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## Original Article

### Frequency of Work-Related Neck Pain in Freelancers

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## ABSTRACT

The use of electronic devices like tablets, smartphones, desktop and laptop users has been increased to a lot of extent from past few years. So, the workers are more prone to be affected by neck pain, shoulder pain and other forms of musculoskeletal problems, due to lack of awareness about bad posture and ergonomics about workstation in their environment. **Objectives:** To find out the frequency of work-related neck pain in freelancers. **Methods:** It was a cross-sectional study containing of questionnaire based online survey in which the data were collected by asking the participants to fill the form online. There were 100 participants who were actively working in this field from last 6 months and all of them were having neck related problems. The data was analyzed using statistical packages of social sciences and different tests were performed including Chi-square and standard deviation and square tab. **Results:** Statistics show that 27% of freelancers were suffered from neck and shoulder pain, 43% suffered from neck pain along with other symptoms and followed by headache in which 34% rarely suffered from headache, 38% suffered from moderate headache and 28% from severe headache. Emotional findings show that 44% faced frustration, anger and sadness to some extent. **Conclusions:** The neck discomfort due to working online increases with sitting still for more than 1 hour, making physical activity difficult as well as making lifestyle change. A significant Association was found between lifestyle changes due to neck pain, neck pain intensity with online working.

## INTRODUCTION

Freelancing intends to fill in as a free organization as opposed to be utilized by another person [1]. Laptop and desktop computers are extensively used in multiple domains of freelancing industry either at home or small agency [2]. Neck discomfort that outcomes from shifting head down to take a glance at a cell phone, PC, screen, and additionally if someone's work from home set up, isn't ergonomic at all and it will result with the beginning of musculoskeletal issue running from neck shoulder [3]. Neck pain was observed among smartphone users

because of postural changes due to the small screen size of the devices [4]. The risk factors related with the onset of work-related musculoskeletal illnesses among workers who use computers extensively can be classified into two types: occupational and non-occupational [5]. Repetition force, incorrect or fixed posture, length of exposure, and vibrations are all indicated as key risk factors in the workplace [6]. freelancing workers have a higher prevalence of Work-related Musculoskeletal Disorders, which could be linked to work style as risk factors for



musculoskeletal disorders [7]. Age, high quantitative job demands, limited social support at work, poor computer workstation design and posture, sedentary work position, repetitive work, and precise work are all risk factors for neck pain in employees. [8]. It also has been indicated that faulty postures contribute to the onset of neck pain syndromes with further loss of cervical spine extension [9]. Freelancers are of particular interest because they spend multiple hours in front of computer at the workplace either home or net cafe and the prevalence of neck pain in this occupational group remains high [10]. The usage of the computer mouse has also been identified as a new work hazard that might cause health problems in the neck and upper extremities [11]. If a person's work from home setup isn't ergonomic, it might lead to neck pain that includes neck, shoulder, and back pain [12]. Among these different danger factors, business related psychosocial factors seem to assume a significant part as indicated by Ariens et al., [13]. Recognizing factors that incline people to tenacious neck issues may add to essential or auxiliary anticipation [14]. A physical ergonomic approach (e.g., an arm board) was much more useful in decreasing neck discomfort severity than no ergonomic intervention [15].

## METHODS

It was a cross-sectional study. Convenient sampling was used for the sampling purpose. 100 freelancers were included into the study using the formula:  $n = Z_{\alpha/2}^2 p(1-p) / d^2$ . The data was collected from different freelancers with online interactions and discussions. The duration of the study was 6 months after approval. Volunteers were included in the study based on inclusion and exclusion criteria. Freelancers aging 21 to 40, Both male and female, Participants having at least 2 years' history of freelancing and, Participants with no known major health issue and neck injury were included in the study. Person with a diagnosed history of chronic neck pain, Participants having previous history of surgery and neck trauma, Participants having previous neck surgery, Participants having any psychological issue, Participants having vision or hearing difficulty, participants having diagnosed musculoskeletal issue and, participants having any active infectious disease such as TB, were excluded from the study. A convenient modified questioner as (Google form) was used for data collection. The data was analyzed via SPSS version 26.0. The Qualitative variables like gender were presented as frequency & percentages along with other quantitative variables like pain intensity. Association of online working with other variables was measured through Chi-square test, where p-value  $\leq 0.05$  was taken as significant.

## RESULTS

21 to 40 years old adults were enrolled in the study. All

participants had filled online questionnaire. There was no drop out in this study. Subjects participated in study fulfill all the parameters. Out of 100 participants 76(76%) were belongs to age group of 21-25year. 16(16%) were belongs to age group of 26-30year. 5(5%) were belongs to age group of 31-35year. 3(3%) were belongs to age group of 35-40year. Out of 100 participants 77 (77%) were male and 23(23%) were female. Out of 100 participants 29(29%) were spending 0-4 hours per day. 36 (36%) were spending 5-8 hours per day. 35 were spending more than 8hours per day. Out of 100 participants 58(58%) were using desktop computer. 31(31%) participants were using laptop. 8(8%) were using smart phone. 3(3%) were using all these devices.

**Table 1:** showing frequency of demographics and other variables

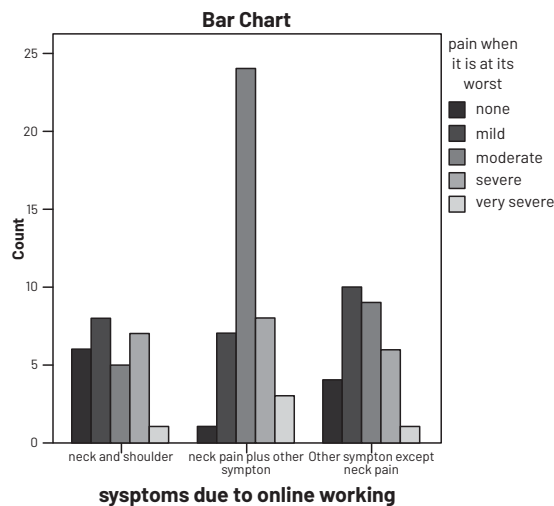
Variables	Frequency (%)	
Age of the respondent	21-25	76 (76.0)
	26-30	16 (16.0)
	31-35	5 (5.0)
	35-40	3 (3.0)
Gender of the respondent	male	77 (77.0)
	female	23 (23.0)
Hours spend working online	0-4hours	29 (29.0)
	5-8hours	36 (36.0)
	more than 8hours	35 (35.0)
Device used for online working	desktop computer	58 (58.0)
	Laptop	31 (31.0)
	smart phone	8 (8.0)
	All	3 (3.0)
Symptoms due to online working	neck and shoulder pain	27 (27.0)
	neck pain plus others symptom	43 (43.0)
	other symptom except neck pain	30 (30.0)

The table 2 showed the Chi-Square results i.e., p value = 0.050. In this case 5% confidence interval consideration tells us that  $p < 0.05$ . The Alternative hypothesis would be accepted which tells that there is significant relationship between life style changes and neck pain.

**Table 2:** Showing Association of pain intensity & online working

Symptoms due to online working	Pain intensity					p-value
	None	Mild	Moderate	Severe	Very Severe	
Neck and shoulder pain	6	8	5	7	1	.037
Neck pain plus others symptom	1	7	24	8	3	
Other symptom except neck pain	4	10	9	6	1	

The Alternative hypothesis would be accepted which tells that there is significant relationship between neck pain and pain at its worst due to working online.



**Figure 1:** Showing the Association of pain intensity & online working

## DISCUSSION

The current study statistics shows the prevalence rate of neck pain with associated symptoms among freelancers is 43%. 27% freelancers suffered from neck and shoulder pain due to online working. similar results were found by a study of Lindegård *et al.*, who studied about prevalence of neck pain and it was seen that neck pain is more common in women than in men. 43 % of population reported neck pain [16]. Taneja *et al.*, whose study revealed that 46% subjects were suffering from discomfort, mild to moderate muscle stiffness in the neck and the stiffness related to work [17]. In contrast a study by Keown & Tuchin found out that 40.7 % students were using smartphones for longer duration and 58 % of students reported neck pain in using the smartphones. Which concluded that longer durations are causing the neck pain along with another health problem like dizziness [18]. Another study by Namwongsa *et al.*, concluded that most painful region after usage for about 12 months was neck (32.50%) [19]. A study by Shan *et al.*, showed that the incident was 50 percent for neck pain much higher than 24 percent for shoulder pain and 34 percent for arms and wrists [20]. Research by Sikka *et al.*, concluded that the prevalence of Cervical pain with the percentage of 71.2 was dominant of all pains with headache on 2nd number with 63.3% and on 3rd number there was irritability with 54.5% and depression 19.69%, strains on eyes 36.8 % etc [21]. Van der Zwan *et al.*, conducted a study whom results showed that neck pain is 75% of the population [22]. Stock and Tissot found out that the incident of neck pain is 42 to 63 percent annually it is estimated as more as 90% of employee are spending 4 hours a day, so it should be highlighted that workplace for employees must be ergonomically friendly to prevent incident of neck pain, so in order to reduce the expenses so

to increase productivity[23].

## CONCLUSIONS

According to the findings of the current study, freelancers have a high prevalence of neck pain. It was determined that the incidence of neck discomfort due to working online increases with sitting still for more than 1 hour, making physical activity difficult as well as making lifestyle changes, but there is no linkage between demographic variables and neck pain caused by working online. A significant Association was found between lifestyle changes due to neck pain, neck pain intensity with online working.

## Authors Contribution

Conceptualization: TG

Methodology: HA, AK

Formal analysis: MS, HA

Writing-review and editing: TF, UBS, HJ, JA

All authors have read and agreed to the published version of the manuscript.

## Conflicts of Interest

The authors declare no conflict of interest.

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