Prevalence of Work from Home on Female-it Workers, on Neck Pain and its Psycho-Social Effects During Epidemic Period

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Abstract

The outbreak of (COVID-19) has created a global health crisis that has had a deep impact on the way we perceive our world and our everyday lives. This survey was helpful to know the impact of neck pain and leisure activity during lockdown of Female IT workers while remaining at work, and to analyse psycho-social effect on neck pain.

Methodology: Female office workers with neck pain (n = 60) completed a survey about impact of their neck pain and leisure activities. Consequences of neck pain were evaluated with questions on self-reported impact on work and leisure activity. Responses to survey questions were analysed using descriptive analyses.

Result: The point prevalence of NP was significantly related to age, gender, health status, job satisfaction, and length of employment.

Conclusions: The findings provide evidence that the impact on work and leisure was substantial.

Keywords: *Neck Pain, Office Employee, Prevalence, Risk Factors, Consequence, Quality of Life.*

Introduction

Neck pain is very common in the society, particularly in office workers. Neck pain related disability has health and economic impact both at individual and community level. Community based studies worldwide reported annual prevalence of neck pain ranging from 15 to 44%. [1] Globally one-year prevalence of neck pain related disability has been reported ranging from 7%[2] to 11%.[1]Prevalence of neck pain among office workers is higher than in the general community.[3] Globally, one-year prevalence of neck pain among administrative workers has been reported between 15% [4] to 34.4%.[5]

It is considered as a major public health problem, both in terms of health and overall well-being of the person and the society[6-8]. It has imposed relatively high direct and indirect costs, and may affect the quality of life and working condition of patients[6,9,10]. Among occupational groups, office workers, especially intensive computer users, are at high risk for developing Neck Pain[11-18]. Prolonged use of computers during daily work activities and recreation is often cited as a cause of neck pain.

The term work-related neck pain is employed in this research;"computer" refers to desktop and laptop or notebook personal computers, video display units, and video display terminals, to include the use of keyboards and pointing devices (i.e., mice, trackballs).

By defining the pain, "pain is associated with tissue injury and an capability to identify pain sensations.''[19]. This pain and disability is due to the pressure of socioeconomic problems, especially reimbursement to which involves blow injuries[20]. Cervical pain involving skull and neck zone was the outcome of mechanical syndromes, shock, as well as provocative degenerative diseases[21]. This pain occurring from constant postures was defines i''Nonspecific Neck Pain.''[22]. The continuous usage of computers, with wrong posture and sit with rounded shoulders be able to interrupt the normal

lodortic curve of neck that can lead towards muscular discrepancy and therefore neck pain.[23]. Continuous work ion computers and constant load on para spinal neck muscles lead to stretch weakness and pain[24]. Electromyographic studies revealed that the muscles of neck like upper trapezius and cervical erector spinal muscle (CES) had constant loading throughout typing and mouse use.[25]

Increasing computer-based tasks at the workplace may cause poor working postures and repetitive movements, especially in head and neck regions [26]. Different studies have demonstrated that office workers were at high risk of developing Neck Pain, yet, they reported different prevalence rates [26-28].

A number of studies have been carried out to investigate the association between neck pain and occupation. Larsman et al. [29] reported that 70% of medical secretaries had job-related neck pain. For academic staff in Hong Kong, the one-year prevalence of neck pain has been reported as 62%.[30] A high prevalence and incidence of neck and shoulder pain (work-related diseases) is present in the working population, especially in computer-based employment.[31,32]

In general, the percentage of neck pain among women appears to be higher than that in men,[33] and their excursion of head retraction and protrusion is than men in a normal situation.[34]

In an epidemiological study by Jensen et al., carried out on office workers, 53% female workers of call centers reported having NP [26].

Neck pain was more common in female computer operators. It was more common in middle class computer operators as compared to others. 67.3% of computers operators of localized neck and 32.7% complained of radiating neck pain. Neck pain occurred in computer operators due to wrong posture. It reduced the performance of computer operators..

Those persons who work more than two hours on computers are more likely to develop postural neck pain and other musculoskeletal problems at neck region.[35] Greater than 50% of the computer operators have pain in neck, shoulder, arms, wrists and fingers.[36] In one study, 285 of the over-all Dutch employed people worked on pain in the neck, shoulder arms, hands or wrists in the earlier twelve months of employment.[37]

The etiology of work-related neck pain disorders (NPD) seems to be multidimensional is associated with physical and psychosocial factors [38]. A number of factors, including individual factors (e.g. gender and age) [28, 39, 40], and work related factors (e.g repetitive work, prolonged sitting, and static posture), Work-related psychosocial factors, such as interpersonal associations at work, funds, and finances appear to play a major role on the occurrence of NP [38, 41, 42].

Computer users had symptoms of discomfort in posture, headaches, discomforts in the neck and shoulder due to pain.[43] Computer worker had been related with poor posture and musculoskeletal neck and upper extremity pain.[44] Prevelance of the complaints that had been identified to increase risk of neck pain in computer operators were, reduce in work location ergonomic, employment duration, continuous sitting in front of computer wrong body biomechanics and work station [45] Rationale of this study was to spread awareness about neck pain in computer operators and to determine the prevalence of neck pain in computers users.

The outbreak of the novel corona virus (COVID-19) and the subsequent work-from-home imperatives and lockdown led to significant economic disruptions around the world. For despite being at home all day, remote workers in the the time of corona virus face key challenges that can affect engagement, satisfaction, productivity and mental health. Effects of the pandemic on employees mental health cannot be ignored.Work related muscular-skeletal disorders of the neck are major problem among employees who spend a great deal of time using laptop. Today, a large number of people use laptop for work and recreation, taking up a great deal of their time each day. Such survey would help me to knowing the impact of neck pain and leisure activity during lockdown of female IT workers while remaining at work. No clinical sample, would be collected or the study.This research focused on neck pain in female IT workers as females consistently demonstrate an increased prevalence of neck disorders and usually over-reported in the office worker population. Consequences of neck pain were evaluated with questions on self-reported impact on work and leisure-activity. Responses to survey questions were analyzed using descriptive analyses.

The purpose of our study were: (a) to investigate the prevalence of neck pain and leisure activities among Indian female IT-workers who is currently doing work

from during epidemic period and the impact of work from home on neck pain (b) to analyse psycho-social effect on neck pain and the ratio between these two variables.

Research Hypothesis: There will be significant relation of Impact of Neck pain and Psycho-social effects during Work from Home among Indian Female-IT workers during Epidemic period

Null Hypothesis: There will be no significant relation of Impact of Neck pain and Psycho-social effects during Work from Home among Indian Female-IT workers during Epidemic period

Methodology

Type of Study: Cross sectional normative study design with non random convenient sampling

Ethical Clearance: Prior to conduct of the study institutional ethical approval & an informed consent in writing were obtained from all the participants

Sample Size: 60 participants

Inclusion Criteria: Participants were included in the study if they were normal healthy individuals within the age range of 25-45 years.

Exclusion Criteria:

Maligancy

History of central or peripheral nervous system disorders

Medical diagnosis of systemic, muscular or connective tissue

History of significant injury to neck or upper thoracic region

History of thoracic or cervical spine surgery

Headaches within the last years that resulted in limitation of daily activity

The general questionnaire contained demographic characteristics and background data such as gender, age, height, weight and marital status. The specific questionnaire included questions the existence and duration of neck pain, working posture and duration (for example sitting or positions during work), duration of working on the laptop, the prevalence of NP, and possible risk factors for NP in Female IT- worker's along with the consequences. The validity and reliability of the questionnaires were evidenced. To detect the rate of NP prevalence,six month during epidemics period, work-from-home, prevalence were recorded. The definition of NP was stated in the questionnaire as pain, ache, or discomfort in the area between the occiput and third thoracic vertebra, and between the medial borders of the scapula. A drawing demarcating of the anatomical area was provided in the questionnaire.

Result Analysis

The results showed that during the pandemic period, prevalence of neck Mild to Moderate. Elongated working hours on the computer, taking a prolonged sitting position, overtime, and static postures were the most irritating factors, respectively ($P < 0.001$).

Pie Chart: The result of this study supports that 60 people who are doing work from home 6-12 hour or more then 12 hours least suffering from discomfort and pain in neck,in this study we are finding that people doing work from home 23% people said it increase the stress level, 33% people said it increase work, 11% uncomfortable, 33% comfortable.

Figure 1: It shows the result of work load and stress level,number of people who are doing work from home at least 6-12 hours in a day.

Demographic data analysis: Data processing and analysis was done with graph Pad's website includes the portion of manual graph Pad Prism (window version 8pro) the pie-chart and t-test analysis were used for statistical correlation. The t score is a ratio between the difference between two groups and the difference within the groups. Our small t-score denotes that the groups are similar. $AP > 0.05$ was considered not statistically significant.

P value and statistical significance: The two-tailed P value equals 0.9825 By conventional criteria, this difference is considered to be not statistically significant.

Confidence interval: The mean of Group One minus Group Two equals -0.33 95% confidence interval of this difference: From -39.97 to 39.30 **Intermediate values used in calculations:** t = 0.0234 df = 4 standard error of difference = 14.275

Table No. 1

Group	Group One	Group Two
Mean	19.67	20.00
SD	22.81	9.54
SEM	13.17	5.51
N	3	3

Discussion

This study identified that the severity of neck pain in female IT workers is mild to moderate but that it has negative impact on their work and leisure time activity.

Immediate prevalence of NP was significantly related to female gender. Our study supports previous studies, indicating that NP was a more common complaint among female office employees than male[1,28,30,46]. Wijnhoven et al., in their study, also showed that prevalence rates of musculoskeletal pain were higher for females than males[47].

The general questionnaire contained demographic characteristics and background data such as gender, age, height, weight, and marital status. The specific questionnaire included questions regarding the existence and duration of neck pain, working posture and its duration (for example sitting or standing positions during work), duration of working on the computer, the prevalence of NP, and possible risk factors for NP in office worker's population along with the consequences. The validity and reliability of the questionnaires were evidenced [48].

Ariens et al. [41] also demonstrated that sitting for more than 95% of the working time could enhance the risk of NP. Other studies also confirmed our results and indicated that longer time spent on the computer and improper work conditions may contribute to the development of NP among office workers[47,49].

Our study revealed certain work-related determinants, such as working hours on the computer, prolonged sitting, and forward flexion posture during working, which were the most common factors that enhanced the risk of developing NP among office employees[47].

Conclusion

Thus, my research work has proved that there was a non-significant relation of Impact of Neck pain and Psycho-social effects during work from Home among Indian Female-IT workers during Epidemic period. Some protective strategies such as having a break during hours and performing regular daily exercises were found as useful protective factors to reduce the incidence of NP in office employees.

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