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ORIGINAL ARTICLE

Association of Work-Related Risk Factors and Lateral Epicondylitis among Chefs in Lahore

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ABSTRACT

Background: The most common type of myotendinosis is lateral epicondylitis, which causes significant pain and loss of function in the affected limb. The peculiarities of muscular biomechanics and equipment are significant in preventing the disorders. It was a painful condition that injured the tendinous tissue of the lateral epicondyle of the humerus, prompting amputation of the limb.

Methods: A cross sectional study was conducted in Lahore. The data was collected from Chef, working in different restaurants. The questionnaire used in this study was Patient-Rated Tennis Elbow Evaluation (PRTEE). Consent form and questionnaire were given to the participants. Independent T-test was applied. The data was evaluated by using the SPSS version 25.

Results: Results analyzed by SPSS. Sample size of population was 136. Statistics for gender, maximum were males (78.7%) and Females (21.3%), while 64.7% were Right-Handed 35.3% were Left-Hand. Minimum age was 25 years and Maximum age was 50 years.

Conclusion: Hence, it was concluded that chefs had pain in their left or right hand (more on dominant right hand) on lateral side due to different factors. It was also concluded that there is association between male and female during work related activities.

Keywords: Lateral Epicondylitis, Myotendinosis, Patient-Rated Tennis Elbow Evaluation (PRTEE)

INTRODUCTION

Work related upper extremity disorders are a significant reason for grumblings and inability in working populations. Elbow pain and related problems, for the most part lateral epicondylitis was known to be quite possibly the most well-known issues of the arm in everybody, as lateral epicondylitis was a significant arm problem with an expected commonness of 0.7 to 4.0% in everybody.[1] An association between gender and epicondylitis was still controversial. Some studies have found that women are at a higher risk than men, but not all. One study found a link between obesity and upper extremity tendinitis, but the effect of other individual or environmental factors, as well as systemic illnesses, remained mostly unknown.[18]

Overuse injury of the lateral elbow known as lateral epicondylitis (LE). Lateral epicondylitis was caused by tedious movement prompting miniature injury of the wrist extensor muscles that start along the elbow's lateral viewpoint. In spite of the fact that Lateral epicondylitis was normally alluded to as "tennis elbow" numerous cases were seen in non-competitors.[2] Increased age or BMI, history of rotator cuff illness, De Quervain's disease, carpal tunnel syndrome (CTS), and oral corticosteroid use, prior smoking history, and limited social support are also demographic risk factors for LE. Increased age or BMI, history of rotator cuff illness, De Quervain's disease, carpal tunnel syndrome, and oral corticosteroid use, prior smoking history, and limited social support are also demographic risk factors for LE.[15]

Work associated upper extremity disorders are a typical issue in occupied population in western nations. The CANS (Musculoskeletal complains of Arm, Neck and Shoulder) model recognizes the accompanying explicit tendinopathies and neuropathies at the elbow. Shiri et al. have reasoned that work-related physical factor like repetitive movements of hands or wrists, taking care of burdens heavier than 5 kg, exercises challenging high hand hold powers and the utilization of energetic instruments were risk factors for lateral epicondylitis.[7] It has been suggested that other risk factors such as age, poor social support, smoking and obesity exist for epicondylitis.[25]

Epicondylitis is quite possibly the most well-known musculoskeletal disorders of the upper extremity. While a few cross-sectional examinations have shown relationship among epicondylitis and work exercises, a precise review of work-related elbow disorders discovered just a single longitudinal cohort study of epicondylitis.[3]. Several researches have looked into the link between physical strain at work and the occurrence of lateral epicondylitis. Longer durations of employment in strenuous jobs, powerful effort errands, the mixture of powerful and monotonous actions of the upper extremity have all been linked to lateral epicondylitis.[19]

Tennis elbow is a painful condition that affects the dorsal lower arm's extensor tendons, which connect at the lateral epicondyle of the humerus. In nearly all situations, the impacted tendon is the extensor carpi radialis brevis muscle. With an annual incidence of 10 to 30 cases per 1000 persons and a peak prevalence between the ages of 35 and 55, it is a prevalent cause of elbow pain. The diagnosis of lateral epicondylitis is frequently made on the basis of clinical findings.. [5]

Lateral epicondylitis was formerly thought to be a kind of tendinitis, characterized by tendon inflammation. As a result, the illness is now classified as a tendinosis, which is a degenerative process. When stress is applied to a tendon, it usually results in increased cross-linking and collagen deposition.[6]

Lateral epicondylitis is pain in the lateral epicondyle caused by overuse of the forearm's extensor muscles. The disorder is linked to degenerative alterations and persistent tears in the root of the extensor carpi radialis brevis. This study's objective was to study at the prevalence of lateral epicondylitis and its risk variables in working residents. This study's objective was to study at the prevalence of lateral epicondylitis and its risk variables in working residents.[8]

In an essential upkeep situation, lateral epicondylitis has been revealed to be the second most frequently examined musculoskeletal condition in the neck and upper extremities. At the lateral humeral epicondyle, clinical examination reveals both acute and circuitous soreness [9]

Vibration-exposed laborers have an increased risk of musculoskeletal problems when compared to controls, according to research from various countries. The goal was to show the clinical evaluation of musculoskeletal findings, treatment, rehabilitation, and return to work in specialists who had been exposed to hand arm vibration.[10]

Everyone experiences pain in the neck and upper limbs. According to a large local area-based survey conducted across the United Kingdom, 20% of people reject neck irritation in the preceding 7 days, 17% oppose shoulder pain, and 13% oppose arm pain in the previous year. As people get older, their symptoms become more normal, and they often resist clinical classification.[11] However, in several areas, knowledge is still limited. Carpal tunnel syndrome is the conclusion that has received the most attention.

Epicondylitis has been the subject of fewer studies. For more unusual conditions, such as De Quatrain's illness, work-related risk variables have been identified barely at all. [20]
The extensor carpi radialis brevis and extensor carpi ulnaris create a strong, discrete, conjoined ligament that connects the brachioradialis and extensor carpi radialis longus at the anterior aspect of the lateral epicondyle and lateral supracondylar border. The pathophysiology of epicondylitis may be influenced by repeated wear and abrasion caused by this contact.[12]

Epicondylitis is a common diagnosis in doctors' offices and work-related medical care facilities. When a person is forced to do intensive work, the resulting inability could be disastrous.[13] Tennis elbow is typically managed conservatively with nonsteroidal anti-inflammatory drugs, physical therapy that incorporates ultrasound and phototherapy, stretches and strength training, and local steroid injections.[14]

Many revisions have established relationships between physically dynamic professional activities, particularly high force combined with high recurrence, difficult position and high physical force combined with precise elbow actions, and the incidence of lateral epicondylitis has been visibly recognized. Some inner work features have also been linked to lateral epicondylitis.[17]

The pathophysiology of LE is similarly unknown, with numerous competing pathophysiological findings being proposed. Hyperlaxity, posterolateral rotatory instability, myofascial discomfort, trigger points, and granulation tissue in the extensor carpi radialis longus are among them.[24]

Epicondylitis had a clinical purpose and was based on indexes and findings from actual assessments. Epicondylitis patients with a high level of physical strain at work, non-neutral wrist postures during job activities, and epicondylitis on the dominant elbow have a worse prognosis. [4]

Lower grip and upper-extremity strength, as well as pain on the outside of the elbow, were all symptoms of lateral epicondylitis. It was musculoskeletal disorder caused by recurring microtrauma from overuse of the upper extremity, resulting in discomfort and tenderness in the elbow area.[16]

The study's aim was to access the risk factor of epicondylitis among chefs because it is considered that they have a persistent workload on their hands. The study was designed to determine the outcome of repeated measures of risk factors.

METHODOLOGY

A cross sectional study was conducted among the working population. The study was used a sample size of 135 working population. A pretested structured valid and reliable questionnaire was used for the assessment of lateral epicondylitis. The questionnaire contained questions related to background information of the respondents, their pain in affected arm, functional disability and usual activities. All the participants were included in the study; male and female worked from 8-12 hours.

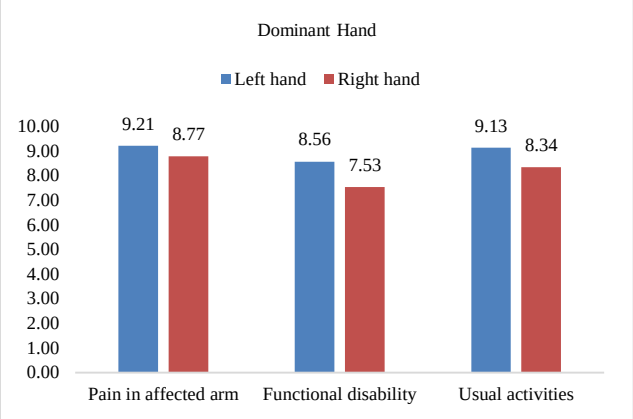
Table 1: Comparison of Left-handed and right-handed chef on Work-Related Risk Factors for Lateral Epicondylitis

	Right hand M±SD	Left hand M±SD	Independent Sample t-test		
			t	df	p
Pain in Affected Arm	9.21±6.49	8.77±5.94	0.396	134	0.693
Functional disability	8.56±9.86	7.53±8.25	0.648	134	0.518
Usual activities	9.13±7.45	8.34±5.87	0.676	134	0.500

Explanation: It shows that right hand is more dominant than left hand. But there is no statically difference in the mean value.

Explanation: it shows that females suffered more pain than males while doing different activities. It has been also seen that there is significant difference in the mean values.

Figure 1: Comparison of Left-handed and right-handed chef on Work-Related Risk Factors for Lateral Epicondylitis



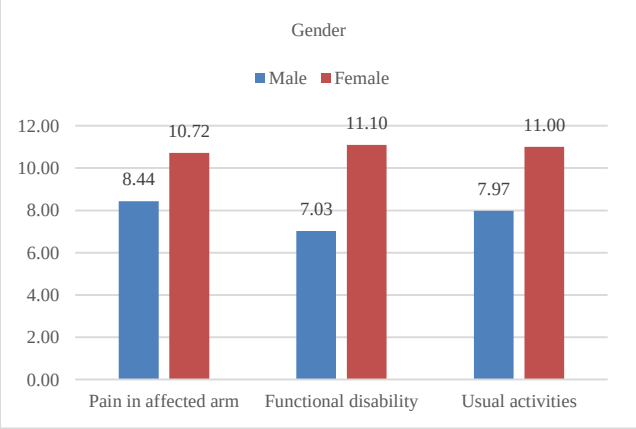
Description: It shows that right hand is more dominant than left hand. But there is no statically difference in the mean value.

Table 2: Comparison of Gender on Work-Related Risk Factors for Lateral Epicondylitis

	Male M±SD	Female M±SD	Independent Sample t-test		
			t	df	p
Pain in Affected Arm	8.44±6.04	10.72±6.18	-1.80	134	0.074
Functional disability	7.03±8.25	11.10±10.23	-2.24	134	0.027*
Usual activities	7.97±5.98	11.00±7.59	-2.28	134	0.024*

*p<.05

Figure 2: Comparison of Gender on Work-Related Risk Factors for Lateral Epicondylitis



Description: It shows that females suffered more pain than males while doing different activities. It has been also seen that there is significant difference in the mean values.

DISCUSSION

In Current study the frequency/percentage of gender of participants, 107/136 (78.7%) are males and 29/136 (21.3%) are females. The dominant hand of participants, 48/136 (35.3%) are left hand and 88/136 (64.7%) are right hand. And 32/136(23.5) participants had no pain, 32/136(23.5) had Mild pain, 52/136(38.2) had Moderate pain and 20/136(14.7) had severe pain while at rest.

Previous study supported the idea that nursery school cooks were more likely to develop epicondylitis than other experts who performed less vigorous hand and arm jobs. Epicondylitis risk factors, comprising mechanical responsibility and psychosocial

factors, were considered to be multifactorial. Takeuchi et al. also found that 8.6% of chefs experienced chronic right arm pain in the month leading up to the study, compared to 3.5 percent of administrative laborers. According to Oze's research, between 13 percent to 20% of school lunch administrators experienced right arm soreness on a regular basis in the month leading up to the evaluation.[21]

In current study independent sample t-test was conducting to compare the pain ratio in Left and Right hand. Results shows that there was no statistically major difference (t= -1.80, p=0.074) in the mean value of Pain in affected arm. There is statistically significant difference (t= -2.24, p=0.027*) in the mean value of Functional Disability. There is statistically significant difference (t= -2.28, p=0.024*) in the mean value of usual Activities. The participants 40/136(29.4) had no pain, 35/136(25.7) had Mild pain, 37/136(27.2) had Moderate pain and 24/136(17.6) had severe pain while playing Recreational sports or activities.

In previous study epicondylitis was typical among cooks because of monotonous diligent work. The predominance of epicondylitis peaked at the age of 20-35 years while in the past review the prevalence topped at the 11 age of 35-54 years. A subjective report in the functioning population has assessed, 5.2% had LE. Prior investigations have shown that LE was multiple times more normal when contrasted with the average epicondylitis and is more normal in the predominant hand. about 51.7% of cooks were experiencing average epicondylitis.[22]

In Current study 16/136(11.8%) participants had no pain, 50/136(36.8%) had Mild pain, 59/136(43.4%) had Moderate pain and 11/136(8.1%) had severe pain while doing repetitive movement. While Carrying plastic bag 6/136(4.4) participants had no pain, 53/136(39.0) had Mild pain, 57/136(41.9) had Moderate pain and 20/136(14.7) had severe pain. The participants 32/136(23.5) had no pain, 7/136(5.1) had Mild pain, 66/136(48.5) had Moderate pain and 38/136(27.9) had severe pain while their pain was at its least.

Previous studies have shown a strong connection among occupation and epicondylitis. Lateral and medial epicondylitis were found to be strongly associated with repetitive elbow twisting for more than 60 minutes each day after adjusting for age, sexual orientation, and psychiatric disorder. With 5% of those with epicondylitis reporting infection absence as a result and the median-estimated time of illness absence being 29 days out of the most recent year, this inquiry also enables an evaluation of the impact of epicondylitis on the workplace.[23]

In current study independent sample t-test was conducting to compare the pain ratio in Left and Right hand. Results shows that no statistically significant difference was found. (t=0.396, p=0.693) in the mean value of Pain in affected arm. There is no statistically significant difference (t=0.648, p=0.518) in the mean value of Functional Disability. There is no statistically significant difference (t=0.676, p=0.500) in the mean value of usual Activities. And while doing everyday work 11/136(8.1) participants had no pain, 48/136(35.3) had Mild pain, 60/136(44.1) had Moderate pain and 17/136(12.5) had severe pain while doing everyday work.

In previous study allow an approximation of the frequency of lateral epicondylitis in a huge resident of labors and features the part of physical professional hazard factors for the growth of lateral epicondylitis, predominantly for high physical force joint with elbow and monotonous activities. The various studies highlight that constant self-evaluation of huge contact is firmly connected with the occurrence of lateral epicondylitis.[1]

RESULTS

Results analyzed by SPSS. Sample size of population was 136. Statistics for gender, maximum were males (78.7%) and Females (21.3%), while 64.7% were Right-Handed 35.3% were Left-Hand. Minimum age was 25 years and Maximum age was 50 years. Chefs had moderate pain. Females are at high risk for lateral epicondylitis.

CONCLUSION

It was Concluded that chefs had pain in their both left or right hand, but more dominantly on right hand on lateral side due to different factors. Factors includes repetitive movements, recreational activities and household activities. They had moderate pain on lateral side of elbow. It was also concluded that there is association between male and female during work related activities.

Recommendations: Studies should be carried out in different cities of Restaurants. The study should be conducted on a large sample size**.** We can conduct Randomized Control Trail

Limitations: Shortage of time and specific inclusion criteria lead to decrease availability of patients. Lockdown due to Covid 19**.** Understanding issues because of illiteracy and primitive education. Ethical complications. Convenient sampling technique was also a limitation for the study.

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