DOI: https://doi.org/10.53350/pjmhs221641095

ORIGINAL ARTICLE

Pattern of Temporomandibular Pain Dysfunction Syndrome

SIBTUL HASSAN[1], MUHAMMAD MUSA CHEEMA[2], HAMMAD NASIR KHAN[3], AROOSA KHAN[4], SADIA HASSAN[5], MAHNOOR YASIR[6]
[1,2]BDS (Dental Surgeon), House Officer, PIMS Hospital, Islamabad
[3]Postgraduate Trainee, Islamic International Dental College Hospital, Islamabad
[4]House Officer, Sharif Medical and Dental College, Lahore
[5]Associate Proffessor and Head of Department Oralbiology, Isra University, Hyderabad
[6]Demonstrator Periodontology, Islamic International Dental Hospital, Islamabad
Corresponding author: Sibtul Hassan, Email: hassansibtul11@gmail.com

ABSTRACT

Aim: The aim of this analysis was to understand the pattern of temporomandibular pain dysfunction syndrome among patients with TMPDS.

Study Design: A descriptive cross-sectional study.

Place and Duration: In the department of Oral and Maxillofacial Surgery, PIMS Hospital, Islamabad and Punjab Dental Hospital, Lahore for duration of Four months from 16th January 2021 to 15th May 2021.

Methods: A total of 46 patients with a clinical demonstration of TMPDS were enrolled in the analysis. Data was collected on demographic characteristics, major ailments, etiology, history of stress and depression.

Results: In this study, 18 (39.1%) of the 46 patients were male and 28 (68.9%) females. 17 to 70 years was the age range of patients with 24.3 ± 12.9 years mean age and 20 (43.5%) subjects in the 10-19 age group and then 9 (19.6%) patients in the 20-29 age group and 3 (6.5%) was observed in the 60-69 age group. Regarding the main complaint, pain was the most prevalent complain noticed in 34(73.9%) subjects. 7 (15.2%) patients reported click, limited mouth opening was observed in 5 patients (10.9%). Etiology was caused by facial trauma in 8 (17.4%) of 46 subjects and only 3 person (6.4%) reported Bruxism. Twelve patients (26.1%) have stress as the only etiology. Collectively stress was testified in 21 subjects (45.6%). The etiology could not be established in 14 (30.4%) patients. Nine stressed people used psychiatric medications for clinical depression (19.6%).

Conclusions: In our analysis, TMPD was common in women with 25 years mean age. The most common underlying complaint was pain. Stress was the communal primary etiology. Also 23% have Clinical depression in stressed people.

Keywords: Temporomandibular pain dysfunction syndrome, Stress, Pain.

INTRODUCTION

Temporomandibular pain dysfunction syndrome is a common orofacial musculoskeletal syndrome that affects the temporomandibular joint and the masticatory muscles[1-2]. TMPDS shows a higher prevalence in females than in males[3]. Numerous analyses have emphasised this gender imbalance in Temporomandibular pain dysfunction syndrome. The feminine sex hormone called Estrogen, appears to play a part[4]. It is usually taken as a disease of grownups, but several analyses have found it in childs. Many factors play a role in the etiology of TMPDS. Mental health has a significant part in the pathogenesis of TMPDS today[5-6]. Among the possible causes of TMPDS, behavioural and psychological factors are the most important etiology. There is a direct relationship between stress and TMPDS because stress factors such as depression, sleep disturbance and anxiety are meticulously connected to the TMPDS, as various studies have revealed. Alternative probable reason is trauma, equally minor and major injuries[7]. There is also a sturdy link between TMPDS and bruxism. TMPDS is categorised by reduced opening of mouth, reduced number of jaw movements, and clicking, crackling sounds of the temporomandibular joint (TMJ)[8]. An important TMPDS clinical feature is pain, deterioration of the life quality and stomatognathic system dysfunction. In the USA, approximately 66-86% of persons endured some of the symptoms of Temporomandibular pain dysfunction syndrome in their lifetime[9]. The symptoms in chronic form due to protracted disability or pain occur in about 13%. In spite of the raised incidence in the inhabitants, just 5 to 8% have severe enough symptoms which necessitate treatment. A Nigeria study found that 62.8% of the population exhibited variable gradations of signs and symptoms of temporomandibular discomfort. Numerous studies have been conducted to see the frequency and distribution of TMPDS problems[10-11]. These studies have shown varying results in different populations. Unfortunately, local data on this widespread anxiety among indigenous Pakistani people is sparse[12]. The aim of this analysis was to understand the pattern of temporomandibular pain dysfunction syndrome among patients with TMPDS.

MATERIAL AND METHODS

This descriptive cross-sectional study was held in the department of Oral and Maxillofacial Surgery, PIMS Hospital, Islamabad and Punjab Dental Hospital, Lahore for duration of four months from 16th January 2021 to 15th May 2021. A total of 46 patients with a clinical demonstration of TMPDS were enrolled in the analysis. Data was collected on demographic characteristics, major ailments, etiology, history of stress and depression. Particular attention was paid to demographic data regarding age and gender. The main complaint was pain, limited mouth opening (LMO) and clicking. Etiological reasons include facial trauma (traffic accident, slap to the face, fall), bruxism, unknown factors and stress. Stress was obtained by questioning appetite, energy levels and sleep quality. The clinical depression and psychiatric medicines history was also cautiously researched. The obtained data were analyzed using the SPSS program version 20.0, assuming the mean, SD and percentages for other variables, such as age (gender, main reason for consultation, etiology, stress, depression).

RESULTS

In this study, 18 (39.1%) of the 46 patients were male and 28 (68.9%) females and the M:F ratio was 6:13 Table 1. 17 to 70 years was the age range of patients with 24.3 ± 12.9 years mean age and 20 (43.5%) subjects in the 10-19 age group and then 9 (19.6%) patients in the 20-29 age group and 3 (6.5%) was observed in the 60-69 age group.

Table 1: Gender Distribution Of Patients

Gender	Frequency	Percentage
Males	18	39.1%
Females	28	68.9%
Total	46	100%

Table 2: Age Distribution Of Patients

Age group	Frequency	Percentage
10 to 19	20	43.5%
20-29	9	19.6%
30-39	5	10.9%
40-49	9	19.6%
50-59	0	0%
60-69	3	6.5%
Total	46	100%

Regarding the main complaint, pain was the most prevalent complain noticed in 34(73.9%) subjects. 7 (15.2%) patients reported click, limited mouth opening was observed in 5 patients (10.9%). Etiology was caused by facial trauma in 8 (17.4%) of 46 subjects and only 3 person (6.4%) reported Bruxism. Twelve patients (26.1%) have stress as the only etiology. Collectively stress was testified in 21 subjects (45.6%). The etiology could not be established in 14 (30.4%) patients. Nine stressed people used psychiatric medications for clinical depression (19.6%). Table 3.

Table 3: Chief Complaints and Etiologies Of Tmpds

Pain	34	73.9%
Clicking	7	15.2%
Limited mouth opening	5	10.9%
Etiology		
Facial trauma	8	17.4%
Bruxism	3	6.4%
Stress	12	26.1%
Unknown	14	30.4%
Bruxism stress	5	10.8%
Trauma Stress	4	8.7%

DISCUSSION

TMPDS was common in women (66%) than in men (34%) in this study. The study by Ahuja et al., Which found raised TMPDS prevalence in women (67%) than in male dentistry students, is consistent with this analysis[12-14]. This is similarly constant with the outcomes of the study by Kitsoulis et al which exhibited that TMPDS is common as well as much severe in females than in males. Similarly, conferring to the works, females are 3 times more probable than males to seek specific treatment for this condition. It is presumed that in the case of higher pervasiveness in females, the receptor of estrogen alters the TMJ metabolic functions in females by raising laxity of ligament[15-16]. Estrogen modulates the limbic system, making it more sensitive to stimuli of pain[17]. Raised severity and morbidity in females can be caused by both depression and the low pain threshold. The maximum number of patients in the 10-19 age group was 20 (43.5%) and the mean age was 24.3 ± 12.9 years. This is in line with the Eweka et al study viewing the presence of TMPDS in adults[18]. The results of Manfredini et al analysis exhibited a comparable highest frequency between the ages of 20-40. Adulthood is the age of first experience to the stresses of employment, career choice, education and the various types of social burdens that predispose adults to this syndrome[19]. The utmost communal main complaint was pain 34(73.9%). In addition, a reduction in mouth opening along with pain was observed in 5(10.9%). In Ogunlewe et al study; It was found that pain is the most common cause of symptoms. Similarly, a study by Kitsoulis et al. Recognised pain as the utmost communal TMPDS symptom[20]. Pain is an indication that a person cannot ignore and therefore becomes the most common cause of ailments. Clicks on joints were the first complaint (14%), trailed by reduced opening of mouth (12%)[21].

Stress was the most common etiology (26.1%), the cause being unknown in 30.4% of patients. General stress was observed in 45.6% of patients[22]. Similarly, Patil et al. In the study, stress and depression occurred in 60% and 53.3% of patients with TMPDS, respectively, compared to the control group. The symptoms of stress and TMPDS are often very closely related. It is difficult to determine whether chronic symptoms of TMPDS are causing stress or if prolonged stress is causing TMPDS. Pain is widely believed to have psychological consequences such as depression and somatization. It can affect a patient's emotional and mental health by interfering with their daily activities and social life. On the other hand, sticking of the teeth occurs as a result of excessive tension, which alters local muscle circulation and affects the exchange of ions in cell membranes[23]. This causes the accumulation of lactic and pyruvic acids which stimulate the pain receptors. A study by Ogunlewe et al. Revealed parafunctional habits in 3% of people with bruxism in 5.3%, which is in line with our findings. Bruxism, grinding or clenching causes microtrauma in TMJ and predisposes to TMPDS. Stress, anxiety and psychological factors stimulate an overactivity of the jaw muscles known as bruxism and can therefore trigger TMPDS[23-24]. People with TMPDS show higher levels of anxiety, stress, somatic awareness, depression, pain catastrophe, and kynophobia compared to the control group. Clinical depression occurred in 23% of patients in our study. In contrast, Majumder et al. Observed 66.2% of patients with TMPDS with anxiety and depression. Celic et al. Also demonstrated a higher level of depression and somatization in patients with TMPDS[25]. This difference in our study may be due to the fact that patients who were not diagnosed with clinical depression were not considered depressive by a psychiatrist and were not using any psychiatric medications.

CONCLUSION

In our analysis, TMPD was common in women with 25 years mean age. The most common underlying complaint was pain. Stress was the communal primary etiology. Also 23% have Clinical depression in stressed people.

REFERENCES

1. Jamot SR, Khan ZA, Khan TU, Waraich RA, Farooq M. Arthrocentesis for temporomandibular joint pain dysfunction syndrome. J Ayub Med Coll Abbottabad. 2017 Jan 25;29(1):54-7.
2. Khiavi HA, Ebrahimi H, Najafi S, Nakisa M, Habibzadeh S, Khayamzadeh M, Kharazifard MJ. Efficacy of low-level laser, hard occlusal appliance and conventional pharmacotherapy in the management of myofascial pain dysfunction syndrome; A preliminary study. Journal of Lasers in Medical Sciences. 2020;11(1):37.
3. Skármeta NP, Pesce MC, Saldivia J, Espinoza Mellado P, Montini F, Sotomayor C. Changes in understanding of painful temporomandibular disorders: the history of a transformation.
4. Melnyk VL, Shevchenko VK, Sylenko YI. POSITION OF THE TEMPOROMANDIBULAR JOINT DYSFUNCTION SYNDROME AMONG FACIAL PAIN SYNDROMES. Ukrainian Dental Almanac. 2018 Mar 21(1):79-82.
5. Gözler S. Myofascial pain dysfunction syndrome: Etiology, diagnosis, and treatment. Temporomandibular joint pathology-current approaches and understanding, Y. Emes, B. Aybar, G. Dergin (eds.). Intech Open, Istanbul, Turkey. 2018 Feb 28:17-45.
6. Sam JE, Rachmat RP, Melano CS, Wahab NA. Giant cell tumor of temporomandibular joint masquerading as temporomandibular joint pain dysfunction syndrome: a rare case report. Journal of the Korean Association of Oral and Maxillofacial Surgeons. 2017 Apr 1;43(2):134-7.
7. Lomas J. Temporomandibular dysfunction. Australian journal of general practice. 2018 Apr;47(4):212-5.
8. Biegańska-Banaś JM, Gierowski J, Ferendiuk E, Pihut M, Adamczyk K. In quest of the longest-lasting and most annoying pain for patients and for dentists: quantitative and qualitative characteristics of temporomandibular myofascial pain dysfunction syndrome: a questionnaire study. Health Psychology Report. 2018;6(3).
9. Ahuja V, Ranjan V, Passi D, Jaiswal R. Study of stress-induced temporomandibular disorders among dental students: An institutional study. National journal of maxillofacial surgery. 2018 Jul;9(2):147.
10. Sadat SA, Chowdhury NM, Baten RB, Uddin AF, Rita SN. Management of temporomandibular joint dysfunction syndrome: an overview. Journal of Bangladesh College of Physicians and Surgeons. 2017 Oct 22;35(3):133-41.
11. Mansourian A, Pourshahidi S, Sadrzadeh-Afshar MS, Ebrahimi H. A comparative study of low-level laser therapy and transcutaneous electrical nerve stimulation as an adjunct to pharmaceutical therapy for myofascial pain dysfunction syndrome: a randomized clinical trial. Frontiers in Dentistry. 2019 Jul;16(4):256.
12. Chaurasia A, Ishrat S. Temporomandibular disorders in North Indian population visiting a tertiary care dental hospital. National Journal of Maxillofacial Surgery. 2020 Jan;11(1):106.
13. Laskin DM. Temporomandibular disorders: A term whose time has passed!. Journal of Oral and Maxillofacial Surgery. 2020 Apr 1;78(4):496-7.
14. Rashid R. Soft occlusal splint therapy in the management of myofascial pain dysfunction syndrome: A follow-up study in Kashmiri population. International Journal of Applied Dental Sciences. 2017;3(4):82-8.

15. Omoregie OF, Akpata O, Koleoso ON. Evaluation of Psychological Factors in Temporomandibular Joint Pain Dysfunction Syndrome: A report of 3 cases and review of the literature. Nigerian Journal of Dental Research. 2020 Jul 31;5(2):89-93.
16. Debta P, Dani A, Swain SK, Debta FM, Mahapatraº S. Occlusal Appliance-When and Where? Management of Temporomandibular Joint Pain Dysfunction Syndrome. İndian Journal of Public Health. 2019 Nov;10(11):265.
17. Chang CL, Wang DH, Yang MC, Hsu WE, Hsu ML. Functional disorders of the temporomandibular joints: Internal derangement of the temporomandibular joint. The Kaohsiung journal of medical sciences. 2018 Apr 1;34(4):223-30.
18. Manfredini D. Occlusal equilibration for the management of temporomandibular disorders. Oral and Maxillofacial Surgery Clinics. 2018 Aug 1;30(3):257-64.
19. Bueno CH, Pereira DD, Pattussi MP, Grossi PK, Grossi ML. Gender differences in temporomandibular disorders in adult populational studies: a systematic review and meta-analysis. Journal of oral rehabilitation. 2018 Sep;45(9):720-9.
20. Okoh M, Onyia N, Azeez O, Okoh DS. A Facility-Based Study of Severity of Pain Among Patients with Temporomandibular Myofascial Pain Syndrome. Annals of Health Research. 2020 Nov 24;6(4):402-9.
21. Wahid A, Raza M, Ullah F, IQBAL M. OCCLUSAL SPLINT THERAPY IN THE TREATMENT OF MYOFACIAL PAIN DYSFUNCTION SYNDROME (MPDS). Pakistan Oral & Dental Journal. 2018 Jun 30;38(2).
22. Leketas M, Šaferis V, Kubilius R, Cervino G, Bramanti E, Cicciù M. Oral behaviors and parafunctions: comparison of temporomandibular dysfunction patients and controls. Journal of Craniofacial Surgery. 2017 Nov 1;28(8):1933-8.
23. Volkov AG, Dikopova NZ, Kislitsyna AV, Shishmareva AL. PHYSIOTHERAPY IN THE COMPLEX TREATMENT OF THE TEMPOROMANDIBULAR JOINT PAIN DYSFUNCTION SYNDROME IN PERSONS PROFESSIONALLY ENGAGED IN VOCAL. Russian Journal of Physiotherapy, Balneology and Rehabilitation. 2017 Dec 15;16(6):304-6.
24. Pooja S, Pradeep S. Advances in the management of myofascial pain dysfunction syndrome-A short review. Drug Invention Today. 2019 Feb 15;12(2).
25. Milutka YA, Fortin AE. Possibilities and organizational problems of diagnostics and treatment of patients with the syndrome of temporomandibular joint pain dysfunction. Journal: Russian Osteopathic Journal. 2020(4):95-116.