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Prevalence of Upper Trapezius Myalgia and its Associated Risk Factors among Undergraduate Physiotherapy Students in Bengaluru, Karnataka: A Cross-Sectional Study

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Abstract

Background: Upper trapezius myalgia (trapezitis) is a common musculoskeletal condition among students, often associated with poor posture, prolonged device use, and academic stress. Physiotherapy students may be at increased risk due to additional clinical and academic demands. **Aim:** To determine the prevalence of upper trapezius myalgia among undergraduate physiotherapy students and to examine its association with selected lifestyle and clinical factors. **Materials and Methods:** A cross-sectional observational study was conducted among 100 undergraduate physiotherapy students aged 18-25 years at Dayananda Sagar University using simple random sampling. Demographic and lifestyle data were collected. Clinical assessment included palpation for tenderness, resisted shoulder shrug, cervical range of motion, and postural evaluation. Functional disability was assessed using the Neck Disability Index (NDI). Upper trapezius myalgia was identified based on the presence of self-reported neck/upper trapezius pain along with localized tenderness and pain on resisted shoulder shrug. Data were analysed using IBM SPSS Statistics (version 29.0). Descriptive statistics, chi-square test, independent t-test, Mann-Whitney U test, and Spearman's correlation were used. A p-value <0.05 was considered statistically significant. **Results:** The prevalence of upper trapezius myalgia was found to be 41%. No significant association was observed with gender, year of study, hand dominance, smartphone use, posture, physical activity, or academic hours ($p > 0.05$). However, sleep duration and academic/clinical stress showed significant associations with upper trapezius myalgia ($p < 0.05$). Participants with myalgia demonstrated significantly higher NDI scores ($p = 0.005$), and a positive correlation was observed between pain intensity and NDI scores ($p < 0.001$). **Conclusion:** Upper trapezius myalgia is prevalent among undergraduate physiotherapy students, with sleep deprivation and stress emerging as significant contributing factors. Early identification, ergonomic education, stress management, and timely physiotherapy interventions are essential to reduce the burden of this condition.

Major Findings: 1) **High prevalence:** Upper trapezius myalgia was found in 41% of undergraduate physiotherapy students, indicating a considerable burden in this population. 2) **Significant risk factors:** Sleep duration and academic/clinical stress showed a statistically significant association with upper trapezius myalgia ($p < 0.05$). 3) **Impact on function:** Students with upper trapezius myalgia had significantly higher Neck Disability Index (NDI) scores, with a positive correlation between pain intensity and disability ($p < 0.05$).

Keywords: Lifestyle Factors, Neck Pain, Neck Disability Index, Physiotherapy Students, Trapezitis, Upper Trapezius Myalgia

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1. Introduction

Neck pain is one of the most commonly reported musculoskeletal disorders worldwide and imposes a considerable economic burden on individuals, healthcare systems, and society[1,2]. In global burden estimates, neck pain consistently ranks among the leading causes of years lived with disability, reflecting its significant impact on long-term function and quality of life[1,2]. In the general population, the prevalence of neck pain is commonly reported to range between 20-30 %, with an average of approximately 23%[3]. Among university and professional students, studies have reported prevalence rates ranging from 48–78 %, indicating that young adults in academic settings constitute a particularly vulnerable group[3,4].

The trapezius is a large, superficial, triangular muscle covering the posterior neck and upper back and is anatomically divided into upper, middle, and lower fibers[5,6]. The upper fibers originate from the external occipital protuberance, superior nuchal line, and nuchal ligament of the cervical spine, and insert into the lateral third of the clavicle and the acromion process of the scapula[5,6]. Functionally, the upper trapezius elevates and upwardly rotates the scapula and assists in cervical extension and lateral flexion. Sustained activation of these functions, particularly under poor postural conditions, contributes to the development of upper trapezius myalgia[5,6].

College students often spend prolonged hours reading, writing, and using laptops or smartphones in sustained or awkward postures, which may contribute to the development of upper trapezius myalgia. However, the condition is multifactorial and not solely related to device use or academic activities. Prolonged static neck flexion, inadequate back support, improperly positioned desks or screens, and frequent handheld device use may promote forward head posture and rounded shoulders, thereby increasing mechanical stress on the upper trapezius and surrounding cervical musculature[2,4-7]. In addition, psychosocial stress related to academic demands may increase muscle tension and pain sensitivity in the neck–shoulder region[3,4,8]. Associated clinical features such as muscular fatigue, tightness, tenderness, trigger points, and reduced postural endurance may further contribute to symptom development and persistence[4,7,8].

The rapid expansion and widespread availability of digital communication technologies have resulted in almost universal use of laptops, smartphones, tablets, and other electronic devices among students[4,7-9]. Several epidemiological studies have reported significant associations between prolonged use of these devices and increased neck and upper back pain in both adolescents and university students[4,7-10]. Extended smartphone use has been associated with greater musculoskeletal discomfort in the neck and shoulders, higher pain intensity, and increased fatigue of the cervical extensors and upper trapezius[7-9]. Forward head posture during texting or viewing small screens, along with working with devices placed below eye level, increases mechanical loading on the cervical spine and surrounding musculature, thereby predisposing individuals to neck pain and upper trapezius overuse[4,7-11]. Consequently, prolonged use of electronic devices often results in sustained flexed or static neck positions, contributing to continuous strain on the cervical and shoulder girdle muscles[7-9].

Various pathologies and contributing factors have been identified in relation to neck pain, including facet joint dysfunction, intervertebral disc changes, myofascial pain syndromes, and muscle imbalances around the shoulder girdle[3,12]. Among these, overuse and myofascial dysfunction of the trapezius muscle - commonly referred to as upper trapezius myalgia (or trapezitis) is recognized as a frequent contributor to neck and shoulder symptoms in young adults[12-14]. Upper trapezius myalgia typically presents as localized pain, muscle spasm, and tenderness, sometimes accompanied by referred pain to the neck, occipital region, or shoulder, and may interfere with academic activities and daily functioning[13,14].

Non-ergonomic postures, prolonged static working positions, psychosocial stress, and muscle imbalances such as forward head posture, tight pectoral muscles, and weak scapular stabilizers (upper crossed syndrome) are commonly described mechanisms underlying the development and persistence of upper trapezius myalgia[4,7,12-14]. Studies in student and working populations have reported a high prevalence of upper trapezius tightness and strong correlations between neck pain and poor posture, highlighting the role of the upper trapezius in activity-related neck disorders[4,15,16].

Physiotherapy students are considered a high-risk group for developing upper trapezius myalgia due to their involvement in repetitive movements, manual patient handling, and suboptimal ergonomics during clinical training[17]. Previous studies have reported a high prevalence of musculoskeletal problems among

university students and have demonstrated strong associations with lifestyle-related factors. However, there is limited evidence specifically investigating the prevalence and associated risk factors of upper trapezius myalgia among undergraduate physiotherapy students.

2. Materials and Methods

This cross-sectional observational study was conducted among undergraduate physiotherapy students at Dayananda Sagar University over a period of 6 months. The study population included male and female students aged between 18 and 25 years. Participants were selected using a simple random sampling technique.

Before starting the study, ethical clearance was obtained from the college for conducting the research. The study protocol was explained to all participants in their vernacular language, and informed consent was obtained before enrollment.

Demographic details (age, sex, and academic year) and lifestyle-related information (study hours, smartphone use, bag carriage, and exercise habits) were collected. Functional disability was assessed using the Neck Disability Index (NDI). Clinical assessment included evaluation of cervical range of motion using a goniometer, palpation for tenderness over the upper trapezius, assessment of pain on resisted shoulder shrug, and postural analysis.

Participants were considered to have upper trapezius myalgia if they reported pain in the neck or upper trapezius region and demonstrated localized tenderness along with pain on resisted shoulder shrug, with or without postural deviation. Inclusion criteria were: (1) willingness to participate and provide informed consent, (2) age between 18 and 25 years, and (3) current enrolment in the undergraduate physiotherapy programme. Exclusion criteria included: (1) recent fracture of the shoulder or neck, (2) history of recent injury or trauma to the upper back, and (3) clinical signs suggestive of radicular pain. These criteria were applied to minimize confounding from acute or non-mechanical neck–shoulder conditions.

The sample size was estimated using the standard formula for determining a single population proportion, considering a 95% confidence level, anticipated prevalence of 60%, and precision of 10%. Based on this calculation, the minimum required sample size was 92 participants. To improve precision and account for potential non-response, a final sample size of 100 participants was included in the study.

3. Statistical Analysis

Data were analysed using IBM SPSS Statistics (version 29.0). Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to summarise demographic variables, prevalence of upper trapezius myalgia, and Neck Disability Index (NDI) scores. The normality of data was assessed using the Shapiro-Wilk test. Group comparisons for categorical variables were performed using Pearson's chi-square (χ^2) test. Continuous variables were compared using the independent samples t-test for normally distributed data and the Mann-Whitney U test for non-normally distributed data. Associations between upper trapezius myalgia and selected risk factors were expressed as Odds Ratios (OR) with 95% confidence intervals. Correlation between variables was analysed using Spearman's rank correlation coefficient. All statistical tests were two-tailed, and a p-value of <0.05 was considered statistically significant.

4. Results

Among the 100 participants, the prevalence of upper trapezius myalgia was found to be 41%. (Table 2).

The Chi square / Likelihood ratio test was used to find the association of gender, year of study, and dominant hand with the prevalence of upper trapezius myalgia. The gender, year of study, as well as dominant hand were not associated ($p > 0.05$) with the prevalence of upper trapezius myalgia (Table 3).

The following symptoms were significantly associated with upper trapezius myalgia: presence of neck/upper back pain, affected side, duration since onset, daily

Table 1. Descriptive statistics for age

(n = 100)	Range	Mean	S.D.
Age (Years)	18 to 25	21.18	1.69

Table 2. Prevalence of upper trapezius myalgia

		Frequency	%
Prevalence of upper trapezius myalgia	Present	41	41
	Absent	59	59

duration of pain, pattern of pain, pain intensity, and radiation of pain to the hand ($p < 0.05$). (Table 4)

The chi-square/Likelihood ratio test showed a significant association between lifestyle factors and upper trapezius myalgia. Sleep duration and academic/clinical stress were significantly associated ($p < 0.05$) (Table 5).

The Chi-square/Likelihood ratio test was used to assess the association between treatment-related factors and upper trapezius myalgia. Use of self-care methods and consultation with a doctor/physiotherapist showed significant associations ($p < 0.05$) (Table 6).

The Independent sample "t" test was used to compare age (Years); according to the prevalence of upper trapezius myalgia. There was no difference ($p > 0.05$) in the age (Years); according to the prevalence of upper trapezius myalgia (Table 7).

The Mann Whitney "U" test was used to compare Neck disability index scale; according to the prevalence of upper trapezius myalgia. There was a difference ($p < 0.05$) in the Neck disability index scale; according to the prevalence of upper trapezius myalgia (Table 8).

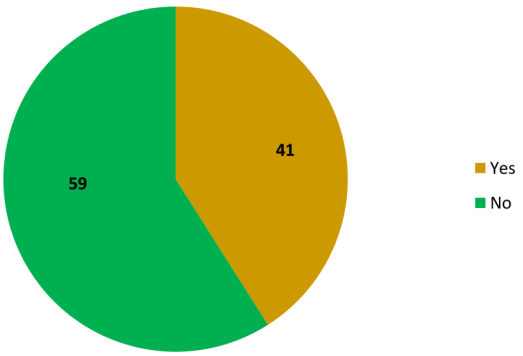


Figure 1. Prevalence of upper trapezius myalgia.

The Shapiro–Wilk test was used to assess the normality of the data for age, pain intensity, and Neck Disability Index (NDI) scores. Age was found to follow a normal distribution ($p > 0.05$), whereas pain intensity and NDI scores were not normally distributed ($p < 0.05$) (Table 9).

Spearman's rank correlation coefficient showed a significant positive correlation between pain intensity and Neck Disability Index scores ($p < 0.05$) (Table 10).

Palpation findings showed that muscle spasm was the most common feature (53%), followed by tenderness (42%) and trigger points (37%) among the participants.

Table 12 shows the mean values of cervical range of motion across all movements, which were within functional limits.

On clinical assessment, pain during resisted shoulder shrug was observed in 42% of participants, while weakness was noted in 35%. Postural deviations included forward head posture (25%) and rounded shoulders (11%), whereas scapular asymmetry was minimal (3%).

5. Discussion

In this cross-sectional study among undergraduate physiotherapy students, the prevalence of upper trapezius myalgia was found to be 41%, highlighting the need for effective preventive and management strategies within this population.

A considerable proportion of students reported prolonged smartphone usage, with a higher proportion using devices for 4-6 hours daily, followed by 2-4 hours. Although smartphone use was not statistically significant in the present study ($p = 0.054$), the observed trend

Table 3. Association of gender, year of study, and dominant hand with the prevalence of upper trapezius myalgia

		Prevalence of upper trapezius myalgia				Chi square / Likelihood ratio	p value
	Present		Absent				
	n	%	n	%			
Gender	Male	10	24.4	22	37.3	1.85	0.174
	Female	31	75.6	37	62.7		
Year of study	First year	10	24.4	15	25.4	2.11	0.550
	Second year	10	24.4	15	25.4		
	Third year	8	19.5	17	28.8		
	Fourth year	13	31.7	12	20.3		
Dominance hand	Right	41	100	58	98.3	1.06	0.303
	Left	0	0	1	1.7		

Table 4. Association between symptoms and the prevalence of upper trapezius myalgia

		Prevalence of upper trapezius myalgia				Chi square / Likelihood ratio	p value
	Present		Absent				
	N	%	n	%			
Do you experience pain in the neck/ upper back?	Yes	32	78.0	11	18.6	34.83	< 0.001*
	No	9	22.0	48	81.4		
Which side is affected?	Right	15	36.6	6	10.2	38.62	< 0.001*
	Left	3	7.3	0	0		
	Both	14	34.1	5	8.5		
	No pain	9	22.0	48	81.4		
Time since the pain episode started?	No pain	11	26.8	46	78.0	29.70	< 0.001*
	< 1 week	10	24.4	8	13.6		
	2 to 4 weeks	4	9.8	1	1.7		
	> 4 weeks	16	39.0	4	6.8		
Typical duration of pain in a day?	No pain	12	29.3	48	81.4	28.58	< 0.001*
	< 1 hour	9	22.0	4	6.8		
	2 to 4 hours	16	39.0	5	8.5		
	> 4 hours	4	9.8	2	3.4		
Pattern of pain?	Single short episode	10	24.4	7	11.9	30.74	< 0.001*
	Recurrent episode with pain free gap	14	34.1	3	5.1		
	Continuous	8	19.5	4	6.8		
	No pain	9	22.0	45	76.3		
Pain intensity	Zero	9	22.0	45	76.3	35.38	< 0.001*
	One	2	4.9	1	1.7		
	Two	1	2.4	1	1.7		
	Three	4	9.8	3	5.1		
	Four	10	24.4	1	1.7		
	Five	7	17.1	4	6.8		
	Six	4	9.8	3	5.1		
	Seven	3	7.3	1	1.7		
	Nine	1	2.4	0	0.0		
Have you had any past injury or diagnosed condition in the neck/ shoulder?	Yes	3	7.3	1	1.7	1.99	0.159
	No	38	92.7	58	98.3		
Is your pain radiating to the hand?	Yes	9	22.0	0	0	17.35	< 0.001*
	No	32	78.0	59	100		

(* Significant)

suggests a potential clinical relevance. Prolonged digital device use has been consistently associated with sustained forward head posture, increased upper trapezius loading, and muscular fatigue[7-11]. These findings are in agreement with earlier studies reporting increased neck muscle strain, fatigue, and a higher prevalence of neck and shoulder pain with prolonged device usage[7-11].

The majority of students reported spending 1-3 hours on self-study daily, along with prolonged academic hours, where a substantial proportion attended more

Table 5. Association between lifestyle factors and the prevalence of upper trapezius myalgia

		Prevalence of upper trapezius myalgia				Chi square / Likelihood ratio	p value
	Present		Absent				
	N	%	n	%			
Average daily smartphone use	< 2 hours	10	24.4	14	23.7	7.63	0.054
	2 to 4 hours	9	22.0	27	45.8		
	4 to 6 hours	17	41.5	12	20.3		
	> 6 hours	5	12.2	6	10.2		
Do you carry heavy bag/ material to college regularly?	Always	10	24.4	7	11.9	3.41	0.332
	Sometimes	18	43.9	26	44.1		
	Rarely	10	24.4	18	30.5		
	Never	3	7.3	8	13.6		
How many hours do you spend on self-study (reading/ writing) daily?	< 1 hour	8	19.5	15	25.4	2.92	0.403
	1 to 3 hours	24	58.5	38	64.4		
	3 to 5 hours	7	17.1	4	6.8		
	> 5 hours	2	4.9	2	3.4		
How many hours do you spend in classes (theory/ practical/clinical posting) daily?	< 4 hours	3	7.3	10	16.9	2.03	0.363
	4 to 6 hours	21	51.2	26	44.1		
	> 6 hours	17	41.5	23	39.0		
What is the usual posture during prolonged sitting?	Upright with back support	16	39.0	21	35.6	6.26	0.100
	Stooped position	8	19.5	3	5.1		
	Leaning on one side	1	2.4	3	5.1		
	Frequently changing position	16	39.0	32	54.2		
Do you engage regular physical activity/exercises?	Yes; daily	7	17.1	18	30.5	2.73	0.436
	Yes; 2 to 3 times a week	13	31.7	13	22.0		
	Occasionally	16	39.0	22	37.3		
	Never	5	12.2	6	10.2		
How many hours do you sleep per day?	< 6 hours	8	19.5	17	28.8	8.07	0.045*
	6 to 7 hours	20	48.8	30	50.8		
	7 to 8 hours	12	29.3	6	10.2		
	> 8 hours	1	2.4	6	10.2		
Do you experience stress due to academics/clinical postings?	Never	5	12.2	13	22.0	8.00	0.046*
	Sometimes	16	39.0	33	55.9		
	Often	10	24.4	6	10.2		
	Always	10	24.4	7	11.9		

(* Significant)

than 4 hours of classes per day. These activities often involve sustained static postures, particularly forward-bending positions, which are recognised ergonomic risk factors for neck and shoulder pain[3,4,12]. Prolonged static sitting and limited movement breaks may increase mechanical stress on the upper trapezius, contributing to muscle fatigue and discomfort[3,12]. However, in the present study, these factors did not show a statistically significant association with upper trapezius myalgia ($p > 0.05$).

Table 6. Association between treatments and the prevalence of upper trapezius myalgia

Treatments		Prevalence of upper trapezius myalgia				Chi square / Likelihood ratio	p value
	Present		Absent				
	N	%	n	%			
Have you taken any medication for pain?	Yes	8	19.5	4	6.8	3.66	0.056
	No	33	80.5	55	93.2		
Have you used any self-care method (rest/stretching/ice therapy)?	Yes	28	68.3	27	45.8	4.96	0.026*
	No	13	31.7	32	54.2		
Have you consulted doctor/ physiotherapist for pain?	Yes	14	34.1	10	16.9	3.92	0.048*
	No	27	65.9	49	83.1		

(* Significant)

Table 7. Comparison of age (Years) according to the prevalence of upper trapezius myalgia

	Prevalence of upper trapezius myalgia	Mean	S.D.	"t"	p value
Age (Years)	Present	21.12	1.69	-0.29	0.776
	Absent	21.22	1.70		

("t" = Independent sample "t" test)

With respect to posture, a considerable proportion of students reported frequently changing their sitting position, indicating possible postural fatigue and discomfort. A smaller percentage reported maintaining a stooped posture, which has been strongly associated with trapezius tightness, upper crossed syndrome, and muscle fatigue in previous studies[5,12,13]. Although posture did not show statistical significance in this study, its clinical importance remains evident based on existing literature.

Table 8. Comparison of neck disability index scale according to the prevalence of upper trapezius myalgia

	Prevalence of upper trapezius myalgia	Median	Inter Quartile Range (IQR)	"Z"	p value
Neck disability index scale	Present	10	4 to 15	-2.83	0.005*
	Absent	5	1 to 10		

(* Significant)

Table 9. Testing of normality

	Test of normality	
	Shapiro-Wilk	p value
Age (Years)	0.657	0.071
Pain intensity	0.333	< 0.001*
Neck disability index scale	0.144	< 0.001*

(* Significant)

Table 10. Relation of age, and pain intensity with neck disability index scale

	Neck disability index scale	
	Spearman's ratio	p value
Age (Years)	-0.095	0.349
Pain intensity	0.444	< 0.001*

(* Significant)

Physical activity patterns revealed that a notable proportion of students engaged in exercise only occasionally or not at all. Regular physical activity is known to reduce muscle tension, improve circulation, and enhance postural endurance, whereas sedentary behaviour is associated with muscle weakness and a higher risk of neck and shoulder pain[1,3,12]. Despite these known associations, physical activity did not demonstrate a statistically significant relationship with upper trapezius myalgia in this study ($p > 0.05$).

Sleep duration showed a statistically significant association with upper trapezius myalgia ($p < 0.05$), with a notable proportion of students reporting less than 6 hours of sleep. Sleep deprivation is known to impair

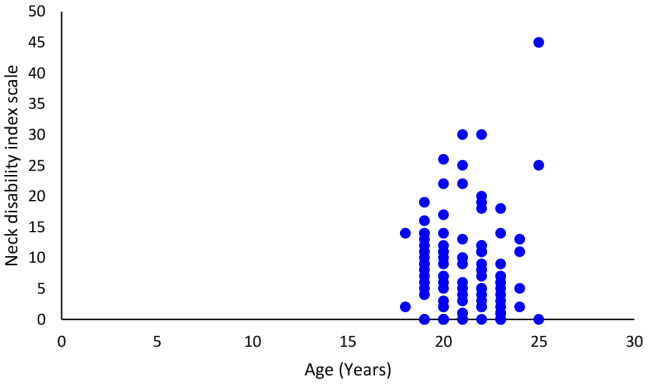


Figure 2. Correlation between age (Years) and neck disability index scale.

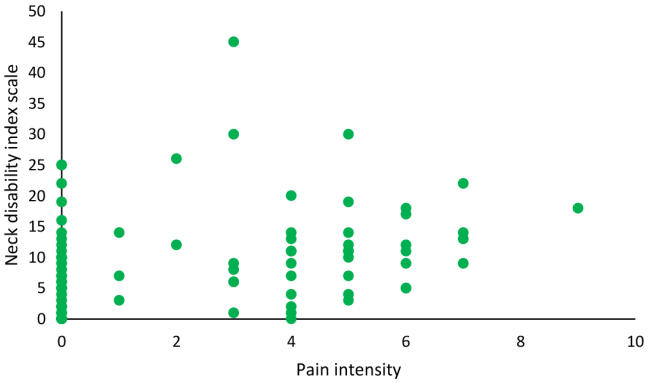


Figure 3. Correlation between pain intensity and neck disability index scale.

Table 11. Palpation

	Present		Absent	
	N	%	N	%
Tenderness	42	42	58	58
Muscle spasm	53	53	47	47
Trigger point	37	37	63	63

Table 12. Cervical range of motion

	Range	Mean	S.D.
Flexion	40 to 60	48.40	4.76
Extension	40 to 60	46.00	4.55
RLF	35 to 45	44.10	2.06
LLF	40 to 45	44.25	1.79
Right rotation	50 to 60	56.85	3.67
Left rotation	50 to 60	56.95	3.55

Table 13. Resisted shoulder shrug and posture

	Present		Absent	
	N	%	N	%
Pain	42	42	58	58
Weakness	35	35	65	65
Forward head	25	25	75	75
Rounded shoulder	11	11	89	89
Scapular asymmetry	3	3	97	97

tissue recovery, increase muscle sensitivity, and heighten pain perception, thereby contributing to musculoskeletal complaints, including neck and shoulder pain[1,3]. Similarly, academic and clinical stress also demonstrated a significant association ($p < 0.05$), with many students reporting frequent stress. Psychosocial stress is known to increase muscle tension and may contribute to the development and persistence of myofascial pain in the upper trapezius[3,12,13].

Treatment-seeking behaviour among participants indicated a preference toward self-management strategies. A higher proportion reported using self-care methods such as rest, stretching, and cold therapy, whereas fewer participants reported medication use or consultation with healthcare professionals. Notably, self-care practices and consultation with a physiotherapist or doctor showed a significant association with upper trapezius myalgia ($p < 0.05$). This suggests that students experiencing symptoms are more likely to adopt management strategies, although professional consultation remains relatively underutilised.

Previous studies have demonstrated that physiotherapy interventions such as myofascial release, muscle energy techniques, positional release, and trigger point therapy are effective in reducing pain and improving function in individuals with trapezitis[14,16,18,19].

In the present study, no significant association was observed between upper trapezius myalgia and demographic factors such as gender, year of study, and hand dominance ($p > 0.05$), suggesting that the condition is widely distributed across subgroups within the student population.

Additionally, participants with upper trapezius myalgia demonstrated significantly higher Neck Disability Index (NDI) scores ($p < 0.05$), indicating greater functional limitation. A positive correlation was also observed between pain intensity and NDI scores, suggesting that increased pain severity is associated with higher levels of disability.

Previous studies have reported similar prevalence rates of musculoskeletal disorders among physiotherapy

students, ranging from 38% to 68%, attributed to repetitive clinical activities, poor ergonomics, and lifestyle factors[20,21]. The prevalence observed in the present study is consistent with these findings.

Overall, the findings of this study suggest that modifiable factors, particularly inadequate sleep and increased stress levels, play a significant role in the development of upper trapezius myalgia. Although other factors such as smartphone use, posture, and physical activity were not statistically significant, they remain clinically relevant contributors based on existing evidence.

The study has certain limitations. The use of a single institution limits generalisability. Self-reported data on lifestyle factors may be subject to recall and reporting bias. Additionally, the cross-sectional design does not allow for causal inference or assessment of long-term progression. Future research should incorporate objective assessments such as posture analysis, muscle strength testing, Electromyography (EMG), and longitudinal designs to better understand relationships and treatment outcomes. Implementation of ergonomic education programmes focusing on posture, device usage, and movement breaks is also recommended.

Overall, these findings emphasise that upper trapezius myalgia among students is influenced by multiple modifiable lifestyle factors. Early identification of at-risk behaviours, combined with ergonomic education, promotion of physical activity, adequate sleep, stress management, and timely physiotherapy intervention, may significantly reduce the burden of trapezitis and related neck-shoulder disorders in university students.

6. Conclusion

This study demonstrated that upper trapezius myalgia is highly prevalent among undergraduate physiotherapy students, affecting 41% of the study population. While demographic factors and several lifestyle variables such as smartphone use, posture, and physical activity were not statistically significant, sleep duration and academic/clinical stress showed a significant association with the condition.

Students with upper trapezius myalgia exhibited greater functional disability, as indicated by higher Neck Disability Index scores, and pain intensity was positively correlated with disability levels. These findings highlight the impact of upper trapezius myalgia on daily functioning and academic performance.

The results emphasise the importance of addressing modifiable risk factors, particularly improving sleep quality and managing stress. Although not statistically significant, factors such as prolonged device use, static postures, and reduced physical activity may still contribute clinically and should not be overlooked.

Early identification of symptoms, implementation of ergonomic strategies, promotion of regular physical activity, and timely physiotherapy interventions are recommended to reduce the burden of upper trapezius myalgia. Future research should incorporate longitudinal designs and objective assessment methods to better understand causality and long-term outcomes.

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Author Contribution

Siddesh Ganesan: Study design, methodological support, data verification, manuscript review, critical revision of the article, and final approval of the manuscript. Darshan M: Conceptualization, data collection, clinical assessment, statistical analysis, interpretation of results, manuscript drafting, and correspondence with the journal.