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Prevalence Of Neck Pain In Undergraduate Physiotherapy Students Using Neck Disability Index

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Abstract

Neck pain is a common musculoskeletal disorder that often indicates structural impairment in the cervical spine. This study evaluates the prevalence and impact of neck pain among undergraduate physiotherapy students using the Neck Disability Index (NDI).

Objective: To assess the prevalence and level of neck pain in physiotherapy students using the NDI.

Methods: A cross-sectional observational study was conducted with 200 undergraduate physiotherapy students using a convenient sampling method. The NDI questionnaire was administered.

Results: Among the 200 participants, 15% reported no pain, 46% mild pain, 21% moderate pain, 7.5% fairly severe, 7% very severe, and 3.5% worst pain levels.

Conclusion: The prevalence of neck pain among physiotherapy students is significant, with 85% reporting some level of disability. The findings underscore the need for ergonomic awareness and preventive strategies in this population.

Keywords: Neck pain, Neck Disability Index, Physiotherapy students

Introduction

Introduction

Neck pain is defined as discomfort or pain located in the anatomical region between the occiput and the first thoracic vertebra, is one of the most prevalent musculoskeletal complaints globally. It significantly impacts quality of life, academic performance, and day-to-day functioning, particularly in young adults. The World Health Organization lists musculoskeletal disorders, including neck pain, among the leading causes of disability-adjusted life years (DALYs) worldwide, emphasizing the global health burden they impose.

In the context of higher education, especially in health science disciplines like physiotherapy, students are subjected to a unique blend of physical, academic, and psychological stressors. Although physiotherapy students receive formal education on biomechanics, posture, and ergonomics, they often fail to implement these principles in their daily routines. Academic obligations demand prolonged hours of study, clinical observation, and practice, most of which involve sustained postures, repetitive movements, and extended use of digital devices. These factors cumulatively contribute to musculoskeletal strain and increase the risk of developing neck pain.

Recent studies have reported a concerning rise in the incidence and prevalence of neck pain among university students, with estimates ranging from 60% to over 90% in some regions. The widespread use of smartphones, laptops, and tablets promotes forward head posture and prolonged neck flexion, which substantially increases the load on the cervical spine, leading to tissue fatigue and structural dysfunction. Other contributing factors include poor physical conditioning, inadequate ergonomic setups, sedentary lifestyle habits, psychological stress, and demographic variables such as gender, body mass index (BMI), and age.

Among physiotherapy students, neck pain is not only a health issue but a potential impediment to clinical skill development and future professional competency. Despite being aware of proper ergonomics and preventive strategies, students often neglect personal physical care due to academic pressures, thereby increasing susceptibility to musculoskeletal disorders. This study employs the Neck Disability Index (NDI), a widely accepted tool for assessing the intensity and functional impact of neck pain, to determine the prevalence and severity of this condition in a population of undergraduate physiotherapy students.

Need of Study

Neck pain is increasingly common among students, especially those in professional courses like physiotherapy. These students spend extensive hours studying and practicing clinical skills, often in suboptimal postures. Although they are educated on proper ergonomics and posture, this knowledge is frequently not applied.

The Neck Disability Index (NDI) provides a reliable tool to quantify neck pain and its impact on daily activities like reading, working, sleeping, and driving. This study aims to identify the prevalence and severity of neck pain among physiotherapy students, highlighting the importance of early intervention, ergonomic training, and lifestyle modifications.

Aim

To find out the prevalence of neck pain in undergraduate physiotherapy students using the Neck Disability Index.

Objective

To assess neck pain and related disability using the Neck Disability Index in undergraduate physiotherapy students.

Methodology

Study Design: Observational, Cross-sectional Study
Sampling Technique: Convenient Sampling
Sample Size: 200 students
Duration: 6 months

Materials Used:
- Pen/Pencil
- Neck Disability Index Questionnaire

Outcome Measure: Neck Disability Index (Reliability: 0.80; Validity: 0.69–0.70)

Inclusion Criteria:
- Age between 18–25 years
- Both genders
- Willingness to participate

Exclusion Criteria:
- Diagnosed cervical condition
- Recent trauma
- Neurological conditions

Procedure:
Ethical clearance was obtained. Participants who met the inclusion criteria were explained the study and gave written informed consent. They then completed the NDI questionnaire under supervision.

Results

A total of 200 physiotherapy students participated in the study, including 43 males (21.5%) and 157 females (78.5%). Participants were aged between 18 and 25 years.

- Age distribution: 1% were under 18 years, 36.5% were aged 18–20, and 62.5% were above 20 years.
- BMI classification: 67% had normal BMI, 17% were underweight, 15.5% overweight, and 0.5% obese.
- Pain intensity (NDI): 15% reported no pain, 46% mild pain, 21% moderate pain, 7.5% fairly severe, 7% very severe, and 3.5% worst pain.
- Impact on daily life (NDI subscales):
  • Personal care: 34.5% experienced no difficulty, while 5% could not care for themselves.
  • Lifting: 17.5% had no issue, while 6.5% were unable to lift anything.
  • Reading: 10% had no issues, 12.5% had limited ability.
  • Headache: 31% had slight headaches, 25% experienced them almost all the time.
  • Concentration: 9% had no difficulty, 10.5% could not concentrate at all.
  • Work: 16.5% could do all work, 4.5% could not do any.

- Driving: 21.5% drove without pain, 7.5% couldn't drive at all.
- Sleep: 26% had no trouble, 6% had completely disturbed sleep.
- Recreation: 23.5% could engage in all activities, 5.5% could not engage in any.

Discussion

Neck pain has become an increasing concern among physiotherapy students due to postural stress and academic demands. This study, with 200 participants, showed that 85% experienced some degree of neck pain. The findings are consistent with previous research that attributes such pain to prolonged sitting, poor ergonomics, academic stress, and frequent device usage.

Despite being taught proper posture and body mechanics, students often neglect these principles in daily life. This leads to musculoskeletal strain, especially in the cervical region. The high prevalence found in this study underscores the need for greater awareness, preventive education, and ergonomic interventions.Discussion

The findings of this study reveal a significant prevalence of neck pain among undergraduate physiotherapy students, with 85% of participants reporting some degree of neck discomfort or disability. These results align with existing literature that highlights high musculoskeletal complaint rates among student populations, particularly those enrolled in demanding health science programs. The multifactorial nature of neck pain—encompassing ergonomic, psychological, and behavioral dimensions—makes it a critical area of concern for academic institutions and healthcare educators.

A noteworthy observation is the dissonance between theoretical knowledge and practical application of ergonomic principles. Despite receiving education in posture and movement science, many students fail to implement these concepts in their daily academic and clinical routines. This gap between knowledge and practice may stem from factors such as time constraints, lack of institutional ergonomic infrastructure, absence of regular physical activity, or underestimation of long-term health consequences.

Additionally, the data from the NDI subscales shed light on the functional limitations associated with neck pain. Activities such as reading, sleeping, driving, and recreational participation were notably affected, which suggests that neck pain in students extends beyond physical discomfort into broader domains of daily living and mental well-being. This highlights the necessity of adopting a more holistic approach to student health, including targeted education, stress management, and ergonomic interventions.

The higher prevalence observed among female students and those over the age of 20 aligns with previous studies, suggesting that gender-specific anatomical or hormonal factors, along with cumulative postural stress over time, may exacerbate the risk. Furthermore, the use of smartphones and other handheld digital devices, often overlooked as a health risk, emerged as a major contributor to forward head posture and sustained cervical strain.

This study reinforces the importance of early identification, prevention, and management of neck pain in physiotherapy students. Institutional interventions such as ergonomic assessments of lecture halls and labs, inclusion of wellness modules in the curriculum, routine physical fitness programs, and stress reduction techniques like yoga or mindfulness training could play a vital role in mitigating this issue.

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Conclusion

This study concludes that the prevalence of neck pain among undergraduate physiotherapy students is 85%. Females and students older than 20 years reported higher rates. The results highlight the need for early ergonomic education and preventive practices.

Recommendations

Future studies should include students from other departments to better understand and analyze the predictors and contributing factors to neck pain.

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