

## Prevalence of Musculoskeletal Pain among Medical Students in District Peshawar

Ameer Hamza<sup>1</sup>, Naveeda Sarwar<sup>2\*</sup> and Nazish Waheed<sup>3</sup>

<sup>1</sup>MBBS, Pak International Medical College, Peshawar, Pakistan

<sup>2</sup>Reserach Associate, Clinical Psychologist, (Ph.D. Scholar), Pak International Medical College, Peshawar, Pakistan

<sup>3</sup>Head of Department of Anatomy, Muhammad College of Medicine Peshawar, Pakistan

**\*Corresponding Author:** Naveeda Sarwar, Reserach Associate, Clinical Psychologist, (Ph.D. Scholar), Pak International Medical College, Peshawar, Pakistan.

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### Abstract

**Introduction:** Musculoskeletal disorders are considered to be work related when the environment and performance of work contribute significantly to the condition, the condition is made worse or persists longer due to work conditions or both.

**Objective:** 1. To assess the prevalence of musculoskeletal pain of medical students. 2. To assess the posture and effects of posture of medical student during computer usage.

**Methodology:** Descriptive study of survey type was conducted in private medical college in district Peshawar during the month of January to March 2022. Informed consents were taken from the respondents. The sample size was 255 with convenient sampling techniques. The confidence interval was 95% and 5% precision of error. The questionnaire consists of dichotomous responses with mix multiple choice options. The questionnaire was basically based on computer usage develops a problem of musculoskeletal pain with uncomfortable posture. To assess workstation ergonomics, its knowledge and practices by identified users. The data was analysed through spss v.25.

**Results:** Out of 250 random questionnaire administered, 225 were retrieved, a response rate of male (67.1%) and female (32.9%) of the total population. The Respondents age ranges from 18 to 24 years. High proportion of students (66.2%) noticed numbness or tingling or pain after computer usage. A high proportion of the respondents reported MSD on some part, with wrist pain (24%) specifically the most common condition. This was followed by back pain (19.6%), more than one region (18.7%), Hand (17.8%), shoulder (10.7%) and some people also reported leg pain (9.3%). This was reported that only (42.2%) students know the importance of inclination whereas (33.8%) always inclined their body at 120 degrees.

**Conclusion:** It was concluded from the study that majority of medical sample population suffer from chronic musculoskeletal pain while using computer with different armrest position not adjustable to their body position.

**Keywords:** Medical Students; District Peshawar; Musculoskeletal Disorder; Descriptive

### Introduction

The goals of a medical school are to produce competent, professional doctors and promote health care of society. But during the period of medical training, students are exposed to stress, study problems, long training hours in hospital wards and clinics [1].

Musculoskeletal disorders are considered to be work related when the environment and performance of work contribute significantly to the condition, the condition is made worse or persists longer due to work conditions, or both (Bernard 1997). General examples of work conditions that may lead to MSDs include: routine lifting of heavy objects, daily exposure to whole body vibration, routine overhead work, work with the neck in a constantly flexed position, or performing repetitive forceful tasks (Bernard 1997).

In addition to the increasing use of computers in teaching and learning, these events are considered modifiable musculoskeletal pain (MSP) risk factors that may increase the prevalence of MSP among medical students. MSP is a major cause of chronic pain, injury, illness, reduced educational attainment that may affect the quality of productivity, and absenteeism from university lessons which will affect their future career.

In our digital society, the use of computer has increased rapidly. In 2016, the American Community Survey (ACS) found that 89 percent of households had a computer, making it a common feature of everyday life. United State is one of the top fifteen countries in terms of global computer use. Computer users vary in age, ranging from students to professional workers. Coincident with growing computer use, concerns of musculoskeletal problems associated with intensive use of computer have also increased [2].

Some researchers investigated musculoskeletal concerns and associated risk factors among South African students with a specific focus on postural and musculoskeletal concerns associated with laptop usage. Hough R, Nel M. Time and space dimensions of computer laptop use amongst third year students of the University of the Free State [3].

Musculoskeletal disorders (MSDs) are extremely common and affect people of all ages, gender and socio-demographic background in society [1].

While burden of major musculoskeletal long-term pain, disability [4], productivity loss and reduced quality of life have emerged as a public health problem among medical students, with the prevalence rate varying between 32.9% and 89.3% [5,6].

To amplify the efficacy of computer usage both physical and psychosocial factors have to be calculated. Symptoms like pain, tingling and numbness etc. in various body parts like wrists, shoulders, back and legs mostly caused due to improper seating position, improper posture, no short breaks during computer use. Proper height of the seat, working posture, proper use of armrest, backrest, straight alignment of the wrist and the elbow and positions on keyboard can prevent various health hazards.

In the absence of education about different body posture and their effect on daily life, these findings can form a core base for further research and bring an occupational comfort for medical students using computers. This review examined prevalence of musculoskeletal disorder among medical students and their risk factors were analyzed.

According to WHO Approximately 1.71 billion people have musculoskeletal conditions. Low back pain causes the highest burden of musculoskeletal disorders with a prevalence of 568 million people. This disorder is the main cause of disability, with low back pain being the single major reason of disability in 160 countries. This condition significantly limit mobility and dexterity, lead to early retirement from work, lower levels of health and reduced ability to the welfare of community [7].

### Aim of the Study

The aims of medical college are to educate and promote health care to the society but during the period of learning, medical students exposed to different health problem like musculoskeletal disorder by using computer usage for long time.

### Objective of the Study:

1. To assess the prevalence of musculoskeletal pain of medical students.
2. To assess the posture and effects of posture of medical student during computer usage.

### Methodology

Descriptive study of survey type was conducted in private medical college in district Peshawar during the month of January to March 2022. Informed consent was taken from the respondents. The sample size was 255 with convenient sampling techniques. The confidence interval was 95% and 5% precise of error. The questionnaire consists of dichotomous responses with mix multiple choice options. The questionnaire was basically based on computer usage develops a problem of musculoskeletal pain with uncomfortable posture. The questionnaire was adopted from the guidelines of the Occupational Health and Safety Act of the Ministry of Labour, Ontario, Canada and "Easy Ergonomics for Desktop Computer Users" (prepared for publication by the Cal/OSHA Consultation Service, Research and Education Unit, Division of Occupational Safety and Health, California Department of Industrial Relations) to assess workstation ergonomics, its knowledge and practices by identified users [7] the data was analyses through spss v.25.

### Results

#### Response rate and demographic characteristics of the respondents

Out of 250 random questionnaire administered, 225 were retrieved, a response rate of male (67.1%) and female (32.9%) of the total population. The Respondents age ranges from 18 to 24 years.

A large number of respondent have been using computer for more than 10 years n = 122 (54.2%), 5 years n = 62 (27.6%) and 6 - 9 years n = 41 (18.2%). while most of them using it in a day for 4-5 hours i.e. n = 155 (68.9%), 6 - 7 hours n = 45 (20.0%), 8 hours or more n = 25 (11.1%). The students who are using laptop n = 144 (64.0%) and n = 81 (36.0%), using desktop computer. chair has an armrest yes n = 126 (56.1%) no n = 99 (44.0%). comfortable armrest Yes n = 129 (57.3%) No n = 96 (42.7%). While armrest is adjustable Yes n = 106 (47.1%) no n = 119 (52.9). adjustment armrest to prevent ailment yes n = 92 (40.9%) no n = 133 (59.1%). Wrist straight on keyboard Yes n = 110 (48.9%) No n = 115 (51.1%). Elbow in line with wrist Yes n = 120 (53.3%) No n = 105 (46.7%). Backrest is inclined at 120 Yes n = 98 (43.6%) No n = 127 (56.4%). Knowing the importance of inclination of backrest at 120 Yes n = 95 (42.2%) No n = 130 (57.8%). Their backrest at 120 for health and safety Yes n = 76 (33.8%) No n = 149 (66.2%). Numbness or tingling or pain during computer usage Yes n = 149 (66.2%) No n = 74 (32.9%). For after how many hours these symptoms appear after usage of computer No n = 77 (34.2%) 1 - 3 hours n = 116 (51.6%) 3 - 5 hours n = 32 (14.2%). organ mostly affected Hand n = 40 (17.8%), wrist n = 54 (24.0%), shoulder n = 24 (10.7%), back n = 44 (19.6%), leg n = 21 (9.3%) and more than one region n = 42 (18.7%). Used medicine for this Yes n = 54 (24.0%) No n = 171 (76.0%). Relieve symptoms Yes n = 37 (16.4%) No n = 188 (83.6%). Exercise for it Yes n = 79 (35.1%) No n = 146 (64.9%).

#### Prevalence of MSD due to abnormal posture

High proportion of students (66.2%) noticed numbness or tingling or pain after computer usage. A high proportion of the respondents reported MSD on some part, with wrist pain (24%) specifically the most common condition. This was followed by back pain (19.6%),

more than one region (18.7%), hand (17.8%), shoulder (10.7%) and some people also reported leg pain (9.3%). This was reported only (42.2%) students know the importance of inclination whereas (33.8%) always inclined their body at 120 degree.

### Discussion

The current study sample consists of two private medical colleges were taken as the setting area in Peshawar. The current study assessed postural problems among medical students in and their associated factors. Sample size was 225. Almost (67.1%) of the students were males and most of the students were 18 - 20 years (48%).

Some of the major finding of our research was that 54.2% of the students are using computer for more than 10 year while most of them using it in a day for 4 - 5 hours i.e. n = 155 (68.9%), 6 - 7 hours n = 45 (20.0%), 8 hours or more n = 25 (11.1%). The same result was found in the study conducted in Karachi [8]. It was found that more than half of the participants (54%) were using computer for over 10 years; 55% were using it for more than 4 to 5 hours a day, 24% for 6 - 7 hours and 21% for 8 hours.

According to finding of current result most of the participants have problem in different region hand n = 40 (17.8%), wrist n = 54 (24.0%), shoulder n = 24 (10.7%), back n = 44 (19.6%), leg n = 21 (9.3%) and more than one region n = 42 (18.7%). Among medical students of Kasr-Alainy Hospital participant reported back pain (78%), upper back pain (64%), hip/thighs (59%), neck pain (52%), wrist and hand (32%), ankle and feet (7%) and shoulder (10%) [9].

According to the result 24% of the participant uses medicine for the pain while the pain gets relives only in 16.4% of participant. The same result was noted in the study among young dentist in Indonesia [10] where only 17% of the participant pain get relives with medication. The Exercise successfully relieves pain in 35.1% of the respondents whereas same result was noted in Indonesian dentist which is 35.3%.

It was reported that the majority of the students (66.2%) suffered from musculoskeletal pain in at least one of the region. A study among Malaysian medical students depicted that the prevalence of musculoskeletal pain was 45.7% in last one week and 65.1% in the last one year [11].

### Limitation of the Study

There may be some possible limitation in our study. The sample size was simple with convenient sampling techniques were utilized. One of another limitation is that the questionnaire dependent on participants' self-reports, which are susceptible to below- or over-reporting remaining to social desirability. Another drawback is that the study was conducted using a cross-sectional approach, which has a limited range.

### Conclusion

It was concluded from the study that majority of medical sample population suffer from chronic musculoskeletal pain while using computer with different armrest position not adjustable to their body position.

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