

Prevalence of Upper Back Pain Including Neck Pain Among College Going Students

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Abstract:

Introduction- Upper back pain & neck pain is increasingly common among college students due to sedentary lifestyles, poor posture, and excessive screen time. Early identification of disability levels is essential to prevent long-term musculoskeletal problems.

The aim and objective - To determine the prevalence of upper back pain including neck pain among college-going students using the Neck Disability Index (NDI) and to explore its association with lifestyle factors.

Need of study – The Need of study is to investigate the Prevalence of upper back pain including neck pain among college going students.

Methodology & Outcome measures - A cross-sectional observational study was conducted among 60 college students. The NDI questionnaire was used to assess the level of neck-related functional disability. Participants with vertebral artery insufficiency, spinal trauma, deformity, radiating pain, or a history of neck surgery were excluded.

Results - Out of 60 participants, 29 (48.3%) reported varying degrees of neck-related disability, while 31 (51.7%) reported no disability. The NDI demonstrated high reliability and internal consistency for this population. Trends suggested a possible association between disability and prolonged screen time or poor posture.

Conclusion- The study reveals a high prevalence of upper back pain & neck pain - related disability among college students. These findings highlight the need for early preventive strategies, including posture education and lifestyle modification, to reduce the burden of musculoskeletal disorders in young adults.

Key Words – Upper back pain, neck pain, neck disability index, posture, ergonomics, sedentary lifestyle.

I. Introduction

Upper back pain is common among college going students due to prolonged study hours. Majority of students who were involved in university activities like sitting looking straight during lectures on multimedia or white board for 3–5 h reported upper back pain. On the other hand, majority of students whose study activities involve looking down during book reading for 1–2 h reported upper back pain.¹

In the past 30 years, there has been an increase in the prevalence of neck–shoulder pain (NSP) and low back pain (LBP) among teenagers. The use of computers and mobile phones for extended periods of time is one aspect that has contributed to this rise. The lower back is the third most typical area of non-traumatic pain in adolescents of both sexes, with the neck and shoulder being the most frequently affected musculoskeletal regions.^{2,3}

Back pain can have various causes but is most often triggered by poor posture and damage to or illnesses of the bones, joints, connective tissues, muscles and nerves. Back pain accompanied by clear medical evidence of a cause is referred to as specific back pain, whereas pain without a clear cause is referred to as non-specific back pain. Non-specific back pain is usually the result of a complex combination of psychological, social and biophysical factors and is far more common than specific back pain.⁵

In a study conducted among university students during the COVID-19 pandemic, 68% of participants' physical activity levels were found to be insufficient. While in another study, neck and shoulder problems were reported after longer use of mobile phones, and the size of the screen was also stated as an important factor in back pain. A Canadian study on users of mobile devices found that 68% of participants had neck complaints and 46–52% of individuals experienced shoulder symptoms.^{6,7,8}

Everyone agrees that sitting with a straight neck and supporting forearms is ideal. This position should only be held for a brief period of time, along with holding the cell phone with both hands and utilizing both thumbs.⁹ In the college student population, one-year prospective cohort study demonstrated a high incidence rate at 46% and of whom 33% reported persistent neck pain such as high prevalence of neck and shoulder symptoms, especially among the younger college students'. In developed and developing countries, the most common of neck pain has been reported in university students.¹⁰ Studies on the prevalence and risk factors of neck pain in the population are important because they generate social and economic consequences, both for the State and individuals. The economic burden due to neck disorders is high and includes treatment costs, lack of work and disability payments.^{12,13,14} It affects all age groups and can also have a major impact on worker function, performance and productivity. More

over; neck, shoulder and upper extremity pain has been reported as the major cause of sickness, reduced educational attainment and truancy from university lessons.¹⁵

II. Methodology

A total 60 subjects were included in the present study according to inclusion and exclusion criteria. All the students were taken from Career Point University Kota, Rajasthan.

It is a Cross Sectional Observational Study.

Inclusion criteria -

- Subject with upper back Pain including neck pain since 1 month.
- NDI raw score >15
- Nonspecific Radiating pain.
- Both males and females included.

Exclusion criteria

- History of spinal trauma (e.g., fractures, dislocation) within 1 Month
- Congenital spinal deformity (e.g., scoliosis, kyphosis).
- Previous spinal Injury and surgeries before 1 month.

III. Outcome Measures

For the analysis of prevalence, the scores obtained from neck disability index Questionnaire (NDI) were examined. The mean scores and their standard deviations were calculated for the entire sample, as well as for different subgroups based on demographic variables such as age, gender, and year of study.

Total participants: 60 college students

Assessment tool: Neck Disability Index (NDI)

Disability Classification (based on NDI %): NDI (%) Range- Disability Level

- 0–4% - No disability
- 5–14% - Mild disability
- 15–24% - Moderate disability
- 25–34% - Severe disability
- ≥35% - Complete disability

Based on the preventive measures recommended to reduce the risk of upper back and neck pain among students, ergonomic education-based training on correct posture during reading, studying, and computer use is crucial. Regular physical activity is also encouraged, with at least 30 minutes of moderate exercise daily. Additionally, limiting continuous screen exposure is advised.

IV. Result

A total of 60 college students were assessed using the Neck Disability Index (NDI). Of these, 31 students (51.67%) had no disability, while 29 students (48.33%) reported varying levels of functional disability due to upper back or neck pain. Among those affected, 20 (33.33%) had mild disability, 5 (8.33%) had moderate disability, 2 (3.33%) had severe disability, and 2 (3.33%) had complete disability. This indicates that nearly half the student population experiences some degree of upper back or neck pain, with mild disability being the most common.

Prevalence of Upper Back Pain including neck pain in your study:

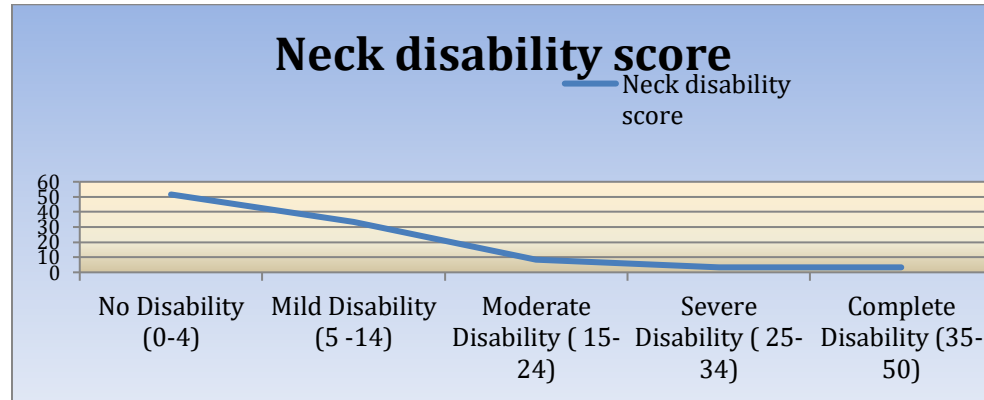
- Upper back pain including neck pain is indicated by any disability level above "no disability"
- Number of students with upper back pain including neck pain = 60 - 31 = 29
- Prevalence (%) = $29 / 60 \times 100 = 48.33\%$

Result: The prevalence of upper back including neck pain among college students (based on NDI) is 48.33%.

The 29 students out of 60 students present with upper back pain including neck pain.

- Mild disability: 20 (38.0%)
- Moderate disability: 5 (17.2%)
- Severe disability: 2 (6.9%)
- Complete disability: 2 (6.9%)

Most affected students (69%) reported mild functional disability, suggesting early-stage or manageable neck/upper back issues.



Disability Level	Number of Students	Percentage (%)
No disability	31	51.67%
Mild disability	20	33.33%
Moderate disability	5	8.33%
Severe disability	2	3.33%
Complete disability	2	3.33%
Total	60	100%

V. Discussion

The present study aimed to determine the prevalence of upper back pain including neck pain-associated disability among college-going students using the Neck Disability Index (NDI). Out of 60 participants, 48.3% (n=29) reported some degree of neck-related functional disability, while 51.7% (n=31) reported no disability. This finding highlights that nearly half of the sampled college population experiences functionally limiting discomfort, a concerning trend in a young demographic. Although the current study primarily focused on the presence or absence of disability, other collected data suggested potential risk factors. Students reporting higher screen time and prolonged sitting tended to report more severe disability scores. While not statistically analysed in depth here, these trends suggest that behavioural and postural factors are closely linked to upper back dysfunction.

In particular, prolonged use of smartphones and laptops without ergonomic support can lead to forward head posture, muscle fatigue, and strain on the cervical-thoracic junction, resulting in upper back pain, including neck pain. Additionally, stress related to academic workload and a lack of physical activity may contribute to the chronicity of symptoms.

The high prevalence of disability even in a young, generally healthy population underlines the need for preventive measures in educational institutions. Incorporating ergonomic education, awareness programs, and physical activity breaks in college routines may help mitigate these issues. Physiotherapists and health educators have a key role to play in assessing posture, teaching stretching routines, and designing individualized ergonomic interventions for students.

VI. Conclusion

In conclusion, this study found that 48.3% of college students experience upper back pain including neck pain-related disability, highlighting the impact of poor posture, prolonged screen time, and sedentary habits. The findings call for early preventive measures such as ergonomic education and physical activity to protect students' musculoskeletal health.

Reference

1. Cepková A, Zemková E, Šooš L, Uvaček M, Muyor JM (2023) Sedentary lifestyle of university students is detrimental to the thoracic spine in men 8(12): e0288553. <https://doi.org/10.1371/journal.pone.0288553>.
2. Yıldız Ş, Bazancir Apaydın Z, Erbahçeci F. The Analyses of the Relationship between Physical Activity, Musculoskeletal System Problems, Sleep, and Screen Exposure Time in University students during the Distance Learning Process. JBACHS. 2023; 7:64–74.
3. Yıldız, Şulenur et al. "The Analyses of the Relationship Between Physical Activity, Musculoskeletal System Problems, Sleep, and Screen Exposure Time in University Students During the Distance Learning Process". Journal of Basic and Clinical Health Sciences, vol. 7, no. 1, 2023, pp. 64-74, doi:10.30621/jbachs.1059276.
4. Yıldız Ş, Bazancir Apaydın Z, Erbahçeci F. The Analyses of the Relationship between Physical Activity, Musculoskeletal System Problems, Sleep, and Screen Exposure Time in University students during the Distance Learning Process. JBACHS. 2023;7(1):64-7.
5. July 2023 Rehman Journal of Health Sciences 5(1):2023 Neck Pain Among Students and Its Association with Smart Phone and Laptop Usage
6. Geetha Kandasamy 1*, Mona Almanasef 1, Tahani Almeleebia 1, Khalid Orayj 1, Eman Shorog 1, Asma M. Alshahrani 2, Kousalya Prabakar 3, Prevalence of Musculoskeletal Pain Among Undergraduate Students TYPE Original research published 20 September 2024 doi 10.3389/Fmed.2024.1403267
7. Landman, Dirkie Maria, and Muhammed Yaseen Tagari. "Onset and Prevalence of Musculoskeletal Disorders Among Undergraduate Health Science Students at the University of Johannesburg During the COVID-19 Regulations." Journal of chiropractic humanities 31 (2024): 20-27.
8. Landman DM, Tagari MY. Onset and Prevalence of Musculoskeletal Disorders Among Undergraduate Health Science Students at the University of Johannesburg During the COVID-19 Regulations. Journal of chiropractic humanities. 2024 Dec 1; 31:20-7.
9. Chan YM, Khaw WF, Tan LA, Nasaruddin NH, Alias N. Prevalence of Low Back Pain and Neck Pain In MALAYSIA: A SYSTEMATIC REVIEW. Malaysian Journal of Public Health Medicine. 2025 Apr 28;25(1):1-7.
10. De Vitta, Alberto, et al. "Neck pain and factors associated in University Students: a cross sectional study." Ciência em Movimento 22.43 (2020): 89-101.
11. De Vitta, A., Candido, J. P., Bento, T., Cornelio, G. P., de Oliveira Perrucini, P., Fernandes, J. A. A., & Ramos, W. (2020). Neck pain and factors associated in University Students: a cross sectional study. Ciência em Movimento, 22(43), 89-101.
12. De Vitta, Alberto, José Paulo Candido, Thiago Bento, Guilherme Porfirio Cornelio, Priscila de Oliveira Perrucini, Julio Alberto Agante Fernandes, and Wagner Ramos. "Neck pain and factors associated in University Students: a cross sectional study." Ciência em Movimento 22, no. 43 (2020): 89-101.
13. De Vitta, A., Candido, J.P., Bento, T., Cornelio, G.P., de Oliveira Perrucini, P., Fernandes, J.A.A. and Ramos, W., 2020. Neck pain and factors associated in University Students: a cross sectional study. Ciência em Movimento, 22(43), pp.89-101.
14. De Vitta A, Candido JP, Bento T, Cornelio GP, de Oliveira Perrucini P, Fernandes JA, Ramos W. Neck pain and factors associated in University Students: a cross sectional study. Ciência em Movimento. 2020;22(43):89-101.
15. Ayhuallem, Sileshi, et al. "Burden of neck pain and associated factors among smart phone user students in University of Gondar, Ethiopia." Plos one 16.9 (2021): e0256794.
16. Ayhuallem, S., Alamer, A., Dabi, S. D., Bogale, K. G., Abebe, A. B., & Chala, M. B. (2021). Burden of neck pain and associated factors among smart phone user students in University of Gondar, Ethiopia. Plos one, 16(9), e0256794.
17. Ayhuallem, Sileshi, Abayneh Alamer, Sisay Deme Dabi, Kefale Getie Bogale, Abey Bekele Abebe, and Mulugeta Bayisa Chala. "Burden of neck pain and associated factors among smart phone user students in University of Gondar, Ethiopia." Plos one 16, no. 9 (2021): e0256794.