

Frequency of Cervicogenic Headaches symptoms among Bankers of Islamabad: A cross-sectional study

Khaleel Ur Rehman¹, Eeman Malik², Mahpara Ali²

¹Specialist Physiotherapy Practice- Sheffield Hallam University, England, UK

²Physiotherapist, Shabeed Zulfiqar Ali Bhatti Medical University, Islamabad, Pakistan

ABSTRACT

Background: Cervicogenic headaches have been classified as secondary headaches due to disorders of cervical spine. Poor posture is considered as an important contributing factor in increasing such headaches. Such faulty posture being maintained for a long time triggers the musculoskeletal pain leading to the decrement in cervical mobility and low quality of sleep, which in turn results in lethargy. These risk factors are common in the professionals who are bound to desks using electronic gadgets adopting bad posture. There is a need to focus and implement the ergonomics practices in such environment to maintain the overall well-being of professionals. This study aimed to conclude the frequency of cervicogenic headache symptoms among Bankers working in different banks in Islamabad.

Methods: It was a cross-sectional descriptive study. Selected subjects were the 61 Bankers working in banks of Islamabad, aged between 25 to 60 years. Convenience sampling technique was used. Study duration was from July 2025 to January 2026. Data collection tools included the Visual analogue scale for pain and the Wiley-Blackwell Cervicogenic Headache: Diagnostic Criteria Questionnaire as a standardized tool for assessing the factors leading to Cervicogenic headache. However, it was not considered a substitute for comprehensive clinical diagnosis. Data had been shown using frequency tables analyzed in the Statistical Package for Social Sciences version 23. Data has been analyzed using frequency and percentages.

Results: Cervicogenic headache was found to be prevalent i.e. 32.7% professionals working in the banks. Out of 61 participants, 20 fulfilled the criteria of Cervicogenic headache. Furthermore, out of 20, 10 % of the individuals reported the experience of mild pain, 65% moderate pain, and 25% reported the presence of severe pain.

Conclusion: This study reports a notable presence of cervicogenic headaches with the moderate intensity reported the most.

Keywords: Rehabilitation, Cervicogenic headache, Neck pain, Prevalence, Visual analogue scale, physiotherapy.

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Corresponding Email: khaleelrehman797@gmail.com

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INTRODUCTION

Headaches have been experienced in about 47% of people worldwide¹. Among them, 2% to 3% of people worldwide experience cervicogenic headaches². Clinicians from a variety of specializations and professions have been describing cervicogenic headaches (CGH) for a long time³. According to literature, it has been a common debate if headaches relate to the cervical symptoms⁴. While some experts consider CGH as the separate condition while others contend that it is actually a part of other headache disorders like tension-type headache and migraine⁵⁻⁶.

A cervicogenic headache originates from the upper cervical vertebra due to the compression of the sensory nerves supplying the scalp⁷. A typical pattern of pain is stiffness in the muscles surrounding the neck and upper cervical vertebrae, followed by a rise of headache in the posterior scalp and later progresses to the anterior including diplopia, dizziness, dysphagia, drop attacks and dysarthria^{1,8}. The fascia, disc, and soft tissue surrounding the neck are all sensitive components that might cause the cervicogenic headache^{9,10}. Cluster headache and migraine are frequently misdiagnosed in



patients with cervicogenic headache¹¹. The head pain experienced by many patients with cervical spondylosis is also cervicogenic¹². There are certain traits which helps in distinguishing CGH from the other headaches including side-locked pain, which gets worse with the head movement^{13,14}.

Multiple international groups, including the International Headache Society and the Cervicogenic Headache International Study Group, proposed the diagnostic criteria for CGH¹⁵. Some of the criteria include radiographic evidence of abnormalities or diagnostic nerve blocks such as ICHD3¹⁶. The administration of physiotherapy also has a significant impact on treating CGH¹⁷. Effective treatment options for the cervical spine including the use of manual therapy, targeted therapeutic exercises, traction of the spine, and range-of-motion exercises¹⁸. Cervical pain has multiple causes, but office employees who sit more than 6 hours are more likely to experience it because of prolonged sitting with a wrong posture adoption, lack of postural control, and increasing demand physically as well as mentally in the form of strain from work¹⁹.

Due to the prolonged work hours and extensive computer use in the banking industry, neck pain is commonly experienced²⁰. In order to promote awareness, provide interventions, and enhance educational programs, it is crucial to understand the dimensions and characteristics of CGH in computer users²¹. As the issue of cervicogenic headache is addressed many times in computer users, but not specifically in bankers²⁰. The current research was carried out to fill the gap in the literature on CGH among the bankers in Islamabad, since very little literature exists on the same musculoskeletal problem in our country. The purpose of the research was to identify the frequency of CGH among bankers. The study will help to add valuable information to the understanding, prevention, and management of CGH in bankers by determining its prevalence in this population, which will eventually enhance the quality of life of the later.

METHODOLOGY

The research was a descriptive cross-sectional study that was carried out for a period of seven months from July 2025 till January 2026 in the different banks of Islamabad. The target population were employees using computer-working employees. The sample used was a total of 61 bankers which was calculated using open

epi software 3.0. For prevalence studies, assuming an expected prevalence of 42.4% based on a previous study among bankers, a 95% confidence level, and a 5% margin of error., sampled through a non-probability convenience sampling method. The two instruments used were the Wiley-Blackwell Cervicogenic Headache: Diagnostic Criteria questionnaire and the Visual Analogue Scale (VAS) to measure pain. The study included bank employees of both sexes with 91.8% male having an age range of 25-60 years and working more than eight hours a day, with more than five hours a day on computers. Participants were screened for the characteristics suggestive of cervicogenic headache using the Wiley-Blackwell Cervicogenic Headache Diagnostic Criteria Questionnaire. Those who had experienced a history of traumatic injuries, neck or upper limb surgery, medical conditions (neuropathy in diabetic patients or sensory loss), and chronic diseases (rheumatoid arthritis or osteoarthritis) were excluded. The diagnostic questionnaire was used to screen the participants.

Ethical approval was obtained from the ethical committee of Foundation of Medical and Research and laboratories (Protocol no. FMRL-IRB/2024/028). After the ethical approval, bankers from different workplaces were approached in the working hours. The purpose of the study had been explained prior. Information consent was also received in writing before data collection. Participants meeting the inclusion criteria were required to complete the questionnaire.

Data had been collected between July 2025 to January 2026. Statistical Package for Social Sciences version 23.0 was used to analyze the collected data, and frequency graphs were created of the qualitative variables while descriptive statistics was used for quantitative variables (VAS scores greater than three).

RESULTS

Results showed a total of 61 participants who were the part in the sample. The age group (25 to 60) outlined in the research was further classified as follows: (25 – 32), (33-39), (40 – 46), (47- 53), and (54-60). Out of the total sample size of 61 participants, the highest number of participants, i.e., 37.7%, fell in the age group (25-32), and the lowest number of participants was 4.92%, who fell in the age group of 54-60

years. The total number of participants with respect to gender is shown in Figure 1. The total male and female patients were 91.8 and 8.2,

respectively, presenting a larger ratio of male patients experiencing headache.

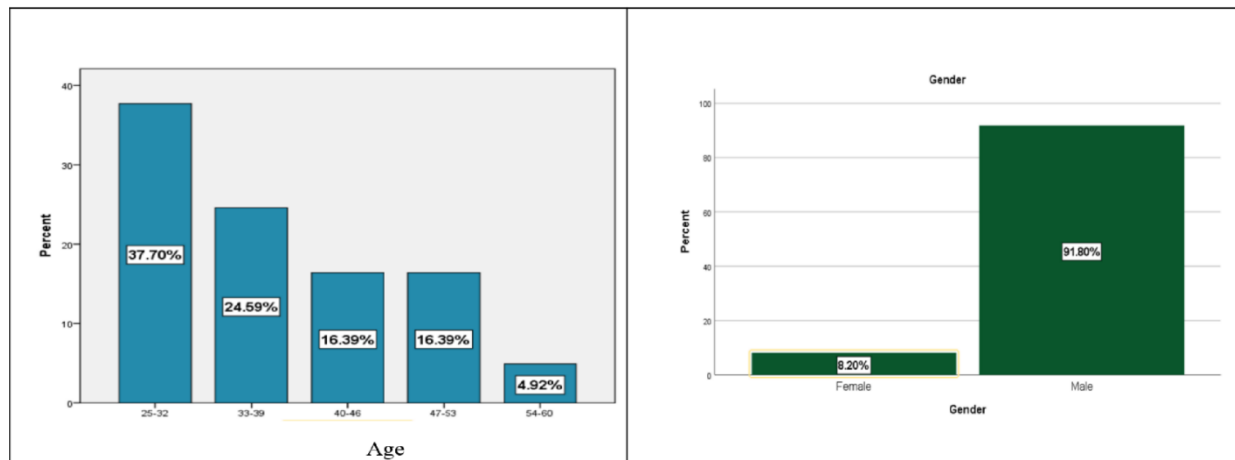


Figure 1: Demographic Variables of Participants

Table 1 indicates the working experience in years and the total working hours of bankers per day in Islamabad. The work experience of bankers was assessed in four categories, ranging from 1 year to 4 years. Out of 61 individuals, most bankers [n=26, 42.6%] had one year of working

experience, whereas at least [n=8, 13.1%] had four years of experience. Working hours were also assessed in three categories, ranging from 8 hours to 10 hours, and most bankers [n=38, 62.3%] have 9 daily working hours, at least [n=4, 6.6%] work for 10 hours.

Table 1: Working Experience and Working Hours of Bankers [N= 61]

Variable	Category	Frequency	Percent
Working Years of participants	1 year	26	42.6
	2 years	17	27.9
	3 years	10	16.4
	4 years	8	13.1
Daily working hours	8 hours	19	31.1
	9 hours	38	62.3
	10 hours	4	6.6

Figure 2a shows the distribution of pain severity among the subjects meeting the criteria suggestive of cervicogenic headache. Subjects reporting moderate pain intensity (65%), followed by severe pain (25%) and mild pain (10%).

Figure 2b shows that 20 of the 61 participants has fulfilled the criteria suggestive of cervicogenic headache, yielding a prevalence of 32.7% (95% CI: 21.0%–44.6%).

Table 2 below shows the frequency distribution of the clinical characteristics of cervicogenic headache.

Factors	F (%)
1. One sided headache without side-shift	22 (36.1%)
2a. Symptoms showing the involvement of neck: Pain initiated by movement of neck/sustained awkward posture	21 (34.4 %)
2b. Involvement of neck indicating symptoms: External pressure of the posterior neck or occipital region	7 (11.5%)
2c. Symptoms and signs of neck involvement: Ipsilateral neck, shoulder, and pain in arm	14 (23%)
2d. Symptoms and signs of neck involvement: Decreased range of Motion	13 (21.3 %)
3. Pain episodes of varying duration or fluctuating continuous pain	26 (42.6%)
4. Moderate, non-excruciating pain, usually of a non-throbbing nature	28 (45.9%)
5. Pain starting in the neck, spreading to oculo-fronto-temporal areas	20 (32.8%)
6a. Various attack-related events: autonomic symptoms and signs, Nausea, vomiting, dizziness	11 (18%)
6b. Various attack-related events: autonomic symptoms and signs, Ipsilateral edema	3 (4.9%)
6c. Various attack-related events: autonomic symptoms and signs, Flushing in the peri-ocular area	22 (36.1%)
6d. Various attack-related events: autonomic symptoms and signs, Photophobia, phonophobia.	9 (14.8%)
6e. Various attack-related events: autonomic symptoms and signs, Blurred vision in the Ipsilateral eye	22 (36.1%)

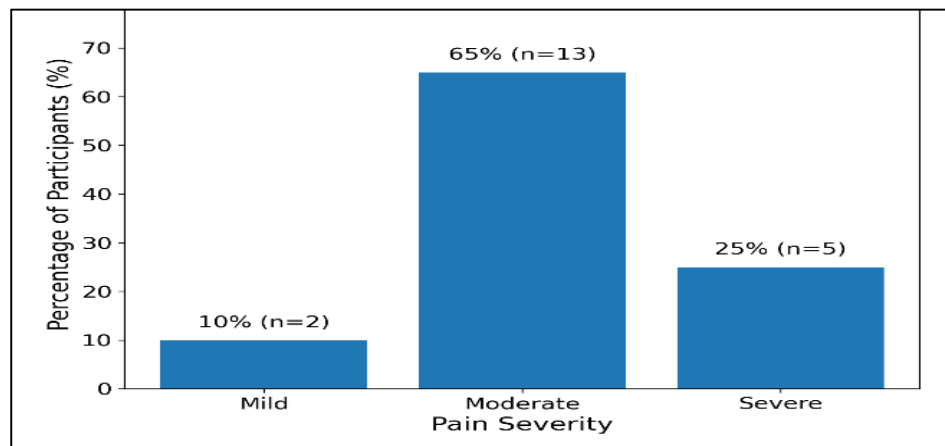


Figure 2a: Severity of Pain among Participants with Cervicogenic Headache

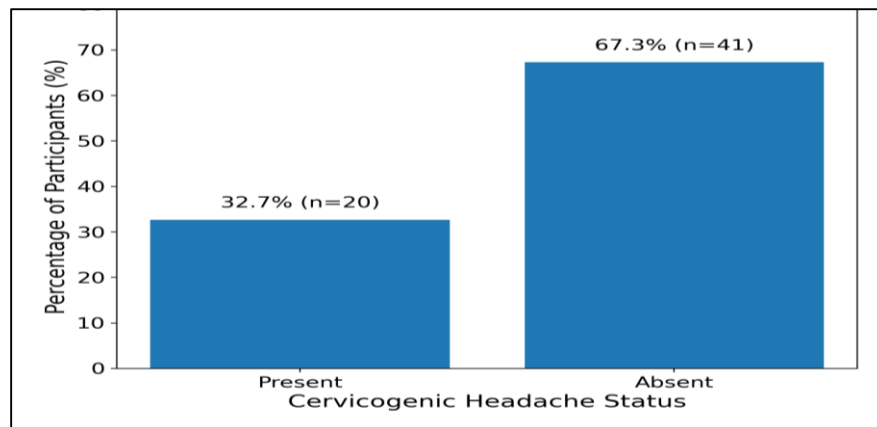


Figure 2b: Prevalence of Cervicogenic Headache Among Study Participants

DISCUSSION

The results of the current study showed that cervicogenic headache is prevalent in bankers working in banks in Islamabad. Current results obtained through the Visual analogue scale and Wiley-Blackwell Cervicogenic Headache: Diagnostic Criteria depicted that cervicogenic headache is present in bankers. There is evidence found regarding cervical pain among bankers due to abnormal posture, occupational hazards, and job factors that include long working hours, hectic routine, workload, age, but no such study has been found in Islamabad²².

A survey was conducted among computer users at the University of Sargodha to determine the prevalence of cervicogenic headache and neck pain. Using a self-developed questionnaire distributed via email, 119 responses were collected. The findings showed that 73.1% of participants experienced pain in their bodies on most days, with 58% reporting pain in the head and neck region. Additionally, 57.1% used chairs and sofas with back support, while 108 individuals attributed their pain to incorrect posture. These results indicate a growing prevalence of head and neck pain among computer users, likely due to prolonged laptop and computer use in incorrect postures²³. A cross-sectional study conducted is aimed to determine the prevalence of neck pain among bankers. A self-designed questionnaire was administered to 416 participants, both males and females aged 18-55 years. The bankers' work duration ranged from 8 to 12 hours per day. The study findings indicated a prevalence of 42.4% for neck pain among bankers, with 26.99% in males and 15.42% in females, reflecting the male-dominant data collection²⁴. These findings highlight the significance of addressing factors such as prolonged working hours and promoting ergonomic practices in the banking industry to mitigate the prevalence of neck pain among bankers and improve their overall well-being. Further research is needed to explore additional contributing factors and evaluate the effectiveness of preventive measures²⁴. Our study revealed the prevalence of cervicogenic headache, i-e, 32.7% less than the referenced study which may be due to study population and sample methods.

To determine the frequency and factors associated with headaches among individuals in various occupations, a cross-sectional study was conducted in four cities:

Karachi, Rawalpindi, Rahim Yar Khan, and Muzaffarabad. The study included 250 individuals aged 18-60 years, encompassing various professions such as doctors, engineers, businessmen, executives, drivers, teachers, armed officers, laborers, and household servants²⁵. In another study conducted in 2013 by Huber et al titled "Reinvestigation of the Dysfunction in Neck and Shoulder Girdle Muscles as the Reason for Cervicogenic Headache Among Office Workers," They conducted a comprehensive investigation to examine the association between musculoskeletal dysfunction and

cervicogenic headaches in office workers. The findings highlighted significant links between these muscular dysfunctions and the occurrence of cervicogenic headaches among office workers²⁶. The research has some limitations, such as a small sample size, which can create the risk of error, also not having an imaging diagnostic test and the short duration of the research is short, which may limit the validity of the prevalence results. Also, the number of individuals approached, declined or excluded had not been recorded systematically limiting the response rate. Also, the predominance of male participants (91.8%) may limit the generalizability of the findings to female bankers. Irrespective of these limitations, the research has meaningful information and can be useful to patients and physiotherapists in cervicogenic headache management. Future studies are to be done on a multicentric and longitudinal, and cross-sectional basis with more contributing factors like depression, psychological problems, occupational hazards, and other demographic variables. In addition, cervicogenic headache in female bankers who resume work after giving birth should also be investigated in the future.

CONCLUSION

The results showed that the most common related symptoms were pain episodes of different lengths, moderate and non-throbbing pain, and pain in the neck that extended to the oculo-fronto-temporal area, which indicates that occupational posture and neck strain may be associated with the Cervicogenic headache.

Author Contributions

Khaleel Ur Rehman conceived and designed the study, contributed to data collection, and supervised the research process. **Eeman Malik** assisted in study design, data analysis, and interpretation of results. **Mahpara Ali** contributed to the literature review, manuscript drafting, and

critical revision. All authors reviewed and approved the final manuscript.

Ethical Approval

Itl was obtained from the ethical committee of Foundation of Medical and Research and laboratories (Protocol no. FMRL-IRB/2024/028).

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None.

Conflict of Interests

None.

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