

## PREVALENCE OF ACTIVE MYOFASCIAL TRIGGER POINTS AMONG THE BANKERS OF FAISALABAD CITY.

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**ABSTRACT**

**Background:** Myofascial trigger points refer to hyperirritable points located in taut bands of skeletal muscle. In bankers' myofascial triggers points of upper trapezius is a major problem characterized by a combination of symptoms including shoulder or neck pain this study is helpful for diagnosis of active myofascial trigger points of upper trapezius in the bankers of Faisalabad City.

**Aims and objectives:** The study will be conducted to investigate the active myofascial trigger points in the bankers of Faisalabad City.

**Methodology:** This study will be conducted on 300 participants with active myofascial trigger point. Questionnaire will be used to find the association. Sampling technique will be convenient sampling and study design will be cross sectional. NDI questionnaire is used for associating factors of active myofascial trigger point and for statistical analysis. The SPSS 24 version is utilized for the computation of the prevalence of active myofascial trigger points (MTRs) in the upper trapezius muscles of bankers residing in Faisalabad City.

**Possible results and conclusion:** Possible results and conclusion will be drawn after the data collection and data analysis. Data will be analyzed using SPSS sheet.

**Keywords:** Trapezius Muscle, Muscle Tightness, Neck Pain, Poor Posture, among bankers

## **INTRODUCTION**

Musculoskeletal problems have been identified as a painful condition which is one of the main causes of pain in human beings' elderly 20-50 years, which can be usually associated with headaches and continual neck ache international. Is an extra common criticism than this pain because of absenteeism and espresso productivity has been recognized as a cause of severe medical and socio-monetary diseases, expected to value extra than 2 percent of the gross home product (GDP). (Mubashir, 2021).

While MPS is diagnosed as a painful musculoskeletal condition that is regularly associated with MTrPs. Described in settings with a factor incidence of 10%–18% and a life-time incidence of 30%–50%, the incidence of MTrPs has been increasing in latest years. MTrPs determined inside the trapezius muscle grew to become out to be extra not unusual due to the fact elements can be differentiated into two sorts primarily based at the presence of their clinical capacity. If the ache happens at relaxation, is clean to the beat with a reference pain pattern, along with the victim's ache critique, this is a residing trigger factor. (Latif & Iqbal Siddiqui, 2020).

Common medical findings in symptomatic muscle tissues are tight bands with lively trigger points (TrPs) of myofascial ache. Latent TrPs are common even in asymptomatic human beings. They were detected in the muscle groups of the shoulder girdle in about half of a collection of young, asymptomatic Navy employees. (Partanen et al., 2010).

Quantities of studies have discovered that about 90% of rehabilitation experts have musculoskeletal disorders, of which 50% of physiotherapists suffer from painting-related musculoskeletal troubles (WMSDs) inside five years of exercise. (Mubashir, 2021).

Neck and shoulder pain are not unusual complaints that can appreciably affect a person's everyday life sports and ability to work. Myofascial trigger factors (MTrPs) are considered exceptionally touchy, tender areas on tight bands of muscle. They are palpable, generate locally and refer ache to different structures with mechanical stimulation. (Ribeiro et al., 2018).

The point of origin for this particular muscle lies in the occipital bone, ligamentum nuchae, and spinous process of C-7. It inserts at the lateral one-third of the clavicle, as well

as the acromion of the scapula and the scapular spine. Innervation: Innervated by means of accent nerves (cranial nerve XI).

Prolonged static postures of the neck, shoulders, and head in some unspecified time in the future for the duration of activities of each day residing can reason ache in those areas. Neck pain is typically cited a physiotherapist. Maintaining a neutral head posture is beneficial to reduce anxiety in the higher and lower trapezius and to boom movement of the scalene anterior by means of turning the top ahead during shoulder flexion. A recent study found a connection between forward head posture and neck pain, as well as increased stiffness in the trapezius muscle while sitting. The findings highlight the impact of posture on physical discomfort and muscle tension. (Najeeb et al., 2022).

Active myofascial trigger points are characterized by spontaneous pain upon movement, which can elicit both local and referred pain. These trigger points result from an increased repetition of activity. It can be treated by dry needling, stretching, medications and other massage therapy etc.

The objective of this research was to assess the prevalence of active myofascial trigger points, and to determine the factor that may contribute and to identify the cause of active myofascial triggers point among the bankers of Faisalabad City. We included those participants who were aged between 24-48 and male bankers of Faisalabad City.

## **Methods**

### **Participants: -**

A total of 300 bankers from the city of Faisalabad, Pakistan were included in this cross-sectional study. The age limit of all the 300 participants were ranged between 24-48 years. Those individuals which were diagnosed with acute to chronic trapezius pain, palpable tender spots in upper trapezius muscle and limitation of neck movement due to pain were included in this study. While those individuals which were above 48 years and have previous history of cervical spine surgery, skin diseases in the area of trapezius muscle, skin lesions in area of trapezius muscle, and sensory disturbances in trapezius region were excluded from this cross-sectional study.

### **Data Collection Procedure:**

Before entering into this cross-sectional study informed consent was obtained from the diagnosed subjects. Visual analogous scale graded from 0-10 to show pain severity and Neck pain index questionnaire were used to assess the level of functional limitations due to pain and posture. The participant's head and neck posture was assessed using photographic method while they stood upright. The values were obtained and the pain and neck pain index was obtained by specially designed questionnaire. SPSS software was used to analyze the data. NDI Questionnaire was used in this research for data analysis related to study variables.

### **RESULTS**

Data was collected from bankers who aged between 24-48 years. According to the given questionnaire, 380 individuals responded, and out of those, 300 met the inclusion criteria. Data collected for those 300 (n=300) has been analyzed by SPSS version 24 who fulfilled the inclusion criteria. Out of 300 participants the age of 180 (60%) participants were between 24-36 years, 120 participants were 37-48 (40%) years

Data analysis has been conducted on the variables mentioned in the questionnaire. The results of the questionnaire have been used to derive the frequency distribution of each variable, presented in both tabular and graphical formats. The prevalence of active myofascial trigger points among bankers has been determined through numerical analysis. To aid comprehension and conceptualization, relevant tables and graphical representations with accompanying explanations have been included.

This table is showing frequency distribution of total neck pain and visual analogue scale score. We sum up the total score of participants and found that 70 people have no neck pain and most of people 230 have triggers points and have neck pain.

### **Discussion**

The primary cause of trigger points is excessive repetition of muscle activity. Physiotherapists often encounter scenarios where patients experience muscle pain and tenderness without a clear diagnosis. Muscle discomfort can occur in a specific area or throughout the body, present constantly or periodically, ranging from mild to severe, and can negatively impact the individual's overall quality of life. (Fernandez-Perez et al., 2012, Cummings and Baldry, 2007).

During the previous century, in various clinical situations, as chapter 1 highlights, numerous authors have systematically documented what is currently recognized as the MTrPs. (Harden et al., 2000). Clinicians from various medical fields currently receive education and training to confirm the diagnosis of MPS (myofascial pain syndrome) after identifying at least one active MTrPs (Charlton, 2005). A precise set of diagnostic criteria has been recommended within the published literature, alongside the description of procedures for manually examining muscles. (Tough et al., 2007).

According to a narrative review published in 2015, the diagnosis of MPS (myofascial pain syndrome) is considered the gold standard when a physical examination is conducted. To meet the diagnosis criteria, the following must be observed: (1) palpation of the taut band, (2) identification of a highly sensitive nodule within the taut band, and (3) reproduction of the patient's symptomatic pain through sustained pressure. (Shah et al., 2015). Nevertheless, it is important to acknowledge a few limitations of the proposed physical examination. Firstly, the critical elements for its success are proper training and palpation skills. Additionally, this examination is not applicable to all muscles. Furthermore, the specific characteristics regarding sensitivity and specificity are currently unavailable for this physical examination. (Lucas et al., 2009). Furthermore, there remains a lack of agreement among medical practitioners regarding the physical findings linked to the diagnosis of MPS. (Shah et al., 2015).

Estimates from epidemiological research, although generally of low quality, indicate myofascial trigger points (MTrP) are a common clinical characteristic. Furthermore, they are frequently observed in conjunction with major musculoskeletal disorders such as spinal conditions and shoulder pain. (Lluch et al., 2015, Chiarotto et al., 2016, Fernandez-de-las-Penas et al., 2007, Iglesias-Gonzalez et al., 2013, Roach et al., 2013, Bron et al., 2011b). A search conducted on the Physiotherapy Evidence Database (PEDro, <http://www.pedro.org.au>) using specific keywords for MPS, clearly indicated a rise in clinical studies on the prevalence of physiotherapy MTrPs over the past decade. (Figure 6.1) (Schneebeli et al., 2015). Clinical trials have demonstrated a favorable clinical response to various types of MTrP, with prevalence ranging from invasive to non-invasive. However, there is a lack of recommendations from clinical guidelines. Based on the latest findings in the literature, both dry needling and ischemic compression are

recommended for providing relief from pain in the short and medium term. (Cagnie et al., 2013, Kietrys et al., 2013).

Since 1942, a significant number of scientific papers have been published regarding MTrP. Janet Travell's publication in the Journal of the American Medical Association marked the beginning of this research. Overall, the literature can be categorized into three main research lines. The etiology of myofascial trigger points (MTrPs) aims to establish associations between pathophysiological factors such as endplate dysfunction, inflammatory mediators, or abnormal tissue properties, and the presence of MTrPs. The diagnostic procedures for MTrPs aim to propose a reliable and valid method for detecting them. The ultimate objective in this situation is to overcome the well-known limitations of the MTrPs physical examination that relies on manual palpation. (Myburgh et al., 2011, Myburgh et al., 2008, Lucas et al., 2009). Finally, the main focus is to determine the most effective prevalence for MTrPs, whether invasive or non-invasive, by providing evidence-based recommendations. Among the latter areas of research, it is crucial to prioritize the investigation into the causes of a MTrP. It would be particularly relevant to examine the role of end plate dysfunction in relation to this, as it is considered a key pathological component of the integrated trigger point hypothesis proposed by Simon et al (1999).

The face validity of myofascial trigger points (MTrPs) is widely recognized by practitioners in terms of its clinical relevance. However, the diagnostic validity of myofascial pain syndrome (MPS) is a topic of discussion within the scientific community, and controversies still persist. (Johnson, 2002, Quintner et al., 2014, Quinter and Cohen, 1994). According to a study conducted by Quinter and colleagues (2014), the concept of the MPS should be regarded as a hypothesis and the resulting theory should be disregarded. Instead, they proposed that the phenomenon of MTrP can be explained as peripheral neural secondary hyperalgesia. (Quintner et al., 2014). MTrPs have been suggested to be located in close proximity to the peripheral nerves, with their development being linked to a concentrated inflammation of the nerve axons that results in the generation of abnormal impulses. (Dilley and Bove, 2008, Dilley et al., 2005). Further investigations focused on specific pathophysiological elements related to the MTrP are necessary. It is crucial to determine the true nature of this perplexing clinical phenomenon. (Simons, 2004).

To enhance the accuracy of the MPS diagnosis, it is important to recognize the MTrPs as specific sources of pain and clearly define their underlying pathophysiological characteristics. Merely observing nonspecific symptoms like hyperalgesia or referred pain is insufficient for distinguishing MTrPs from other common musculoskeletal conditions. Any advancements made in this direction will contribute to confirming the content validity of a MPS diagnosis and subsequently, its relevance in the clinical practice within the musculoskeletal field. Consequently, an examination was conducted to explore the spatial relationship between MTrP and IZ. The potential involvement of the endplates in the pathophysiology of MTrP has been suggested. (Mense et al., 2001). The location of MTrPs within muscles and their relationship to other anatomical structures has been underestimated. Previous chapters have discussed the proximity of MTrPs to the IZ. Interestingly, in clinical practice with patients who experience muscle pain in the neck shoulder region, it is evident that certain muscles (such as the upper trapezius, sternocleidomastoid muscle, teres major muscle, and infraspinatus muscle) exhibit trigger points within the muscle's core. This study involved the implementation of two procedures to carry out the experimental measurements.

Two different procedures were employed to determine the location of the IZ and the MTrP in the upper trapezius muscle. The first procedure utilized surface EMG signals to detect the IZ's location, while the second procedure involved a manual palpation technique to locate the MTrP. The main objective was to explore the spatial relationship between the IZ and MTrP, taking into account the authors' proposal that MTrPs are situated within the IZ. (Kuan, 2009, Mense et al., 2001) Thus, it is important to consider the evidence on both the reliability of the experimental procedures used and their impact on the findings of the cross-sectional study examining the locations of IZ and MTrP. After careful consideration of the current evidence, it was hypothesized for the cross-sectional study that the distance between the IZ and the MTrP in the upper trapezius would not show a significant deviation from zero.

### **Conclusion**

The aim of this research was to determine the prevalence of active myofascial trigger points among individuals working in banking professions., which was satisfied accordingly in the findings of this research. Most of the participants were aged between 24-36. According to study majority of participants have triggers points. Other important findings included that most of the



participants feel difficulty in sleeping, working, and walking etc. It was also found that participants did not participate in any form of physical activity and almost half of the population had a sedentary life-style. It was also observed that participants had very less awareness of the disease.

### **Recommendations**

Based on the findings of the present study, the following recommendations are proposed:

In the present study, the data was collected during survey from our bankers of Faisalabad City only. If the data has also been collected from other department like computer science student or IT department and others cities of Pakistan, then the results of the study might be different. The outcomes or the conclusion of this study could vary. The result of our study only covers the bankers of Faisalabad City.

In Pakistan, literacy rate is not as well effective as foreign countries have. Hence, there is no proper screening in Pakistan. Proper screening system is present in foreign countries, where all the patients are examined and screened about their medical condition, so that if they have any issues, they must resolve it from their physician. If there is proper screening in Pakistan's hospital system, then result should be different.

The methodology of hospitals related studies should include basic knowledge about their primary health care and physical fitness in order to avoid any health-related issues with respect to their job. Our system must start health education program regarding health-related issues of patients in order to keep their patients physically and mentally strong enough so that they would be able to cope up with the problems.

### **Limitations**

- Duration of study was short we were unable to collect more data.
- Sample size was small.
- Area of study was just Faisalabad City; we could not collect from other cities of Pakistan.



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