Immediate Effect of Myofascial Trigger Point Release on Chronic Neck Pain among Visual Display Terminal Operators

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Abstract

Background: Neck pain is a common health issue which is always accompanied with marked disability in the general population. Musculoskeletal complaints in the neck and upper extremity in computer work are common in modern society and both show an increasing trend. Individuals working at desks and computers, or individuals who drive for a long period of time are more prone to this condition.

Objective: This study is to evaluate the immediate effect of myofascial trigger point release on chronic neck pain among visual display terminal operators.

Study Design: Experimental Study.

Subjects: 40 subjects, age group between 20-35 years of both male and female.

Intervention: A total of 40 subjects received myofascial trigger point release with pre and post-test.

Outcome Measures: Neck disability index (NDI) & Visual analogue scale (VAS).

Results: Statistical analysis was done by using paired 't' test which showed significant improvement in subjects.

Conclusion: The findings show that myofascial trigger release is effective in chronic neck pain.

***Key Words*: Chronic neck pain, Visual display terminal operators, Myofascial trigger point release.**

I. INTRODUCTION

Neck pain is a common health issue which is always accompanied with marked disability in the general population. Musculoskeletal complaints in the neck and upper extremity in computer work are common in modern society and both show an increasing trend.[1,2]

Neck disorders are prevalent nowadays; such disorders affect approximately 70% of the people at some point in their life. The visual display terminal operators sitting at a desk and working on a computer for the prolonged time can stress the Neck muscles causing soreness and even headache.[5, 7]The percentage of the Indian population to be affected with neck pain depends on the work environment and posture.The Ratio of prevalence in males and females in India is 1:10 and 35% of the population are affected worldwide. Individuals working at desks and computers, or individuals who drive for a long period of time are more prone to this condition. Limitation of range of motion along with neck pain and a feeling of stiffness may be experienced by the person which is aggravated by neck movements cause a headache, stiff neck pain and can be a trigger. Myofascial release is a specialized physical and manual therapy used for the effective treatment and rehabilitation of soft tissue and fascial tension and restrictions. Myofascial release focuses on reducing pain by easing the tension and tightness in the trigger points. Myofascial trigger points are extremely common and become a distressing part of nearly everyone's life at one time. Tightness felt in the neck and back of the skull often comes from the trigger point. The term trigger point is coined in 1942 by Dr. Janet Travel to describe clinical findings with following characteristics pain related to discrete, irritable point in skeletal muscle or fascia, not caused by acute local trauma, inflammation, degeneration, neoplasm or infection. [9]The painful point can be felt as a tumor or band in the muscle and a twitch response can be elicited on stimulation of trigger point. Palpation of the trigger point reproduces the patient's complaints of pain, and the pain radiates in the distribution typical of the specific muscle harboring the trigger point. The pain cannot be explained by findings on neurological examination.[12]Management of subjects with neck pain constitutes one of the most important problems encountered in clinical practice. Nowadays there is an increase in demand for faster recovery among neck pain subjects since it affects the functional activities.[4]Myofascial trigger release has always been the main method used in Asian approaches. This manipulation is the way working on clothing or without lubricant. Thus, the myofascial trigger release gives immediate effect on chronic neck pain.

II. METHODOLOGY

STUDY DESIGN : Experimental Study Design.

STUDY TYPE : Pre-test and Post-test.
SAMPLING METHOD : Convenient sampling.
SAMPLE SIZE :40
STUDY DURATION : 1 Day
STUDY SETTING **:** SRM TECH PARK, SRM UNIVERSITY.

INCLUSION CRITERIA:

Both men & women Agegroup20- 35 years, VAS Score 5-8, with chronic neck pain, Working on over time Visual Display Terminal Operators (6-7 Hours).

EXCLUSION CRITERIA: Cervical trauma or surgeries, Cervical spondylosis with radiculopathy, spondylolisthesis, Long term steroid use.

MATERIALS USED FOR THE STUDY: Inch Tape, Bed sheet, Pillow, Chair and Couch.

PROCEDURE

A total of 40 subjects were taken based on the inclusion and exclusion criteria and an informed consent was obtained after explaining clearly about the treatment protocol. Pre-test values of VAS (Visual Analog Scale) and Neck Disability Index measurements were taken for all forty subjects. Treatment area of Subjects was examined for local contraindication or any trauma. Subjects were positioned in a comfortable position with a pillow support. Subjects were explained about the procedure and informed to stop the treatment if subjects feel any uncomfortable while doing myofascial trigger release. After locating a taut band of muscle and placing of thumb finger at right angles, applied non-painful movement by slowly increasing pressure with the thumb over the trigger point was moved back and forth to roll the underlying fibers of the muscle at a neutral length, which elicited a local twitch response, which palpating jump sign will be elicited.This consisted of sustained deep pressure with the thumb to the upper Neck Muscles Trigger point for the 30s -1 min. The pressure was released when there was decreased tension in the Trigger point or when the Trigger point was no longer tender or one minute had elapsed.

*OUTCOME MEASURES***:** Visual Analogue Scale (VAS), Neck disability index (NDI). Data Analysis: The obtained data were analyzed by using the Student t-test and paired t-test (VERSION 17). Student‘t’ test was used to test whether there is a significant difference between the Pre test and Post test values.

TABLE -1: Comparison of pre and post-test values of visual analog scale (VAS) & neck disability index (NDI) among Visual Display Terminal operators.

	PRETEST			POST- TEST			
	N	MEAN	S.D	MEAN	S.D	T TEST	SIG
VAS	40	6.42	1.50	5.42	1.31	5.701	0.00
NECK DISABILITY INDEX	40	21.15	8.89	12.6	7.00	15.351	0.00

$p<0.05$

In this table, there is a significant reduction of pain and neck disability index post treatment for a period of one day among visual display terminal operators.

III. RESULTS

According to table-1, there is a significant reduction of pain and neck disability index (NDI) score.Graph1-shows post test values of visual analog scale and neck disability index. There is a significant reduction of pain and neck disability index <0.05.

IV. DISCUSSION

The objective of this study was to find out the immediate effect of myofascial trigger point release on chronic neck pain among visual display terminal operators.Neck pain is one of the common musculoskeletal problems that in 1.7 -11.5 percent of cases result in activity restriction. neck pain is responsible for many personal and social cost and a major cause of occupational disability that can cause one’s refuse to work and exercise. neck pain can be created due to musculoskeletal, trauma, systemic, inflammatory, neoplasm and poor posture reasons.[7]Pain relief from myofascial trigger release may result from reactive hyperemia in the myofascial trigger point region ,counterirritant effects or a spinal reflex mechanism for the relief of muscle spasm .the pressure is applied to the myofascial trigger point of taut band should be within a tolerable pain level for each subject to avoid causing excessive pain and autonomic responses to involuntary muscle .the treatment may not be effective if insufficient pressure is applied .the movement which is very much restricted is the lateral flexion. Thus, the lateral flexion shows improvement after treatment.The integrated hypothesis theory states that trigger points from excessive release of acetylcholine which produces sustained depolarization of muscle fibers. indeed, the trigger point has an abnormal biochemical composition with an elevated concentration of acetylcholine, noradrenaline and serotonin and a lower ph.Analysis of pain relief was done by subjective visual analog score and neck disability index by the statistical mean. The pre test mean value of visual analog score was 6.2 and neck disability index was 21.15. The post test mean value of visual analog score was 5.42 and neck disability index was 12.60 there is a significant difference among visual analog score and neck disability index. There is a significant reduction of pain and neck disability index post treatment for a period of one day.Mohammed hosseinifar et al 2016, stated that myofascial trigger point release on pain and disability index reduction in the participants with chronic neck pain

V. CONCLUSION

The study shows that myofascial trigger release is effective in chronic neck pain**.**

VI. LIMITATION AND RECOMMENDATIONS

LIMITATIONS

The sample size was small.

The study only looked at the immediate effect of the treatment and there was no long- term follows up.

Many patients may not accept treatment as the pressure release produces a transient pain

RECOMMENDATIONS

Similar studies with large sample size can be done.

Different age groups can be taken.

Acute conditions can also be taken.

Large sample size and long-term follow-up can be done in future.

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