

Neck pain in computer users

Aysha Siddiqua Kalim Khan^{1,*}, Mohammed Faizan²¹UG Student, ²Associate Professor, Dept. of Orthopedics, NKP Salve Institute of Medical Sciences & Research Centre & Lata Mangeshkar Hospital, Nagpur***Corresponding Author:**

Email: ayshakhan2493@gmail.com

Abstract

In the modern era of networking, technological advances, particularly, invention of computer revolutionized our way of working. Increase in industrialization and urbanization lead to increase in health issue related to it, neck pain in computer users is one of them. 59% of WRMSDs (work related musculoskeletal disorder) reported annually by IT professionals in India, out of which 30% cases are of neck pain. Sickness absenteeism due to neck pain is 41%. The prevalence of neck pain in computer users in our study was 28%. Data was collected through questionnaire and analyzed through various statistical methods. 40% of computer users have associated complaint like upper limb pain and parasthesias which are related to neck posture. The prevalence is more in females (60%). The neck pain increased with increase in age, 66% neck pain was found in people between 50 -60 years. The prevalence of neck pain was low among those who do regular exercise, in our study only 30% of computer users do regular exercise out of which only 36% develop neck pain.

Keywords: Neck pain, Computer users, Paraesthesias, Neck posture, Upper limb pain.

Access this article online**Website:**

www.innovativepublication.com

DOI:

10.5958/2348-7682.2016.00010.5

Introduction

Musculoskeletal disorders became increasingly common worldwide during the past few decades. It is common cause of work related disability, among workers with substantial financial consequences due to workers compensation⁽¹⁾.

Neck pain in particular is considered to one of the major health problem in modern societies. It is also increasing in intensity, frequency, and severity because of more stress and strain on the upper back and neck region⁽²⁾. Neck pain is assumed to be multi factorial in origin, implying that several risk factors can contribute to its development. The long term, lower intensity stress and strain and improper posture are believed to be the most important causative factor for neck pain⁽³⁾.

It is important to consider the public health and financial implication of neck pain. Chronic neck pain patient uses the health care system twice as often as the rest of the population. Over a decade ago, the national Institute for Occupational Safety and Health, estimated that the cost associated with work related Musculoskeletal Disorder was \$13 billion annually; more recently, this was projected to be between \$45-54 billion. With children being exposed to computer – related activities at even earlier ages, the health of the future work force deserves contemplation. Hence this

study about prevalence of neck pain among the computer users.

There is general agreement that the frequency of neck pain in particular profession is quite high and its symptoms greatly affect the quality of life and need for health care⁽⁴⁾. Neck problem also accounts for a large proportion of occupational illness and disability and place a heavy load on the compensation insurance system. The prospective studies on prevalence of neck pain are important to study the size and extent of this problem that would facilitate accurate prediction of the need for preventive measures (Fig. 1). Neck pain is common among computer workers in our country and contributes importantly to the demand for medical services and the economic burden of absence from work due to sickness. Population based studies suggest that life time prevalence of over 70% and a point prevalence of between 12% and 34%⁽⁵⁾.

Pie chart showing the annual prevalence of WRMSDs reported among the IT professionals

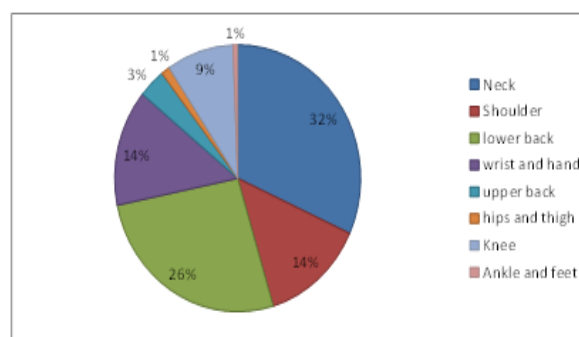


Fig. 1: Annual prevalence of pain among IT professionals

Material and Method

Study design: The aim of the study was to find out the prevalence of neck pain in computer users of our institute. The cross-sectional observational study was conducted. Survey research as a method of collecting data was used, which involves the measuring relevant sample variable (often using a questionnaire) without any form of manipulation or systemic intervention. Data was used to assess the prevalence of neck pain and other variables in the sample population.

Sample population: In this study, sample population was selected from the computer users of our tertiary care and medical institute.

Sampling technique: Convenient sampling, 50 computer users who are willing to participate in our study.

Computer users: In this study computer users are defined as person using computers daily for more than 6 hours, and weekly more than 36 hours.

Neck pain: Neck pain is defined in this study as pain experience from the base of the skull (occiput) to the upper part of the back and extending laterally to the outer and superior bounds of the shoulder blade (6-7).

Inclusion criteria:

- Both male and female computer users are selected.
- Aged between 20-60 years, using computers more than 6 hours a day and weekly more than 36 hours.

Exclusion criteria:

- All other persons who are not fulfilling the above mentioned criteria were excluded.
- Participants were excluded if they have any specific medical condition affecting the cervical spine (such as ankylosing spondylitis, tumors, infection, and rheumatoid arthritis).
- Any previous surgery that can cause neck pain.

We studied the prevalence of neck pain among computer users and its relationship with following factors:

- Age
- Gender
- Duration of job
- Daily hours of work
- Physical exercise

Information regarding neck pain and computer usage was collected through questionnaires.

It included:

- Individual demographic characteristics.
- Duration of job.
- Total duration of daily sitting at work.
- Physical exercise.
- Postural care.
- Other related problems like upper limb pain or paraesthesias.

Data management and the data analysis: The collected data was descriptive data. We used the graph, tables, bar and pie chart for analyzing data, calculated

as percentages, and presented this usage bar and pie charts.

Informed Consent: For this study interested subjects were given consent form and the purpose of the research and consent form was explained to each subject verbally.

Ethical consideration:

- Followed the guidelines given by the local ethical committee.
- Institutional review board approval was taken.
- Participant were explained the purpose and goals of the study.
- Strictly maintained the confidentiality.
- Informed consent was taken.

Results

In our study 50 computer users were taken from our institute and other offices. Out of which 25 were male and 25 were female. Out of 25 female 15 had history of neck pain, i.e. prevalence of neck pain among female is 60%. And out of 25 male only 10 male computer users had history of neck pain, i.e. prevalence in male is 40%.

Prevalence according to gender is as follow (Fig. 2)

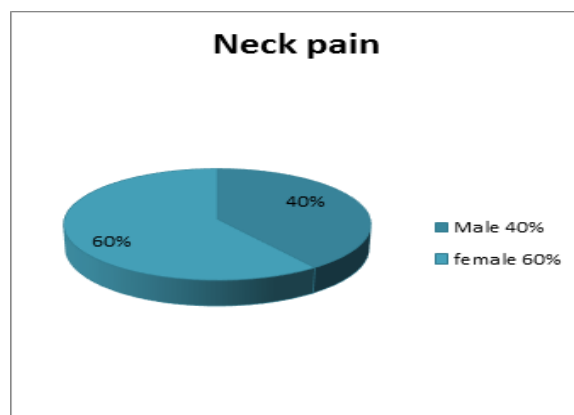


Fig. 2: Prevalence of neck pain according to gender

Out of 50 computer users the distribution according to age is as follow (Table 1)

Table 1: Age-wise distribution

Age group	No of participant
20-30yr	15
30-40yr	23
40-50yr	9
50-60yr	3

Neck pain and daily hours of work show the direct relationship (Fig. 3)

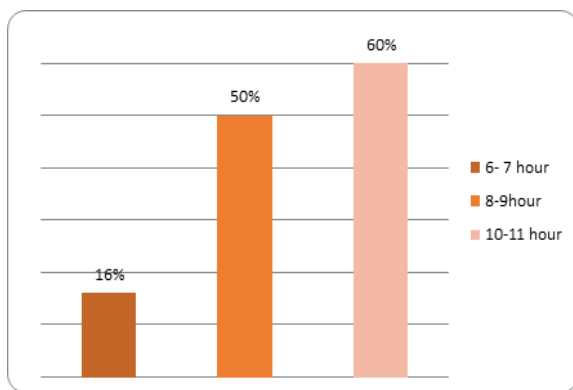


Fig. 3: Relationship between daily hours of work and neck pain

Neck pain and duration of job (Fig. 4):

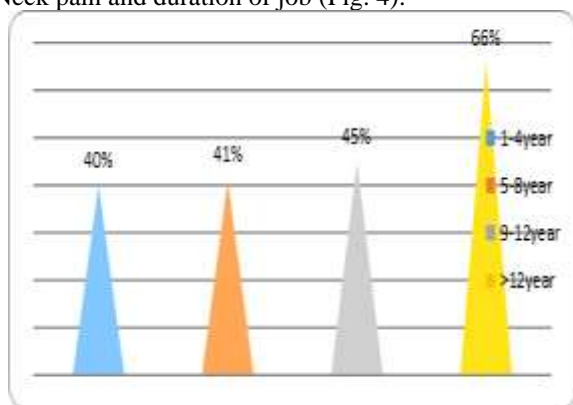


Fig. 4: Neck pain and duration of job

Neck pain and physical exercise show following relation (Fig. 5)

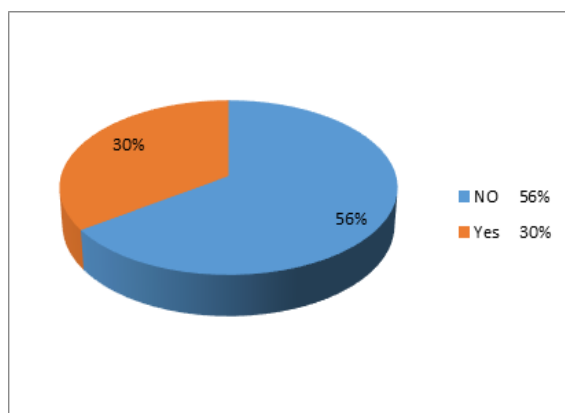


Fig. 5: Neck pain and physical exercise

Discussion

The prevalence of neck pain in computer users in this study is 28%. 40% of computer users have associated complaint like upper limb pain and paraesthesias which are related to neck posture. The prevalence is more in females (60%). The neck pain is increased with increase in age, 66% neck pain is found in people between 50 -60 years. The prevalence of neck

pain is low among those who do regular exercise, in our study only 30% of computer users do regular exercise out of which only 36% develop neck pain, rest 64% are free of pain.

For people who spend a great deal of time using computers, neck pain is a common problem. There has been a great technological advances in computer along with an industrial shift to a more service oriented economy. This has lead to a more sedentary jobs as the downsized of the number of employees is used to minimize losses in corporate profits and resulting increase demands in productivity for those who remain with the company and an increase in sick leave resulting from neck pain. This means more people use computer for work and recreation and we must find better ways of coping with neck pain associated with extended use of computer⁽⁴⁾.

Several literature have specifically studied the work related physical risk factors for the development of neck pain, incidence studies showed that 34.4% annual incident of neck pain among office employees working with computers⁽⁵⁻⁷⁾. While one year prevalence of neck pain among the full time academic staff Hong Kong University was 46.7% a significant association was found between gender and neck pain. Literatures prove that static loading and repetitive movements on the neck muscles are important risk factors for the development of neck pain also a positive co relation between neck pain and neck flexion. A plausible mechanism for strong relation between prolonged sitting and neck pain as working position will lead to continues static load on the neck muscles. Physical fitness and endurance are encouraged for the prevention of neck pain. From this study, we found that there are some modifiable and non-modifiable factors, which are related to neck pain.

Modifiable factor	Non modifiable factor
Daily hours of work	Age
Life style	Gender
Posture	Duration of job

Conclusion

Neck pain has direct relationship with duration of computer job in years, hours of daily work, age of the person. More the age, duration of computer job, daily hours of work more will be the chance of developing neck pain.

We can prevent the neck pain with the help of increasing awareness about life style modification, and few simple arrangements at work place according to ergonomic can reduce the neck pain in workers.

Taking few seconds break in between and releasing constant stress and strain of muscle can also help in decreasing neck pain.

References

1. Andersson GBJ. Epidemiologic features of chronic low back pain. *Lancet* 1999;354:5815.
2. Binder AI. Cervical spondylosis and neck pain. *BMJ* 2007;334(7592):527-31.
3. Stupar M, Shearer H, Cote P. Prevalence and factor associated with neck pain in office workers. In: *Proceeding of the World congress on the Neck pain*; Los angeles. Toronto: Canadian Institute for the relief of pain and Disability 2008:154.
4. Cote P, Cassidy JD, Carroll L. The Saskatchewan health and back pain survey. The prevalence of neck pain and related disability in Saskatchewan adults. *Spine* 1998;23:1689-1698.
5. Croft P, Johnson SH, Velde GV, Carroll L, Peloso. The burden and determinants of neck pain in workers: Result of the bone and joints decade 2000-2010. Task force on neck pain and its Association Disorder. *Spine J* 2008;33(4 Suppl):S60-74.
6. Tsauo J, Jang Y, Du c, Liang H. Incidence and risk factor of neck discomfort: 6 month sedentary – worker cohort study. *J Occup Rehabil* 2007;17:171-179.
7. Cagni B, Danneels L, Vantiggelens D, DeLoose V, Cambier D. Individual and work related risk factor of neck pain among office workers: a cross sectional study. *Eur Spine J* 2007;16(5):679-86.