesia with neck pain on neck disability in academicians having trapezitis. So, the need of this study mainly highlights the correlation between scapular dyskinesia with neck pain and neck disability in academicians having trapezitis.

Methodology: After taking written consent from the academicians, they were explained the procedure. Scapular dyskinesia, pain and neck function - disability were assessed using lateral scapular slide test (LSST), visual analog scale (VAS), and neck disability index (NDI) respectively. Data analysis for correlation was done through spss.

Result: Total 11 Male and 39 Female were included. Data was not normally distributed, so the spearman rank correlation test was used. Significance level was kept at $p < 0.05$. LSST1 has low significance and positive correlation with VAS ($r = 0.287$, $p = 0.043$) but not with NDI ($r = 0.197$, $p = 0.170$). LLST2 has low significance positive correlation with VAS ($r = 0.281$, $p = 0.048$) as well as not NDI ($r = 0.217$, $p = 0.129$). However, LLST3 is neither statistically significance with VAS ($r = 0.239$, $p = 0.095$) nor NDI ($r = 0.203$, $p = 0.157$).

Keywords: Lateral scapular slide test, Visual analog scale, Neck disability index

INTRODUCTION:

The trapezius muscle is important for stabilizing the scapula, often working alongside other shoulder muscles such as the serratus anterior. Trapezitis refers to inflammation of the trapezius muscles, typically caused by excessive stress or strain. Issues like altered activation, poor control, or reduced strength in different parts of the trapezius can result in abnormal shoulder movements, often accompanied by pain. ⁽¹⁾

The scapula is the large triangular-shaped bone behind the thoracic region and an important link between the trunk and the shoulder complex with a key role for the upper limb kinematic chain. Many muscles in the neck, back, and shoulder area use the surfaces of the scapula for attachment and the alignment of the scapula is related to proper cervical, thoracic, and shoulder functions. Therefore, functional disorders of these muscles and the asymmetric alignment of the scapula can be seen in patients with a painful neck, back, and shoulder disorders. ⁽²⁾

Keeping your Scapula stable relies on certain muscles working together, like the upper and lower trapezius, serratus anterior, and rhomboids. Inhibition or disorganization of activation patterns in Scapular stabilizing muscles can alter the scapular position thus causing scapular Dyskinesia. ⁽¹⁾

Scapular dyskinesia is characterized by the abnormal position of the scapula during rest or abnormal scapula movements with the upper extremity movements and impaired scapulohumeral rhythm. ⁽²⁾

Neck is a complex structure which has many dynamic and stability functions, especially those connecting head to scapula and shoulder. Thus, any structural or functional change in these structures will lead to pain in neck. In turn, Neck pain can lead to neck disability. Disability refers to any limitation or inability to perform an activity due to an impairment. ⁽³⁾

Teachers frequently experience neck pain, the most prevalent health issue related to their occupation. This pain can lead to disability and hinder their work performance due to the nature of their daily tasks and work environment. ⁽³⁾

Academicians have to performed tasks and work during lectures will be in altered postures, this study will provide overview of risk of major problem in academicians suffering from trapezitis. Hence, it will help in understanding the impact of scapular dyskinesia with neck pain on neck disability in academicians having trapezitis. So, the need of this study mainly highlights the correlation between scapular dyskinesia with neck pain and neck disability in academicians having trapezitis.

I. Lateral scapular slide test:

- Lateral scapular slide test (LSST), clinically measures static scapular positions.
- This test involves measuring the distance from the inferior angle of the scapula to the nearest vertebral spinous process using a tape measure or goniometer in three positions:
 - shoulder in neutral,
 - shoulder at 40-45 degrees of coronal plane abduction with hands resting on hips, and
 - shoulder at 90 degrees abduction with the arms in full internal rotation
- The injured or deficient side would exhibit a greater scapular distance than the uninjured or normal side and asserted that a bilateral difference of 1.5 cm (15 mm) should be the threshold for deciding whether scapular asymmetry is present. ⁽⁴⁾

II. Visual analogue scale:

- The visual analog scale (VAS) is a validated, subjective measure for acute and chronic pain. Scores are recorded by making a hand written mark on a 10-cm line that represents a continuum between “no pain” and “worst pain.” ⁽⁵⁾

III. Neck disability index:

- The Neck Disability Index (NDI) is a 10-item questionnaire that measures a patient’s self-reported neck pain related disability. Questions include activities of daily living, such as: personal care, lifting, reading, work, driving, sleeping, recreational activities, pain intensity, concentration and headache. Each question is measured on a scale from 0 (no disability) to 5, and an overall score out of 100 is calculated by adding each item score together and multiplying it by two. A higher NDI score means the greater a patient’s perceived disability due to neck pain. ⁽⁶⁾

METHODOLOGY:

- **Study design:** Cross-sectional correlation study.
- **Study setting:** Different school and colleges in Ahmedabad.
- **Study duration:** 1 month.
- **Sampling design:** Convenient sampling.
- **Sample size:** 50 academicians.

MATERIALS USED:

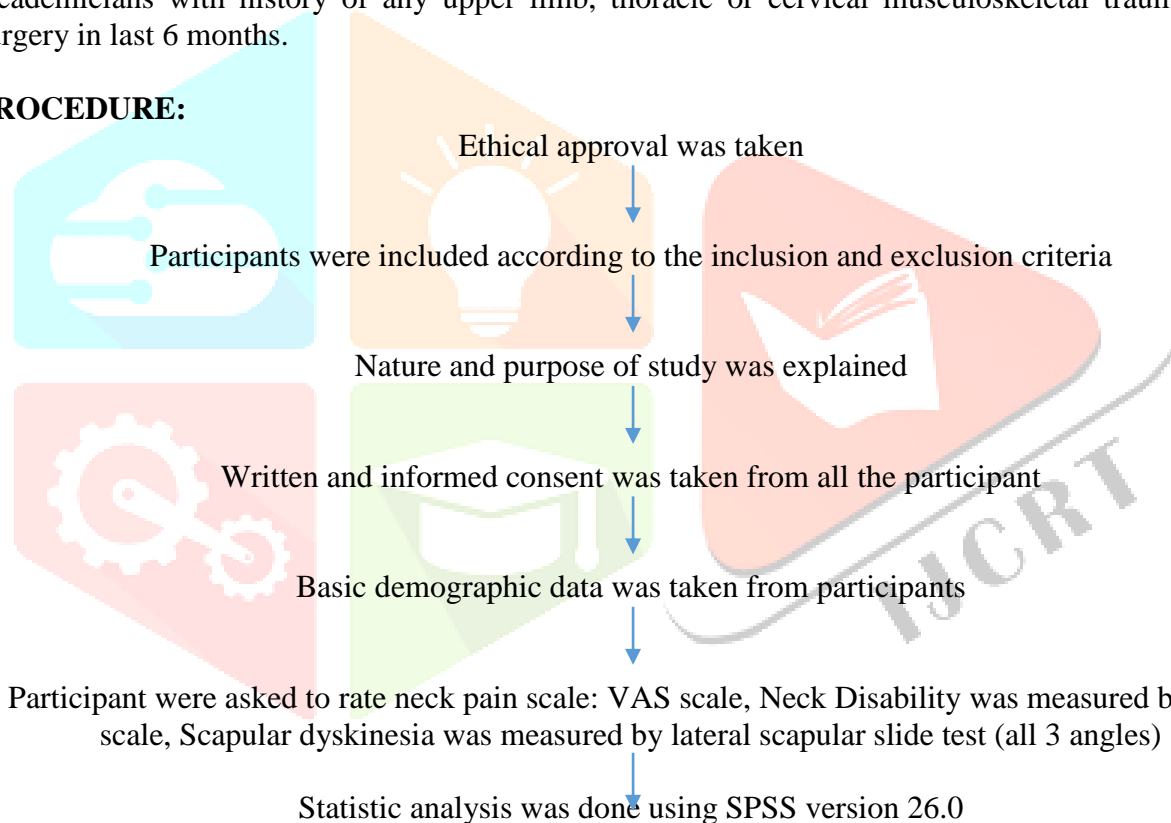
- Scales: VAS [Visual analog scale]
- Scales: NDI [Neck disability index]
- Measuring tape
- Participants consent form

INCLUSION CRITERIA:

- Academicians between ages of 25 to 45 years.
- Having Trapezitis since 6 month
- Both Genders
- Academicians who are working for 4 to 6 hours five days a week

EXCLUSION CRITERIA:

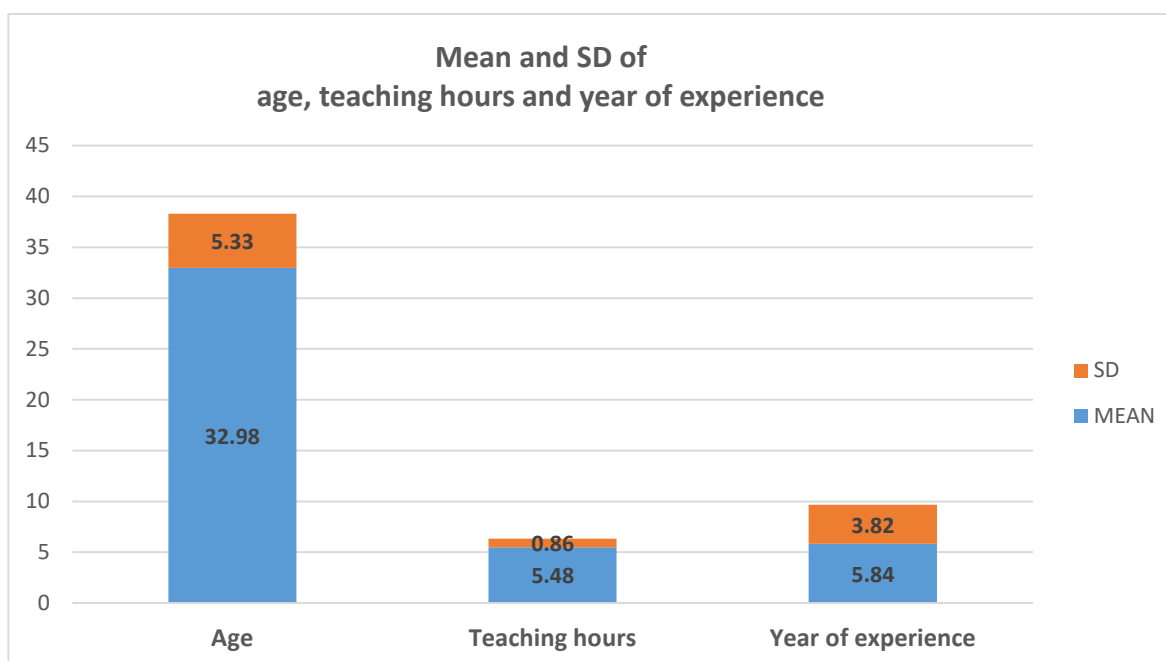
- Any other musculoskeletal (especially around neck/ upper thoracic region), neurological, congenital and metabolic disorders.
- Academicians with history of any upper limb, thoracic or cervical musculoskeletal trauma and/or surgery in last 6 months.

PROCEDURE:**RESULT:****Statistical analysis:-**

- Statistical analysis was done by using SPSS version 26. Total 11 Male and 39 Female were included.
- Data was screened to check the normality by using Shapiro wilk test. Data was not normally distributed, so the spearman rank correlation test was used.
- Significance level was kept at $p \leq 0.05$. Correlation coefficient (r) ranges from -1 to +1, a positive value indicates positive correlation and negative value indicates a negative correlation.

Table 1: Descriptive Characteristics of Academicians

MEAN±SD	
Age	32.98±5.33
Teaching hours	5.48±0.86
Year of experience	5.84±3.82
Lateral scapular slide test 1	4.60mm±5.87mm
Lateral scapular slide test 2	8.70mm±7.74mm
Lateral scapular slide test 3	11.0mm±6.92mm
Visual analog scale	45.0mm±11.82mm
Neck disability index	10.24±5.57

Graph 1: Mean and SD of age, teaching hours and year of experience.**Table 2: correlation of the LSST with VAS, and NDI**

P Value (r)	P Value (r)	
	VAS	NDI
Lateral scapular slide test 1	0.287 (0.043)	0.197 (0.170)
Lateral scapular slide test 2	0.281 (0.048)	0.217 (0.129)
Lateral scapular slide test 3	0.239 (0.095)	0.203 (0.157)

- Lateral scapular slide test1 and 2 has low significance and positive correlation with VAS but not with NDI. And lateral scapular slide test 3 is neither statistically significant with VAS nor NDI.

DISCUSSION

This study is aimed to find out correlation of scapular dyskinesia, neck pain and neck disability in academicians with trapezititis. The muscles attached to the scapula are connected to other surrounding bones and they balance in such a way that they work together so that the scapula can move correctly with respect to the thorax during upper extremity movements. Losing the balance amongst these muscles may cause inappropriate muscle action and decreases the stability in cervical and shoulder joints too.

Decrease in stability due to inappropriate action of these muscles can causes pain in surrounding body parts or bad postures. LSST, which measures the distance between the scapula and thorax, was used to evaluate scapular asymmetry in this study.

In recent times, the teaching method has undergone a shift from the traditional use of blackboards to incorporating audio-visual aids. Previously, teachers were required to engage the upper trapezius and middle trapezius muscles due to extensive overhead activities. However, nowadays, teachers utilize PowerPoint presentations, projectors, and computers, for teaching and multiple task like checking papers and carrying books between classrooms. These activities involve the use of the lower trapezius greater than upper and middle trapezius. Because of excessive use of lower trapezius in compromised posture for longer duration it leads to pain and spasm in lower trapezius. Thus, leading to altered scapular movement even during rest.

Hence, results found correlations of VAS with lateral scapular slide test 1 and 2, which is the test of dyskinesia focusing on middle and lower trapezius. However, correlation for VAS was not found for lateral scapular slide test 3 due to modifications in work postures, as it avoids excessive use of upper trapezius, in recent times.

Furthermore, it is evident that scapular dyskinesia does not have any impact on neck disability as there was no correlation found between all three LSSTs and NDI. This indicates that academicians are not at risk of development of neck disability, according to the result

CONCLUSION

Scapular dyskinesia has low significant positive correlation with neck pain but not with neck disability in academicians.

LIMITATION

- Small Sample size
- Other Related Professionals are not taken into consideration

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