International Journal of Health Sciences and Research
Vol.10; Issue: 4; April 2020
Website: www.ijhsr.org
Original Research Article *ISSN: 2249-9571*

Prevalence of Musculoskeletal Problems in Physiotherapy Students

Manasi Desai[1], Saloni Jain[2]

[1]M.P.Th in Neurosciences, Department of Neurophysiotherapy,
Assistant Professor, D. Y. Patil University, School of Physiotherapy, Nerul, Navi Mumbai, Maharashtra
[2]B.P.Th, D. Y. Patil University, School of Physiotherapy, Nerul, Navi Mumbai, Maharashtra

Corresponding Author: Saloni Jain

ABSTRACT

Aim: To find the prevalence of musculoskeletal problems faced by the physiotherapy students.
Material and Methodology: A cross-sectional survey was carried out among 250 physiotherapy students in the age group of 18-24 years both males and females who are undergraduate physiotherapy students of 1st - 4th year and Interns. A study was conducted by administering a Self-Designed Questionnaire aimed at getting information regarding the various musculoskeletal problems faced by physiotherapy students, various postures attained and activities performed throughout the day. The Extended Nordic Questionnaire was also used to quantify the musculoskeletal pain and activity limitation in 9 body regions.
Results: Out of the total study population, 70.1% of the physiotherapy students had musculoskeletal pain after joining the physical therapy profession and the most common sites of pain were low back (177), neck (167), shoulders (114) and upper back (102).

Key Words: Physiotherapy students, Site of pain, musculoskeletal problems.

INTRODUCTION

A work-related disorder is, according to World Health Organisation (WHO) definition, multifactorial, and the work environment and the performance of work contribute significantly, but in varying magnitude, to the causation of the disease. [1] Work related musculoskeletal disorders cause chronic pain and functional impairment for millions of people, impose heavy costs on society for treatment, sick leave, and retirement, and reduce productivity in working life. [1] Work-related disabilities in various professions are very common due to associated musculoskeletal disorders. [2] The physical aspect of work associated with a profession has been reported as the risk factor for developing such work-related musculoskeletal disorders (WRMD). [3,4]

Health care professions like nursing, dentistry and physical therapy (PT) have been identified at risk for development of the WRMD due to risk factors like heavy physical work; repeated lifting and handling of loads; overstrained and awkward postures in the form of bending, twisting; repetitiveness of different joint movements; use of high frequency vibration tools; psychological stress and prolonged static body position. [3-8]

Physical therapy provides services to individuals and populations to develop, maintain and restore maximum movement and ability throughout the life span. Physical therapy is concerned with identifying and maximising quality of life and movement potential within the spheres of promotion, prevention, treatment and rehabilitation. This encompasses physical,

psychological, emotional and social well-being.

On a typical day a physiotherapy student examines patient's medical history, tests and measures patient's strength, range of motion, balance and coordination, posture, muscle performance, respiration and motor function. They determine whether a patient is independent and help them get reintegrated into the community or work place after injury or illness. They develop a treatment plan describing a treatment strategy, it's purpose and anticipated outcome.

During the course of physiotherapy, the students are often put across long hours of strenuous activities along with attainment of unavoidable prolonged static postures. This may result in damaging physiological changes that can lead to back, neck or shoulder pain etc. If regularly occurring pain or discomfort is ignored, the cumulative physiological damage can lead to an injury. WRMDs have been commonly reported among physiotherapists across the world. [14-16] However, very few studies have been explored the prevalence of musculoskeletal problems in physiotherapy students, especially in India.

The present study therefore aims to study the prevalence of musculoskeletal problems in physiotherapy students in India.

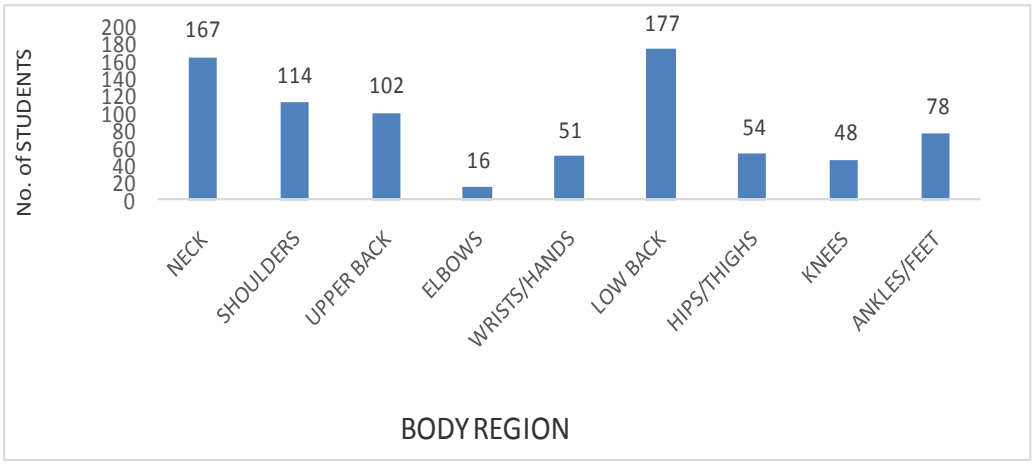
MATERIALS AND METHODS

A cross-sectional survey was carried out among 250 physiotherapy students in the age group of 18-24 years both males and females who are undergraduate physiotherapy students of 1st - 4th year and Interns. A study was conducted by administering a Self-Designed Questionnaire aimed at getting information regarding the various musculoskeletal problems faced by physiotherapy students, various postures attained and activities performed throughout the day. The Extended Nordic Questionnaire was also used to quantify the musculoskeletal pain and activity limitation in 9 body regions.

DATA ANALYSIS AND RESULTS

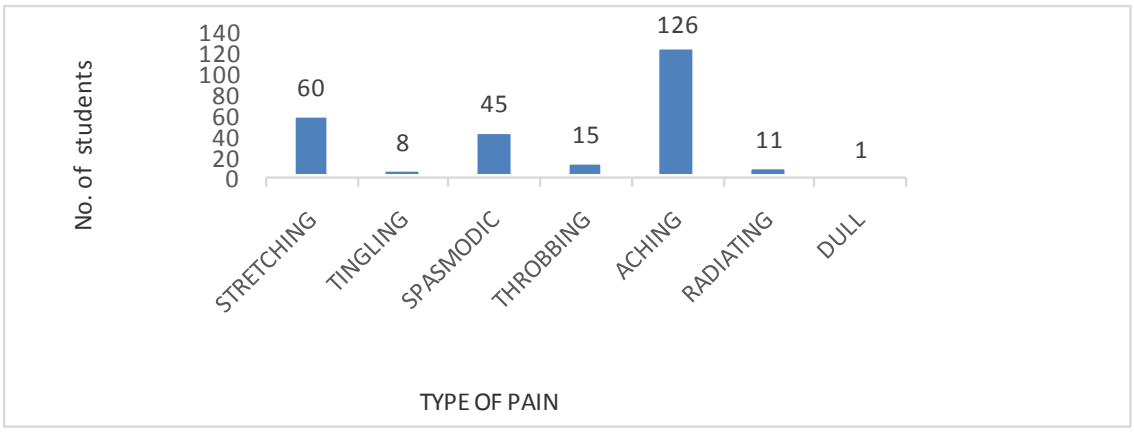
A survey was conducted and total 250 physiotherapy students were taken as subjects. Physiotherapy students had musculoskeletal problems that interfered with work and also required professional consultation.

Demographic Details	Mean ± SD
Age	20 ± 2
Working Hours	6 ± 2



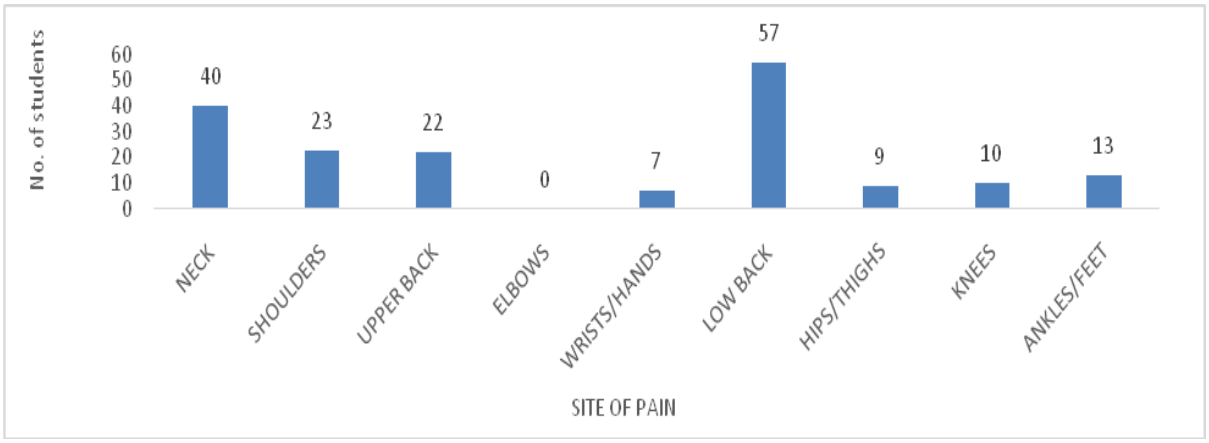
GRAPH 1: PREVALANCE OF PAIN/ACHE/DISCOMFORT

INFERENCE: Maximum no. of students had low back pain (177) followed by neck pain (167) and shoulder pain (114) .



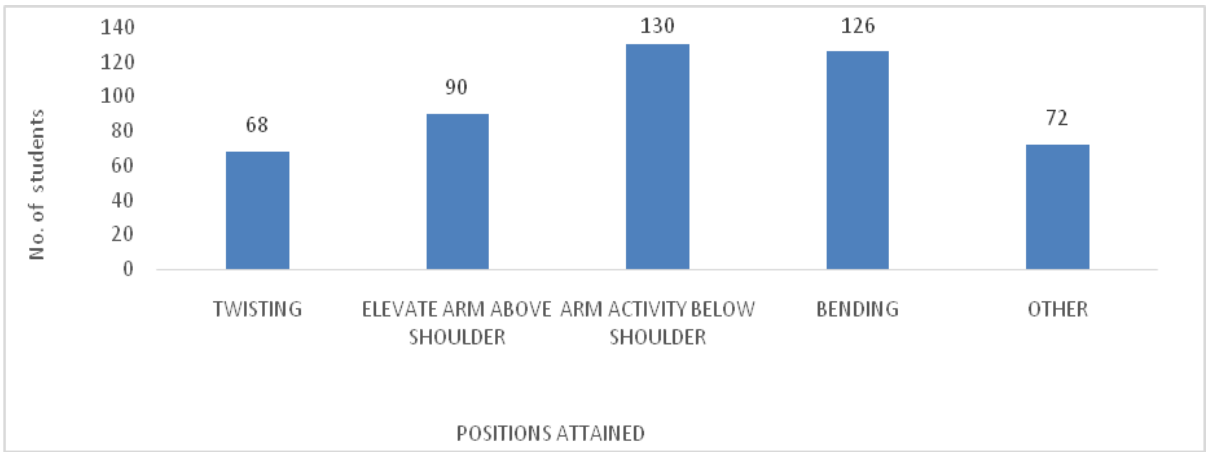
GRAPH 2: TYPE OF PAIN

INFERENCE: Maximum no. of students had aching type of pain (126) followed by stretching pain (60).



GRAPH 3: INTERFERENCE WITH WORK

INFERENCE: Low back pain interfered with work for maximum students (57) followed by neck pain (40).



GRAPH 4: Positions attained during postings/practical

INFERENCE: Maximum no. of students performed arm activity below shoulder (130) followed by bending (126) for maximum time during their positing.

DISCUSSION

The purpose of our study was to report the prevalence of common musculoskeletal problems among Physiotherapy students studying in India. This study was done on a sample of 250 students studying in India who fulfilled the inclusion and exclusion criteria. Among 250 students who participated in survey, 82.4% were females and 17.6% were males. The mean age of subjects was 20 years with SD ±2 years. 92.4% were

right handed by dominance while 7.6% were left handed by dominance. Maximum no. of students i.e. 33.2% of students were from 4th BPT, 18.8% were interns, 17.6% were from 3rd BPT, 17.2% were from 2nd BPT and 13.2% subjects were from 1st BPT.

The first objective of our study was to assess the most common musculoskeletal problems faced by physiotherapy students. The prevalence of the WRMD among physiotherapy students was found to be high with at least 70.1% of the respondents reporting to develop some musculoskeletal pain after joining the physical therapy profession. Most of the musculoskeletal problems range from minor discomfort, aches and pains to more serious medical conditions requiring medical intervention, hospitalisation and rehabilitation. West and Gardner [5] reported that 16% of physiotherapists first experienced their injury as students. This prevalence was higher when compared to the study conducted in Surat, [9] with 52%. According to the present study, majority of students reported lack of adequate breaks and non-adjustable plinths and chairs. During the course of physiotherapy, the students are often put across long hours of strenuous activities, physical work, repeated lifting and handling of loads, overstrained and awkward postures in the form of bending, twisting, repetitiveness of different joint movements; use of high frequency vibration tools; psychological stress and prolonged static body position which may lead to WRMD's.

The second objective was to identify the areas causing maximum pain and interfering with day to day activities. In our study, the prevalence of pain was found to be highest in low back (reported by 177 respondents), neck (167), shoulder region (114), upper back region (102). Our findings reported Physiotherapy to be a high-risk profession for developing work-related musculoskeletal disorders, especially the LBP. According to previous studies conducted, the most common region of injury is the low back [9-16] which is consistent with the finding of this study.

Physiotherapy students attain potentially deleterious postures during training-related activities, prolonged sitting during lectures and twisting and bending activities thus increasing the risk of LBP. [13] The core muscle strength is one of the contributing factors for low back pain. Core stability is important for maintaining an upright posture. Without core stability the lower back is not supported and can result in low back pain, poor posture.

The second most affected area was neck (167). Factors that may contribute to neck pain are bending while writing, continuous arm activity below shoulder, etc.

The third most affected area was shoulder (114). Factors that may contribute to shoulder pain are continuously elevating the arm above shoulder, lifting and carrying heavy loads above shoulder repetitively, etc.

The third objective of the study was to study various postures physiotherapy students acquire, and the activities they perform during the day. High prevalence of work-related pain in these young professionals may have been either due to overload in the work setting or faulty postures or faulty ergonomics or wrong techniques used during treatment of patients. [17,18] Maximum no. of students i.e. 130 students perform arm activity below shoulder, 126 students perform bending, 90 students perform activities requiring arm elevation above shoulder, 72 students perform other activities minimum no. of students i.e. 68 students attain twisting. From the observation of the existing posture of the physiotherapy students, it was found that they have to work for prolonged period with awkward postures. These lead to development of musculoskeletal discomfort in back. [19] Our data suggests that plinths used in postings or practical sessions, positions attained during postings or practical sessions, duration of patient contact per day, bending while writing during the lectures were common among students with musculoskeletal problems.

Newly qualified Physiotherapy students to give treatment do not seem to be using their principles of training or the instructions they give to patients for precautions, into their own practice. [20] Such professionals are at the beginning of their career. As the WRMDs are known to accumulate and increase with age, the problem could grow with time making it difficult for them in future. Strategies are needed to be developed, that should help them to cope with such problems early. [21]

The fourth objective of the study was to suggest corrective measures and bring awareness among them to minimise the risk of these problems. Posture correction, ergonomic advice and modifications decrease the risk of musculoskeletal symptoms and musculoskeletal disorders. [20] According to A.C.S.M. guidelines, regular exercise and some physical activity to maintain muscle strength and endurance along with core strengthening is very important to maintain one's health. Changing positions at frequent intervals and use of ergonomic furniture is recommended.

CONCLUSION

Based on the study conducted among 250 physiotherapy students in India, the following are the conclusions:

Out of the total study population, 70.1% of the physiotherapy students had musculoskeletal pain after joining the physical therapy profession.

The most common sites of pain were low back (177), neck (167), shoulders (114) and upper back (102).

Most physiotherapy students performed arm activity below shoulders (130), bending (126), and elevate arm above shoulders (90).

There is a need to create awareness among physiotherapy students regarding the association between poor and sustained postures and musculoskeletal disorders. Ergonomic advice and modifications along with postural correction exercises may help in minimizing the risk of WRMDs.

ACKNOWLEDGEMENTS

I take this opportunity to express my sincere gratitude to those people without whose support and concern this project would not have been a great success.

I am grateful to all my study subjects for co-operating with me in carrying out this study, as without them it would have been impossible to complete the project.

REFERENCES

1. Proceedings of the International Symposium on Work-Related Diseases. Espoo, Finland, 4-8 June 1984. Scand J Work Environ Health 1984;10(6):341-519.
2. Andersson GB. Epidemiological features of chronic low back pain. Lancet. 1999; 354(9178):581–5, http://dx.doi.org/10.1016/S0140-6736(99)01312-4.
3. Szymanska J. Disorders of the musculoskeletal system among dentists from the aspect of ergonomics and prophylaxis. Ann Agric Environ Med. 2002;9(2):169–73.
4. Akesson I, Lundborg G, Horstmann V, Skerfving S. Neuropathy in female dental personnel exposed to high frequency vibrations. J Occup Environ Med. 1995; 52(2): 116–23.
5. West DJ, Gardner D. Occupational injuries of physiotherapists in North and Central Queensland. Aust J Physiother. 2001; 47(3):179–86, http://dx.doi.org/10.1016/S00049514(14)60265-8.
6. Coenen P, Kingma I, Boot CR, Twisk JW, Bongers PM, van Dieen JH. Cumulative low back load at work as a risk factor of low back pain: A prospective cohort study. J Occup Rehabil. 2013;23(1):11–8, http://dx.doi.org/10.1007/ s10926-012-9375-z.
7. Dawson AP, Steele EJ, Hodges PW, Stewart S. Development and test–retest reliability of an extended version of the Nordic Musculoskeletal Questionnaire (NMQ-E): a screening instrument for musculoskeletal pain. The Journal of Pain. 2009 May 1;10(5):517-26.
8. Pugh JD, Gelder L, Williams AM, Twigg DE, Wilkinson AM, Blazevich AJ. Validity and reliability of an online extended version of the Nordic Musculoskeletal Questionnaire (NMQ-E2) to measure nurses'

fitness. Journal of clinical nursing. 2015 Dec 1;24(23-24):3550-63.
9. Bharadva NA, Verma MR, Kantharia SL. Are physiotherapy students at risk of Musculoskeletal Pain? A Study on Physiotherapy students of Government Physiotherapy College, New Civil Hospital, Surat. IJIMS. 2014: Aug; 1(8) 157-163.
10. Vincent-Onabajo GO, Nweze E, Kachalla Gujba F, Ali Masta M, Usman Ali M, Alhaji Modu A, Umeonwuka C. Prevalence of low back pain among undergraduate physiotherapy students in Nigeria. Pain research and treatment. 2016;2016.
11. Kimelman N, Kalichman L. Musculoskeletal Complaints in Physical Therapy Students: Prevalence and Association with Hypermobility. Journal of Scientific Research and Reports, 3(6), 874-883.
12. Aatik Arsh, Abid Jan. Prevalence of low back pain among DPT students in Peshawar. 2016 South Asian Journal of Medicine. SAJMED.2016; 1(2).
13. Imdad F, Ishaque F, Yasmeen S, Lal W, Sheikh SA, Nawaz U, Khanzada S. Prevalence Of Low Back Pain Among The Undergraduate Students Of Isra University Karachi Campus. International Journal of Physiotherapy. 2016 Jan 1;3(1):119-23.
14. Burger E, Myezwa H, Naidoo V, Olivier B, Rothberg A. Low back pain in physiotherapy students: Prevalence and the association with neuromuscular findings. South African Journal of Physiotherapy. 2013 Jan 16;69(4):29-35.
15. Iqbal Z, Alghadir A. Prevalence of work-related musculoskeletal disorders among physical therapists. Med Pr. 2015 Jan 1;66(4):459-69.
16. Silva KK, daSilva Tenório A, Guerino MR, Oliveira MR, Braga deMendonça M, Cidrão deCarvalho AG, deLima Ferreira AP, dasGraças Rodrigues deAraújo M. Musculoskeletal disorders in manual therapist. Manual Therapy, Posturology & Rehabilitation Journal= Revista Manual Therapy. 2016 Jan 1;14.
17. Scholey M, Hair M. Back pain in physiotherapists involved in back care education. Ergonomics. 1989;32(2):179–90, http://dx.doi.org/10.1080/00140138908966078.
18. Poitras S, Blais R, Swaine B, Rossignol M. Management of work-related low back pain: A population-based survey of physical therapists. Phys Ther. 2005;85(11):1168–81.
19. Marklin RW, Cherney K. Working postures of dentists and dental hygienists. Journal of the California Dental Association. 2005;33(2):133–6.
20. Glover W, McGregor A, Sullivan C, Hague J. Work related musculoskeletal disorders affecting members of the Chartered Society of Physiotherapy. Physiotherapy. 2005;91(3):138–47, http://dx.doi.org/10.1016/j.physio.2005.06.001.
21. Campo M, Weiser S, Koenig KL, Nordin M. Workrelated musculoskeletal disorders in physical therapists: A prospective cohort study with 1-year follow-up. Phys Ther. 2008;88(5):608–19, http://dx.doi.org/10.2522/ ptj.20070127.

How to cite this article: Desai M, Jain S. Prevalence of musculoskeletal problems in physiotherapy students. Int J Health Sci Res. 2020; 10(4):59-64.

******