



INVESTIGATING MUSCULOSKELETAL ISSUES IN PHYSIOTHERAPY STUDENTS A CROSS-SECTIONAL STUDY ON LOW BACK PAIN AND NECK PAIN

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ABSTRACT

Aim: This study aimed to assess the musculoskeletal fitness of physiotherapy students at TMV and to determine the prevalence of low back pain and neck pain using the Modified Oswestry Back Pain Disability Questionnaire (MODQ) and Neck Disability Index (NDI). **Method:** A survey design was employed, recruiting students in the clinical phase (3rd, 4th year) or study phase (1st and 2nd year) of the programme who expressed willingness to participate. Data was collected on age, gender, year of study, and amount of time spent sitting (lectures and personal study) and standing (treating patients and practicing techniques) in the past month. Participants completed the MODQ and NDI, with queries addressed for clarity. Questionnaires were distributed and collected in bulk to ensure anonymity, and data was analyzed and scored. **Results:** The results indicated a high prevalence of low back pain and neck pain among physiotherapy students at TMV, highlighting the importance of addressing musculoskeletal health in this population.

KEYWORDS : low back pain, neck pain, MODQ, NDI,

INTRODUCTION

An occupational injury can be defined as an injury that results from a work-related event or from a single instantaneous exposure in the work environment leading to death, lost work time, medical treatment other than first-aid, loss of consciousness, work restriction, or transfer to another job. [1] The injury rate among hospital workers, for example, has been estimated to be twice that of other service industries. [2] High levels of patient contact, as well as other variables in the healthcare environment that are thought to cause injuries, are common in the field of physical therapy. [3] A work-related musculoskeletal disorder (WRMD) is defined as a musculoskeletal injury that results from a work-related event. These types of injuries are common among physiotherapists. Physical therapists routinely perform manual therapy, such as soft-tissue mobilization, which means that the upper limb is also exposed to risk factors associated with musculoskeletal and neurovascular disorders. [4]

These professionals routinely perform activities that involve transferring a patient (from exercise mat to chair, to parallel bar, etc.), assisting with activities on the exercise mat, and lifting and using cumbersome equipment. These work tasks put therapists at risk for acute and cumulative musculoskeletal pain. [4] The 3 primary risk factors associated with work related musculoskeletal disorders are repetitive movements, inappropriate physical conditions, and high work pressure. [5] Health care providers, especially those in direct contact with the patients, had the highest rates of musculoskeletal complaints. [7] Although physiotherapists have sufficient knowledge of musculoskeletal injuries and prevention strategies, they are at high risk of work-related injuries. [5] Modern musculoskeletal pain is often generated by the increased use of computers and sustained seated posture. Studies have shown that neck pain in 67% of the total population has been experienced due to overuse of muscles in the scapular and neck regions amongst those with musculoskeletal disorders in modern society. [8] Neck pain can cause muscle pain, muscular weakness, and migraines. It can also trigger radiating pain, muscular weakness, and atrophy, as radiculopathy associated with restricted range of motion (ROM) may develop due to neck stiffness and pain. [9] Individuals with neck pain may have deficits in coordination. Strength, endurance, repositioning acuity, postural stability, or oculomotor control. [10] People with chronic neck pain experience difficulties with performing their activities of daily

living. [8] Chronic neck pain has been reported to affect females more than males. A possible reason for this may be due to the strength of neck muscles which has been reported to be weaker in women than men. [9] Thus, early effective management of acute neck pain is necessary prior to the generation of chronic neck pain. [8] there is a general agreement that the frequency of neck pain in various populations is quite high and general that agreement this symptom greatly affects the person's life and need for health. [11]

The incidence of low back pain (LBP) in the general and working population has been the focus of numerous investigations; from 62% to 80% of the population will suffer from LBP at some times in their lives. [12] Among health care professionals, LBP has been studied most frequently in nurses, nursing aids and other caregivers. Epidemiological studies have repeatedly linked heavy lifting and material handling with the occurrence of low back disorders. [13] Physiotherapists (PT) also are exposed to many of the same occupational risk factors leading to work-related musculoskeletal problems, especially with regard to the lower back. [14] The incidence of LBP among PTs has been reported to range from 57% lifetime prevalence, [15] 45% 12 month prevalence, [14] 52% overall incidence [12] to 89% overall incidence in mixed sample which consisted of 67% of yr and 33% of nurses. [13] LBP is defined in the Nordic Back Pain Questionnaire as an 'ache, pain or discomfort in the area between the 12th ribs and gluteal folds. [16] It is however interesting to note that health care professionals are not exempt from the scourge of LBP

Consequently, several studies have focused on the prevalence of LBP among various health care professionals including physiotherapists. [18] Physiotherapists are professionals trained to, among other services, provide rehabilitative care in a wide range of disabling conditions with the aim of maintaining, and promoting function. Interventions utilized by physiotherapists often entail a considerable amount of "hands-on" techniques that are characterized by repetitive movements, prolonged standing, and somewhat difficult postures. [18] Transferring and lifting patients are also common work activities in physiotherapy and such activities are considered risk factors for LBP and have been linked to its onset. [17] LBP is commonly treated by physiotherapists, [8] however physiotherapists themselves have been reported

as being LBP sufferers. Australian prevalence statistics approximating those from British, Canadian and American surveys. Concerningly, all these authors report high LBP prevalence in young physiotherapists (< 30 years) (approximating 30-40%), with up to 60% of LBP events in this age group estimated to result from work-related injuries within the first five years of employment.[16] Student physiotherapists are potentially exposed to the same LBP (occupational risk as graduates, such as poor working posture and frequent manual handling activities, often undertaken in difficult environments and with variable training regarding personal safety. As an example of the risks associated with the Physiotherapy Occupation, 27% physiotherapy students were reported in one study to have experienced LBP as a direct result of handling patients.[16] In the Australian context, Cromie et al reported from their retrospective survey of physiotherapists, WRMSD, that approximately 16% respondents reported LBP commencing during their physiotherapy training with a further 5.6 % physiotherapists reporting LBP that was present prior to training

Need For The Study

The study aims to investigate the risk of lower back pain (LBP) and neck pain among physiotherapy students, likely stemming from poor postures and carrying techniques. As the demand for physiotherapy services grows, practitioners are increasingly engaged in various tasks across diverse healthcare settings. Physiotherapists work in emergencies, hospitals, clinics, and rehabilitation centers, catering to a wide range of patients through exercises, transfers, and strength-building activities. However, due to inadequate attention to physical well-being, there is a rising incidence of musculoskeletal issues among physiotherapists and students. Given their role in promoting fitness, physiotherapy trainees are expected to maintain high levels of agility and fitness. Consequently, the study aims to provide ergonomic advice and early initiation of strengthening exercises to address musculoskeletal pain among physiotherapy students.

Aims & Objective

The objective of this study is to evaluate the musculoskeletal fitness of physiotherapy college students.

The specific aims are:

1. To measure the agility of physiotherapy students.
2. To evaluate the musculoskeletal fitness of physiotherapy students.
3. To determine the prevalence of low back pain and neck pain using the Modified Oswestry Disability Questionnaire (MODQ) and Neck Disability Index (NDI).

Inclusion Criteria:

- **Age:** 18–23 years
- **Gender:** Both males and females
- Currently enrolled as an undergraduate physiotherapy student willing to participate in the study

Exclusion Criteria:

- Presence of any other musculoskeletal injury
- Diagnosis of any systemic condition
- Any neurological issues
- Recent surgery on the neck or back

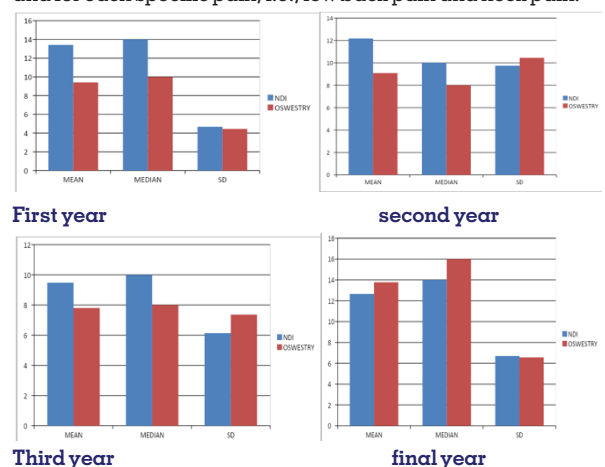
Methodology

The study involved approaching students from each year of study during free lectures, explaining the research topic, obtaining consent forms for participation, and collecting data on hours of sitting and standing in the past month. The consent forms included information on the study, motive, voluntary participation, and required details without revealing their identity for anonymity. Students were asked to indicate their

consent, studying year, college name, university name, and hours of sitting/standing. The forms were distributed in groups to maintain anonymity. The study included filling questionnaires on pain and discomfort experienced in the past month, followed by filling the Neck Disability Index and Modified Oswestry Low Back Pain Disability Questionnaire. A total of 143 forms were collected, and the disability scores were calculated for each participant without disclosure. The scores were entered into an Excel sheet categorized by year of study (1st to Final year) with the number of participants from each year. Descriptive statistics were used to summarize the data, and bar diagrams were created to show the incidence of low back pain and neck pain across different years based on the questionnaire scores.

Statistical Analysis

The statistical analysis is done using descriptive analysis by calculating the mean, mode, median, and standard deviation. The entered data in an Excel sheet was calculated, and the mean, mode, and median was analyzed for each specific year and for each specific pain, i.e., low back pain and neck pain.



DISCUSSION

The studies discussed in the articles highlighted a high prevalence of musculoskeletal disorders, particularly low back pain and neck pain, among undergraduate physiotherapy students. The findings indicated that factors such as repetitive movements, static postures, treating a large number of patients, lack of rest, and manual therapy contribute to these issues. Female physiotherapists were shown to be at a higher risk for musculoskeletal disorders. Physiotherapists identified treating a large number of patients, prolonged static positions, manual therapy techniques, and patient handling as significant factors leading to work-related musculoskeletal disorders (WRMDs). Coping strategies included modifying positions, selecting appropriate techniques, and adjusting equipment height. The studies also noted that younger physiotherapists are more prone to musculoskeletal problems due to a lack of experience and lower skill levels. The prevalence of low back pain was found to be higher in physiotherapy students, with an increased risk as students progressed through their course. Female students were more susceptible to ergonomic loads due to combining household activities with work. The studies emphasized the importance of preventive measures and highlighted the impact of posture, task overload, and inadequate physical activities on the prevalence of low back pain. Taller students were found to have a higher risk of neck pain due to maintaining greater neck flexion during studies or work. Overall, the articles underscored the significant prevalence of musculoskeletal disorders among physiotherapy students and practitioners, emphasizing the need for preventive strategies and awareness of modifiable risk factors to mitigate these issues.

CONCLUSION

The study found that the Neck Disability Index scores indicate higher levels of neck pain among first-year, second-year, and third-year students. Conversely, the Modified Oswestry Low Back Pain Disability Questionnaire scores suggest that low back pain is more prevalent among final-year students. The study included students from each year from the college of physiotherapy affiliated with Tilak Maharashtra Vidyapeeth. Both neck pain and back pain were observed in students at this undergraduate Physiotherapy college.

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