ORIGINAL ARTICLE

FREQUENCY OF TRAPEZIUS TRIGGER POINTS AND FORWARD HEAD POSTURE IN TAILORS

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ABSTRACT

Introduction: Myofascial trigger points are hypersensitive nodules with distinct characteristics that cause pain at the location of trigger point and refer pain to the surrounding structures.

Material & Methods: A cross sectional study was conducted on tailors in the factories of twin cities of Pakistan. 349 male and female with the age of 20 to 60 years having complaint of myofascial trapezius trigger points were selected by Non probability convenient sampling technique. All the participants were assessed by using the Trapezius trigger points assessment form meanwhile forward head posture was assessed by using plumb line method.

Results: Out of 349 participants 229(66.5%) were males and 120(33.5%) were females. The mean age of the participants was 34.13 ± 9.8 years. The results revealed that the frequency of active trigger points in trapezius muscle was 166(47.5%), latent (Passive trigger point) was 155(44.4%) and 28(8.1%) having mix type of trigger points. Frequency of Forward head posture shows 40(11.4%) were normal, 80(22.9%) were mild, 180(51.6%) were moderate and 49(14.1%) sever. Association between forward head posture and trigger points are high as P. Value was <0.001.

Conclusion: It is concluded that frequency of active trigger points was higher in percentage as compared to the latent trigger points moreover both type of trigger points had higher association with the forward head posture.

Key Words: Forward head posture, Myofascial trigger points, Posture, Tailors, Trapezius muscle.

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INTRODUCTION

Myofascial trigger points (MTrPs) are hypersensitive or hyperirritable spots or nodules which may be present within the bands of skeletal muscle.[1] Travell and Simons define the clinical characteristics of trigger points as a palpable nodule in a cord-like tensed muscle

band, history of local tenderness, brisk contraction, also known as a local twitch response, and jump sign, which is an involuntary yell or cry by the patient when the trigger point is manually stimulated.[2] Myofascial trigger points lead to myofascial pain. Myofascial pain is a myalgic condition that presents as both local and referred pain from the 3 to 7 on numerical pain rating scale.[3] Certain conditions like muscle strain, ligament sprain, contusions and overuse can be the cause of development of trigger points. Furthermore, endocrine and metabolic deficiencies, nutritional deficiencies, or nonbacterial inflammation of the spine can be the possible causes.[4] In addition, there are a number of physical activities that are responsible for the occurrence of trigger points. These activities may involve lifting loads or maintaining certain sustained postures such as sitting in an abnormal position in front of the computer for prolonged periods. Thus it can be said that frequent or recurring muscle functioning in certain positions may be the reason of muscle pain, especially the neck.[5] There are a variety of therapeutic techniques that can return the muscles affected by MTrPs to their ordinary lengths, and the post-synaptic membranes to their required potential. These techniques can be classified as being noninvasive or invasive. Noninvasive techniques may include manual pressure release, stretching, or ultrasound and invasive techniques include injection therapy, dry needling etc.[6]

Forward head posture (FHP) is a common defect caused by improper posture. This defect increases the gravitational forces on the head, causing it to hyperextend. Hence, the head protrudes outwards in the sagittal plane such that the position of the head is anterior to the trunk. Subsequently, FHP may lead to muscle insufficiency as the body constantly attempts to adapt an efficient way to hold the head up in order to achieve central vision.[7] Forward head posture can be caused by many occupations as well as by few activities of daily living. Occupations that require people to work in a static posture for long periods of time can be a cause of FHP. This is because prolonged static posture causes the head and neck muscles to contract continuously.[8] In FHP, the head protrudes out in the sagittal plane, therefore lying anterior to the trunk. FHP occurs either due to the anterior translation of the head or increased flexion of the cervical spine, or both, and is associated with increased extension of the upper cervical spine.[9-10] Forward head posture is just because of the poor posture of neck specially in prolong screen users like bankers, computer operators etc. triggers may become common in such populations. Triger points are mostly present in weaker muscles and in those who have poor blood supply in particular areas of muscles. In FHD postures posterior neck muscles are weaker so risk of trigger points is high.[11] The main purpose of this study was to find out the frequency of trapezius trigger points and forward head posture in tailors. These findings can help us create awareness in the community to prevent further development of forward head posture and trigger points. This will also help to decrease the frequency of musculoskeletal pain.

MATERIAL AND METHODS

A cross sectional study was conducted on tailors in the (Wazir Tailoring House, Rizwan Fabrics and Tailors, Royal Suiting, The Merino Tailors and Fabrics, Staff Welfare Organization) factories of twin cities of Pakistan. in a six-month period, from August 2019 to January 2020, 349 male and female with the age of 20 to 60 years having complaint of myofascial trapezius trigger points were selected by Non probability convenient sampling technique. All the participants were assessed by using the Trapezius trigger points assessment form meanwhile forward head posture was assessed by using plumb line method. Data was analyzed through statistical package of social sciences, SPSS 21, frequency and percentage of demographics and two

variables (forward head posture and trigger points), mean and standard deviation of age and other demographics were used. Chi square test was used to check the association. and is displayed in the form of tables and charts. Ethical approval was taken from Riphah ethical committee after this approval (Riphah/RCRS/REC/Letter-00649) written informed consent has been obtained individually before the data collection.

RESULTS

Out of 349 participants 229(66.5%) were males and 120(33.5%) were females. The mean age of the participants was 34.13 ± 9.8 years (Table 1). Right handed participants were 336 (96.3%) and left handed participants were 13 (3.7%), working hours $\leq$ 6 hours were 41(11.8%) and > 6hours were 308(88.2%).

The results revealed that the frequency of active trigger points in trapezius muscle was 166(47.5%), latent (Passive trigger point) was 155(44.4%) and 28(8.1%) having mix type of trigger points. (Figure 1)

Frequency of Forward head posture shows 40(11.4%) were normal, 80(22.9%) were mild, 180(51.6%) were moderate and 49(14.1%) sever. The frequency of moderate forward head posture was highest in participants who had 5 active TrPs (14.0%), and in participants who had 2 latent TrPs (20.6%). Specifically, active T2, both right (35.8%) and left (44.1%), right T3 (24.4%), and left T5 (24.9%) showed the most association with moderate forward head posture. Association between forward head posture and trigger points are high as P. Value was <0.001.

DISCUSSION

In the present study, five trigger points of trapezius muscle were assessed on right and left sides. The results showed that majority of participants had active and latent trigger points. Carel, et al conducted an observational study on the prevalence of myofascial trigger points in patients with unilateral shoulder pain. They assessed 17 muscles and found out that the prevalence of active myofascial trigger points in the upper trapezius was higher than middle trapezius and latent myofascial trigger points in upper trapezius was 38%.[12] Another study conducted by Sacramento, et al on the prevalence of latent myofascial trigger points in children and young adults showed that children had less latent myofascial trigger points than adults. It also showed that adults had more latent MTrPs in upper trapezius and the prevalence was found to be more than 50%.[13]

This study found that the frequency of forward head posture was high in sewing machine operators. Arfa, et al in their cross-sectional study on prevalence of forward head posture in university students found that the prevalence of forward head posture in university students was 63.96% this study contradicts with the recent study.[14]

Regarding the association between the presence of myofascial trigger points and forward head posture, recent study showed that active and latent myofascial trigger points were significantly associated with higher frequency of forward head posture. However, existing data regarding this association is contradictory. The present study showed that the frequency of moderate forward head posture was highest in participants who had 5 active TrPs, An-sun, et al in their study to analyze the relationship between myofascial pain syndrome and forward head posture, stated that forward has no association with the presence and association of trigger points.[15]

There were some limitations in this study on the top of that Gender of participants was not equally distributed. Further studies are needed to find different factors related to forward head posture and to improve the quality of life by providing proper techniques related to postural correction, and prevention of trigger points.

CONCLUSION

Frequencies of active and latent trapezius trigger points were high in tailors. Moreover, the frequency of forward head posture was found to be high, with moderate forward head

posture being observed more frequently than severe forward head posture.

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Table 1: Descriptive statistics for demographical data.

	Mean	SD
Age	34.13	9.8
Gender	1.34	0.473
Dominant hand	1.04	0.194
Working Hours	10.47	2.85
Working Years	14.42	9.42

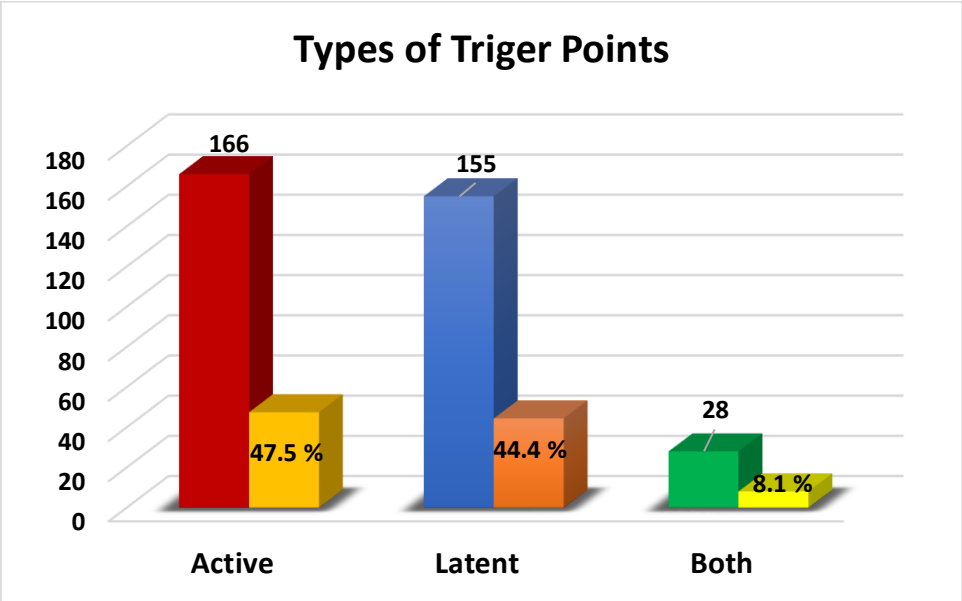

Figure 1: Descriptive Statistics for Types of Trigger Points.