

## **PRESENCE OF MUCULOSKETEL DISORDERS AMONG DEFENCE PERSONAL WORKING IN OFFICE PREDOMINENTLY.**

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### **ABSTRACT:**

**The burden of disabling musculoskeletal pain and injuries are arising from work-related causes in many workplaces remains substantial. Our objective was to update a systematic review of work related musculoskeletal disorders in army personnel who predominantly work in office as compare to field work. As army personal are reportedly physically fit. We followed a systematic research by distributing a questionnaire through Google forms to army personnel who are working in offices.**

**The aim behind this research is to find out whether army personal suffers from musculoskeletal disorders or not and to figure out the most common musculoskeletal disorders and the effect of ergonomics on it.**

### **KEYWORDS:**

Musculoskeletal disorders, Ergonomics, Musculoskeletal system, cervical pains, lumber pain.

### **INTRODUCTION:**

#### **INTRODUCTION TO HUMAN MUSCULOSKELETAL SYSTEM:**

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The human musculoskeletal system (also known as the human locomotors system, and previously the activity system<sup>[1]</sup>) is an organ system that gives humans the ability to move using their muscular and skeletal systems. The musculoskeletal system provides form, support, stability, and movement to the body.

It is made up of the bones of the skeleton , muscles, cartilage, tendons, ligaments, joints and other connective tissue that support s and binds tissues and organs together.[2]

The musculoskeletal system's primary functions include supporting the body, allowing motion, and protecting vital organs.<sup>[3]</sup> The skeletal portion of the system serves as the main storage system for calcium and contains critical components of the hematopoietic system.<sup>[4]</sup>

## **INTRODUCTION TO MUSCULOSKELETAL DISORDERS:**

Musculoskeletal disorders are injuries or pain in the human musculoskeletal system, including the joints, ligaments, muscles, nerves,

tendons, and structures that support limbs, neck and back.<sup>[5]</sup>

Musculoskeletal skeletal disorders can arise from a sudden exertion (e.g., lifting a heavy object),<sup>[6]</sup> or they can arise from making the same motions repeatedly repetitive strain, or from repeated exposure to force, vibration, or awkward posture.<sup>[7]</sup> Injuries and pain in the musculoskeletal system caused by acute traumatic events like a car accident or fall are not considered musculoskeletal disorders.<sup>[8]</sup> Musculoskeletal skeletal disorders can affect many different parts of the body including upper and lower back, neck, shoulders and extremities (arms, legs, feet, and hands).<sup>[9]</sup> Examples of Musculoskeletal include carpal tunnel syndrome, Epicondylitis, tendinitis, back pain, tension neck syndrome, and hand-arm vibration syndrome.<sup>[7]</sup>

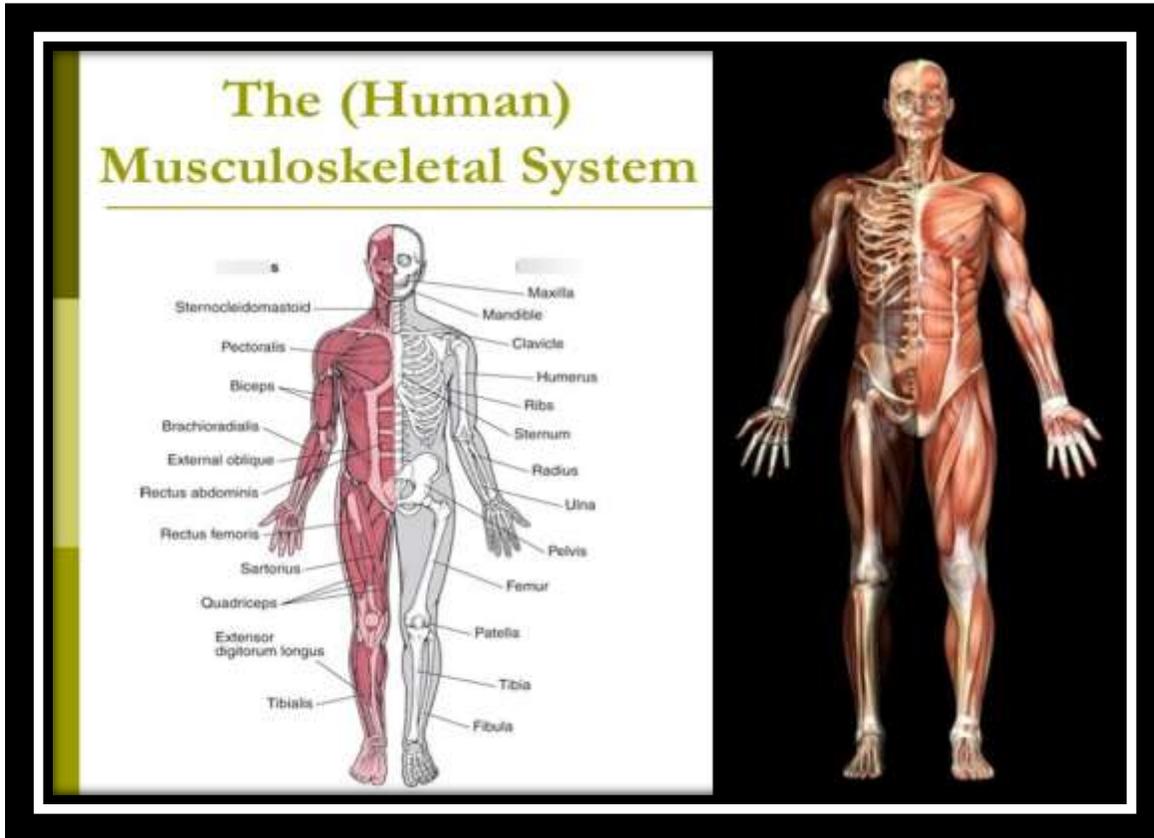
## **INTRODUCTION TO WORK RELATED MUSCULOSKELETAL DISORDERS:**

Musculoskeletal Disorders are widespread throughout the world [10] and are the second most common cause of disability in work setting [11]. These disorders are responsible for 40-50% of the costs of all work related diseases. In addition, 50% of all more-than-3-day absences from work and 49% of all more-than-two-week absences are caused by Musculoskeletal disorders [12]. Workplace risk factors for development of Work-related Musculoskeletal Disorders (WMSDs) include heavy physical work, forceful overexertion, awkward and sustained postures, repetitive movement, and vibration [13].

Previous surveys indicated a significant positive association between musculoskeletal disorders and fatigue [14, 15], stress, psychosocial distress, and sleep disruption [14]. Musculoskeletal disorders are also a significant workplace issue resulting in loss of productivity at work and sickness absence [16]. Outcomes of Musculoskeletal disorders can range from symptoms to major impairment losses [17], such as reduction of quality of life [18], reduction of productivity (e.g., lost time) [19]

The causes of work-related musculoskeletal disorders are usually multi factorial including physical, ergonomic, and psychosocial factor [20]. Musculoskeletal disorders usually occur in workers who have excessive repetition, awkward postures, and heavy lifting [21]. The International Labor Organization (ILO) and the

World Health Organization (WHO) regards musculoskeletal as a work related disease, which is also referred to as a “new epidemic” that should be researched and solved. Musculoskeletal have a huge impact on work-related absence and a high proportion of days lost is due to musculoskeletal [20]. Therefore, it not only affects the health of workers but also creates a burden on the health system, on the businesses economic, and on the social costs to deal with their consequences [20, 22]. Musculoskeletal prophylaxis is needed in many countries to allow workers to avoid the symptoms of musculoskeletal, improve working productivity and reduce the burden on medical systems at the same time [23, 24]. In developed countries, many programs for the prevention of MSDs have been applied on workplace. [25]



**Fig:1: Above figure shows musculoskeletal system of human body**

**BACKGROUND:**

Musculoskeletal system disorders are common among health care workers worldwide. [26, 27]They are common causes of severe long-term pain and physical disability.[28] Musculoskeletal disorders (MSDs) are defined as “regional impairments of the muscles, tendons, nerves and joints. When the surrounding work environment and the performance of work contribute in causing such kind of disorders, then they are called work-related musculoskeletal disorders (WRMSDs).

**METHODOLOGY:**

**QUESTIONNAIRE:**

This questionnaire included some demographic questions like age, gender, weight, height and work related questions like job tenure, daily sitting, working time, current and past musculoskeletal disorders, ergonomics, and life after job hour and other essential details.

**METHOD PROCEDURE:**

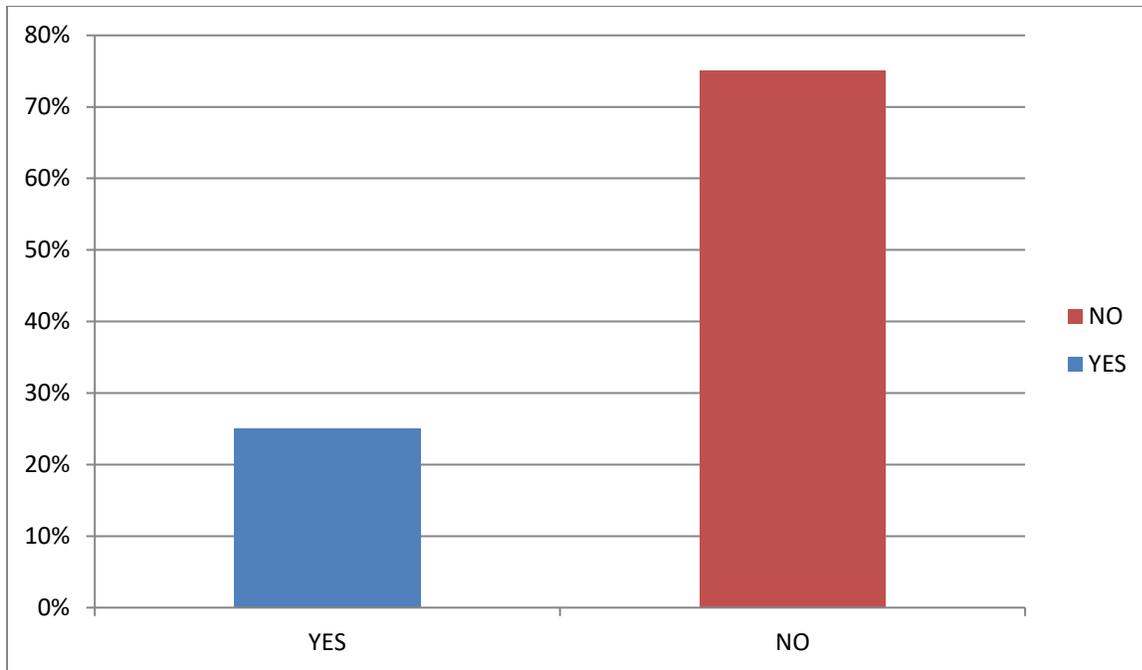
**QUESTIONNAIRE METHOD:**

The questionnaire was distributed among the army personal office workers (male and female both) through Google form, age limit 20-60.

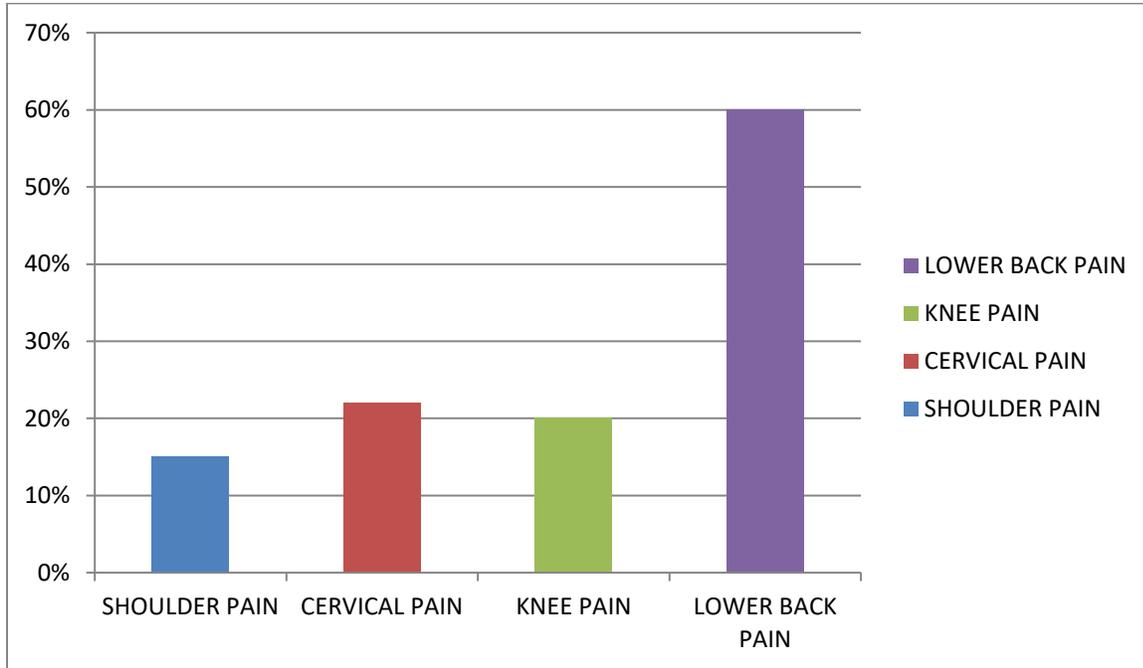
Questionnaire contained some demographic questions such as age, gender, height, weight etc and also questions regarding their office hours, working pattern, nature of work and complains about musculoskeletal pains.

### DISCUSSION:

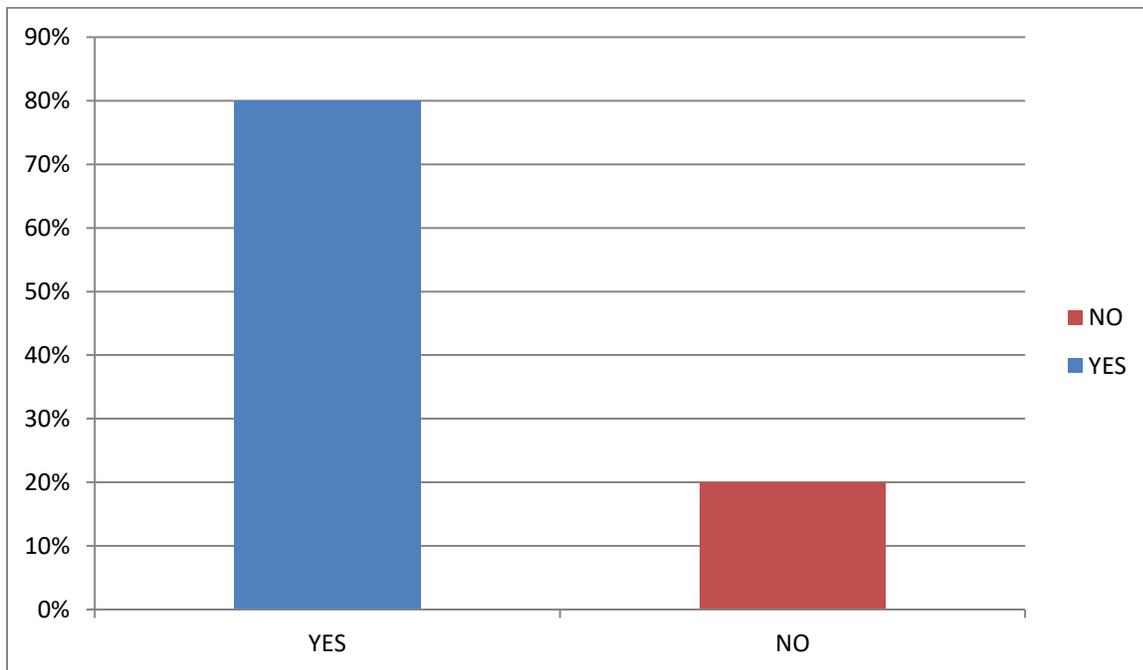
We received a data reflecting the percentage of subjects suffering from musculoskeletal. This research has also helped us out finding the most common musculoskeletal disorders present among subjects. The most common risk factors identified in the present study was prolong sitting period. The present research was carried out on total 500 subjects through Google form.



**Fig: 2:** Above figure demonstrate the percentage of subjects suffering from musculoskeletal disorders.



**Fig 3: Above figure demonstrate the percentage of most common musculoskeletal disorders present among subjects.**



**Fig 4: Above figure demonstrate the percentage of subjects who believe the role of ergonomics in musculoskeletal system “YES”, represents role of ergonomics in musculoskeletal system is positive whereas “NO”, represents negative role of ergonomics in musculoskeletal system.**

## RESERCH LIMITATION:

The current research has been carried out exclusively on army personnel who predominantly work in office sector. The result may vary for another group of people accordingly.

## CONCLUSION:

With the help of data collected through research we came to following conclusion.

1. There are 25% of defense personnel suffering from musculoskeletal disorders whereas 75% of defense personnel are reportedly fit and fine.
2. Among the 25% of the defense personal suffering from the most common musculoskeletal disorder appeared to be low back pain due to prolong sitting position followed by cervical pain, knee pain and shoulder pain
3. Research also concluded that 80% defense personal believed that following correct ergonomics while performing any work is beneficial in reducing signs and symptoms of musculoskeletal disorders while 20% of subjects are not sure about ergonomics playing role in musculoskeletal pain.

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