INSIGHTS-JOURNAL OF
HEALTH AND REHABILITATION

INSIGHTS-JHR
INSIGHTS-JOURNAL OF HEALTH AND REHABILITATION

PREVALENCE OF NECK PAIN AMONG BANK WORKER IN PESHAWAR: CROSS SECTIONAL SURVEY

Original Research

Manzoor[1], Arif Shah[2]*, Mamoona Waseem[3], Anosha Jamal[3], Shahbaz Khattak[4], Wajahat Ullah[5], Mujeeb Ur Rahman[6]
[1]Physical Therapist, Islamabad Club, Islamabad, Pakistan.
[2]Physical Therapist, Paraplegic Centre, Peshawar, Pakistan.
[3]Clinical Physical Therapist, PhysioPlus Clinic, Peshawar, Pakistan.
[4]Therapeutic Stretching Therapist, Doctor Stretch Mobile Wellness, USA.
[5]Clinical Physical Therapist, Sarhad University of Science and Information Technology, Peshawar, Pakistan.
[6]Assistant Professor, Khyber Medical University, Pakistan.
Corresponding Author: Arif Shah, Physical Therapist, Paraplegic Centre, Peshawar, Pakistan, arifkmu90@yahoo.com
Acknowledgement: The authors acknowledge the cooperation of all participating bank employees in Peshawar.

Conflict of Interest: None
Grant Support & Financial Support: None

ABSTRACT

Background: Neck pain (NP) is one of the most commonly reported musculoskeletal disorders (MSDs), especially in occupations that involve prolonged sitting and repetitive movements. Bank workers are particularly vulnerable due to their static postures, extensive computer use, and high job demands. Unaddressed, NP can significantly impact productivity and quality of life. Understanding its prevalence and associated occupational risk factors is essential to designing effective preventive and ergonomic interventions.

Objective: To determine the prevalence of neck pain and identify associated risk factors among bank workers in Peshawar.

Methods: A descriptive cross-sectional study was carried out over five months, from November 2014 to April 2015, involving 150 bank workers selected via convenience sampling from various banks in Peshawar. Data were collected using a self-administered questionnaire, which was pre-tested through a pilot study. Participants included both male and female employees aged 25–60 years, with at least one year of work experience. Individuals with a history of major trauma or spinal deformities were excluded. Descriptive statistics were analyzed using SPSS version 20.0.

Results: Of the 150 bank workers surveyed, 132 (88%) were male and 18 (12%) female, with a mean age of 31.88 ± 6.21 years. The overall prevalence of neck pain was 51.3% (n=77), higher among females (77.7%) than males (47.7%). Regarding onset, 7% experienced neck pain in the first year of work, 44% within 2–5 years, 19.3% between 6–15 years, and 6.7% after 16 years. Reported risk factors included repetitive tasks (32%), overtime work (23.3%), poor posture (18.7%), repetitive neck movements (15.3%), and working with a bent neck (10.7%).

Conclusion: The study revealed a high burden of neck pain among bank workers, with notable gender differences and multiple occupational risk factors. These findings emphasize the need for ergonomic interventions, employee training, and preventive strategies in banking workplaces.

Keywords: Bank Workers, Ergonomics, Musculoskeletal Disorders, Neck Pain, Occupational Health, Posture, Risk Factors.

INTRODUCTION

Neck pain is a prevalent musculoskeletal complaint that significantly impacts individuals' quality of life and productivity. It is characterized by discomfort or stiffness in the cervical region, often radiating to the shoulders or upper back. Epidemiological studies suggest that nearly one-third of the global population will experience neck pain at some point during their lifetime (1). In 2010 alone, approximately 330 million individuals worldwide were affected, accounting for about 4.9% of the global population (2). This condition not only contributes to physical discomfort but also poses a substantial economic burden, as about 31.25% of those affected report absenteeism from work due to its severity (3). Research consistently shows a gender disparity in the occurrence of neck pain, with women experiencing a higher prevalence (5.7%) compared to men (3.9%) (4,5). Although neck pain is widespread, it is still less prevalent than lower back pain. The prevalence also varies across different geographical regions and occupational groups. For example, the reported prevalence in northern Sweden is 43%, while in Hong Kong, it stands at 32% (6,7). In contrast, the United States reports a relatively lower prevalence of 5.6% (8). Certain occupational settings appear particularly vulnerable, with bank workers being one of the most affected groups due to the nature of their tasks. In Kuwait and Ghana, the prevalence among bank employees has been reported as 53.5% and 47.4% respectively (9,10). Similarly, rates of 45.7% in Dhaka and 37.4% in Iran further underscore the occupational risk (11,12). The development of neck pain is multifactorial, influenced by intrinsic factors such as age, genetics, gender, and psychosomatic health, as well as lifestyle habits including smoking (13). In occupational contexts, especially among bank workers, extrinsic factors play a critical role. Prolonged sitting, sustained neck flexion, repetitive movements, inadequate workstation ergonomics, and psychosocial stressors have all been identified as key contributors to the onset and persistence of neck pain (4,9,12). Given the high prevalence and occupational implications, particularly in professions involving sedentary and repetitive tasks, there is a pressing need to understand the specific burden of neck pain in regional populations. Despite global data, there remains a lack of localized evidence exploring the magnitude and risk factors of neck pain among bank workers in Pakistan. Therefore, this study aimed to determine the prevalence of neck pain among bank workers in Peshawar and to identify the associated risk factors contributing to its development.

METHODS

This cross-sectional study was conducted over a five-month period, from November 2014 to April 2015, to determine the prevalence of neck pain and explore its associated risk factors among bank workers in Peshawar. A convenience sampling method was used to recruit a sample of 150 bank employees from various public and private banks operating within the city. Both male and female participants were eligible for inclusion if they were between the ages of 25 and 60 years and had a minimum of one year of continuous employment in the banking sector. Individuals with a known history of major trauma, spinal deformities, or underlying neuromusculoskeletal disorders were excluded from participation to ensure the accuracy of outcomes and to minimize confounding variables. Prior to the main data collection phase, a pilot study was carried out involving 15 bank employees to assess the clarity, consistency, and content validity of the questionnaire. Modifications were made where necessary to improve reliability. The final version of the self-administered questionnaire included sections on demographic details, occupational history, and potential risk factors for neck pain. These risk factors encompassed both ergonomic and lifestyle-related variables such as posture, duration of computer use, stress levels, and physical activity. The questionnaire was distributed by hand, and data were collected on-site during working hours with the permission of the bank administration. A total of 150 questionnaires were distributed and all were returned, resulting in a response rate of 100%, which strengthens the representativeness of the findings. The sample size was calculated using the Raosoft online calculator, based on an assumed population proportion with a 95% confidence level and a 5% margin of error, which is a standard approach in epidemiological research (14,15). Data analysis was conducted using IBM SPSS Statistics version 20.0. Descriptive statistics, including frequency distributions and percentages, were used to present categorical variables, while mean and standard deviation were calculated for continuous variables. Results were tabulated for clarity and ease of interpretation. Ethical approval was obtained from the relevant institutional review board prior to the commencement of the study. Written informed consent was obtained from all participants after explaining the purpose and voluntary nature of the study. Confidentiality and anonymity of responses were ensured throughout the data collection and analysis process.

INSIGHTS-JHR
INSIGHTS-JOURNAL OF HEALTH AND REHABILITATION

RESULTS

A total of 150 bank workers participated in the study, with a response rate of 100%. The demographic profile revealed that 88% of the participants were male (n=132) and 12% were female (n=18). The mean age of the participants was 31.88 years (SD ±6.21). The overall prevalence of work-related neck pain was 51.3% (n=77), while 48.7% (n=73) reported no neck pain. Among those affected, the prevalence was notably higher in females (77.7%) compared to males (47.7%). Regarding work experience, 58% of participants had been employed in banking for 1–5 years, 28.7% for 6–10 years, 8% for 11–20 years, and 5.3% had more than 21 years of experience. Analysis of the onset of neck pain revealed that 6.7% reported its onset within the first year of employment, 44% within 2–5 years, 19.3% within 6–15 years, and 6.7% after 16 years of work. Notably, 23.3% of participants were uncertain about when they first experienced neck pain. Risk factors associated with neck pain were identified through participant responses. Performing repetitive tasks continuously was reported by 32%, followed by working overtime (23.3%), adopting improper posture (18.7%), repetitive neck movements (15.3%), and working with a bent neck in poor positions (10.7%). Additionally, 46.7% of respondents believed their workstation ergonomics contributed to their neck pain, whereas 53.3% did not perceive such an association.

Table 1: Demographics, Neck Pain Prevalence, and Associated Factors

Variables	Numbers	Percentage
Gender		
Male	132	88%
Female	18	12%
Age in years (Mean ± SD)	31.88 ± 6.21	
Work-related neck pain		
Yes	77	51.3%
No	73	48.7%
Work experience in years		
1–5 years	87	58%
6–10 years	43	28.7%
11–20 years	12	8%
21 years and onward	8	5.3%
First experience of neck pain		
In first year of work	10	6.7%
2–5 years of work	66	44%
6–15 years	29	19.3%
16 years and onwards	10	6.7%
Don’t know	35	23.3%
Factors associated with neck pain		
Performing the same task continuously	48	32%
Working overtime	35	23.3%
Working in improper posture	28	18.7%
Repetitive neck movement	23	15.3%
Working with a bent neck in poor positions	16	10.7%
Ergonomics association with neck pain		
Yes	70	46.7%
No	80	53.3%

INSIGHTS-JHR
INSIGHTS-JOURNAL OF HEALTH AND REHABILITATION

Table 2: Risk Factors Associated with Neck Pain

Risk Factor	Percentage (%)
Performing the same task continuously	32.0
Working overtime	23.3
Working in improper posture	18.7
Repetitive neck movement	15.3
Working with a bent neck in poor positions	10.7

Table 3: Neck Pain Prevalence by Gender

Gender	Number with Neck Pain	Prevalence (%)
Male	63	47.7
Female	14	77.7

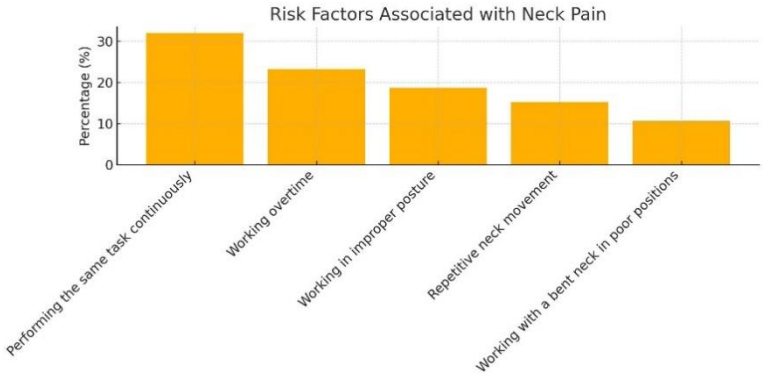

Figure 1 Risk Factors Associated with Neck Pain

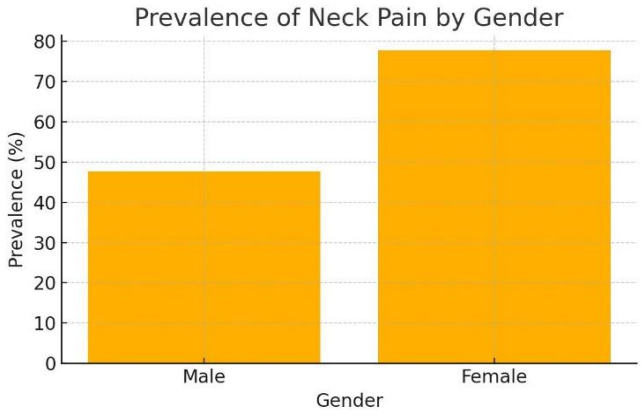

Figure 2 Prevalence of Neck Pain by Gender

DISCUSSION

The findings of this study confirmed a high prevalence of neck pain among bank workers in Peshawar, aligning with previous research conducted in similar occupational groups across different regions. The observed prevalence of 51.3% falls within the range reported in earlier studies, such as 53.3% in Kuwait, 47.4% in Ghana, 45.7% in Dhaka, and 37.4% in Iran (9–12). These consistent figures across geographically and culturally diverse populations reflect the occupational nature of neck pain, especially in sedentary jobs that require repetitive and static postures. In addition, the current study reinforced the gender disparity previously noted, with female participants being disproportionately affected by neck pain compared to their male counterparts, which is consistent with trends reported in all comparative studies (15,16). The distribution of neck pain onset in relation to duration of employment also mirrored the literature. A prior study reported the onset within the first year of employment in 6.25% of cases, within 2–5 years in 43.75%, 6–15 years in 18.75%, and after 15 years in 6.35%, with 25% uncertain about the timeline (17). Comparable findings were noted in the present study, suggesting a pattern of increasing risk during the early years of employment, likely due to cumulative strain and suboptimal adaptation to ergonomic stressors. These observations support the hypothesis that the first few years in the profession are critical for intervention to prevent the chronicity of musculoskeletal issues. Risk factor analysis in this study also corresponded closely with previous investigations. Repetitive tasks, prolonged work hours, improper posture, and neck bending were recurrently identified across studies as major contributors to neck pain in bank workers (18-20). In the current analysis, 32% of participants attributed their symptoms to continuous task repetition, followed by 23.3% citing overtime work, and others referencing awkward postures and repetitive neck movements. These modifiable risk factors underscore the importance of workplace ergonomics and targeted occupational health policies. Furthermore, the role of psychosocial and environmental stressors was noted in earlier studies but was not extensively captured in the present research, representing a potential area for expansion in future investigations.

INSIGHTS-JHR
INSIGHTS-JOURNAL OF HEALTH AND REHABILITATION

The relationship between poor ergonomics and musculoskeletal disorders was well-documented in the existing literature and was similarly reflected in the current study, where 46.7% of participants acknowledged ergonomic deficiencies as exacerbating their neck pain. Prior studies have highlighted that suboptimal workstation design, including improper monitor height, lack of lumbar support, and incorrect keyboard placement, contributed significantly to the burden of neck pain among desk-based employees (21,22). These findings further substantiate the need for ergonomic interventions as a preventive measure in occupational settings. A key strength of this study lies in its focused population and complete response rate, which strengthens the internal validity of the results. The use of a validated, piloted questionnaire enhanced the reliability of data collection. However, certain limitations merit consideration. The cross-sectional design limits causal inference, and the use of convenience sampling restricts the generalizability of the findings beyond the studied region. The relatively small sample size and single-city focus may not represent the full occupational diversity of bank workers across Pakistan. Additionally, the lack of standardized clinical assessment or diagnostic confirmation of neck pain introduces the potential for reporting bias. Time constraints among participants also posed a challenge, as the demanding nature of their work may have hindered thorough responses to the questionnaire. Future studies should consider incorporating objective ergonomic assessments, larger multi-center cohorts, and analytical techniques such as regression modeling to identify predictive factors for neck pain (22). Incorporating physical examination findings and validated scales for pain intensity and disability would also enrich the data quality and clinical relevance. The findings of this study highlight the pressing need for preventive strategies targeting ergonomic improvements, education on posture, and structured breaks during work hours to reduce the burden of neck pain in bank employees. Building an evidence-based framework in physical therapy within the local context of Peshawar could pave the way for broader public health interventions and policy development aimed at minimizing work-related musculoskeletal disorders.

CONCLUSION

This study concluded that neck pain is a common occupational health concern among bank workers, primarily driven by poor ergonomic practices, prolonged sitting, and repetitive tasks. The findings highlight the urgent need for workplace modifications and preventive strategies, such as ergonomic interventions, posture education, and routine physical activity, to mitigate the risk of musculoskeletal strain. By addressing these modifiable factors, not only can work performance be improved, but the overall quality of life for affected individuals can also be enhanced. These insights serve as a valuable foundation for developing targeted occupational health policies within the banking sector.

AUTHOR CONTRIBUTION

Author	Contribution
Manzoor	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing Has given Final Approval of the version to be published
Arif Shah*	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing Has given Final Approval of the version to be published
Mamoona Waseem	Substantial Contribution to acquisition and interpretation of Data Has given Final Approval of the version to be published
Anosha Jamal	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Shahbaz Khattak	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Wajahat Ullah	Substantial Contribution to study design and Data Analysis Has given Final Approval of the version to be published
Mujeeb Ur Rahman	Contributed to study concept and Data collection Has given Final Approval of the version to be published

INSIGHTS-JHR
INSIGHTS-JOURNAL OF HEALTH AND REHABILITATION

REFERENCES

1. Erick P, Sethatho M, Tumoyagae T, Letsholo B, Tapera R, Mbongwe B. Self-reported neck and back pain among supermarket cashiers in Gaborone, Botswana. Int J Occup Saf Ergon. 2023;29(3):989-97.
2. Wu T, Wang H, Huang K, He J, Yan C, Ding C, et al. Risk factors of bone loss after Prestige-LP cervical disc arthroplasty. Eur Spine J. 2024;33(10):3969-77.
3. Sreeharsha P, Kanna RM, Milton R, Shetty AP, Rajasekaran S. Risk factors for thirty-day morbidity and mortality after spinal trauma. Eur Spine J. 2023;32(1):110-7.
4. Baucher G, Taskovic J, Troude L, Molliqaj G, Nouri A, Tessitore E. Risk factors for the development of degenerative cervical myelopathy: a review of the literature. Neurosurg Rev. 2022;45(2):1675-89.
5. Jackson JA, Liv P, Sayed-Noor AS, Punnett L, Wahlström J. Risk factors for surgically treated cervical spondylosis in male construction workers: a 20-year prospective study. Spine J. 2023;23(1):136-45.
6. Gao Y, Chen Z, Chen S, Wang S, Lin J. Risk factors for neck pain in college students: a systematic review and meta-analysis. BMC Public Health. 2023;23(1):1502.
7. Baek IW, Joo YB, Park KS, Kim KJ. Risk factors for cervical spine instability in patients with rheumatoid arthritis. Clin Rheumatol. 2021;40(2):547-55.
8. Pinter ZW, Mikula A, Shirley M, Xiong A, Michalopoulos G, Ghaith AK, et al. Risk Factors for Allograft Subsidence Following Anterior Cervical Discectomy and Fusion. World Neurosurg. 2023;170:e700-e11.
9. Nagata K, Nakamoto H, Iwai H, Takeshita Y, Hara N, Azuma S, et al. Risk Factors and Prevalence of Sleep Disturbance in Degenerative Cervical Myelopathy. World Neurosurg. 2025;194:123610.
10. Yang F, Wang Z, Zhang H, Xie B, Zhao H, Gan L, et al. Prevalence and risk factors of occupational neck pain in Chinese male fighter pilots: a cross-sectional study based on questionnaire and cervical sagittal alignment. Front Public Health. 2023;11:1226930.
11. Ren S, Jiang X, Wang S, Wong AYL, Bi X, Wang X. The prevalence and factors associated with neck and low back pain in patients with stroke: insights from the CHARLS. BMC Public Health. 2024;24(1):2362.
12. Yoo SJ, Park JY, Chin DK, Kim KS, Cho YE, Kim KH. Predictive risk factors for mechanical complications after multilevel posterior cervical instrumented fusion. J Neurosurg Spine. 2023;38(2):165-73.
13. Stjernbrandt A, Pettersson H, Vihlborg P, Wahlström J, Lewis C. Occupational exposure to whole-body vibration and neck pain in the Swedish general population. Ergonomics. 2024;67(2):136-47.
14. Stjernbrandt A, Hoftun Farbu E. Occupational cold exposure is associated with neck pain, low back pain, and lumbar radiculopathy. Ergonomics. 2022;65(9):1276-85.
15. Chowdhury SK, Zhou Y, Wan B, Reddy C, Zhang X. Neck Strength and Endurance and Associated Personal and Work-Related Factors. Hum Factors. 2022;64(6):1013-26.
16. Kazeminasab S, Nejadghaderi SA, Amiri P, Pourfathi H, Araj-Khodaei M, Sullman MJM, et al. Neck pain: global epidemiology, trends and risk factors. BMC Musculoskelet Disord. 2022;23(1):26.
17. Hayashi T, Fujiwara Y, Kawano O, Yamamoto Y, Kubota K, Sakai H, et al. Incidence and risk factors of pneumonia following acute traumatic cervical spinal cord Injury. J Spinal Cord Med. 2023;46(5):725-31.
18. Gou L, Zheng Q. How to reduce the risk of cervicalgia and low back pain in obese individuals: A mendelian randomization study. Medicine (Baltimore). 2023;102(18):e33710.
19. Maldonado CJ, White-Phillip JA, Liu Y, Choi YS. Exposomic Signatures of Cervical Pain. Mil Med. 2023;188(Suppl 6):116-23.
20. Alentado VJ, Bisson EF, Potts EA. Dysphagia after cervical spine surgery: a review of risk factors and preventative measures. J Neurosurg Spine. 2023;38(3):382-8.
21. Correia IMT, Ferreira AS, Fernandez J, Reis FJJ, Nogueira LAC, Meziat-Filho N. Association Between Text Neck and Neck Pain in Adults. Spine (Phila Pa 1976). 2021;46(9):571-8.
22. Czępińska A, Zawadka M, Wójcik-Załuska A, Rzezak-Siwiec A, Gawda P. Association between pain intensity, neck disability index, and working conditions among women employed in horticulture. Ann Agric Environ Med. 2023;30(3):531-5.