

# Prevalence of Upper Extremity Musculoskeletal Disorders in Health Professionals in Lahore

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## Highlights:

- Prevalence of musculoskeletal disorders among 236 health professionals in Lahore was evaluated.
- through nordic musculoskeletal questionnaire.
- Upper extremity musculoskeletal pain was found to be common.

## Abstract:

Musculoskeletal disorders are dysfunctions influencing muscles, bones, nerves, ligaments, tendons, joints and peripheral nerves leading to pain or un-easiness.

## Objective:

The main objective of the study was to find out the prevalence of musculoskeletal problems among health professionals in Lahore.

## Methodology:

In this study, 236 health related professionals participated including 110 males and 126 females. Data were collected by taking written information consent form through Nordic musculoskeletal questionnaire. Data were analyzed through SPSS version 21.0.

## Results:

Out of 236 subjects, prevalence of pain in neck was 157 (66.5%), shoulder 119 (50.4%), upper back 106 (44.9%), elbow 30 (12.7%), hand and wrist 58 (24.6%). Result showed that 127 (53.8%) participant had sitting posture, 2 (8%) had squatting posture and 1 (4%) had kneeling posture and those participants having standing posture were 106 (44.9%).

## Conclusions:

This study concluded that upper extremity musculoskeletal pain is common in health professionals depending upon their working posture.

## Keywords:

Musculoskeletal disorders, upper extremity, health professionals.

## Introduction:

Musculoskeletal disorders (MSDs) are

provocative and retroactive conditions affecting different body parts. MSD are conditions that are slowly produced from work-related activity. Three key risk factors associated with these disorders are analyzed as repetitive movements, awkward positions and high strength levels.<sup>1</sup> MSDs include a wide range of progressive and regressive problems especially muscular pain, tendonitis and occlusion syndrome. This kind of profession can affect the occurrence of these diseases, but the increased incidence has been found in various types of health care workers such as nurses, nursing assistants, X-ray specialists, patient care staff and doctors.<sup>2</sup> The work activities including repetition, contact stress, critical positions, lifting, transferring patients and sustained attitude have been associated with increased risk of MSD. The majority of hospital orders in tertiary care facilities provide a wide range of tasks related to repeated manual patient care activities.<sup>3</sup> According to the Bureau of Labor Statistics, work-related structural musculoskeletal disorders affect nearly one million workers in the United States alone each year. This can affect the ability of workers to perform the necessary professional activities, which may negatively affect productivity. It is estimated that economic losses from these services in Korea is about US\$ 1 billion. Studies have revealed that health care professionals are sensitive to these disorders during routine work. In the health care sector, a wide range of workers are affected by them, but it seems to be a mandatory problem for medical practitioners.<sup>4</sup> It has been shown that different groups of individual, physical and psychosocial factors are predisposed to MSDs.<sup>5</sup> The prevalence ranges from 43% to 78%. Most of the previous studies have achieved the prevalence of MSDs through one category of hospital staff (nurses, nursing assistants, operating theater nurses, physical therapists, midwives, students, secretaries, workers) or through one type of injury (neck pain, shoulder pain). It was

therefore, decided to conduct an investigation among all categories of hospital personnel and on all related disorders.<sup>6</sup>

The purpose of the study was to find out the prevalence of MSDs in upper extremity in health professionals making them aware in future of the risk factors and to evaluate how much these disorders are affecting their activities of daily living, social life and professional carrier. This evaluation helps to identify underlying causes or adopt life style changes so that opportunities for disorders and health professionals can be better adapted to stressful occupation in favor of themselves and patients in general.

### Methodology:

A cross sectional study design was designed. Data were collected through convenient sampling from 236 health professionals. Data were collected in 4 months. Both male and female health professionals between the ages of 20 to 62 years and the data was collected from different hospitals of Lahore were included, whereas non responsive health professionals and with body trauma of upper extremity were excluded. In demographic data age and gender was documented. Among 236 health professionals participated in the survey including 110 males and 126 females. Data were collected through Nordic scale questionnaire as it was the convenient and appropriate way for data collection. Data were analyzed through SPSS version 21.0 and graphs were formulated afterwards which made it easy to find out the exact number of health professionals suffering from musculoskeletal disorders in upper extremity.

### Results:

Table 1 shows the frequency of male and females that participated in study. A total of 236 subjects participated with 110 (46.6%) males and 126 (53.3%) females in this study.

Gender	Frequency	Percentage
Male	110	46.6%
Female	126	53.4%
Total	236	100%

**Table 1:** Frequency distribution of gender

Table 2 shows the frequency of their posture during work, 127 (53.8%) had sitting posture, 2 (8%) were having Squatting posture, 1 (4%) had kneeling and 106 (44.9%) had standing posture. (Table 2).

Ergonomic posture	Frequency	Percentage
Sitting	127	53.8%
Squatting	2	8%
Kneeling	1	4%
Standing	106	44.9%
Total	236	100%

**Table 2:** Descriptive statistics of ergonomic posture

Table 3 shows the frequencies of subjects who had no neck trouble in past 12 months was 79 (33.5%), those who had neck trouble during work was 157 (66.5%). The frequencies of subjects who had no shoulder trouble in past 12 months was 117 (49.6%), those who had shoulder trouble during work was 119 (50.4%), without elbow trouble during work was 206 (87.3%), those who had elbow trouble was 30 (12.7%). The frequencies of participants who had no wrist/hand trouble in past 12 months was 178 (75.4%), those who had wrist/ hand trouble was 58 (24.6%). The frequencies of subjects who had no upper back trouble in past 12 months was 130 (55.1%), and those who had trouble in upper back was 106 (44.9%) (Table 3).

Region		Frequency	Percentage
Neck	No	79	33.5%
	Yes	157	66.5%
	Total	236	100 %
Shoulder	No	117	49.6%
	Yes	119	50.4%
	Total	236	100%
Elbow	No	206	87.3%
	Yes	30	12.7%
	Total	236	100%
Upper back	No	130	55.1%
	Yes	106	44.9%
	Total	236	100%
Wrist/ hand	No	178	75.4%
	Yes	58	24.6%
	Total	236	100%

**Table 3:** Frequency of Musculoskeletal Pain in Different Regions

## Discussion:

In New South Wales and Australian dentists, the study was conducted which showed that 64% had different type of pain in the last 12 months. Southern Thailand study showed that 78% dentist had musculoskeletal pain in the last 12 months and 78% female staff. A study of dental hygienists in the United States reported that approximately 93% experienced musculoskeletal sign in the previous 12 months. In a study of Swedish female labor, the dentists who had wrist and hand pain since last 12 months was 64% which was compared with 54% of dentists and 27% of dental assistants. Wrist and hand was the most extreme sign of pain (69.5%) in an Musculoskeletal disorder study of dentists in the United States.<sup>7</sup> According to our study, the frequencies of participants who had neck trouble during work were 157(66.5%). More than 50% of the nurses (55%) reported that they had multiple disorders in their body. Of the 347 nurses selected, 317 filled the questionnaires (91%). The total age and time period of work as a nurse was 33.7 (7.7%) years and 10 (7.6%) years respectively.<sup>8</sup> According to our study, a total number of 236 subjects participated in filling questionnaires including 110 (46.6%) males and 126 (53.3%) females. A whole medical assessment of the cases show that upper extremity (38.7%) was the highest main region for pain. The severity of pain to muscular skeletal disorder percentage was calculated as medium and high in 42.9 cases and as low in 23.2 cases. 67.9% of the study showed anxiety and 28.6% show depression. According to our study, the frequencies of participants of how much work they perform per day 1-4 hours was 9 (3.8%), 5-8 hours per day was 69 (29.2%), 9-12 hours per day was 134 (56.8%), 12 and above was 24 (10.2%). 95% of nurses had symptoms in last 12 months. The frequency of dentists who suffered from pain in neck region, shoulder, upper back region, wrist and hand, arms / forearms were 48.8%, 27.3%, 14.7%, 9.3%, 6% respectively. The 18% dentists did not claimed any pain in the past 6 months. Work-related stress was the most frequent problem related to mental health represented by 57.6%, fatigue (38%), waking late night (8%), and depression before going to work (7.3%), the level of anxiety (5.3%) and the level of nervousness (3.3%).<sup>10</sup> According to our study the

frequencies of participants who suffered from neck, shoulder, elbow, upper back and wrist/hand were 66.5%, 50.4%, 12.7%, 44.9% and 24.6%.

## Conclusions:

This study concluded that musculoskeletal disorder (MSD) is a common disorder among health professionals. Upper extremity musculoskeletal disorders prevalence in health professionals is relatively high depending upon their working posture.

## Recommendations:

Most of the previous literature was descriptive cross-sectional surveys. Further studies were recommended to carry out on a large sample size to identify etiology and risk factors of musculoskeletal disorder

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