

Awareness Of Physiotherapy Management On Temporomandibular Joint Dysfunction Among Dental Students

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ABSTRACT

Background: Temporomandibular Joint Dysfunction (TMD) is a common condition that affects the temporomandibular joint and surrounding muscles. It often causes symptoms like jaw pain, clicking sounds, restricted movement, and headaches. Physiotherapy has proven to be an effective conservative treatment for TMD, yet many dental professionals remain unaware of its role.

Materials and Method: A self-administered structured questionnaire was used to find out the level of awareness of physiotherapy management on temporomandibular joint dysfunction among undergraduate dental students.

Results: Out of 371 participants, 272 were females and 99 were males. Also 350 were undergraduate students and 21 were interns. The results showed that 74.1% of the participants were unaware of the role physiotherapy plays in managing TMD. Only 25.9% had some knowledge of physiotherapy treatment methods. Female students showed slightly higher awareness levels than males. Most participants recognized common symptoms but lacked understanding of physiotherapy techniques such as jaw exercises, manual therapy, and posture correction.

Conclusion: There is a significant lack of awareness among undergraduate dental students about the physiotherapy approach to TMD. Integrating physiotherapy knowledge into the dental curriculum could encourage timely referrals and better patient outcomes through interdisciplinary collaboration.

Keywords: Temporomandibular Joint, TMD, Physiotherapy, Dental Students, Awareness, Jaw Pain, Conservative Treatment (alphabetical order)

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INTRODUCTION

The temporomandibular joint (TMJ) is a specialized synovial joint that enables the mandible to perform complex movements needed for speaking, chewing, swallowing, and facial expression. Structurally, it consists of the mandibular condyle articulating with the temporal bone, cushioned by an articular disc, and supported by muscles, ligaments, and neurovascular structures that maintain functional harmony between movement and stability^[1]. Temporomandibular disorders (TMD) encompass a wide range of conditions affecting the TMJ, masticatory muscles, and associated orofacial structures. These conditions may result from trauma, malocclusion, parafunctional habits such as bruxism, joint degeneration, poor posture, or psychological stress. The cause is often multifactorial, involving both physical and psychosocial components. Despite advances in the understanding and treatment of TMD, awareness about the role of physiotherapy remains insufficient—surveys show that around 41% of dentists are unaware that physiotherapists can play a

key role in managing these patients^[2]. TMD can present with a variety of symptoms, including joint noises, facial or jaw pain, headaches, myofascial tenderness, and restricted mandibular movement.

The condition may be acute or chronic, and can range from mild discomfort to complex cases involving behavioral, cognitive, and psychosocial issues. Due to its multifaceted nature, TMD management often benefits from a multidisciplinary approach that may include dentists, physiotherapists, physicians, psychologists, and speech therapists^[3]. Physiotherapy is one of the most effective conservative management options for TMD. It focuses on restoring joint mobility, reducing pain, improving muscle performance, and addressing postural or movement-related contributors to dysfunction. Non-invasive interventions such as behavioral therapy, occlusal appliances, and patient education can complement physiotherapy by reducing risk factors and preventing symptom recurrence^[4,5].

A detailed musculoskeletal assessment is essential to identify contributing factors such as cervical spine

involvement, poor posture, or muscle imbalances. Physiotherapy interventions may include manual joint mobilization, soft tissue techniques, therapeutic exercises, posture correction, and home exercise programs tailored to the patient's needs. Electrotherapy modalities—such as transcutaneous electrical nerve stimulation (TENS), ultrasound, and low-level laser therapy—are also used to relieve pain, reduce inflammation, and promote healing^[6,7]. Evidence consistently supports physiotherapy's role in improving function and reducing pain in TMD patients. However, this potential is often underutilized due to low awareness among dental professionals and students. Since dentists are frequently the first healthcare providers consulted for TMD symptoms, their knowledge of physiotherapy's role is crucial for making timely referrals and optimizing patient recovery^[8,9]. TMD can significantly impair daily activities, nutrition, speech, and emotional well-being. Chronic, untreated cases may lead to long-term disability and increased healthcare costs^[10]. Therefore, early diagnosis and conservative management are key to preventing progression and improving quality of life. Collaborative care between dental and physiotherapy professionals has been shown to enhance treatment outcomes, patient satisfaction, and adherence to rehabilitation plans. In some

countries, integrating physiotherapy concepts into dental education has increased graduates' confidence and competence in managing TMD conservatively^[11]. Given the benefits of physiotherapy and the current gap in knowledge, it is essential to evaluate awareness among dental students. Understanding these gaps can guide educational improvements and promote evidence-based, multidisciplinary management strategies. This study aims to assess the level of awareness regarding physiotherapy in TMD management among dental students, with the goal of improving early diagnosis, encouraging appropriate referrals, and ultimately enhancing patient care^[12].

Materials and Methodology:

The study was cross sectional type of study with 371 participants conducted in Krishna college of dental sciences, Karad, Maharashtra. The study duration was about 6 months. The review was conducted with the approval of Ethical committee of the institution where the study was conducted. By reviewing the inclusion and exclusion criteria of the participant, the sample population was selected. The participants were told about the study and consent form was taken from them regarding the study. Questionnaire was distributed to participants through google forms. Participant's responses to the question were then recorded.

Results:

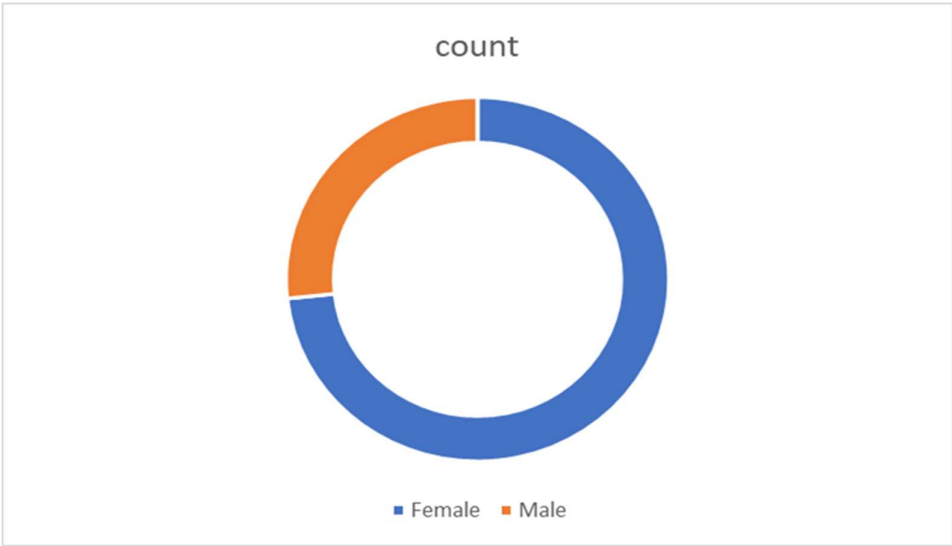
Out of the 371 participants, 26.69% were male (99) and 73.31% were female (272), showing a clear majority of female

Gender	Frequency	percentage
Male	99	26.69%
Female	272	73.31%
Total	371	100%

respondents. The pie chart highlights this imbalance, with the female segment notably larger than the male segment. This gender distribution suggests that the study's insights are more reflective of the female participants' perspectives As shown in

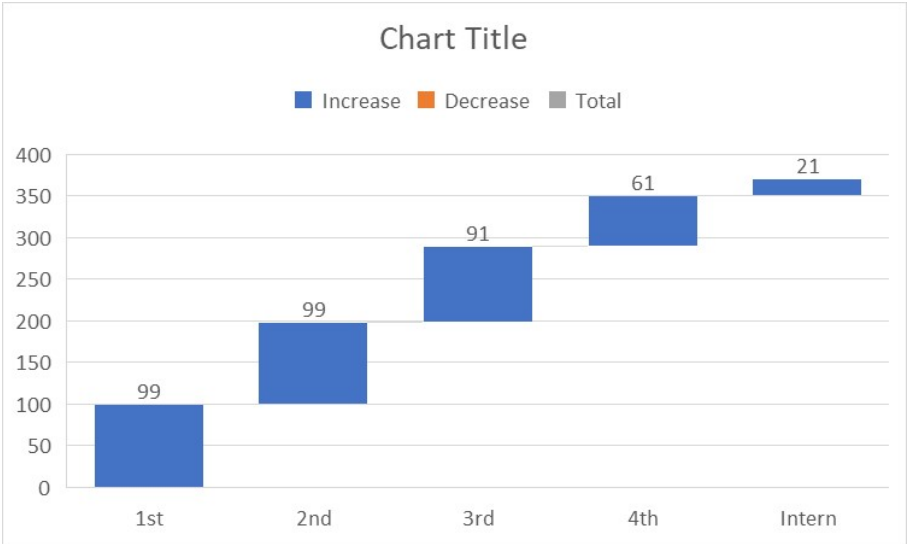
Table 1 and figure 1

Table 1 Gender distribution



In the study, participation was fairly balanced among the early academic years, with both first- and second-year students making up the largest share at 26.7% each (99 students in both groups). Third-year students followed closely at 24.5% (91 students). Representation dropped in the later years, with 16.4% (61 students) from the fourth year and just 5.7% (21 students) from the interns. This shows stronger involvement from students in the initial years of their course compared to those in the final stages. As shown in Table 2 and Figure 2

Table 2 Academic Year distribution



The survey results revealed that a majority of respondents (73.9%) were aware of temporomandibular joint dysfunction (TMD), and over two-thirds (69.3%) recognized jaw pain or discomfort as a symptom. More than half (58.8%) believed TMD could affect quality of life, while 77.1% had observed jaw locking in patients. Awareness of physiotherapy in TMD management was notable, with 74.1% having knowledge of it and 80.6% believing it could aid symptom relief. A large proportion (91.4%) understood that untreated TMD could lead to

chronic complications, and 63.3% agreed that collaboration between dentists and physiotherapists would enhance treatment outcomes. Overall, the findings suggest a generally positive awareness and attitude towards physiotherapy in TMD management among dental students. As shown in Table 3

Table 3 Distribution of study According to the questionnaire for knowledge based assessment.

Based on the survey findings, the majority of respondents (74.7%) identified problems with jaw and chewing function as the main effect of TMD, followed by teeth-related issues (23.7%). Jaw pain (29.4%) and clicking

Questionnaire	Options	Frequency	Percentage
Do you know what is a temporomandibular joint dysfunction?	Yes	274	73.9%
	No	97	26.1%
Do you believe jaw pain or discomfort is due to TMD?	Yes	257	69.3%
	No	20	5.4%
	Not sure	94	25.3%
Do you think that patient's quality of life can be affected by temporomandibular dysfunction?	Yes	218	58.8%
	No	24	6.5%
	Not sure	129	34.8%
Have you ever noticed patient's jaw locking while opening or closing mouth?	Yes	286	77.1%
	No	85	22.9%
Do you believe that frequent chewing on gum or hard things leads to TMD?	Yes	221	59.6%
	No	30	8.1%
	Maybe	120	32.3%
Do you think TMD can impact daily activities such as eating, speaking or sleeping?	Yes	221	59.6%
	No	24	6.5%
	Maybe	126	34%
Are you aware that untreated TMD can lead to chronic pain or other complications?	Yes	339	91.4%
	No	32	8.6%
Do you know that jaw clenching brought on by stress or emotional tension might result in TMD?	Yes	264	71.2%
	No	107	28.8%

sounds (25.9%) were the most commonly recognized symptoms, while fewer participants associated TMD with

Have you ever treated TMD patients while clinical practice?	Yes	246	66.3%
	No	125	33.7%
Do you have any knowledge of physiotherapy as a TMD treatment?	Yes	275	74.1%
	No	96	25.9%
Do you think that treating TMD symptoms can aided by physiotherapy?	Yes	299	80.6%
	No	72	19.4%
Have you ever seen a physiotherapy treatment given to a patient with TMD?	Yes	263	70.9%
	No	108	29.1%
Do you think physiotherapy is a effective for TMD?	Yes	218	58.8%
	No	22	5.9%
	Maybe	131	35.3%
Do you believe that physiotherapist and dentist should work together to manage TMD?	Yes	235	63.3%
	No	22	5.9%
	Maybe	114	30.7%
Do you think collaboration between physiotherapist and dentists would improve TMD treatment outcome?	Yes	234	63.1%
	No	19	5.1%
	Maybe	118	31.8%

headaches, earaches, or neck pain. Teeth grinding or clenching (45%) and jaw injury (28%) were perceived as the most likely contributing factors. When asked about therapies, awareness was highest for jaw exercises and physical therapy (47.7%) and splint or night guard use (31.3%). In terms of physiotherapy methods, jaw exercises (40.2%) and massage therapy (26.4%) were most frequently considered effective, though a notable proportion of respondents (17.8%) were unsure about suitable options. As shown in table 4

Table 4 Distribution of study according to questionnaire regarding signs and symptoms and physiotherapy

management

Questionnaire	Options	Frequency	Percentage
What do you believe is the primary effect of TMD?	Teeth	88	23.7%
	Jaw and chewing function	277	74.7%
	Neck	6	1.6%
which of the following symptoms do you associate with TMD?	Jaw pain	109	29.4%
	Clicking or popping sound in the jaw	96	25.9%
	Difficulty opening and closing the mouth	76	20.5%
	headaches	35	9.4%
	Earaches or ringing in the ear	29	7.8%
	Neck or shoulder pain	26	7.0%
According to your opinion, which of the following could make TMD more likely to occur?	Teeth grinding or clenching	167	45%
	High levels of stress	48	12.9%
	Poor posture	22	5.9%
	Jaw injury	104	28%
	arthritis	30	8.1%
Are you aware of any of the following therapies for TMD?	Jaw exercises and physical therapy	177	47.7%
	Use of splint or night guard	166	31.3%
	Pain relieving medications	88	23.7%
	surgery	76	20.5%
Which physiotherapy methods are effective for TMD in your opinion?	Jaw exercises	149	40.2%
	Massage therapy	98	26.4%
	Postural correction	33	8.9%
	Heat and cold therapy	25	6.7%
	Not sure	66	17.8%

Discussion:

This study was designed to determine how much dental students knew about physiotherapy care of

temporomandibular joint dysfunction (TMD). The study included 371 students who answered a standardized questionnaire. The findings revealed

that 74.1% of respondents were unaware of the importance of physiotherapy in TMD management. Only 25.9% of pupils were aware, with females showing somewhat more awareness than males.

These findings highlight a significant gap in our understanding of how physiotherapy can aid in the treatment of TMD. Despite physiotherapists' rising role in treatment musculoskeletal problems such as TMD, many dentistry students appear unaware with this technique. This is concerning because, in addition to being a safe and conservative option, physiotherapy can significantly improve pain, jaw movement, and overall quality of life in TMD patients.

This study's findings follow a similar pattern to earlier research. Even in previous studies, both students and dental professionals had a limited grasp of the importance of physiotherapy in TMD. However, this study differs in that it focuses solely on undergraduate dental students from a single institution, providing a clear picture of the early educational gap. Many earlier research included a diverse group of professionals or students from multiple universities, broadening their conclusions. However, this concentrated study helps to highlight where the problem begins—at the very beginning of dentistry education.

In previous studies, many participants had heard of physiotherapy but were unaware of specific therapies such as jaw exercises, posture correction, manual therapy, or electrotherapy, which are frequently utilized in TMD cases. Similarly, in one study, most students could recognize symptoms such as jaw pain, clicking sounds, or difficulty opening the mouth, but they were unaware of how physiotherapy may be utilized to treat these problems. This demonstrates that, while students are learning to detect TMD symptoms, they are not receiving comprehensive training in the various treatment choices.^[13]

One significant finding was that students who had clinical experience or had personally observed TMD patients being treated were slightly more aware of physiotherapy. This suggests that practical, real-life experience can have a significant impact on how students learn. Include physiotherapy-related talks in lectures, clinical posts, or case discussions to help close this gap.

Lack of awareness has an impact on patient care. If future dentists are unaware that physiotherapists can play an important role in controlling TMD, they may not refer patients at the appropriate time. This can cause therapeutic delays, increase patient suffering, and diminish the likelihood of complete recovery. However, if students are made aware early on, they will be better prepared to provide holistic care in partnership with physiotherapists.

The study concludes by emphasizing the pressing need for additional interdisciplinary instruction in dental school, particularly in the area of

physiotherapy. Improved patient outcomes in TMD cases may result from increased comprehension and cooperation between dental and physiotherapy students. Workshops, collaborative lectures, and even minor curriculum modifications can have a significant impact on raising awareness of this issue starting at the undergraduate level.

Conclusion:

The study found hundred percentages of responses. This study reveals a substantial lack of awareness among undergraduate dental students about physiotherapy management on temporomandibular joint dysfunction. According to result among 371 participants 272 females and 99 males. Analysis of the responses revealed that 74.1% of the participants were unaware about the role of physiotherapy management of temporomandibular joint dysfunction. And 25.9% participants are aware about the physiotherapy management on temporomandibular joint dysfunction. Female students showed slightly higher awareness than males. This study emphasizes the importance of including physiotherapy related topics in the dentistry curriculum particularly for a disease like TMD.

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