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FREQUENCY OF WORK RELATED NECK PAIN IN COMPUTER USERS

Running Title; Work Related Neck Pain in Computer Users

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ABSTRACT:

Background
Previously presented literature had demonstrated the importance of posture care knowledge and duration of work hours. In this study we are seeking to evaluate the frequency of neck pain in computer users in Lahore. I not only label a previously ignored issue but also seek to completely evaluate this issue to search ways to control the problems.

Objective
The objective of the study was to find the frequency of work related neck pain in computer users in Lahore

Materials and methods
Sixty four computer users from banks, offices, and universities participated in study. The study was cross sectional survey research. A questionnaire was distributed for data collection. In the study 66% participants were male and 34% were females.

Results
From the sample of 64 computer users 78% of people in Lahore who were using computer experienced neck pain. This is the result of our study.

Conclusion
A total 11 variables related to work related neck pain were studied. The three most significant variables were occupation, no. of hours of daily use of computer and knowledge of posture. Frequency of neck pain was 78% in computer users.

Keywords: Neck pain, computer users, office workers, posture

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Introduction

Neck pain, sometimes called cervicalgia, is pain in or around your spine beneath your head. Your neck is also known as your cervical spine. Neck pain is a common symptom of many different injuries and medical conditions.

In our community the most common pain is in the neck region. About two third of our community suffers from it. Neck pain can be due to pathological reasons or it can be neuromuscular or musculoskeletal causes such as spasm of the neck musculature and shoulder muscles resulting in impingement of nerves passing through them or nearby. Apart from nerves and muscles, stiffness or dislocation of joints in the cervical region can also cause neck pain (1).

Neck pain is experienced in the region between the head and shoulder. Mostly the nodding movements in neck region occurs at C1, C2, while the rotatory movements occurs at C4-C7 cervical vertebras. These cervical vertebras also provide support to the head. If the support being provided by the vertebras is disrupted, then it results in exaggerated or decreased movements which disturbs the normal bio mechanics and physiology of neck musculature and put stress on them, as a result of which the neck muscles undergoes guarding and then spasm, which results in pain (2).

The factors to be considered while computer usage to prevent neck pain are the level of computer table according to particular individual, chair ergonomics, body alignment and proper biomechanics. Increase height of computer table put stress on the shoulder musculature and paravertebral muscles, which results in pain in neck region. A major factor associated with neck pain in computer users is the hours of computer usage (3).

The prevalence of neck pain is very much high in some professions. Besides these traumatic injuries of cervical region, psychosocial disruption, low income and increase work load are leading cause of neck pain. Neck pain experienced in computer users and severity of pain depends on duration of computer usage, rest intervals in activity, posture of computer user and ergonomics. Prolong duration of computer usage add stress on neck musculature i.e. upper trapezius, paraspinals, cervical erector spinae muscle, due to sustained loading and pressure during typing and mouse usage (4).

A mixture of medical, ergonomic, individual and organizational and psychological factors decide, whether an individual will have computer related disorders in neck and upper limb or not. Individuals of low socio-economic status have an additional risk factors for this problem. Working in a healthy environment and in a healthy style is necessary to avoid work related disorders and also for the prosperity of organization (5).

Individuals who have to do high repetition of activity in an awkward posture for long time without breaks in a stressful environment with less appreciation are at the edge of getting neck pain in a relatively shorter period of time. Job stress and ergonomics stress combines to cause a number of disabilities and disorders in neck region, shoulder and upper extremity

Individuals having severe neck pain experience decrease range of motion at cervical region and impaired synergistic pattern of neck musculature especially in flexors and trapezius.In order to prevent neck pain it is necessary to guide our society about good posture and body biomechanics along with ergonomics (6).

Main factor in poor posture is weak and tighten neck, lower and upper back muscles. As individuals have different types of body, therefore posture varies from individual to individual. The main feature of poor posture is pot belly, protracted shoulders and forward head. Pot belly is the one in which tummy protrudes out due to weak abdominals and exaggerated lumber curve (7).

Impaired posture also affects the way of breathing. It is necessary to correct posture, which will not only relieve pressure from postural muscles but will also ease in our breathing. Poor posture when adapted in different sports, places the athletes in risk of serious injuries e.g. in weight lifting there it can injure the muscle or even can lead to fracture of the bones. Poor posture has link with emotions (8)

The most common types of mild to moderate neck pain usually respond within two or three weeks to self-care. Pain relievers and the use of heat might be all that's needed. Various treatment option are available (physical therapy, Surgery and medications) are available for neck pain. A physical therapist can teach correct posture, alignment and neck-strengthening exercises. Physical therapy might also involve the use of heat, ice and other measures to help ease pain (9).

Objective of study

The purpose of the study was to evaluate frequency of work related neck pain in computer users. Hypothesis

Null hypothesis (H_0)

There is no association between low back pain and occupation.

Alternate hypothesis (H_A)

There is significant association between low back pain and occupation.

Methods

Study Design

It was a cross –sectional survey research. Data was collected from two institutes of computer courses in Lahore. Duration of the study was 6 months. A permission letter signed by the head of department was used to take permission from respective hospitals. The sample size of the study was 64 that was determined using the Open epitool software for precise calculation.

Sample size

There is no exact statistics about population using computer in computer courses and in different job places. By estimated calculations they are approximately 1000.So that's why anticipated population proportion P=0.01 with 95% confidence interval, and absolute precision d=0.05 was taken and calculated sample is in n=64 by using the below mentioned formula

$$\frac{^2 \quad (1-)}{\quad}$$

Sample Selection

Inclusion Criteria

Students of computer courses

Office workers

bankers

Exclusion Criteria

People with neck pain due to trauma

People with neck pain due to different diseases

People with congenital abnormalities of cervical spine

Pregnant females

Data collection procedures

Data was collected by distributing a validated questionnaire.

Data analysis

Data was analyzed by using SPSSV-21 software.

Ethical Consideration

All ethical concerns were taken into consideration. To get authorization from the individual hospitals, a permission letter signed by the head of department was utilized. All volunteers were informed about the study's technique, importance, and aim. Only individuals who were willing to participate in this research were considered. Personal information was kept private. Any participant in the study was not be harmed in any way. The participants' dignity was be respected. Prior to the trial, patients were asked to sign an informed consent form.

Results

Table 1:

Demographic information					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	44	68.8	68.8	68.8
	female	20	31.3	31.3	100.0
	Total	64	100.0	100.0	

Table no.1: Table shows that 68% males and 31% females were the participants of this study

Table 2:

Occupation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	banker	5	10.0	10.0	10.0
	office worker	11	22.0	22.0	32.0
	student	34	68.0	68.0	100.0
	Total	50	100.0	100.0	

Table no.2: Table shows that 10% participants were bankers, 22% were office workers and 68% were students.

Table 3:

Type of system					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	desktop	17	34.0	34.0	34.0
	laptop	28	56.0	56.0	90.0
	notebook	5	10.0	10.0	100.0
	Total	50	100.0	100.0	

Table no.3: Table shows that 56% participants used laptop, 34% used desktop and 10% used notebook

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Table 4:

Daily work hours					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3-4 hrs	12	24.0	24.0	24.0
	4-5 hrs	18	36.0	36.0	60.0
	5-6 hrs	20	40.0	40.0	100.0
	Total	50	100.0	100.0	

Table no.4: Table shows that 40% participants worked for 5-6 hours, 36% worked for 4-5 hours and 24% worked for 3-4 hours.

Table 5:

Neck pain history					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	50	100.0	100.0	100.0

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Table no.5: Table shows that 100% participants had neck pain

Table 6:

Nature of pain					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	localized	39	78.0	78.0	78.0
	radiating	11	22.0	22.0	100.0
	Total	50	100.0	100.0	

Table no.6: Table shows that 78% participants had localized pain and 22% had radiating pain.

Table 7:

Posture care knowledge					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	17	34.0	34.0	34.0
	no	33	66.0	66.0	100.0
	Total	50	100.0	100.0	

Table no.7: Table shows that 66% participants had no pasture care knowledge and 34% had knowledge

Table 8:

Practice of posture					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	8	16.0	16.0	16.0
	no	42	84.0	84.0	100.0
	Total	50	100.0	100.0	

Table no.8: Table shows that 84% participants did not practice the posture and 16% practiced the posture.

Table 9:

Other problems					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	3	6.0	6.0	6.0
	no	47	94.0	94.0	100.0
	Total	50	100.0	100.0	

Table no.9: Table shows that 94% paticipants had no other problem and 6% had other problems.

Table 10:

Specify the problem					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	3	6.0	6.0	6.0
	no	47	94.0	94.0	100.0
	Total	50	100.0	100.0	

Table no.10: Table shows that 94% participants had no specified problm and 6% had specified problems.

Discussion

The study focused on the frequency of work related neck pain in computer users. The topic has a great importance because by finding the frequency we will be enable to educate about the posture and work related physical activities. The result of study showed that people had a little knowledge about good posture. People who worked for 5-6 hours had highest risk frequency of neck pain. The results of this study are comparable to the results of study conducted by T.Korhonen (10).

In that study results showed that 34.4% neck pain was related to poor posture while in our study 78% individuals had neck pain related to poor posture in computer users. In another study conducted by Mohammad Rasim ul Hassanat et al in July 2017 which showed that only 26 % individuals had neck pain at the time of data collection as compared to this study in which 78% individuals had pain at time of data collection (11). A prevalence study conducted by Ayesha Siddiqua, Kalim Khan et al in 2016 showed the 28% neck pain in computer users. According to nature of pain results can be compared with the study conducted by Nadeem younis et al in 2017 in which 67% individuals had localized neck pain and 32.7% had radiating pain but in our study 78% computer users had localized and 22% had radiating neck pain. In the study conducted by Mariyum Shabbir et al in 2016 pain in neck during work hours was experienced by 71.67% of the participants while in our study 78% participants had neck pain in working hours (12).

Conclusion

A total of 11 variables related to work related neck pain were studied. The three most significant variables were occupation, no. of hours of daily use of computer and the knowledge of posture. Frequency of neck pain is high in frequent computer users. Duration of computer use and no knowledge of posture is also associated with neck pain.

Recommendations

Further studies are also required to find the exact prevalence of neck pain among computer users to increase the knowledge in population related to bad posture, poor biomechanics and ergonomically settings.

CONFLICT OF INTEREST

There are no conflicts of interest that the authors of this work need to disclose.

Funding

No external funding was received for this study.

Data Availability statement

The datasets generated and analyzed in this study are not publicly available due to privacy and confidentiality concerns, ethical restrictions, legal or contractual obligations, and intellectual property considerations. However, the corresponding author is open to sharing the datasets upon reasonable request.

Limitations:

Short duration of time and limited resources wee the limitations of the study.

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