

Prevalence of Work Related Elbow Pain among Allied Healthcare Providers: A Cross-Sectional Study

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Abstract: Musculoskeletal pain is very common complaint in the workplace and about billions of dollars yearly are spending on work related musculoskeletal pain. Elbow pain is one of the common complaints in allied health providers today. Rare researches have been studied on musculoskeletal pain among allied health providers in Pakistan, but not specifically on elbow pain. The objective of study is to determine lifetime prevalence of work related elbow pain among allied health providers of Lahore. Cross-sectional study was conducted among allied health providers by using convenient sampling technique. Nordic Musculoskeletal Questionnaire (NMQ) of pain was used to assess the prevalence rate of work related elbow pain among allied health providers. The data was collected through a survey study of 105 participants from different healthcare setups in Lahore and was analyzed through statistical package for the social sciences (SPSS) version 21. There were total 105 participants who include 37 (35.2%) physiotherapist, 38 (36.2%) nurses and, 30 (28.6%) technologists. The prevalence of work related elbow pain among allied health providers was reported in 9 (8.6%) participants. Elbow pain was reported in physiotherapists 13.5%, nurses 2.6% and technologists 10%. Physiotherapists and technologists have much prevalence of elbow pain than nurses because of nature of their job in poor and uncomfortable posture.

Keywords: Elbow pain, lifetime prevalence, allied health, physical therapists, technologists, nurses, work-related musculoskeletal pain.

INTRODUCTION

Musculoskeletal pain is usually recognized as commonest complaints in the workplace and about billions of dollars are spending yearly on work-related musculoskeletal concerns around the globe [1]. Musculoskeletal pain is an increasing problem in our community with a great influence in the workplace [2]. After common cold, musculoskeletal pain is the second most reason for short duration work-related ill health [3]. Work-related musculoskeletal pain is very common; it is the main cause of illness in working community and usually increases with age [4, 5]. Allied health providers, includes physical therapists, technologists and nurses. engage in more physical work and are prone of developing work related musculoskeletal pain [6]. Any ache or discomfort in the elbow joint structures such as tendons, bursa, bones or nerves causes elbow pain [7]. Risk factors include working in the same posture [8], working in the uncomfortable posture [9], twisting or bending [10], lifting [11], transfer the patients [10], performing repetitive tasks [8, 11], high

number of patients and lack of rest breaks, being a fresher, and having lesser years of experience [6]. Elbow is a composite 'hinge' joint made of three discrete articulations; the ulnohumeral, radiohumeral, and radioulnar articulations because it can flex, extend, supinate and pronate the forearm [12, 13]. Structures include biceps brachii muscle and tendon, brachialis muscle and tendon, brachial artery, radial nerve, and median nerve, trochlea-ulna and radiocapitellar joints, triceps brachii, anconeus muscles, ulnar nerve, tendon of common extensors, radial collateral ligament, radial nerve, tendon of common flexors, and medial collateral ligament [14]. Site and behavior of symptoms determine the location of the injury in one out of four anatomical compartments: posterior, anterior, lateral and medial compartments [15]. Investigations of the elbow can be obtained by using plain radiography, magnetic resonance imaging or musculoskeletal ultrasonography [15]. There is a vast literature available on musculoskeletal pain. In 2010, Alreza Rahimi *et al.* investigated work-related musculoskeletal disorders

among medical lab scientists of Isfahan. The prevalence of work-related elbow complaint was 7.8% [16]. In 2015, Islam *et al.* conducted a research to find musculoskeletal symptoms of pain among physiotherapist and occupational therapist in Bangladesh. Elbow pain was least reported by physiotherapists with 23% [17]. In 2009, Hill *et al.* studied prevalence of musculoskeletal complaints with anthropometric measurements and work stress among female sonographers. The elbow complaints reported was 27% [18]. In 2016, Vieira *et al.* studied systemic review to find frequency, natures, and risks of work-related musculoskeletal disorders in physiotherapists. They concluded the 15% prevalence of elbow pain [19]. In 2017, Anap DB *et al.* studied work-related musculoskeletal injuries among nurses in India and revealed elbow pain was 1.88% [20]. In 2012, Emmanuel *et al.* conducted a study among health and allied providers of Nigeria. They found elbow pain prevalence of 11% [21]. The study objective is to find the lifetime prevalence of work related elbow pain among allied health providers of Lahore.

METHODS

Descriptive cross-sectional survey was studied among allied health providers by using convenient sampling technique. Nordic Musculoskeletal Questionnaire of pain was used to collect the data from different health care setups (three governmental hospitals and three private hospitals) of Lahore, through a distributed 170 questionnaires. There were 133

participants who had filled the questionnaire and 28 participants did not lie in inclusion criteria so they were excluded. The total sample size was 105 and was calculated using the online Epi Tools software (epitool.ausvet.com) [22]. The candidates who filled the survey were all allied health providers who were currently working. Inclusion criteria included allied healthcare providers (both males and females) having no congenital musculoskeletal abnormalities who were currently working with minimum experience of one (1) year and age greater than 22 years. Exclusion criteria included allied health students and internees, allied health providers with congenital musculoskeletal abnormalities, and unemployed allied health providers. Total time duration to collect data and complete work was around 6 months. Data was analyzed through statistical package for the social sciences (SPSS) version 21. Descriptive (mean, standard deviation, and minimum, maximum) statistics were used to analyze variables i.e. age, weight, height, and working hours a week. Demographics (age, gender, occupation) and pain were analyzed using frequencies and percentage. Results were computed using scoring instructions given at the end of questionnaire.

Results

The data collected through a distributed 170 questionnaires. There were 133 participants who had filled the questionnaire and 28 participants did not lie in inclusion criteria so they were excluded. Total sample size was 105.

Table 1: Occupation frequency and percentage

Occupation	Frequency	Percent
Physiotherapist	37	35.2
Nurse	38	36.2
Technologist	30	28.6
Total	105	100.0

There were total 105 participants which includes 37 (35.2%) physiotherapist, 38 (36.2%) nurses and, 30 (28.6%) technologists.

Table 2: Elbow trouble in a total sample size

Have you ever had elbow trouble (ache, pain or discomfort)?		
	Frequency	Percent
No	96	91.4
Yes	9	8.6
Total	105	100.0

Prevalence of work related elbow pain among allied health providers reported was 9 (8.6%).

Table 3: Occupation wise elbow trouble

Have you ever had elbow trouble (ache, pain or discomfort)?			
Occupation		Frequency	Percent
Physiotherapist	No	32	86.5
	Yes	5	13.5
	Total	37	100.0
Nurse	No	37	97.4
	Yes	1	2.6
	Total	38	100.0
Technologist	No	27	90.0
	Yes	3	10.0
	Total	30	100.0

Work related elbow pain was revealed in physical therapists 5 (13.5%), nurses 1 (2.6%) and technologists 3 (10%).

DISCUSSION

Nordic Musculoskeletal Questionnaire of pain analysis was used to determine the prevalence of work related elbow pain among allied health providers. This study concluded that work-related elbow pain was (8.6%) prevalent among allied health providers. This study found that there was lifetime prevalence (8.6%) of elbow trouble among allied health providers, in contrast to findings found by Yasobantand Rajkumar in 2014. They found elbow pain prevalence of 5% among health and allied providers [23]. But, similar findings to our study found in a research conducted by Mbada *et al* in 2012 [21]. In 2016, Vieira *et al* found, in a research conducted in USA, prevalence of work related elbow pain reported in 15% of participants. Similar investigations were found in our study [19]. In 2009, Hill *et al* conducted a study in USA that out of n=26, prevalence rate of work related elbow trouble is 27% in technologists [18]. This study reported less prevalence i.e. of 10%. Similar findings (7.8%) related to our study were found in a study conducted by Alireza Rahimi *et al* in 2010 [16]. This study found lifetime prevalence of 2.5% in nurses. Similar investigation (1.88%) was found in a study on work-related musculoskeletal injuries among nurses in India conducted by Anap DB *et al* [20].

CONCLUSION

This study concluded that work related elbow pain was less prevalent among allied health providers of different settings of Lahore. Physical therapists and technologists had much prevalence of elbow pain than nurses because of nature of their job.

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