

## Knowledge, Attitude and Practice of the Dental Practitioners About Temporomandibular Disorder in the Union Territory of Jammu & Kashmir and Ladakh Region of India: A Cross – Sectional Study.

### Abstract:

**Introduction:** Temporomandibular Disorder (TMD) is a disorder including temporomandibular joint (TMJ) and of the masticatory muscles and their associated structures. TMD accounts for the most common orofacial pains arising from musculoskeletal origin or non-dental origin with a prevalence of 5-12% in the population.

**Aim:** The aim of the current study was to assess the knowledge, attitude and practice of the dental practitioners about temporomandibular disorder in the Union Territory of Jammu & Kashmir and Ladakh region of India.

**Materials and Methods:** A cross-sectional study was conducted wherein a self-structured questionnaire, which consisted of 31 close ended questions, was sent online via Google forms to the dental practitioners residing in the Union Territory of Jammu & Kashmir and Ladakh region of India. A total of 500 subjects selected by Convenience sampling, were contacted for the study, out of which only 206 returned the completed questionnaire who were included in the study.

**Results:** A statistical significance was noted between knowledge to practice (-0.22), knowledge to attitude (0.03) and between attitude and practice (-0.26), attitude to knowledge (-0.03) and practice to knowledge (0.22), practice to attitude (0.26).

**Conclusion:** The results obtained by analyzing data obtained in present study reflect that the knowledge of physiological anatomy along with the management of symptomatic TMD is insufficient.

**Key-words:** Knowledge, attitude, practice and dental Practitioners.

### Introduction:

Temporomandibular Disorders (TMD) is a collective term that include disorders of the temporomandibular joint (TMJ) and of the masticatory muscles and their associated structures. These are characterized by pain, joint sounds and restricted mandibular movement.[1] The WHO has emphasized the importance of being free from chronic orofacial pain is a clear pre requisite for oral health as well as negative effect of functional problems on individual's general health.[2]. The causes of TMD's are multifactorial and are associated with disturbed jaw movements and the presence of clicking and popping sound in TMJ.[3]

<sup>1</sup>ANMOL RAZDAN, <sup>2</sup>M.K. SUNIL, <sup>3</sup>MANU DHILLON, <sup>4</sup>AMBAR KHAN, <sup>5</sup>NIDHI PURI, <sup>6</sup>UPASANA SETHI AHUJA

<sup>1,2</sup>Department of Oral Medicine and Radiology Teerthanker Mahaveer Dental College and Research Centre, Moradabad

<sup>3</sup>Department of Oral Medicine and Radiology, D.J. College of Dental Sciences & Research, Modinagar

<sup>4</sup>Department of Public Health Dentistry, D.J. College of Dental Sciences & Research, Modinagar


<sup>5</sup>Department of Oral Medicine and Radiology, I.T.S. College of Dental Education and Research College, Muradnagar

<sup>6</sup>Department of Oral Medicine and Radiology, Shree Bankey Bihari Dental College and Research Center, Ghaziabad

**Address for Correspondence:** Dr. Anmol Razdan  
Department of Oral Medicine and Radiology, Teerthanker Mahaveer Dental College and Research Centre, Moradabad  
E-mail: anmolrazdan31@gmail.com

**Received :** 6Jan., 2023, **Published :** 30 June, 2023

**How to cite this article:** RAZDAN, A. (2023). Knowledge, Attitude and Practice of The Dental Practitioners About Temporomandibular Disorder in the Union Territory of Jammu & Kashmir and Ladakh Region of India – A Cross – Sectional Study. UNIVERSITY JOURNAL OF DENTAL SCIENCES, 9(2). 07 - 12

Access this article online	
<b>Website:</b> www.ujds.in	<b>Quick Response Code</b> 
<b>DOI:</b> https://doi.org/10.21276/ujds.2023.9.2.2	

In recent years, the International Classifications have been updated for the adaption to new clinical diagnosis and research. In regard to the clinical presentation of TMD, one of the most frequent symptoms is pain that affects areas like ears, eyes, and/or throat, producing neck pain, facial pain, and headaches.[3] The Research Diagnostic Criteria for TMD (RDC/TMD) have been one of the most commonly used and recognized classifications by the International Scientific Communities.

TMD's may present themselves as a mysterious entity with frequent conflicting presentations that propose a diagnostic & therapeutic dilemma.[4] So a suitable therapeutic approach for TMD should be aimed at alleviating the main signs and symptoms of this condition.[5] The role of dental practitioners is not only to inquire about diseases or symptoms of the oral cavity but to assess the whole maxillofacial complex involving the temporomandibular joint that may negatively impact the patient's oral health and further the quality of life.[1]

TMD accounts for the most common orofacial pains arising from musculoskeletal origin or non-dental origin with a prevalence of 5-12% in the population. However due to the complexity of the TMJ and its biomechanics, the diagnosis and treatment of TMD's are oftendifficult. Furthermore, a lack of training in assessment of TMDs, presents a challenge to a number of practitioners that leads to misdiagnosis, making the patients to undergo several unnecessary rounds of treatment for unrelated disorders.[6] Thus, the aim of the current study was to assess the knowledge, attitude and practice of the dental practitioners about temporomandibular disorder in the Union Territory of Jammu & Kashmir and Ladakh region of India.

### **Material And Methods:**

The present Cross-sectional study was designed to include the dental practitioners of Union Territory of Jammu and Kashmir and Ladakh region of India. The study participants were selected based on Convenience sampling. After obtaining a list of names and contact details from the Indian Dental Association (IDA), 500 dental practitioners were selected on the basis of the availability of contact information.

Ethical clearance was obtained from the Ethical Committee for Research ITS College of Dental Education and Research College, Murad Nagar, Ghaziabad. Written, informed consent was taken from all the study subjects at the beginning of the study. All the study participants were informed about the aim of the study and were assured of confidentiality of the study.

### **Study Subjects:**

A total of 500 dental practitioners were contacted for the study. However, only **206** of these subjects gave their consent and returned the completed questionnaire for the study. The study subjects included Dental practitioners from various streams of Dentistry. The dentists who gave their consent and returned the completed questionnaire were included in the study. While those who did not consent or did not return the completed questionnaires even after the reminder were excluded from the study.

### **Questionnaire:**

The general information of the participants including age, gender, educational qualification, years of clinical experience, and location of practice setting was recorded. The study was conducted using a self-structured questionnaire which consisted of 31 close ended questions. The questionnaire consisted of three main sections: Knowledge, Attitude and Practice. The section "Knowledge" consisted of 8 questions with 2 case presentations, radiological image evaluation and methods for updating the knowledge with multiple choice options. The section "Attitude" consisted of 5 questions. The third section "Practice" contained 12 questions regarding the respondent's opinion towards the acceptance of TMD patient and the approach of each practitioner towards the issue.

An online survey link was created with Google forms and the link was sent to all the study subjects with a cover message illustrating the study context through e-mails and WhatsApp. The questionnaire was prepared in English. The subjects were asked to complete the survey form within 2 days and the completed questionnaires were obtained. For some

participant's doubts regarding the questions were clarified at the same time.

The data collected was compiled and was checked for completeness. In case of incomplete questionnaires two reminders were given, and if such participants were not willing to cooperate, they were excluded from the study after collecting the completed questionnaires, the correct score was given 1 and incorrect score was given 0. The final score was calculated by summing up the correct scores for each respondent. However, by the end of the study duration, only **206** complete responses were received. The collected information was then subjected to appropriate statistical analysis.

### Questionnaire validation:

To pre-test the validity of the questionnaire and determine the feasibility of the study, a pilot study was conducted among 25 dentists who were interviewed on a face to face basis and were not included in the main study. Internal consistency measured through Cronbach's alpha ( $\alpha$ ) was found to be 0.86 which is considered to be good.

### Statistical Analysis:

The findings obtained were coded and entered into Microsoft Excel (2010). The collected data were analyzed using Statistical Package for Social sciences (SPSS) 24.0. Data was presented with descriptive analysis. The statistical analysis was done using Chi - square test and Tukey's post Hoc Test ( $P \leq 0.001$ ). Statistical significance was measured for qualitative variables at  $P \leq 0.05$ .

### Results:

The current study included a sample size of **206 dental professionals**. The total overall response rate was 41.4%, out of which majority of the respondents were males (58.5%) who participated. On the basis of professional qualification, 133 (64.7%) were graduates and 73 (35.3%) were post graduates. Most of the respondents had 1-2 year of experience (61.7%) and 69.4% of them had TMJ as an integral part of their dental practice. **(Table 1)**

Since most of the practitioners were general dental practitioners, they were asked about the training they received during their graduation. 65.7% of the practitioners stated that

the exposure provided during the graduation was based only on information and was not enough for practicing. Whereas only 34.3% reported that they received enough discussion and exposure regarding the diagnosis and management protocol for TMD as graduate students.

The participants were asked about the knowledge-based question which included the diagnostic ability with the help of question based clinical problem, case presentations and image-based diagnosis for the joint imaging analysis. Thus, when a clinical problem presented, 74.9% of the responses were incorrect and in the evaluation of diagnostic ability using case presentations, 87.4% were correctly diagnosing the case and 12.6% were not able to diagnose. The difference evaluated statistically for the deviation from the correct response with chi square test was found to be statistically significant ( $P \leq 0.001$ ). The total knowledge, 41.1% of responses for diagnosis the TMD were correct and 58.9% were not able to diagnose the case. The difference was found to be statistically significant ( $P = 0.044$ ).

In contrast to the clinical problem 45.4 % of the participants were able to detect structural abnormality and probability of the image projecting TMD in patient. The deviation from the correct radiographic impression for the given image was not statistically significant ( $P = 0.062$ ). The attitude towards application of knowledge of the present protocols for diagnosis as well as the management of symptomatic TMD was also assessed.

The practitioners were asked questions regarding the need of radiographic imaging, and counselling the patient for relaxation training and clinical implication including splint therapy. 56.0 % of the participants correctly answered the question regarding the application of splint therapy for the TMD patients. Astonishingly 66.0 % of the practitioners did not consider the radiographic examination to be necessary for the formulation of the patient specific treatment protocol. 91.3% of the responses were in favor of examining the joint associated musculature for the diagnosis.

Inclusion of practicing the examination protocols including soft and hard tissue component of TMJ was enquired. 69.6% of the participants agreed to the notion that the joint

examination should be included in regular examination whereas more than 30.4% denied the statement. The total responses of attitude towards application of knowledge, 45.9% of responses were correct and 54.1% were incorrect. The difference was found to be statistically significant ( $p=0.044$ ).

In the present study, Tukey's Post Hoc Test was used to compare the mean differences between knowledge to practice (-0.22), knowledge to attitude (0.03) and between attitude and practice (-0.26), attitude to knowledge (-0.03) and practice to knowledge (0.22), practice to attitude (0.26). The difference was found to be statistically significant ( $p=0.044$ ). Thus, it revealed that even with high practicing habits in clinical scenario the knowledge and the attitude towards the essential components of the diagnosis and management of TMD are lacking in the dental professionals.

### Discussion:

TMD is a broad term encompassing pain and/or dysfunction of the masticatory musculature and the temporomandibular joints. Pain arising from a temporomandibular disorder is one of the common reasons for seeking dental care. Complex anatomical architecture along with multi variant etiology of these disorders makes the diagnosis as well as the management a challenge for the clinician.

Thus, it is essential that dental practitioners are able to accurately diagnose and manage these conditions as it can aggravate from minor discomfort to problems like jawlocks and finally changes in the physiological state of soft as well as hard tissues.<sup>7</sup> Being the second most common variant of the orofacial pain, the knowledge regarding the risk profile and attitude to practice the examination techniques along with inclusion of management protocols for such patients is essential for wholesome oral health maintenance.

Even with evidence-based knowledge of 26% to 86% of TMD affected population, several surveys conducted all across India have shown the lack of knowledge, attitude and practice of diagnosis and management of TMDs. A KAP survey in 200 dental practitioners in India revealed that 75% of the dentists had concern regarding the adequate TMD experts along with revelation of serious discrepancies regarding the opinions for diagnosis as well as management of TMD's. The same study

reported that 83% of participants were not updating their knowledge regarding the recent management protocols.[8]

The literature supported high prevalence of TMD's and scarcity of the data regarding the knowledge attitude and practice quotient amongst the dental practitioners of the region of Jammu and Kashmir and Ladakh which encouraged the need of present study.[9] From the current study, it was revealed that dental practitioners had a relatively low level of knowledge and attitude towards temporomandibular joint disorders. Considering the mean score of knowledge, attitude and practice as 0.49, 0.46 and 0.71 revealed that the majority of the respondents are in a fair status of practice towards TMD.

According to findings reported in the present study, the examination of baseline variables in the years of experience 37.2% have more than 2 years followed by 26.1% (2-5 years.). According to study conducted by **Wright EF et al** which mentioned that the abilities of dental practitioners to evaluate and treat TMD vary greatly with their experience and training.<sup>10</sup> Further evaluating the first section of our study as Knowledge, 41.1% of the general dental practitioners had acceptable TMD knowledge and 58.8% showed an insufficient knowledge. 65.7% of the dental practitioners considered that they have little base of knowledge during graduation and 34.3% have sufficient knowledge, which is in accordance with the study conducted by **Patil S (2016)** which revealed that there is low/fair knowledge among general dental practitioners that attributes to the inadequacy of undergraduate dental education on TMDs and orofacial pain.[8]

The most widely employed diagnostic protocol for TMD research is RDC/TMD classification and in the present study 64.3% of dental practitioners were not aware of this classification. A study conducted by **Rajaraman. V et al (2020)** revealed that 72.7% of dentists were aware about the RDC/TMD and 75.4% dentists did not use RDC/TMD for diagnosis of TMD. So, it is necessary for all dental clinicians to be aware of TMD classification.[11] On evaluation of next section, 45.9% of the dental practitioners had sufficient attitude and 54.1% showed insufficient attitude towards application of knowledge of present protocols for diagnosis as well as the management of TMD. 33.3% of them correctly accepted that there is effectiveness of removal of occlusal



interferences in patients with temporomandibular disorders. For the opinion of the dental practitioners towards radiographic investigation, 66.7% of the study subjects in the current study accepted that radiography of TMJ before the formulation of treatment is necessary, which is in accordance with the study conducted by **Chalkoo A (2015)** which highlighted the importance of various imaging techniques for the TMJ region.[12] In the current study, 67.1% of the study subjects had correctly evaluated the responses related to practice of management of temporomandibular disorders.

In the current study, 69.6% of the study subjects considered TMJ examination as an integral part of their regular practice and maintained a routine examination of TMJ, which is in agreement with the study done by **Pawar R et al** with an aim to create awareness regarding the importance of examination of TMJ during routine dental check-up and highlighted that the examination of TMJ should always been an integral part of routine check-up in a dental practitioner's office.<sup>13</sup>In the current study 91.3% of the study subjects accepted the opinion towards the examination of Muscle of mastication as an important part for TMD diagnosis, which is in sync with the study conducted by **Conti AC et al** which highlighted that muscle palpation is a very important step in the diagnosis of TMD and myofascial pain syndromes.[2]

When the confidence levels of the dental practitioners towards their therapeutic approach to treat cases of TMD, 86.5% of them felt the need of more experts in field of TMD in the region of Jammu & Kashmir and Ladakh. Due to less specialists in Union Territory of Jammu Kashmir Ladakh and a smaller number of dental colleges, it has affected the exposure of implementation of knowledge in TMD cases. Lastly, the interest of the dental practitioners towards attending education programmes on TMD was assessed. 86.0% of the study subjects found it essential to participate in panel discussions, conferences and dental programmes on TMDs, which is in agreement with the study conducted by **M.S Kiran et. al** which concluded that there is benefit for general dental practitioners to attend educational programmes that are aiming at highlighting the management aspects of TMD.[14]

Table 1- Demographic factors of the study participants:

VARIABLE	CLASSIFICATION	N	PERCENTAGE
1.Age	Below 25 years	30	14.5%
	25 –40 years	142	68.9%
	40 - 60 years	32	15.5%
	Above 60 years	2	1.4%
2.Gender	Male	120	58.5%
	Female	86	41.5%
3. Educational qualification	BDS	133	64.7%
	MDS	73	35.3%
4. Year of Experience	Less than 2 years	77	37.3%
	2-5 years	54	26.1%
	6-10 years	46	22.2%
	More than 10 years	29	14.5%
5. TMJ as integral part of Practice	Yes	143	69.4%
	No	63	30.6%

Table 2: Tukey's Post Hoc analysis for the comparison between the Knowledge, Attitude and Practice of the dental professionals:

Multiple Comparisons						
(I) Variable	(J) Variable	Mean Difference (I-J)	Std. Error	P value	95% Confidence Interval	
					Lower Bound	Upper Bound
Knowledge	Attitude	0.03	0.017	0.102	-0.005	0.074
	Practice	-0.22*	0.017	0.000	-0.262	-0.183
Attitude	Knowledge	-0.03	0.017	0.102	-0.074	0.005
	Practice	-0.26*	0.017	0.000	-0.296	-0.217
Practice	Knowledge	0.22*	0.017	0.000	0.183	0.262
	Attitude	0.26*	0.017	0.000	0.217	0.296

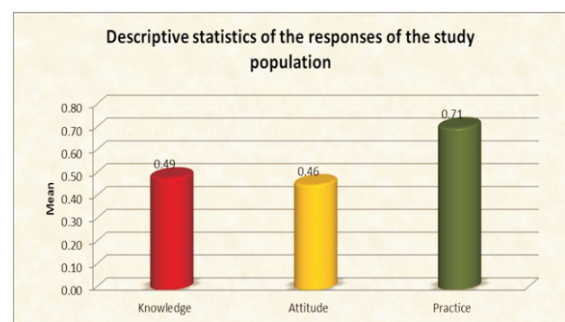


Figure 1: Descriptive statistics of the responses for the Study population

### Conclusion:

The results of the present study reflected that the knowledge of physiological anatomy along with the management of symptomatic TMD is insufficient in the dental practitioners of the Union Territory Jammu and Kashmir and Ladakh region of India. The analysis also revealed that even with low knowledge quotient the general dental practitioners of the Union Territory Jammu and Kashmir and Ladakh region are diagnosing and managing the TMD cases regularly. Regarding the knowledge, attitude and practice in the management of TMD's, there is an urgent need for revision of curriculum for the education architecture with respect to TMDs and more programmes with regard to TMDs should be carried out.

### References:

1. Herranz-Aparicio J, Vázquez-Delgado E, Arnabat-Domínguez J, España-Tost A, Gay-Escoda C. The use of low-level laser therapy in the treatment of temporomandibular joint disorders. Review of the literature. *Med Oral Patol Oral Cir Bucal*. 2013 1;18(4):603
2. Conti PC, Pinto-Fiamengui LM, Cunha CO, Conti AC. Orofacial pain and temporomandibular disorders: the impact on oral health and quality of life. *Braz Oral Res*. 2012;26(1):120-3.
3. Gil-Martínez A, Paris-Aleman A, López-de-Uralde-Villanueva I, La Touche R. Management of pain in patients with temporomandibular disorder (TMD): challenges and solutions. *J Pain Res*. 2018;(11):571.
4. Chaurasia A, Ishrat S. Temporomandibular disorders in North Indian population visiting a tertiary care dental hospital. *Natl J Maxillofac Surg*. 2020;11(1):106.
5. Naikoo FA, Chalkoo AH, Ahmad MB, Yaqoob G, Tariq S. Prevalence of anxiety levels in patients with temporomandibular disorder among Kashmiri population. *Int J App Dent Sci*. 2017; 3:101-3.
6. López-Frías FJ, Gil-Flores J, Bonilla-Represa V, Ábalos-Labruzzi C, Herrera-Martinez M. Knowledge and management of temporomandibular joint disorders by general dentists in Spain. *J Clin Exp Dent*. 2019;11(8):680.
7. Beaumont S, Garg K, Gokhale A, Heaphy N. Temporomandibular disorder: a practical guide for dental practitioners in diagnosis and management. *Aust Dent J*. 2020 ;65(3):172-80.
8. Patil S, Iyengar AR. Assessment of knowledge, attitude and practices of dental practitioners regarding temporomandibular joint disorders in India. *J Adv Clin Res Ins*. 2016;3(2):64-71.
9. Bali RK, Mathur VB, Talwar PP, Chanana HB. National oral health survey and fluoride mapping 2002-2003 India. New Delhi: Dental Council of India. 2004;(132).
10. Wright EF, North SL. Management and treatment of temporomandibular disorders: a clinical perspective. *J Man Manip Ther*. 2009;17(4):247-54.
11. Rajaraman V, Nallaswamy D, Subha M. Clinical Relevance of RDC Diagnostic Tool In Current Clinical Environment: Temporomandibular Disorder Study A Point Pandect. *Int J Dentistry Oral Sci*. 2020;7(10):844-8.
12. Chalkoo AH, Ahmad MB, Naikoo FA. Magnetic resonance imaging and ultrasonography in the diagnosis of temporomandibular joint internal derangements: A comparative study. *J Indian Acad Oral Med Radiol*. 2015;27(2):198.
13. Pawar R, Gulve N, Nehete A, Dhope S, Deore D, Chinglembi N. Examination of the temporomandibular joint-a review. *J Appl Dent Med Sci*. 2016;(2):1.
14. Kiran MS, Joy ET, Vidya S, Krishna S, Hegde S. Attitude and awareness of temporomandibular joint disorders among general dental practitioners in Southern India. *J Adv Clin Res Ins*. 2016;3(3):72-5.