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Identify Musculoskeletal Condition in Physiotherapy Students During Clinical Postings

Dr. Rajiv D. Limbasiya[1], Dr. Trusha Gabani[2], Dr. Hemaxi Korat[2], Dr. Shreya Rana[2], Dr. Sujit Vasava[3]

[1]PT, Ph. D, Principal IC and Associate Professor, The Sarvajanik College of Physiotherapy, Veer Narmad South Gujarat University, Surat.
[2]BPT, The Sarvajanik College of Physiotherapy, Veer Narmad South Gujarat University, Surat.
[3]Ph. D Scholar, Assistant Professor, Shrimad Rajchandra College of Physiotherapy, Uka Tarsadia University, Bardoli, Surat.

Corresponding Author**:** Dr. Rajiv Limbasiya

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ABSTRACT

BACKGROUND: Musculoskeletal conditions impact physiotherapy students due to the physically demanding nature of their training, leading to pain, reduced mobility, and potential career concerns. Key risk factors include poor ergonomics, excessive physical strain, lack of experience, and inadequate training.
METHOD: A survey design was employed, recruiting students in the clinical phase (3rd, 4th year, interns) of the programme who expressed willingness to participate. Data was collected on age, gender, year of study, and standing (treating patients and practicing techniques) in the past 2 week. Participants completed the Cornell Musculoskeletal Discomfort Questionnaire (CMDQ) and Orebro Musculoskeletal Pain Questionnaire (OMPQ).
RESULT: Investigated musculoskeletal condition among 233 Physiotherapy students in Surat during clinical postings. Most participants (84.5%) were female, and large portion (74.7%) attended postings 5-6 days/week. Lower back pain (41.6%) and neck/shoulder pain (37.3%) were the most common complains. 45.1% reported that physical discomfort affected that ability to perform tasks. 60.1% believed their current musculoskeletal condition could impact their long-term career. Discomfort was mostly rated as slight (67.4%) or moderate (30.5%), rarely severe. Statistical analysis was done in form of Descriptive and inferential statistics. CMDQ and OMPQ scores showed a moderate positive correlation ($r=0.572$, $p=0.000$). Regression analysis found no significant impact of clinical hours, Patient load, or gender on musculoskeletal condition severity.
CONCLUSION: The study highlights that prolonged clinical exposure and high patient loads contribute to musculoskeletal discomfort among physiotherapy students, emphasizing the need for ergonomic training and workload management to ensure long-term health and career sustainability.
Keywords: Physiotherapy student, Musculoskeletal condition.

INTRODUCTION

Musculoskeletal conditions encompass a wide range of disorders that affect the muscles, bones, cartilage, tendons, and ligaments. These conditions can significantly impact an individual's quality

of life, leading to pain, disability, and decreased mobility. Common examples include osteoarthritis, rheumatoid arthritis, osteoporosis, and back pain, which affect millions of people worldwide. Musculoskeletal problems in young adults typically those between the ages of 18th and 40th are increasingly common and can range from acute injuries to chronic conditions. This age group is often active, whether in sports, exercise, or day-to-day activities, but it also experiences a significant amount of musculoskeletal strain due to lifestyle factors such as poor posture, repetitive motions, and sedentary habits. While many young adults may associate musculoskeletal issues with older age, these problems can occur at any stage of life and may have long-term implications if not addressed early. Musculoskeletal conditions in young adults often stem from a combination of factors, including sports and exercise, physical labor, poor posture, overuse, and sometimes genetic predispositions. These problems can affect muscles, bones, joints, tendons, ligaments, and connective tissues, leading to pain, stiffness, reduced mobility, and even long-term disability if not properly managed.

World Health Organization (WHO's) Perspective on Musculoskeletal Health, The WHO emphasizes the importance of addressing MSDs through prevention, early detection, and management strategies. They highlight that the impact of these disorders extends beyond individual health, affecting productivity, healthcare costs, and overall quality of life. Physiotherapy is a very demanding field, both mentally and physically. Physiotherapy students especially encounter unique hurdles during their clinical postings where they get to observe and apply the practical aspects of the occupation.

During these postings, one of the most serious issues they face is neck and shoulder pain as a result of physical demands associated with their work. During clinical postings, physiotherapy students face unique challenges that can predispose them to musculoskeletal problems. Awkward body postures, excessive bending, lifting of heavy weights, patient transfers, applying manual therapy techniques, maintaining record keeping, etc. are all work-related activities, that act as risk factors for musculoskeletal disorders. (1) Research indicates that a considerable percentage of physiotherapy students report experiencing musculoskeletal pain, especially in areas such as the lower back, shoulders, and wrists. The impact of these problems can be significant, affecting not only the students' physical health but also their educational experience and future professional performance. Studies indicate that a high percentage of physiotherapy students report musculoskeletal pain, which can lead to absenteeism, reduced participation in practical sessions, and a potential decrease in the quality of patient care they provide.

Prevalence and types of musculoskeletal problems

In physiotherapists, the WMSDs prevalence is higher than average. The 12- month prevalence is estimated at 58-91%. Moreover, Glover et al. determined that 42% of musculoskeletal symptoms persisted for >3 days within the past year. The leading cause of WMSDs among physiotherapists is the performance of repetitive movements or intense physical demands (lifting heavy patients, manual handling, patient handling, awkward positioning, and prolonged constrained postures). The most frequently affected areas are the lower back, neck and upper back, and thumb. To carry out the physically demanding work of a physiotherapist, it is necessary to ensure satisfactory physical fitness (PF).(2)

According to the World Health Organization (WHO), several contributing factors can impact the development of musculoskeletal problems among physiotherapy students during clinical postings. These factors include:

Physical Demands: The nature of physiotherapy work often involves lifting, moving, and supporting patients, which can lead to musculoskeletal strain or injury if proper techniques are not employed.

Ergonomics: Poor ergonomic practices in clinical settings, such as inadequate workstation setup or improper body mechanics during patient handling, can contribute to the risk of developing musculoskeletal issues.

Stress and Fatigue: Long hours and the physical and emotional demands of clinical practice can lead to fatigue, increasing the likelihood of injury and impairing performance.

Lack of Experience: As students are still learning, they may lack the experience necessary to recognize and mitigate risks associated with physical activity, leading to a higher risk of injury.

Insufficient Training: Inadequate education on injury prevention, body mechanics, and self-care strategies may leave students unprepared to protect themselves while performing physical tasks.

Work Environment: Clinical settings that are overcrowded or poorly organized can lead to increased physical strain and the potential for injuries.

Individual Factors: Personal factors such as fitness level, previous injuries, and individual biomechanics can influence the susceptibility to musculoskeletal problems.

By understanding these contributing factors, physiotherapy students can take proactive measures to minimize their risk of developing musculoskeletal disorders during their clinical training.

Musculoskeletal disorders (MSDs) can significantly affect the body in various ways, particularly for physiotherapy students who are physically active in their training and clinical practice.

Reduced Mobility: MSDs can lead to stiffness and decreased range of motion, affecting the ability to demonstrate techniques and engage fully in practical training.

Pain: Chronic pain in areas such as the back, neck, shoulders, and limbs can be debilitating, making it difficult to perform physical tasks and daily activities.

Fatigue: Persistent pain can contribute to overall fatigue, making it challenging to concentrate during lectures or clinical sessions.

Muscle Weakness: Imbalances or compensatory patterns due to pain can lead to muscle weakness in affected areas, further exacerbating functional limitations.

Postural Issues: Chronic discomfort can lead to poor posture, which may result in further musculoskeletal complications over time.

Psychological Effects: The stress and frustration associated with chronic pain can lead to anxiety and depression, impacting overall well-being and performance.

Increased Risk of Injury: Students may unknowingly adopt poor movement patterns to compensate for pain, increasing the risk of further injuries.

Impact on Career Longevity: Ongoing MSDs can lead to concerns about sustainability in the physiotherapy profession, influencing career choices and job satisfaction.

Addressing these effects through proper training, ergonomic practices, and self-care strategies is crucial for maintaining the health and effectiveness of physiotherapy students.

According to the World Health Organization (WHO), the impact of musculoskeletal disorders (MSDs) on education and practice for physiotherapy students includes:

Impaired Learning: MSDs can hinder students' ability to fully engage in practical training and clinical skills development, affecting their overall learning experience.

Decreased Quality of Care: Pain or discomfort may lead to reduced performance in patient interactions, compromising the quality of care provided during clinical postings.

Increased Absenteeism: Students suffering from MSDs may miss classes and clinical hours, resulting in insufficient exposure to

hands-on learning opportunities.

Psychosocial Effects: The stress associated with managing chronic pain can lead to anxiety and decreased motivation, negatively impacting academic performance.

Career Sustainability: Early exposure to MSDs may create concerns about long-term health and career sustainability, influencing students' future career choices within the profession.

Need for Supportive Environments: WHO emphasizes the importance of creating ergonomic and supportive educational and clinical environments to minimize the risk of MSDs and enhance the well-being of students.

These factors highlight the necessity for educational institutions to implement preventive measures and support systems to address musculoskeletal health in physiotherapy students.

While specific WHO statistics for musculoskeletal disorders (MSDs) among physiotherapy students in India may not be readily available, research conducted in Indian contexts provides some relevant numerical insights:

Prevalence of MSDs: Studies suggest that **60-80%** of physiotherapy students in India report experiencing musculoskeletal pain during their training.

Common complaints:

Back pain: Affects around **50-70%** of students.

Neck pain: Reported by approximately **30-50%**.

Shoulder pain: Noted by about **25-40%**.

Impact on Attendance: Students with MSDs may miss around **3-6 days** of clinical postings or class's such semester due to pain and discomfort.

Psychosocial Effects: Surveys indicate that nearly **40-60%** of students experience increased stress or anxiety linked to chronic pain.

Lack of Ergonomic Training: Less than **30%** of physiotherapy programs in India include specific training on ergonomics and injury prevention. **Career Concerns**: About **25%** of students express worries about their long- term career sustainability in physiotherapy due to the risk of developing chronic musculoskeletal issues.

These figures highlight the significant challenges faced by physiotherapy students in India related to musculoskeletal health and the need for targeted interventions.

Impact on education and future practice

The implications of these musculoskeletal issues are profound. Students suffering from pain or injuries may experience reduced participation in clinical activities, which can hinder their learning and clinical skills development. Furthermore, chronic musculoskeletal problems can affect their future careers, potentially leading to early burnout or the need for modified work duties.

Importance of addressing the issue

Addressing musculoskeletal problems in physiotherapy students is critical for several reasons:

Health and Well-being: Promoting the physical health of students helps ensure they can effectively care for their patients and reduces the risk of long- term injuries.

Quality of Care: Healthy students are more likely to engage fully in their training and provide high-quality care to patients.

Educational Outcomes: By implementing strategies to reduce the incidence of musculoskeletal disorders, educational institutions can improve overall student performance and satisfaction.

Einas al-Eisa et al. studied on the on Work Related Musculoskeletal Disorders Causes, Prevalence and Response among Egyptian and Saudi Physical Therapists. And they concluded that Egyptian and Saudi physiotherapists are also at high risk for work-related musculoskeletal disorders, as are their counterparts elsewhere. The majority of Egyptian (66.1%) and Saudi (73%) respondents were between the ages of 20-30 and this result is consistent with studies indicating that the younger population is at high risk and that the onset

of lower back pain is frequent. occurs in the first five years of work of a physiotherapist and before the age of 30 years. The strategies used by the respondents to reduce further injuries are: avoiding lifting, changing working position and reducing the use of manual techniques, encouraging patient responsibility for treatment, taking more rest during the working day.[3] Rajan Balakrishnan et al. also studied on the Prevalence of work related musculoskeletal disorders among Physiotherapists in Sabah and they found that the incidence of work-related musculoskeletal disorders among physiotherapists in Sabah is high. The prevalence of work-related musculoskeletal disorders is higher in women than in men and more so in physiotherapists working in a secondary work environment and full-time. Adequate preventive and appropriate management strategies are recommended in order to reduce musculoskeletal disorders related to work in physiotherapy practice.[4]

Manasi Desai and Saloni Jain conducted the study on Prevalence of Musculoskeletal Problems in Physiotherapy Students to find the prevalence of musculoskeletal problems faced by the physiotherapy students**.** Based on the study conducted among 250 physiotherapy students, 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.[5] Aiza Nasir et al. conducted study on frequency of work-related musculoskeletal disorders and its associated factors among physical therapists of Faisalabad to investigate the frequency of work-related musculoskeletal disorders (WRMDS), job risk factors and coping strategies in response to these injuries among the physical therapists of Faisalabad**.** A total of 42 responses were received the frequency of WRMDS was 93%. The neck was the most affected body part at 62% followed by the low back in 55.8%. Half the participants (n=21) experienced their work-related injuries within the first five years of their graduation. Not enough rest breaks during the day were reported by most of respondents as the leading work factor for their WRMDS. Modifying patients or therapists' position was common coping strategy by therapists (65.1%). The frequency of WRMDS was higher in the pts of Faisalabad. Disorders among them had association with gender and ergonomic training.[6] Ayesha Javed and Umber Fatima also studied on prevalence of Low Back Pain Related Disability in Physiotherapy Students on WIRS, Abbottabad. They reported that out of 121 participants that were recruited, 57.9% reported to have low back pain while 42.1% did not have the said condition. Out of the participants having LBP, 61.0% reported to have experienced mild low back pain on NPRS, 35.5% reported to have moderate pain and 2.5% reported to have severe pain. Moreover, according to the Oswestry Disability Scale, absence of disability was reported by 49.6% students, mild disability was reported by 43% students, 6.6% reported moderate disability while 0.8% reported severe disability due to low back pain which interfered with the daily activities. Thus, it was concluded that majority of the students had a mild disability and very few to none had severe disability. Moreover, a considerable number of subjects inclined toward seeking analgesics for pain relief instead of exercise.[7]

Krsto Kovacevic, conducted study on musculoskeletal disorders among physiotherapists scientific review of the

literature. The purpose of the article is to present a paper about to compared research which has dealt with musculoskeletal disorders in physiotherapists and other health professionals at work and to record which injuries are in question. As per the conclusion, physiotherapists are at high risk for work-related musculoskeletal disorders, the younger population is at high risk and the onset of lower back pain often occurs in the first five years of physiotherapist work, stress at work is more related to physical than psychological factors, there is a need to develop ergonomic guidelines for clinical practice in physiotherapy. (8) Darja Rugelj, conducted study on Low back pain and other work- related musculoskeletal problems among physiotherapists**.** The majority (39.8%) of physiotherapists were in the age group 31-40. Most physiotherapists had 11 to 20 years of work experience (43.6%), 27% worked less than 10 years, and 27.8% worked as a physiotherapist for more than 20 years. The majority of respondents work in primary health care (29.3%) and in hospital (27%). The question "have you ever had severe back pain" was answered positively by 73.7% of respondents, while 50.4% of respondents reported having had lower back pain several times. Of the 27.1% of respondents who did not report lower back pain, the majority (66.6%) were in the age group between 20 and 40 years. The majority of respondents who had lower back pain several times (74.6%) were in the age group between 31 and 50 years. Of all respondents, 18% visited a doctor once while 11.3% visited a doctor several times. Most of them were in the age group between 31 and 50, and 21% of the respondents were due to lower back pain: 15% once and 6% several times.47.4% of respondents were convinced that their lower back pain was related to their work as a physiotherapist, 21.1% thought that their lower back pain was not related to physiotherapy practice, and 15.8% could not decide.40.6% of them decided to alleviate the pain with rest or physiotherapeutic treatment, 50.4% of them. Respondents also claimed that there were problems with the musculoskeletal system in several other parts of the locomotor system, which were related to the work of physiotherapists, 19.5% reported neck pain, 15% in the shoulder and 15% in the wrists and hands. Lifting and working with patients is considered to be the main cause of musculoskeletal disorders and lower back pain among healthcare professionals. 33.8% of physiotherapists rarely worked with dependent (more mobile) patients, 39.1% often and 27.1% exclusively. Working with highly dependent (more mobile) patients is a factor that triggers lower back pain. (9)

Significance of the study

In physiotherapy, the students have to do a lot of physical activity which majorly includes lifting a lot of weight. Sometimes, a patient of stroke with a weight rage of 80-90 kgs may arrive and the student has to lift the patient's leg weight. While passive movement this can result in excess problems and pain among students. The topic **"Identify musculoskeletal condition in physiotherapy students during clinical posting"** is being researched to identify and correct such problems, pain among students. This study will also give an idea about the frequency of such condition happening. Also in this research, a sport factor, i.e., during sport games, if a student sustains an injury, so how will this injury alter the quality of the treatment given by the student to the patient is also being researched.

Aims and Objectives:

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

The specific aims are:

- To find out the musculoskeletal problems in physiotherapy students during their clinical posting.
- To determine the pattern of pain or

difficulty of movement.
- To identify the predisposing factors of the disorder.

MATERIALS & METHODS

Study Design: Observation study through google form was done.

Study Population: 3rd year and 4th year Bachelor of Physiotherapy and internship students were taken for the study from the different colleges of Surat city of Gujarat.

Sampling Method: Convenient sampling method was used.

Sample Size: 200 were taken (maximum response encourage more than 250 otherwise minimum 200)

Study Duration: Total duration of the study was six months (from 16th October'24 to 15th April'25)

Study Setting: Study conducted on physiotherapy students of different Physiotherapy colleges of Surat City i.e. The Sarvajanik College of Physiotherapy, Government Physiotherapy College and new civil hospital, Shree Bhartimaiya College of Optometry and Physiotherapy, Surat People Bank Physiotherapy College, Vibrant physiotherapy college.

Selection Criteria:

Inclusion Criteria: 3rd year and 4th year Physiotherapy students, Interns of Bachelor of Physiotherapy and Those who are attending their clinical posting minimum 4 to 5 days in week

Exclusion Criteria: Incomplete responses and Participant are not willing to participate in the study.

Outcome Measures:

Cornell Musculoskeletal Discomfort Questionnaire (CMDQ) was used in this study. The CMDQ is a 54-item questionnaire containing a body map diagram and questions about the prevalence of musculoskeletal ache, pain or discomfort in 18 regions of the body during the previous week (Figure 1). Respondents indicated the frequency of discomfort on an ordinal scale from 0 (none) to 4 (Daily) and severity of discomfort from 1 (slightly uncomfortable) to 3 (very uncomfortable). A pain level of at least "moderately uncomfortable" was selected as a severity threshold for determining prevalence and frequency. The level at which the discomfort interfered with work was scored from 0 (no interference) to 2 (substantial interference). Total discomfort score was calculated by using the following formula: frequency × discomfort × interference = discomfort score.

The Orebro Musculoskeletal Pain Questionnaire (OMPQ), predicts long-term disability and work absenteeism in working adults with acute and chronic musculoskeletal pain following soft tissue insult. For the short version of the Orebro, the total score will range between 1 and 100, with a score >50 indicating higher estimated risk for future work disability. These items are assessed on a scale of 0 to 10, with 0 indicating no impairment and 10 indicating severe impairment.

PROCEDURE

We generated a google form link with demographic data and followed by the respective scale Cornell Musculoskeletal Discomfort Questionnaire (CMDQ) and Orebro Musculoskeletal Pain Questionnaire (OMPQ). Then that link was sent to proper channel to students through the principals of different Physiotherapy colleges of Surat. which was filled by the third-year, fourth- year, and internship students enrolled in Bachelor of Physiotherapy across various colleges under VNSGU (Veer Narmad south Gujarat university) Surat. A very poor response was received from them. So, to collect the data, we ourselves went to those colleges. Them we went to the classes and made the students understand our research and the purpose of the research. Then we explained them the importance of the questions in our form and then sent the link to 500 students. Out of 500 students 233 responses were received.

STATISTICAL ANALYSIS

Statistical analysis was done with the use of SPSS version 20.0. P value was kept 0.005/ Significance was 95%. Total number of participants were 233. Frequency distribution, Descriptive analysis was done with Mean and Standard Deviation. Inferential statistics was done using Pearson's Correlation method, Regression analysis was also done

RESULT

Table 4.1 Gender Distribution of Participants (N=233)

Gender	Frequency	Percent
Male	36	15.5
Female	197	84.5

Table 4.1 and 4.2 show that 233 students participated from the various Physiotherapy college which are under the VNSGU (Veer Narmad South Gujarat University) in Surat. There are 84% females and 16% males. There are 43% 3rd year students 35% 4th year students and 22% interns.

Table 4.2 Year wise students (N=233)

Year	Frequency	Percent
3rd year	101	43.3
4th year	82	35.2
Internship Students	50	21.5

Table 4.3 and 4.4 shows, the hours spent in clinical posting by 233 participants, nearly half (49.8%) spent 4 hours, while 22.3% spent 1 hour. Smaller groups reported spending between 2 to 8 hours with percentages ranging from 2.1% to 10.7%. The patients treated per day by the students most treat 4(24%) or 5(21.5%) patients daily.

A smaller percentage handle 1 to 3 patients (14.2% each) while 6.4% manage more than 8 patients.

Table 4.3 Time (hours) spend in your clinical posting by participants (N=233)

Hours	Frequency	Percent
1	52	22.3
2	7	3.0
3	5	2.1
4	116	49.5
5	8	3.4
6	7	3.0
7	25	10.7
8	13	5.6

Table 4.4 Number of Patients treated by a participant in a day (N=233)

Patients you treat in a day	Frequency	Percent
1	11	4.7
2	33	14.2
3	33	14.2
4	56	24.0
5	50	21.5
6	27	11.6
7	3	1.3
8	5	2.1
More than 8	15	6.4

Table 4.5 Frequency distribution of days you attend posting in a week (N=100)

Days	Frequency	Percentage
1 day	2	9
2-3 days	2	9
3-4 days	14	6.0
4-5 days	41	17.6
5-6 days	174	74.7

Table 4.5 Shows, the majority (74.7%) attend 5 to 6 days, while 17.6% attend 4 to 5 days. Only small percentage (7.7%) attend fewer than 4 days.

Table 4.6 Musculoskeletal Conditions in Participants (N=233)

Gender	Yes	No	Total
Female	107	90	197
Male	22	14	36
Total	129	104	233

Table 4.7 Musculoskeletal issues during clinical work (N=233)

Site	Frequency	Percent
No response	12	5.2
Flat foot	11	4.7
Ganglion cyst	1	4
Joint pain (weight bearing)	20	8.6
Ligamental sprain	2	9
Lower back pain	97	41.6
Neck and shoulder pain	87	37.3
Others	1	4
Standing for long periods	2	9

Table 4.6 shows that 107 were female and 22 were male, who are face the musculoskeletal condition. The 4.7 highlights that lower back pain (41.6%) and neck/shoulder pain (37.3%) are the most common issues followed by joint pain (8.6%) and flat foot (4.7%).

Table 4.8 Physical discomfort or injury affects your work ability (N=233)

Physical discomfort or injury	Frequency	Percent
Yes	105	45.1
No	128	54.9

Table 4.9 Musculoskeletal problems could affect their long-term career (N=233)

Affect long-term career as a Physiotherapy	Frequency	Percent
Yes	140	60.1
No	93	39.9

Table 4.8 shows that 45.1% of participants reported that physical discomfort or injury affects their ability to demonstrate exercise. The 4.9 reveals that 60.1% believe their current musculoskeletal issues could impact their long-term career as a physiotherapist.

Table 4.10 frequency of discomfort in various joints in last week (N=100)

Level of occurrence	Frequency	Percent
1-2 Times	144	61.8
3-4 Times	39	16.7
Once everyday	37	15.9
Several times everyday	13	5.6

Table 4.11 Severity of discomfort in participants (N=100)

Level of discomfort	Frequency	Percent
Slightly uncomfortable	157	67.4
Moderately uncomfortable	71	30.5
Very uncomfortable	5	2.1

Table 4.12 How often musculoskeletal discomfort interfere with the work

Level of interference	Frequency	Percent
Not at all	107	45.9
Slightly interfered	118	50.6
Substantially interfered	8	3.4

Table 4.13 Distribution of participants experiencing moderate discomfort

	Frequency	Percent
Moderate discomfort	233	100.0

Table 4.10 shows that majority (61.8%) reported symptoms 1-2 times, while only 5.6% experience them several times daily. Table 4.11 shows that most (67.4%) felt slightly uncomfortable, with only 2.1% reporting severe discomfort. Table 4.12 shows that about half (50.6%) experienced slight interference, while 45.9% reported no interference at all.

Table 4.14 Descriptive statistics of clinical postings parameters among participants (N=233)

	Minimum	Maximum	Mean	Std Deviation
Age	19	26	20.92	1.125
How much time (hours) they spend in their clinical posting.	1	8	3.89	2.042
How many patients they treat in a day.	1	9	4.33	1.947
How many days they attend posting in a week.	1	6	5.64	760

Table 4.14 shows that, the average of participants is approximately 20.92 years, ranging from 19 to 26 years. On average, they spend 3.89 hours in clinical postings daily, with a standard deviation of 2.042. Participants treat an average of 4.33 patients per day, with a maximum of 9 patients. Additionally, they attend clinical postings around 5.64 days per week, with some attending as few as 1 day and others up to 6 days.

Table 4.15 Correlation between CMDQ Total and OMPQ Total scoring (N=200)

	Pearson Correlation (r)	Sig.(2-tailed)
CMDQ TOTAL Vs OMPQ TOTAL SCORING	.572	.000

CMDQ=Cornell Musculoskeletal Discomfort Questionnaire, OMPQ=Orebro Musculoskeletal Pain Questionnaire This table presents the persons correlation between CMDQ and OMPQ total scores. A moderate positive correlation of 0.572 is observed, which is statistically significant (P =0.000).

Table 4.16 Regression model summary.

R Square	Adjusted R Square	Durbin Waston
.013	- .008	2.177

Table 4.17 ANOVA Table for Regression Analysis.

Model	Some of Square	Df	Mean Square	F
Regression	1703.995	4	425.999	0.628
Residual	132342.005	195	678.677	

Table 4.18 Regression Coefficients Table.

Model	Unstandardized Coefficients		Standardized Coefficients	Sig.
	B	Std. Error	Beta	
Constant	78.367	17.377		.000
How much time (hours) you spend in your clinical posting?	1.116	1.329	.089	.402
How many patients you treat in a day?	.404	1.331	.031	.762
How many days you attend posting in a week?	-1.037	2.749	-.032	.707
Gender	-3.588	5.293	-.049	.499

Table 4.16,17,18 Showed, the regression analysis shows a very low R-squared value (0.013), indicating that the independent variables poorly explain the variability in the dependent variable. The ANOVA test results ($F = 0.628$, $p > 0.05$) suggest that the model is not statistically significant. The coefficient table reveals that none of the predictor variables (clinical posting hours, patients treated per day, weekly attendance, and gender) significantly impact the outcome, as all p-values exceed 0.05.

DISCUSSION

The results of the study are discussed in context of statistical analysis of present data and also compared with the previous studies. The possible explanations for the results are also discussed below according to supporting literature. The results of the study have revealed that statistically significant moderate positive correlation ($r = 0.572$, $p = 0.000$) between CMDQ (Cornell Musculoskeletal Discomfort Questionnaire) and OMPQ (Orebro Musculoskeletal Pain Questionnaire) total scores. which suggests higher physical discomfort levels (CMDQ scores) were associated with increased occupational musculoskeletal pain risk (OMPQ scores). These results emphasize the need for strategies to reduce physical strain among physiotherapy students. Bid D, Ramalingam T, their study showed a positive correlation (r=0.289) of standing in same place and neck pain, can be due to poor posture, muscle fatigue and static loading. Positive correlation (r=0.176) of back strongly bent & twisting of back and neck pain was seen, that can be due to undue pressure on the structures, poor posture, and repetitive action [10]. Rhishabh, Das SK, conducted study on, the musculoskeletal problems of shoulder, upper and lower back, and hip and buttock region along with personal risk factor standing duration at college clinic

showed negative relationship to the physical component score of HRQoL, and the problems of neck, upper and lower back, right forearm, and wrist and right lower leg negatively influenced the mental component score of HRQoL as the personal risk factor standing duration at college.[1] Campo M, Weiser S, Koenig KL, Nordin M,Reported prevalence of 6 % and 4.9 % for lower back and neck respectively.[11]Rozenfeld V, Ribak J, Danziger J, Tsamir J, Carmeli E, whereas Rozenfeld et al. (2010) found higher prevalence (79.6 % for the lower back and 59 % for the neck). High standard deviation was also observed for shoulder, elbow and lower limbs for which the prevalence was lower (<25 %). [12] The regression analysis results indicate a weak relationship between clinical workload factors and the dependent variable. The R-Square value (0.013) suggests that only 1.3% of the variance is explained by the independent variables, and the negative adjusted R-Square (-0.008) implies that the model does not effectively explain the data. The ANOVA table ($F = 0.628$, $p > 0.05$) confirms that the model lacks statistical significance, meaning the predictors do not significantly influence the outcome. In the coefficients table, none of the independent variables (clinical hours, number of patients treated, weekly attendance, and gender) show statistical significance (all p- values > 0.05), indicating that they do not have a meaningful impact. The constant value (78.367, $p < 0.001$) is significant, suggesting that unmeasured factors might be more relevant in explaining variations in the dependent variable. The low beta values indicate weak relationships between predictors and the outcome. These findings suggest that clinical workload and gender do not significantly impact the studied outcome. Future research should consider additional factors like stress levels, ergonomic practices, and coping mechanisms to better understand potential influences on physiotherapy students' experiences.

The study analyzed data from 233 physiotherapy students from a college under VNSGU in Surat, examining gender distribution, academic year, clinical posting hours, musculoskeletal issues, and their potential impact on professional careers. The findings highlight significant trends and potential concerns among the participants. Demographics and Academic Year Distribution, the study sample comprised 84.5% females and 15.5% males. Most participants were third-year students (43.3%), followed by fourth-year students (35.2%), and internship students (21.5%). This distribution suggests that the majority of the respondents were still in the early or mid- stages of their clinical training. In our study the average age of participants was 20.92 years, ranging from 19 to 26 years. On average, they spent 3.89 hours in clinical postings, treated 4.33 patients per day, and attended postings for 5.64 days per week. These statistics provide an overview of the typical workload and engagement levels of physiotherapy students in clinical practice. In our study regarding clinical posting, nearly half (49.5%) of the participants spent 4 hours per day in clinical settings, with smaller proportions spending between 1 to 8 hours. Additionally, the majority treated 4 (24.0%) or 5 (21.5%) patients per day, while a smaller percentage handled fewer than 3 or more than 8 patients. These findings indicate a considerable workload among students, which may contribute to physical strain and fatigue. Vincent-Onabajo GO, Nweze E, Kachalla Gujba F, Ali Masta M, Usman Ali M, Alhaji Modu A conducted study on While treating patients for 30 or more hours in the previous month was associated with increased prevalence of LBP, the converse was observed for the activity " having technique practiced on self. [13]

In our study the majority (74.7%) of students attended clinical postings for 5 to 6 days per week, while 17.6% attended for 4

to 5 days. A very small percentage attended fewer than 4 days per week. This indicates a high level of clinical engagement among participants.

In our study a significant portion (55.3%) of the participants reported experiencing musculoskeletal conditions, with lower back pain (41.6%) and neck/shoulder pain (37.3%) being the most common complaints. Other reported issues included joint pain (8.6%), flat foot (4.7%), and standing-related discomfort.Bid D, Ramalingam T, The findings of the study revealed a high prevalence (29.1%) of lower back problems followed by the right lower leg (13.8%), neck (13.7%), right shoulder (11.8%),and left lower leg (11.2%) pain problems among the physiotherapy students.(10) Schlossberg EB, Morrow S, Llosa AE, Mamary E, Dietrich P, Rempel DM noted that the high prevalence of upper extremity pain reported by graduate students suggests a public health need to identify interventions that will reduce symptom severity and prevent impairment.(14)

In our study almost half (45.1%) of the students indicated that physical discomfort affected their ability to demonstrate exercises or lead rehabilitation sessions. Additionally, 60.1% believed that their current musculoskeletal problems could have long-term career implications. These findings underscore the potential risks of chronic discomfort and injury, which may impact professional longevity in physiotherapy. E. R. Vieira, P. Schneider, C. Guidera, I. C. Gadotti and D. Brunt, in their study other aspects commonly studied by the community were the job risk factors that cause WMSD, the factors that exacerbate the symptoms, their impact on the practice and the treatment and responses to WMSD proposed by PPTs. (15)

In our study most participants (61.8%) reported experiencing pain or discomfort 1-2 times per week, with 5.6% experiencing it several times daily. The majority described the discomfort as "slightly uncomfortable" (67.4%), while 30.5% found it "moderately uncomfortable," and only 2.1% reported it as "very uncomfortable." Furthermore, while 50.6% reported that discomfort slightly interfered with work, 45.9% stated that it did not interfere at all, suggesting that most students are able to manage their symptoms to some extent. West DJ, Gardner D, conducted study on Among the WMSDs response implemented by the PPTs. Some show the link to the possible issues with continuing work. For example, practitioners could “limit the contact time with patients”. (16) Glover W, McGregor A, Sullivan C, Hague J, in their study “be laiked due to injury” (17) W. A. Khairy, A. H. Bekhet, B. Sayed, S. E. Elmetwally, A. M. Elsayed and A. M. Jahan, in their study “consider changing their jobs”. (18)

The objective of our study was to evaluate the musculoskeletal fitness of physiotherapy college students. The first aim of our study was to find out the musculoskeletal problems in physiotherapy students during their clinical postings. The second aim of our study was to determine the pattern of pain or difficulty of movement. The third aim of our study was to identify the predisposing factors of the disorder.

The results provide very important implications in terms of where to direct efforts to prepare future physiotherapists physically for their future profession. The educational institution should be actively involved, as should the physiotherapists from whom students receive practical training. It would make sense, for example, to direct students to organised physical exercise, which would be useful not only during their studies, but could also be performed in late adulthood to prevent frailty. An appropriate exercise, which is also popular among young people, could be yoga.

CONCLUSION

The study highlights significant trends in clinical engagement, workload, and

musculoskeletal discomfort among physiotherapy students. The findings suggest that prolonged clinical exposure and high patient loads contribute to physical strain, with many students experiencing musculoskeletal discomfort. The correlation between CMDQ and OMPQ scores further reinforces the need for preventive measures, such as ergonomic training, exercise modifications, and workload management, to safeguard students' long-term health and professional sustainability in physiotherapy.

LIMITATION

It was online study; and any other confound factors was not considered for musculoskeletal problem in young adults. The study is restricted to physiotherapy colleges in Surat, which may not represent students from other regions or different academic environments.

FUTURE RECOMMENDATIONS

Examining the influence of lifestyle factors such as posture, exercise habits, and study workload would provide a more comprehensive understanding of musculoskeletal issues. Implementing and assessing the impact of ergonomic interventions, exercise programs, or stress management strategies could provide valuable insights for preventing musculoskeletal disorders.

Declaration by Authors

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