

AWARENESS OF DENTAL CONSULTANTS ABOUT PHYSIOTHERAPY MANAGEMENT OF TEMPOROMANDIBULAR JOINT DISORDERS

Muhammad Nazim Farooq¹, Mubashra Malik², Fasiha Khalid³, Iqra Raja⁴, Azaz Ullah Shah⁵

ABSTRACT

Introduction: Temporomandibular joint disorders (TMDs) refer to a wide variety of conditions affecting various tissues of the temporomandibular joint (TMJ) complex which can produce orofacial pain and functional disturbances. A variety of treatment choices are available for the management of TMJ problems. However, little is known in Pakistani dental consultants and therefore, this study was design to determine awareness among dental consultants of Pakistan about the role of physiotherapy management in patients with TMDs disorders.

Material & Methods: An observational cross-sectional study was carried out on dental consultants between May 2019 and February 2020. One hundred and seventy-six practicing oral and maxillofacial surgeons, orthodontists and prosthodontists were recruited in the study through convenience sampling from all over Pakistan. A self-structured questionnaire, after conducting a pilot study and incorporating the recommended changes, was distributed to dental consultants by hand, through e-mails and social media.

Results: One hundred and twenty-one dental consultants (68.75%) were found aware about PT management of patients with TMDs. The referral of TMDs patients to PT was reported by only 18.75% of the participants. Maximum referral to PT was done by oral and maxillofacial surgeons (10.23%), followed by prosthodontists (6.25%) and orthodontists (2.27%). After participating in this survey, 72.16% of the dental consultants were found interested to refer their TMDs patients to PT and 91.48% showed their interest to learn more about their collaboration with physiotherapists.

Conclusion: Dental consultants of Pakistan were found aware about the treatment of patients with TMDs by a physiotherapist. However, most of them were not referring their TMDs patients to PT. This study increased the level of awareness among dental consultants about the role of PT in the management of patients with TMDs.

Key Words: Awareness, Dentists, Physical Therapy Specialty, Temporomandibular Joint Disorders

Authors' Declaration: The authors declared no conflict of interest and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. All authors contributed substantially to the planning of research, question designing, data collection, data analysis and write-up of the article.

Authors' Affiliation

¹Islamabad College of Physiotherapy, Margalla Institute of Health Sciences, Rawalpindi

²Armed Forces Institute of Rehabilitation Medicine, Rawalpindi, Pakistan

³Riphah International University, Islamabad, Pakistan.

⁴Max Health Hospital, Islamabad, Pakistan.

⁵The Health Professionals Medical and Rehabilitation Centre, Bahria Town Phase 6, Islamabad, Pakistan

Corresponding Author

Muhammad Nazim Farooq

Principal & Dean

Islamabad College of Physiotherapy, Margalla Institute of Health Sciences, Quaid-e-Azam Avenue Gulrez III, Rawalpindi, Pakistan.

Email: nazimfarooq@yahoo.com

This article may be cited as: Farooq MN, Malik M, Khalid F, Raja I, Shah AU. Awareness of dental consultants about physiotherapy management of temporomandibular joint disorders. *Rehman J Health Sci.* 2021;3(2). 72-76

Submitted: March 04, 2021

Revisions Submitted: June, 14 2021

Accepted: July 31, 2021

INTRODUCTION

Temporomandibular joint disorders (TMDs) refer to a wide variety of conditions affecting various tissues of the temporomandibular joint (TMJ) complex which can produce orofacial pain and functional disturbances.¹ TMDs have negative impact on the patients' quality of life and are associated with increased financial burden on healthcare system.² The prevalence of TMDs in patients seeking consultation from orthodontists has been reported between 21.1% and 73.3%, respectively.³ A significant number of patients (75-90%) having symptoms of TMDs recover with conservative management.⁴ Only very few patients with disc disorders or TMJ degeneration may require surgery.

Several treatment options including patient education, self-care strategies, medications, physiotherapy (PT), psychotherapy, occlusal splints, occlusal adjustment, prosthodontic reconstruction and surgery are available

for treating TMDs.² PT has been shown as an effective treatment option to relieve pain, restore functional disturbances and improve the quality of life of the patients suffering from TMDs.⁵⁻⁸ The most important role of the physiotherapist for treating this condition including identifying the musculoskeletal component contributing to patient' symptoms. Physiotherapist uses different physical techniques and electrotherapeutic modalities to relieve pain and promote tissue healing.^{2,5} Evidence supports the use of a multi-modal treatment approach to get better results in patients with TMDs.⁹ Dental treatment combined with PT has been shown to be more effective than the dental treatment alone in patients with TMDs.⁶ An effective collaboration between physiotherapists and dental practitioners is very important to get better results in treatment of patients with TMDs. It has been reported that big proportion of

dentists are unaware about the benefits of their collaboration with physiotherapist. To increase this collaboration, it is necessary to know the awareness of the dental practitioners about the role of PT in the management of the patients with TMDs. Currently, the data about the awareness of dentists regarding PT management of patients with TMDs is lacking specially those who are working in Pakistan. The studies conducted on national level reported that a large proportion of dentists do not know that physiotherapists can treat patients with TMDs. However, these studies were conducted on very small scale.^{10,11} Therefore, the objective of this study was to conduct a survey where awareness of dental practitioners about PT management in patients with TMDs may be found.

MATERIAL AND METHODS

An observational cross-sectional study design was used and ethical approval was taken from the ethical review committee of Margalla Institute of Health Sciences Rawalpindi (ERC Ref No: MM/64/19). The study was conducted between May 2019 and February 2020. One hundred and seventy-six practicing oral and maxillofacial surgeons, orthodontists and prosthodontists working in both government and private set-ups were recruited in the study through convenience sampling from all over Pakistan. Post graduate dental students and dental those consultants who were involved in teaching only were excluded from the study.

The questionnaire developed by Gadotti et al. with minor changes was used to collect data. After conducting a pilot study on 16 dental consultants and incorporating the recommended changes the questionnaire was distributed to dental consultants by hand, through e-mails and social media. The questionnaire included different questions related to demographics, work experience, TMDs patients population and referrals and general knowledge. A written consent was obtained from all the dental consultants who participated in the study.

Sample size

The sample size was computed using Rao soft software. Using estimated population of oral and maxillofacial surgeons, orthodontists, and prosthodontists as 500, 59% response distribution¹² 5% margin of error and 90% confidence level, 173 participants were required.

RESULTS

One hundred and eighty questionnaires were distributed to oral and maxillofacial surgeons, orthodontists, and prosthodontists across Pakistan. One hundred and seventy-six dental consultants responded back. Sample characteristics are shown in Table 1.

The estimated percentage of the dental consultants' patients suffering from TMDs is shown in Figure 1. Eighty-four consultants (47.73%) reported that most of their patients presented with TMDs have acute condition followed by chronic stage patients reported by sixty-two consultants (35.23%) while thirty consultants (17.04%) reported the sub-acute stage of the patients. The type of TMDs evaluated and/or treated by the dental consultants is shown in Table 2.

Seventy-seven consultants (43.75%) reported that their patients with TMDs also have neck pain followed by cervicogenic headache as comorbidity reported by sixty-five consultants (36.93%). While thirty-six consultants (20.45%) reported that their TMDs patients were accompanied with poor posture. Different types of

treatments provided to the patients with TMDs by the dental consultants are shown in Table 3.

One hundred and twenty-one participants (68.75%) were found aware about the treatment of patients with TMDs by a physiotherapist. The prosthodontists were found most aware (75.76%) followed by oral and maxillofacial surgeons (72.62%) and orthodontists (59.32%). About 37% of consultants were not found aware about the involvement of cervical spine as the cause of masticatory region pain.

One hundred and thirty-six consultants (77.27%) were found to refer their TMDs patients to other health care practitioners. The maximum referral was to oral and maxillofacial surgeons (42.61%), followed by prosthodontists (23.30%) and the minimal referral was to endodontists and physicians (0.57%) (Table 4). The percentage of the TMDs patients referred by the dental consultants to other practitioners is shown in Figure 2. Only 18.75% of the consultants were found referring their patients of TMDs towards PT. Among the three specialities, the maximum referral of TMDs patients to PT was by oral and maxillofacial surgeons (10.23%) followed by prosthodontists (6.25%) and orthodontists (2.27%). The most common reason reported for this referral to PT was muscle tenderness (Table 5). On the other hand, when consultants were asked about the reasons of not referring TMDs patients to PT. Seventy-three participants (41.48%) replied that they have no idea about the benefits of PT in these patients. Forty-eight participants (27.27%) believed that there is no need of PT treatment in these patients. While remaining participants (31.25%) gave other reasons mainly including the application of exercises and facial massage by the consultants themselves, never had a thought of PT treatment, no significant improvement by PT and lack of access to PT in their working setup.

When the consultants were asked about referring the patients with TMDs to a physiotherapist after participation in this survey, one hundred and twenty-seven dental consultants (72.16%) reported yes that now they would more likely refer their TMDs patients to PT. Forty-one consultants (23.30%) replied that they may refer their patients with TMDs to PT. While remaining participants (4.54%) stated that they will not refer TMDs patients to PT.

The need for having more experts to manage TMDs patients was expressed by 155 (88.07%) consultants and that a great majority of them (161, 91.48%) were interested in enhancing their learning about the benefits of the collaborations with physiotherapists to treat patients with TMDs.

DISCUSSION

In the current study more than half of the dental consultants were found aware about the treatment of patients with TMDs by a physiotherapist. This finding is consistent with the results of earlier studies.¹⁰⁻¹² However, this result was inconsistent with the findings of a previous study conducted at national level in which awareness was found significantly low among dentists.¹³ The most possible reason for this difference of results might be that previous study involved general dentists. However, current study involved the dental consultants who are expert in TMDs management and get maximum TMDs patients' referral.^{12,14} The current study found a considerably low referral of TMDs patients to PT which

was in agreement with the findings of previous study carried out by Samejo et al.¹¹ However, this finding is inconsistent with the results of a previous study which revealed more referral of TMDs patients to PT (31%) by the dentists.¹² Conversely, a study conducted in Lahore reported a significantly low referral of TMDs patients to PT (7%).¹³ The low referral can be attributed to general dentists who have been reported to refer less TMDs patients to PT than the consultants recruited in the current study.¹² It has been observed that general dentists have less knowledge about TMDs compared to the dental consultants involved in this study.¹⁴

Out of 143 dental consultants who had never referred a patient with TMDs to PT, 73 (51%) dental consultants were not found aware about the benefits of PT in the management of patients with TMDs. It was expected that there would be more referral to PT if more dental consultants would know about the benefits of PT management of patients with TMDs. This is evident by the fact that after participating in the current study, more than 70% of the dental consultants reported that they would more likely refer their TMDs patients towards PT. This finding is consistent with the earlier work done by Gadotti et al. About 75% of the dental consultants reported that their patients with TMDs also have other comorbidities like neck pain, poor posture and cervicogenic headache. It shows that most of these patients can be referred to a physiotherapist for further management.

Among different healthcare practitioners, the maximum referral of TMDs patients was reported to oral and maxillofacial surgeons by the dental consultants which is in agreement with the findings of an earlier study.¹² The maximum referral of TMDs patients to PT was reported by oral and maxillofacial surgeons. It shows that TMDs patients were mainly referred to PT for postsurgical management. Evidence shows that PT has beneficial effects in relieving the symptoms of TMDs following surgery.¹⁵ However, where appropriate, the PT treatment should be provided to these patients before undergoing surgical interventions. Timely conservative management of patients with TMDs have been reported to produce better outcomes and reduces the development of chronic pain.^{4,16} A multidisciplinary treatment approach is very crucial in the management of TMDs patients to specifically address the individual patient' needs.¹⁷ This may decrease the unnecessary requirement of surgical intervention in few cases.¹⁸

In the present study a large number of the dental consultants (91%) were found interested to know and learn more about the multidisciplinary approach between dentists and physiotherapists to treat TMDs patients. This finding is consistent with the results of previous studies.^{10,12} There is dire need to have multidisciplinary approaches while treating patients. The purpose of such studies to assess and provide awareness to other health professionals regarding the role of physiotherapist in treating different conditions.

CONCLUSION

The findings of current study revealed that more than half of the dental consultants were aware about the treatment of patients with TMDs by a physiotherapist. However, most of them were not referring their TMDs patients to PT. The major reason for no referral was the lack of awareness about the benefits of PT in the management of

patients with TMDs. This study increased the level of awareness among dental consultants about the role of PT in the management of patients with TMDs. After participating in this survey, a significant number of dental consultants were found interested to refer their TMDs patients to PT and to learn about the collaboration with physiotherapists for management of patients with TMDs.

REFERENCES

1. Yadav S, Yang Y, Dutra EH, Robinson JL, Wadhwa S. Temporomandibular joint disorders in older adults. *J Am Geriatr Soc.* 2018;66(6):1213-1217.
2. Ghurye S, McMillan R. Pain-Related Temporomandibular Disorder - Current Perspectives and Evidence-Based Management. *Dent update.* 2015;42(6):533-546.
3. Lai YC, Yap AU, Türp JC. Prevalence of temporomandibular disorders in patients seeking orthodontic treatment: A systematic review. *J Oral Rehabil.* 2020;47(2):270-280.
4. Durham J, Newton-John TR, Zakrzewska JM. Temporomandibular disorders. *BMJ.* 2015;350:h1154.
5. Calixtre LB, Moreira RF, Franchini GH, Albuquerque-Sendín F, Oliveira AB. Manual therapy for the management of pain and limited range of motion in subjects with signs and symptoms of temporomandibular disorder: a systematic review of randomised controlled trials. *J Oral Rehabil.* 2015;42(11):847-861.
6. Viana MdO, Olegario NBdC, Viana MdO, Silva GPFd, Santos JLF, Carvalho STRFd. Effect of a physical therapy protocol on the health-related quality of life of patients with temporomandibular disorder. *Fisioterapia em Movimento.* 2016;29(3):507-514.
7. Kraus S, Prodoehl J. Outcomes and patient satisfaction following individualized physical therapy treatment for patients diagnosed with temporomandibular disc displacement without reduction with limited opening: A cross-sectional study. *Cranio.* 2019;37(1):20-27.
8. Fisch G, Finke A, Ragonese J, Dugas L, Wrzosek M. Outcomes of Physical Therapy in Patients with Temporomandibular Disorder: A Retrospective Review. *Br J Oral Maxillofac Surg.* 2020.
9. Gil-Martínez A, Paris-Alemany 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;11:571-587.
10. Anjum A, Javed H, Sharif F, Bakhat W, Mubashar K. Temporomandibular disorders awareness among dentist's about physical therapy management. *Rawal Medical J.* 2020;45(3):590-592.
11. Samejo B, Lasi FF, Mehmood A, Saleem S, Waseem H. Assessment of attitude and practice of general dental practitioners dealing with temporomandibular disorders and referral to physiotherapists. *J Mod Rehabil.* 2020;14(2):113-120.
12. Gadotti IC, Hulse C, Vlassov J, Sanders D, Biasotto-Gonzalez DA. Dentists' awareness of physical therapy in the treatment of temporomandibular disorders: a preliminary study. *Pain Res Manag.* 2018;2018.
13. Shah F, Hassan SN, Rana FM. Awareness of dentists regarding role of physiotherapy in managing temporomandibular joint dysfunction. *J Riphah Coll Rehabil Sci.* 2014;2(1):35-39.

14. Patil S, Iyengar AR. Assessment of knowledge, attitude and practices of dental practitioners regarding temporomandibular joint disorders in India. *J Adv Clin Res Insights*. 2016;3(2):64-71.
 15. Abboud WA, Yarom N, Yahalom R, Joachim M, Reiter S, Koren O, et al. Comparison of two physiotherapy programmes for rehabilitation after temporomandibular joint arthroscopy. *Int J Oral Maxillofac Surg*. 2018;47(6):755-761.

16. Hamad R, Clark AS, Pretty IA. Referral patterns for temporomandibular joint disorders (TMD) in Greater Manchester. *Community Dent Health*. 2020; 37:1-5.
 17. Dimitroulis G. Management of temporomandibular joint disorders: A surgeon's perspective. *Aust Dent J*. 2018;63 Suppl 1:S79-S90.
 18. Rajapakse S, Ahmed N, Sidebottom AJ. Current thinking about the management of dysfunction of the temporomandibular joint: a review. *Br J Oral Maxillofac Surg*. 2017;55(4):351-356

Table 1: Sample Characteristics (N = 176)

Variables		Frequency	Percentage
Gender	Males	119	67.61%
	Females	57	32.39%
Speciality	Oral & Maxillofacial surgeons	84	47.73%
	Orthodontists	59	33.52%
	Prosthodontists	33	18.75%
Foreign Qualification on TMDs Treatment	Yes	11	6.25%
	No	165	93.75%
Attended TMDs Courses	Yes	93	52.84%
	No	83	47.16%
Region	Punjab	71	40.34%
	Khyber Pakhtunkhwa	55	31.25%
	Sindh	15	8.52%
	Baluchistan	07	3.98%
	Islamabad	27	15.34%
	Gilgit-Baltistan	01	0.57%
Age (Years)		32.61	± 8.19
Postgraduate experience (years)		4.42	± 5.77

Table 2: Type of TMDs evaluated and/or treated by dental consultants

Type of TMDs	Frequency	Percent
Parafunction habits	78	44.32%
TMJ disc displacement	72	40.91%
Muscle tightness	71	40.34%
TMJ hypomobility	62	35.23%
Occlusion alterations	42	23.86%
Headaches	36	20.45%
TMJ hypermobility	28	15.91%
TMJ degeneration	19	10.80%
TMJ Derangement	06	3.41%
Swelling	04	2.27%
Myofacial pain dysfunction syndrome	04	2.27%
Ankylosis	03	1.70%
Clicks and pops	01	0.57%

Table 3: Treatment of TMDs patients provided by dental consultants

Treatment	Frequency	Percent
Medication	133	75.57%
Bite splints	116	65.91%
Occlusion correction	68	38.64%
Exercise/Massage	14	7.95%
PRP Therapy	2	1.14%

Table 4: Referral of TMDs patients to healthcare practitioners by dental consultants

Healthcare practitioners	Frequency	Percent
Orthodontists	21	11.93%
Endodontists	01	0.57%
Prosthodontists	41	23.30%
Oral Surgeons	75	42.61%
Physiotherapists	33	18.75%
Physicians	01	0.57%
Psychologists	06	3.41%

Table 5: Reasons of TMDs patients' referral to physiotherapy by dental consultants

Reasons of referral	Frequency	Percent
Masticatory muscle tenderness	52	29.54%
Postural alteration	32	18.18%
Neck pain	28	15.91%
Cervicogenic headache	22	12.50%
Headache	13	7.39%
No improvement by dental treatment	27	15.34%

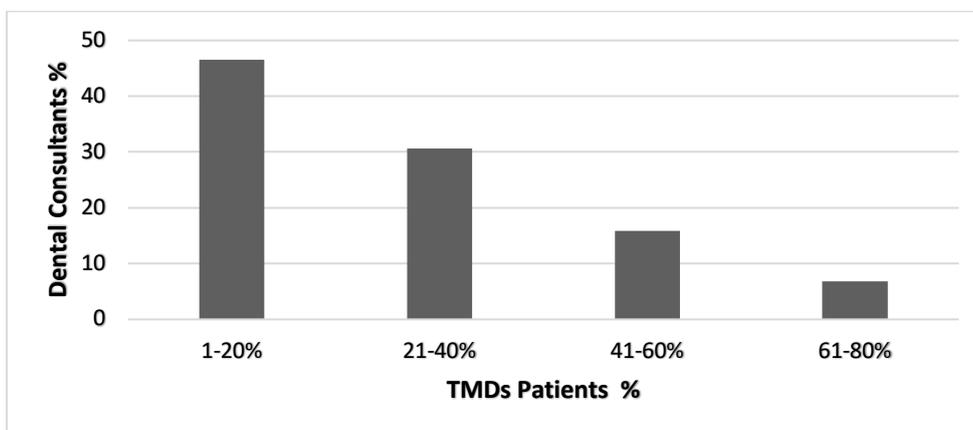


Figure 1: Percentage of dental consultants' patients suffering from TMDs

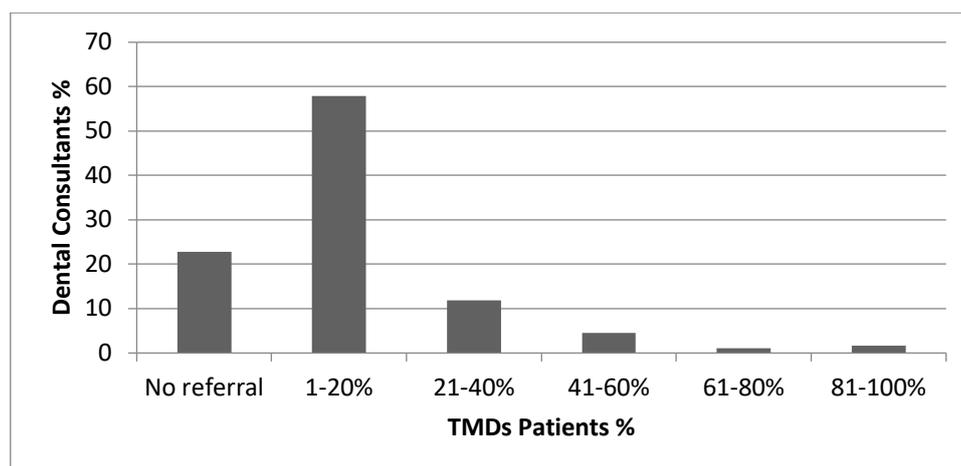


Figure 2: Patients referral by dental consultants to other practitioners