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Prevalence of cervicogenic headache and neck pain in professionals working from home during this pandemic period

Mansi Karwa[1], Aboli Pedgaonkar[2], Satyam Bhodaji[3]
[1,2]BPT, student, [3]Assistant professor
MGM School of Physiotherapy, Aurangabad, a constituent unit of MGMIHS, Navi Mumbai, Maharashtra, India

***Corresponding Author:**
Satyam Bhodaji, ORCID: 0000-0002-9850-6901
Assistant Professor, MGM School of Physiotherapy, Aurangabad, a constituent unit of MGMIHS, Navi Mumbai, Maharashtra, India

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Abstract

Objectives: COVID-19 has triggered major health crisis. This survey aimed in learning about the prevalence of neck pain and cervicogenic headache, as well as the risk factors associated with them, among professionals who work from home. **Methods:** Participants included in the study are normal healthy individuals above 20 years of age, who are working from home since COVID19 pandemic has started. The survey collected data regarding demographic characteristics and background data such as gender, occupation, age, dominance. The specific questionnaire included questions like the existence and duration of neck pain, duration of working on device, postures they adapt while working. Multiple logistic regressions were conducted to identify risk factors for neck pain. **Results:** Among the people working from home in this pandemic, around 23% of professionals are suffering from neck pain and 17% from headache, whereas 29% suffer from both. The study reports low to moderate level of prevalence of neck pain and headache. **Conclusion:** This study not only discovered a high prevalence of neck pain and cervicogenic headache among professionals working from home, but it also established many modifiable risk factors for neck pain and cervicogenic headache in this community. To minimize the risk of neck pain and headache in vulnerable individuals, specific preventive measures should be developed and implemented.

Keywords: Covid 19, pandemic, work from home, neck pain, cervicogenic headache.

INTRODUCTION

Social distancing, to prevent the spread of COVID-19, is the most important public health responses to the global coronavirus pandemic. Along with closing churches, supermarkets, and restricting restaurants to take-out only, encouraging people to work from home has now become a big tool for social distancing.Many companies have implemented work from home policies to reduce physical contact among employees and prevent new infections.[1]

More people are working from home than ever before because of the coronavirus. Previously, only about 7% of American employees had the opportunity to work from home on a daily basis.According to a new study, at least 74% of Indians claim they will continue to work from home more than they did before the Covid-19 pandemic. According to the report, 91 percent of Indians agree that their use of laptop computers has increased during the pandemic, which is higher than the global average of 85 percent. [2]

Working from home as a result of COVID-19 have significantly altered employee's job experiences. Positive changes like improved work-life balance coexist with negative changes like lack of social interaction with coworkers. [3, 4]. An increase in neck pain (NP) has been identified as one of the negative consequences of working from home during the COVID-19 pandemic. [5].

Neck pain is caused by prolonged computer use, poor posture, and sitting with rounded shoulders. It is caused by a muscular discrepancy caused by the Lodortic curve.Stretch pain is caused by prolonged computer use and a heavy load on the paraspinal neck muscles. [6]. Bad posture, whether it's leaning over your laptop or hunching over your workbench, can strain neck muscles. [7]. Awkward body postures and repetitive body movements when working on a computer, are identified as significant risk factors for musculoskeletal symptoms, as they can cause increased stress in the neck/shoulder muscles[8]. Longer periods of time spent in front of a computer or laptop, resulting in a change in posture, cause the upper cervical spine to lose its natural lordotic curvature, which causes muscle stress and shortening, ultimately leading to neck pain. [9]

Foreground Primary headaches, especially migraine is among the world's most common diseases. [10]Cervicogenic headache affects approximately 2% to 3% of the global population. [11]People who have a forward head posture and who use computers have more headache complaints.[12]Pain begins with tightness in the upper cervical vertebrae and muscles around the neck, then increases in the posterior scalp and travels to the anterior. The majority of computer users do not use adjustable keyboards or heights, and neck pain is associated with forward leaning. [13]

The aim of this study is to investigate the prevalence of neck pain and cervicogenic headache among Indian workers who are currently doing work from home during pandemic period.

Method and Materials

A cross-sectional study was carried out in Maharashtra State to assess the physical discomforts experienced by workers working from home during the lockdown from April 2021 to May 2021. This study was approved by the institute's ethical committee. Those who work from home and use various electronical devices for several hours per day. A questionnaire is created based on the study's requirements.

To adhere to the restrictions and protocols of social distancing, the questionnaire was prepared in the form of a Google document and distributed via social media platforms such as WhatsApp, Facebook, and various social platforms where doctors are involved, e-mails, and so on. Before the study, respondents were asked to provide informed consent, and an option to terminate was provided in the form itself. The respondents' confidentiality was maintained and no personal information, such as their address, or contact information, were recorded for the purposes of the study. This study's participants were all workers who are doing work from home. The sample size for participants was 104 Participants reported demographic information such as age, gender (male, female, and other), hand dominance, occupation, electronic devices used for work (computer, laptop, mobile phones, tab), and the hours spent on the above devices.

The study includes people aged 18 and up who have been doing work from home since the COVID-19 Pandemic began and are suffering from neck pain with cervicogenic headache. People under the age of 18 who work in the field will be excluded from the study

Using the Cervicogenic headache and neck pain in professional working from home on computer questionnaire, the online survey collected information on the study variables of neck pain and cervicogenic headache. The scale is a self-report tool that is commonly used to assess posture, neck pain, and cervicogenic headache. The scales consist of two items, each with 5 questions focusing on aforementioned aspects.

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The ethical clearance was taken from the Institutional Ethical Committee.

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A Questionnaire was prepared to know the prevalence of cervicogenic headache and neck pain in professionals working from home.

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Questionnaire was prepared in the google forms and was distributed through various social platforms like WhatsApp, Facebook, etc.

↓

Informed consent was attached in the google form

↓

Basic demographics and data was collected

↓

Once the data was collected, it was analysed using appropriate statistical methods

Statistical Analysis-

Statistical Analysis was done using Microsoft Excel and google sheets. A confidence level of 95% was used to create the descriptive statistics. The comparative analysis was done by using the t-test and the p value was obtained by using 2 tailed two sample unequal variance arrays. Table 1 shows the statistical analysis of neck pain and headache. Here, P (T<=t) two-tail = 0.005127223 and t Critical two-tail = 1.984467455. We can conclude that the difference is significant.

Group	**NeckPain**	**Headache**
Mean	5.388888889	5.916666667
Standard Error	0.264900686	0.291476635
Median	5	6
Mode	6	6
Standard Deviation	1.9	2.01
Sample Variance	3.7	4.07

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Kurtosis	-0.23106956	-0.493720418
Skewness	0.333412948	0.183175085
Range	8	8
Minimum	2	2
Maximum	10	10
Sum	291	284
Count	54	48
Confidence Level (95.0%)	0.531323491	0.586375356

Table 1

Results-

The study was conducted among 104 professionals who work from home. Out of which 100 are such that we count for analysis as 3 said they did not want to participate and 1 had data integrity issue. Table 2 shows the statistical distribution of age group with mean 27.528. Among our study participants, 23% suffer from neck pain, 17% from headache, and 29% suffer from both as shown in figure 1. We had responses from 18 to 47 years of age, where most responses were from 22- 27 years of age. Figure 2 shows the ailments reported by age group, where in the age group of 21 to 30 age group, 20% suffer from neck pain, less than 15% suffer from headache, and 38% suffer from both while 37% suffer from none. Figure 3 and 4 shows the histogram for headache pain and neck pain levels. Table 3 depicts thedistribution of people by hand dominance, age group and duration of time worked. When we look at the age group 20-30 years, 37 people said they worked on device for more than 4 hours while 35 people said that they worked on device in between 1 to 4 hour. In Figure 3 and 4, the X axis represents the neck pain level and Y axis represents number of observations that fall in those levels. In figure 3, almost 70% population that have neck pain level of 4.1 to 7.3. The mean level for neck pain is 5.3 and standard deviation is 1.9. In Figure 4, almost 70% population that have headache have a pain level between 4 to 8.

Age	
Mean	27.52885
Standard Error	0.655157
Median	26
Mode	25
Standard Deviation	6.681312
Sample Variance	44.63994

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Kurtosis	9.676385
Skewness	2.766635
Range	43
Minimum	17
Maximum	60
Sum	2863
Count	104
Confidence Level(95.0%)	1.299349

Table 2: Statistical distribution of age group analysed

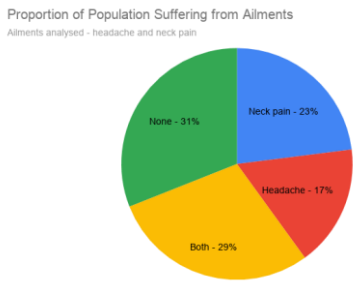

Figure 1: Distribution of subjects surveyed by ailments

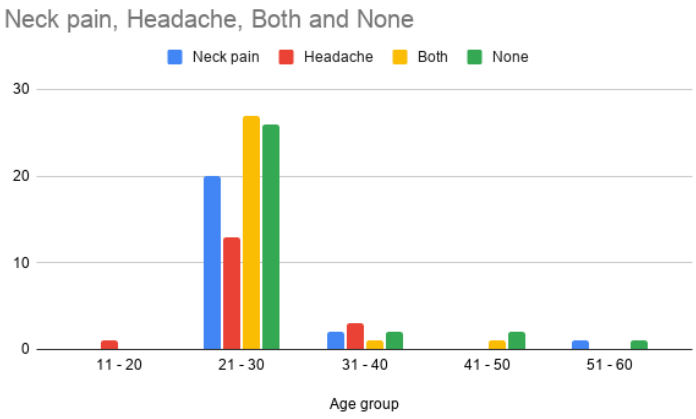

Figure 2: Ailments reported by age group

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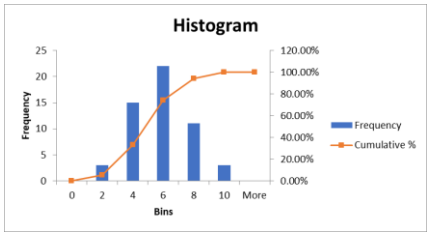

Figure 3: Histogram for neck pain levels

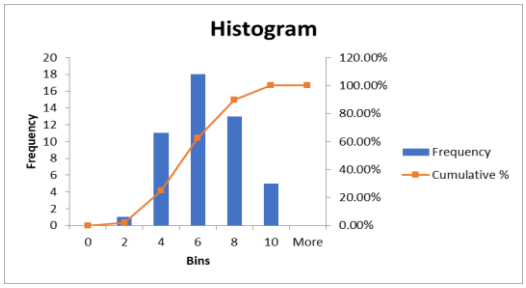

Figure 4: Histogram for headache pain levels

Count of people	Duration worked on devices				
Hand Dominance and age group	**>4hours**	**15-30Minutes**	**1Hour-4Hours**	**30Minutes-1Hour**	**Grand Total**
Left	**4**		**2**	**2**	**8**
20-26	2		2	1	5
27-33	2			1	3
Right	**36**	**3**	**32**	**20**	**91**
13-19	1				1
20-26	22	1	21	5	49
27-33	11	2	10	10	33
34-40			1	2	3
41-47	1			2	3
55-62	1			1	2
(blank)	**1**		**1**		**2**
20-26	1				1
27-33			1		1
Grand Total	**41**	**3**	**35**	**22**	**101**

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Table 3: Distribution of people by hand dominance, age group and duration of time worked

Discussion-

The state of Maharashtra was recently struck by COVID-19's second wave. In recent days, a significant number of human lives have been lost in Maharashtra's cities. As a result, Maharashtra's government declared a state of emergency on April 12th to combat the COVID-19 virus's spread. People were only permitted to leave for emergencies and were expected to work from home.These restrictive and self-quarantine measures, while effective in containing the disease, have a negative impact on the physical and mental well-being of residents.

We aimed to know how working from home affected the musculoskeletal system of an individual. The health of workers is critical for any company productivity. This study discovered that 23% among our study participants suffer from neck pain, 17% from headache, and 29% suffer from both. One study found that people who worked on computers for more than four hours a day had more musculoskeletal system problems, general health symptoms (such as headaches, exhaustion, loss of focus, and sensitivity to light), computer addiction, and poorer working capacity than people who worked on computers for less than four hours a day.[14]

Isolation at home is an important way to prevent the Covid-19 virus from spreading (Fowler et al. 2020). However, the impact on the musculoskeletal system can be troublesome. [15]The amount of time spent on technology-based educational, communication, and entertainment activities during a homestay can increase the amount of time spent sitting. [16] Increased sedentariness and poor posture in our population due to the use of non- ergonomic equipment appeared to encourage the onset of MSK disorders, especially headaches and neck pain. Other authors published similar findings, emphasizing the value of proactive steps and the implementation of ergonomics concepts in reducing workplace injuries. [17]

Neck pain is a very common musculoskeletal injury that affects the general population, especially workers. Neck discomfort may also be caused by a poorly built workstation or poor ergonomics. [18] Several studies have been conducted to look into the connection between neck pain and occupation. According to a survey, 70% of medical secretaries suffer from neck pain as a result of their employment.[19] The prevalence of neck pain among academic staff in Hong Kong has been stated to be 62 percent after a year.[20] The working population has a high prevalence and occurrence of neck and shoulder pain (work-related diseases) People who spend more than two hours on computers are more likely to experience postural neck pain and other musculoskeletal issues in the neck area, according to a report. [21] Pain in the neck, shoulder, arms, wrists, and fingers affects more than half of computer operators.In one report, 285 of the working Dutch worked on neck, shoulder, arm, hand, or wrist discomfort in the earlier twelve hours. [6] Limitations of the study was due to pandemic and lockdown we could not reach maximum participants. Further studies can be done on finding specific postures related to neck pain and headache during work from home as well as different relieving therapies could be studied.

Conclusion

Today, the effect of this pandemic on the wellbeing of professionals who work from home should not be ignored. It indicates a high need for both preventative and symptomatic physiotherapy. This study discovered a low to moderate prevalence of neck pain and cervicogenic headache among home-based employees, as well as a number of modifiable risk factors for neck pain and cervicogenic headache in this community. To minimize the risk of neck pain and headache in vulnerable individuals, specific preventive measures should be developed and implemented.

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Nil

Conflict of Interest

There are no conflicts of interest.

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