# Relationship of Job Satisfaction and Neck Pain among Medical Professionals

**Zularsha Tatheer,[1] Aqsa Riaz,[2] Umaira Moeed,[3] Qirrat Shahbaz,[4] Menahil Arif,[5] Wajida Perveen,[6] Sidra Manzoor[7]**

## Abstract

**Objective:** To determine the relationship of job satisfaction and neck pain among medical professionals.

**Material and Methods:** A cross-sectional study was conducted utilizing non-probability convenience sampling to accumulate data of 331 participants using Job Satisfaction Survey (JSS) questionnaire, the Visual Analogue Scale (VAS), and the Neck Disability Index (NDI). Data was gathered from three public hospitals: CMH, Services, and Jinnah Hospital in four months, after the approval of synopsis. Medical professionals of age between 20 and 45 years, from diverse fields such as MBBS, BDS, Nursing, and Allied Health Sciences were included. To analyze the collected data, we employed the SPSS software version 26.0. Pearson's Test was used to find the relationship between neck pain and job satisfaction.

**Results:** Abount half of the participants (48%) were 20 to 30 years old. The majority of the participants (53.5% of the total) were male accounting. Among them, 64.4% reported experiencing pain levels ranging from 1 to 4 on VAS, indicating mild pain. The 99.4% of participants who fell within the 37-108 score range on JSS indicating a dissatisfied response.

**Conclusion:** This study revealed the relationship between job satisfaction and neck pain among medical professionals. The findings show the prevalence and impact of neck pain as a significant musculoskeletal condition affecting a substantial portion of the population.

**Keywords:** Neck Pain, Job Satisfaction, Job Satisfaction Survey, Visual Analogue Scale, Neck Disability Index, Medical Professionals.

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## Introduction

Neck pain (NP) was reported by 60% of participants,[1] it affects approximately half (45.8%) of the adult population annually[2] and disrupts cervical proprioception, contributing to its persistence.[3] Work-related factors like job satisfaction, psychosocial elements, and the physical work environment play significant roles in NP.[4] Identifying risk factors, including sedentary lifestyles, prolonged computer use, and heightened stress levels, is crucial.[5] Quality of Work life is negatively related to job stress, positively related to job satisfaction and to job commitment,[6] without providing better facilities organizations can't run properly, whereas- working environment is the prime concerning issue of the employee.[7] To improve a company's financial performance by maintaining good employee productivity, total reward system may enhance job satisfaction and productivity.[8] Musculoskeletal health is crucial for human mobility and productivity, but conditions like low back and neck pain are major causes of disability.[9] Ergonomic interventions can be effective for work-related complaints of the arm, neck or shoulder (CANS) in adults on pain, function and work-related outcomes.[10] Musculoskeletal disorders (MSDs), including NP, rank as a leading cause of disability.[11] Neck and upper body pain results from

*1-5 Department of Physical Therapy, School of Allied Health Sciences, CMH LMC & IOD Lahore*

*6. Department of Physical Therapy, School of Allied Health Sciences, CMH LMC & IOD (NUMS) Lahore*

*7. Department of Biomechanics and Movement Sciences, BIOMS University of Delaware, Newark USA.*

**Correspondence:**

Dr. Wajida Perveen, *Associate Professor & HOD DPT Department of Physical Therapy, School of Allied Health Sciences, CMH LMC & IOD Lahore.*

*E-mail: wjda_noor@yahoo.com*

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various factors, including ergonomics, individual traits, lifestyles, and psychosocial factors, with job strain affecting males more than females.[12] Reading with a head-down posture and prolonged work with hands above shoulder level are physical factors strongly linked to neck and shoulder pain[(13)]. NP can arise from various causes, including arthritis, disc degeneration, muscle inflammation, strain, or rare underlying conditions.[2] Neck pain results in significant productivity loss and personal suffering, impacting both work performance and well-being, there was discontinuation in 37(21.8% in EET group and EHP 77(20.2%).[14] Job dissatisfaction and psychosocial stress significantly affect job productivity in healthcare settings.[15] In Ethiopia, Manyazewal and his team assessed the impact of healthcare reform on job satisfaction among healthcare professionals, revealing an adverse effect on job satisfaction among public healthcare professionals.[16] To eliminate MSD hazards in the workplace is most effectively reduced by developing health programmes aimed at advocating healthy lifestyle behaviours and raising workers' awareness of workstation ergonomics and work organization[(17)]. Kim and colleagues focused on the influence of musculoskeletal pain on job satisfaction among care workers, finding a significant association between musculoskeletal pain and job satisfaction, particularly among older participants.[18]

Similarly, Temesgen and associates investigated job satisfaction among health professionals in the Western Amhara region, revealing that one-third of health professionals reported contentment with their occupation, with factors such as workload and educational status influencing job satisfaction.[19]

Limited research on quality of life in Pakistan, particularly regarding NP, prompts a study focused on young medical professionals to enrich understanding and propose solutions. Enhancing their well-being can amplify their impact on community health, making this research vital for Pakistan's medical landscape. Addressing NP and its risk factors, including job satisfaction and ergonomics, is crucial for individual health and societal well-being. These studies collectively highlight the importance of understanding and addressing the impact of MSDs on job satisfaction within various professions, as the present study aims to contribute to this research by examining the specific issue of neck pain among young medical professionals. The objective of the current study is to determine the relationship of job satisfaction and neck pain.

## Material and Method

This cross-sectional study was conducted in public sector hospitals in Lahore in four months, (May-August 2023), following the approval of the research synopsis. The study was approved by the ethics committee of CMH Lahore Medical College & IOD wide case no # 711/REC/CMH/LMC dated 25th April 2023. To ensure a robust and representative sample, the study employed a sample size of 331 participants, calculated using the WHO Calculator.[20] The determination of sample size involved considering a 95% confidence interval, represented by the standard value of 1.96 (z), as well as factors such as the prevalence rate (p) and the sample size constant (d), which was set at 0.05. This comprehensive approach to sample size determination enhances the study's statistical validity and reliability.

In terms of participant selection, a non-probability convenient sampling technique was adopted. The inclusion criteria specified individuals falling within the age range of 20 to 45 years and encompassed those with diverse medical backgrounds, including MBBS, nursing, BDS, and allied health sciences. Conversely, the exclusion criteria precluded individuals with neck pain arising from trauma, congenital deformities, or systemic illnesses from the study.

Data were collected using Visual Analogue Scale (VAS), Job Satisfaction Survey (JSS), and Neck Disability Index (NDI). The VAS score ranged from 0 to 10, with 0 indicating no pain and 10 representing the worst pain.[21] Concurrently, the JSS total scores ranging from 1 to 108, the lower the score, more satisfied the person will be[(22)]. The Neck Disability Index (NDI), comprises ten questions four questions pertain to subjective symptoms (pain intensity, headache, concentration, sleeping), while six questions address daily activities (lifting, work, driving, recreation, personal care, reading). According to Vernon and Mior's proposed classification, a score below 4 indicates no disability, 5-14 suggests mild disability, 15-24 moderate, 25-34 indicates severe disability, and scores exceeding 35 represent complete disability.[22] Pearson r was calculated to find an association between the variables and $p \leq 0.05$ was considered statistically significant.

## Results

The demographic characteristics of the participants are given as table 1. While the scores of Visual analogue scale, Neck disability index and Job satisfaction scale are expressed as table 2 and relationship of job satisfac-

tion with neck pain and neck disability index is given as table 3. Table 1 shows the demographic characteristics of the participants. The age distribution of the participants showed that the majority of them (48%) were under the age of 30, indicating a relatively younger population. The study had a slightly higher representation of males, accounting for 53.5% of the total. The marital status of the participants shows that the majority (57.4%) were married. The specialty distribution among the participants indicates that the largest group (31.4%) consisted of individuals with MBBS graduates, 24.8% BDS nursing field, constituting 18.7%, and allied health sciences accounts for 25.1% of the participants. The study reveals that the majority (45.9%) had a monthly income greater than 40,000 units, indicating a relatively higher income bracket.

Table 2 presents participants' pain levels, neck disability, and job satisfaction. The initial column indicates that 64.4% of participants reported experiencing pain levels ranging from 1 to 4, suggesting a mild degree of pain, 24.5% reported moderate pain levels of 5-6, and 11.2% had pain levels ranging from 7-9 reflecting the severe pain. On the basis of NDI scores, 3% had no disability (0-4 range), 39.6% had mild disability (5-14 range), 39.3% had moderate disability (15-24 range), 16% had severe disability (25-34 range), and 2.1% had complete disability (35-50 range). Lastly, the study found that majority of participants (99.4%), expressed dissatisfaction with their jobs. Table 3 presents a descriptive analysis of the inverse relationship between the Visual Analog Scale (VAS) scores, which measure the intensity of neck pain, and the Job Satisfaction Survey (JSS) scores using Pearson's Test, which generated a p-value of 0.003 and an r-value of -0.165. The data demonstrates that as VAS scores increase, indicating higher levels of neck pain, JSS scores decrease, indicating lower levels of job satisfaction. This suggests a strong negative correlation between neck pain intensity and job satisfaction among the participants. An inverse relationship between Neck Disability Index (NDI) scores and JSS, reflecting the level of neck disability, and Job Satisfaction Survey (JSS) scores. The data clearly reveals a pattern in which higher NDI scores, signifying greater neck disability, align with lower JSS scores, indicating reduced job satisfaction. This observation indicates a strong negative correlation between neck disability and job satisfaction among the participants. The findings imply that as neck disability increases, job satisfaction tends to decrease.

**Table 1:** *Demographic Characteristics of Participants (n=331)*

| VARIABLES | RESPONSES | N (%) |
|---|---|---|
| **Age of participants** | 21-30 | 159(48%) |
| | 31-40 | 115(34.74%) |
| | 41-50 | 57(17.22%) |
| **Gender of participants** | Male | 177(53.5%) |
| | Female | 154(46.5%) |
| **Marital status of participants** | Married | 190(57.4%) |
| | Unmarried | 141(42.6%) |
| **Specialty of participants** | MBBS | 104(31.4%) |
| | BDS | 82(24.8%) |
| | Nursing | 62(18.7%) |
| | Allied Health Sciences | 83(25.1%) |
| **Monthly income of participants** | <20,000 | 55(16.6%) |
| | 20,000-30,000 | 38(11.5%) |
| | 30,000-40,000 | 86(26%) |
| | >40,000 | 152(45.9%) |

**Table 2:** *Scores of Visual analogue scale, Neck disability index and Job satisfaction scale*

| Scales | Score | Frequency (%) |
|---|---|---|
| Pain severity VAS | 1-4 | 213(64.4%) |
| | 5-6 | 81(24.5%) |
| | 7-9 | 37(11.2%) |
| NDI | 0-4 (No Disability) | 10(3%) |
| | 5-14 (Mild Disability) | 131(39.6%) |
| | 15-24 (Moderate Disability) | 130(39.3%) |
| | 25-34(Severe Disability) | 53(16%) |
| | 35-50(Complete Disability) | 7(2.1%) |
| JSS | 18-35 (Satisfied) | 2(0.6%) |
| | 37-108 (Dissatisfied) | 329(99.4%) |

**Table 3:** *Relationship of job satisfaction with neck pain and neck disability index*

| VAS Vs JSS | | r | P-value |
|---|---|---|---|
| Interval by Interval | Pearson's R | -0.165 | 0.003[c] |
| **NDI Vs JSS** | | | |
| Interval by Interval | Pearson's R | -0.085 | 0.125[c] |

## Discussion

The present study underscores that neck pain (NP) is a prevalent issue among medical professionals, arising from a complex interplay of individual attributes and workplace dynamics. Various factors such as gender, age, length of employment, job satisfaction, and overall health status were identified as significant correlates of Neck Pain in medical professionals. NP was found to be closely associated with factors such as musculoskeletal discomfort, heightened job demands, inadequate social

support, job instability, diminished physical capacity, unfavorable work postures, prolonged periods of inactivity, persistent tasks, and substandard physical work environments. Additionally, gender, profession, headaches, emotional concerns, smoking habits, job dissatisfaction, and inappropriate work ergonomics emerged as possible contributors to Neck pain. Engaging in rest breaks during work hours and adopting regular physical exercises were revealed as protective measures against NP, consistent with previous research. Furthermore, the study unveiled a higher prevalence of NP among male medical professionals than their female counterparts, potentially due to variations in musculoskeletal structures and pain sensitivity. Age and duration of employment were also identified as factors elevating the risk of NP, corroborating prior studies that have established a connection between advancing age and neck discomfort. The study highlighted that protracted periods of sitting, static postures, and unfavorable work conditions were linked to a heightened likelihood of NP. Notably, low job satisfaction was closely tied to the development of NP. The effects of NP were substantial, affecting functional impairment, quality of life, and work-related challenges. Individuals suffering from NP reported compromised quality of life, work-related impediments, and limitations in daily activities.[(2)]

Research indicates that individuals experiencing significant debilitation due to neck pain with a moderate or severe impact on overall health have coexisting comorbidities like history of neck injury. This implies that chronic conditions tend to exaggerate in specific individuals, and give rise to set of different symptoms [(3)].

Psychological and social factors, in addition to mechanical aspects, significantly contribute to the onset of neck pain. While traditional factors such as workload and decision-making control are known to play roles in work-related neck pain, this study has unearthed novel factors that are even more influential in this regard.[5]

The pronounced risk of musculoskeletal disorders (MSDs) tied to office employment casts a negative impact on employees, businesses, and society at large. This study provides evidence that office workers frequently experience musculoskeletal issues that are closely linked to diminished job satisfaction. These findings underscore the importance of giving heightened attention to MSDs among office workers and formulating effective preventive strategies. In our study, a considerable number of health professionals experienced neck pain, which was attributed to reduced job satisfaction.[17] Professionals working night shifts often encounter more health challenges than their counterparts. Many workers undertake night shifts, which adversely affects their health, especially if they experience neck pain due to prolonged sitting or standing. The lack of adequate sleep during night shifts may give rise to other occupational health problems. Our study revealed that those with lower job satisfaction were more likely to experience musculoskeletal issues like neck pain[(11)]. Professionals who experience higher workloads tend to be more satisfied than those with lower workloads. Additionally, professionals who consistently undergo medical checkups and consultations tend to be more content than their peers. When compared to their counterparts, professionals whose needs and expectations are met tend to be more satisfied. Our study also indicated an inverse relationship between authorized autonomy and job satisfaction. This suggests that those health professionals who have their autonomy respected experience greater job satisfaction and consequently less neck pain.[19]

A significant proportion of medical professionals reported neck and upper limb pain. Risk factors for neck pain in medical professionals included overexertion and sustained forms of movement. These factors led to job dissatisfaction among medical professionals, which in turn was linked to neck pain. Many inflammatory and degenerative diseases or conditions are work-related musculoskeletal disorders. These disorders can affect the neck and upper limb region. Research consistently demonstrates a clear link between job performance and the occurrence of musculoskeletal disorders in the neck and upper limb regions. Our study found an inverse relationship between neck pain and job satisfaction among medical professionals, indicating that those who are less satisfied with their jobs experience more neck pain.[23]

There was a strong correlation between job satisfaction and neck pain or musculoskeletal pain. Psychological factors associated with job satisfaction also played a significant role in musculoskeletal pain. Social support influenced the psychological factors tied to job satisfaction, which, in turn, could impact neck or musculoskeletal pain. The study also related shoulder or neck pain to low job satisfaction. Our study similarly revealed that an inverse relationship between neck pain and job satisfaction exists among medical professionals, suggesting that those who are less satisfied with their jobs are more prone to experiencing neck pain.[24] The residents in our country are unhappy with their work place and

have low job satisfaction.[25] Postural support, monitoring work hours, and taking small stretch breaks can play an important part in their professional well-being.[26]

## Conclusion

This research study revealed the relationship between job satisfaction and neck pain among medical professionals. The findings show the prevalence and impact of neck pain as a significant musculoskeletal condition affecting a substantial portion of the population.

**Conflict of interest:** None

**Funding Source:** None

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## Authors Contribution

**SM, WP:** Conceptualization of Project
**ZT, AR:** Data Collection
**QS, MA:** Literature Search
**SM, UM:** Statistical Analysis
**WP, ZT:** Drafting, Revision
**WP, ZT:** Writing of Manuscript