Original Article

A Questionnaire Study to Assess Knowledge and Awareness of Temporomandibular Joint Disorders Among Dental Students

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ABSTRACT

Background: Temporomandibular joint (TMJ) disorders significantly impact patients' quality of life. This study evaluates the knowledge and awareness of TMJ disorders among dental students.

Methods: A cross-sectional study was conducted with 100 dental students from a private dental college, using a 10-question survey distributed via Google Forms.

Results: The mean age of participants was 22 years, with 16% unfamiliar with TMJ disorders. About 43% estimated that 20-30% of patients suffer from these disorders. While 78% correctly identified common symptoms, only 43% acknowledged the role of occlusion, and 45% recognized diagnostic criteria. Treatment approaches varied: 46% favoured occlusal adjustment, and 55% suggested NSAIDs and muscle relaxants. MRI was identified as the gold standard by only 15% of students.

Conclusions: The study reveals significant gaps in knowledge regarding TMJ disorders among dental students, emphasizing the need for improved educational frameworks to enhance competence in diagnosis and management.

Keywords: Temporomandibular Joint Disorders, Dental Education, Knowledge Assessment, Imaging Techniques, Treatment Approaches.

INTRODUCTION

Temporomandibular joint (TMJ) disorders refer to a group of conditions affecting the temporomandibular joint, the muscles responsible for jaw movement, and the associated structures. These disorders are a major source of orofacial pain, significantly impacting a patient's quality of life and functional abilities. TMJ disorders present with various symptoms, such as jaw pain, limited movement, clicking or popping sounds in the joint, headaches, and ear discomfort.[1] Temporomandibular disorders (TMD) is a term that describes a range of clinical issues involving the masticatory muscles, the temporomandibular joint, or nearby structures. [2] Common symptoms include restricted or deviated jaw movements, pain in the muscles or TMJ during function, and TMJ sounds. These conditions are more commonly seen in women aged 20–40 years, with a prevalence rate of around 30% in adults. Despite numerous studies on the etiology and treatment of TMD, there is still no consensus on these aspects, contributing to a lack of confidence among dentists in managing patients with TMD.[3] The presence of differing theories often leaves them feeling uncertain and confused about the best approach. Although TMJ disorders are prevalent, their diagnosis and management remain challenging, necessitating a thorough understanding of their causes, anatomy, and treatment options. Early detection and intervention are vital for preventing the progression of these disorders and enhancing patient outcomes. It is crucial for dental students, as future practitioners, to develop a solid foundation in diagnosing and treating TMJ disorders.[4] The knowledge and awareness of TMJ disorders among dental students vary widely across different regions and educational systems. Research highlights a general deficiency in comprehensive training and understanding of TMJ disorders, which is essential for accurate diagnosis and effective treatment.[5] This study aims to evaluate the level of knowledge and awareness about TMJ disorders among dental students.

MATERIALS AND METHODS

This study utilized a cross-sectional design with a descriptive research methodology to assess the knowledge and awareness regarding TMJ disorders among dental students. Conducted over a two-month period, from September 2024 to October 2024, the research involved stages of data collection and report preparation. The participants were dental students from a private dental college, with necessary approvals obtained from the Department of Oral Medicine and Radiology, and ethical clearance granted by the Institutional Review Board. A convenience sample of 100 students was selected, and their demographic information was recorded. A 10-

question survey was distributed using Google Forms, ensuring that informed consent was obtained to maintain confidentiality and privacy. Participants were given a briefing about the questions to encourage accurate and thoughtful responses. The data gathered through Google Forms was then organized into an Excel format for analysis and report generation.

RESULTS

In a study assessing knowledge and awareness regarding TMJ disorders among 100 dental students, the mean age of participants was 22 years. Of these students, 38% were house surgeons (CRRI), 30% were in their 3rd year, 28% were 4th-year students, and the remaining participants were from the 1st and 2nd years. The findings revealed that 16% of the students were unfamiliar with TMJ disorders. About 43% of the students estimated that 20-30% of patients suffer from TMJ disorders. When asked about the classification of these disorders, 45% of students indicated the use of diagnostic criteria. A significant 78% of the participants accurately identified the most common symptoms of TMJ disorders, including jaw pain, restricted mouth opening, and clicking or popping sounds in the joint. Additionally, 76% recognized risk factors such as bruxism, malocclusion, and stress. Regarding the role of occlusion in TMJ disorders, 43% of the students acknowledged its contribution. When it came to treatment, 46% of the students stated that the primary approach to managing TMJ disorders is occlusal adjustment, while 55% cited NSAIDs, muscle relaxants, and acupuncture as the most common treatment options. For imaging techniques, 47% of students considered orthopantomogram (OPG) the best modality for visualizing TMJ bone morphology, although only 15% identified MRI as the gold standard. Finally, 71% of the students were able to identify signs of TMJ degeneration on radiographs, such as osteophyte formation, joint space narrowing, and subchondral sclerosis.

DISCUSSION

In our study, 16% of students were unfamiliar with TMJ disorders, indicating a need for more fundamental education within the dental curriculum. This finding aligns with Ana Karina De Medeiros Tormé's' study, where 62.6% of participants expressed dissatisfaction with the content related to TMD, citing insufficient clinical practice as a significant limitation.[6] The perception of TMJ disorder prevalence also varied; 43% of students in our study believed that 20-30% of patients experience these disorders, reflecting a fairly accurate estimate. However, Sneha's research and findings from Jazan University emphasized the need for increased self-awareness and knowledge of TMJ symptoms, indicating that gaps in students' perception could reflect broader educational deficiencies observed in different regions. Our study found that 78% of students correctly identified common TMJ symptoms, while 76% recognized key risk factors like bruxism, malocclusion, and stress. These results are somewhat consistent with Sneha's findings, which showed that knowledge levels improved from first-year students to postgraduate levels, highlighting the impact of experience on understanding.[7,8] When considering the role of occlusion, our study revealed that 43% of students acknowledged its contribution to TMJ disorders, and 45% were aware of diagnostic criteria for classification. In comparison, Xin Xiong's study reported that 80% of participants considered occlusal grinding an effective early treatment, indicating a higher level of understanding in this area compared to our findings. Treatment approaches among our participants varied, with 46% favoring occlusal adjustment and 55% suggesting NSAIDs, muscle relaxants, and acupuncture, showing a broader range of preferences than in studies like that of Ana Karina De Medeiros Tormes, which emphasized the lack of clinical training in TMD management.[6,9]

When it comes to imaging techniques, 47% of our students preferred orthopantomogram (OPG) for visualizing TMJ bone morphology, while only 15% recognized MRI as the gold standard. This under-recognition of MRI mirrors the gap noted in Vaishnavi Prabhakar's study, which emphasized MRI for soft tissue assessment and cone-beam computed tomography for arthritic changes.[10] Lastly, 71% of students in our study could identify radiographic signs of TMJ degeneration, indicating a good level of understanding, although findings from King Saud University showed only fair knowledge among dental interns, highlighting a need for improved radiographic interpretation skills.[11] Overall, while our study demonstrates that dental students have a relatively solid grasp of TMJ disorder symptoms, risk factors, and radiographic indicators, significant gaps remain in their knowledge of occlusion, diagnostic criteria, and appropriate imaging modalities. Studies by Ana Karina De Medeiros Tormes, Sneha, and others similarly highlighted the deficiencies in clinical practice and educational frameworks, underscoring the need for enhanced, standardized training.[12,13] Addressing these gaps through targeted education, practical workshops, and case-based learning could significantly elevate the competence of dental students in diagnosing and managing TMJ disorders, preparing them better for clinical practice.[14] This comparative analysis indicates a global trend of insufficient knowledge and awareness regarding TMJ disorders among dental students, reinforcing the need for a more practical, hands-on approach in dental education to effectively bridge these gaps.[15]

CONCLUSION

The results of this study emphasize the importance of a robust and comprehensive dental curriculum that thoroughly covers TMJ disorders. Despite the evident need for enhanced training programs, there remains a notable deficiency in the current dental curricula regarding TMJ disorders, which could hinder future practitioners' ability to manage these conditions effectively. Strengthening the training on this topic will not only improve diagnostic accuracy and treatment outcomes but also enhance

patient care in clinical practice. Continued education and professional development opportunities in TMJ disorders will further benefit dental students as they progress in their careers.

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