

Original Research

Assessment of temporomandibular disorders among adult population

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ABSTRACT:

Background: Temporomandibular disorders (TMD) is a collective term for a group of musculoskeletal conditions involving pain and/or dysfunction in the masticatory muscles, temporomandibular joints (TMJ) and associated structures. The present study was conducted to assess TMDs among adult population. **Materials & Methods:** 80 TMDs patients of both genders were enrolled. A self-reported TMD pain variable based on the question "pain in jaw-face region" and "headache," as well as a self-reported TMD dysfunction variable based on the questions "difficulty opening the mouth wide," "TMJ sounds," and "jaw locking" were recorded. **Results:** Out of 80 patients, 38 were males and 42 were females. Clinical symptoms in male and female were TMJ sounds in 13 and 10, TMJ pain in 15 males and 8 females, jaw muscle pain in 4 and 5, pain while opening mouth in 2 and 6, headache in 1 and 6, difficult open mouth wide in 2 and 7 and TMJ locking in 1 and 4 patients in group I and II respectively. The difference was significant ($P < 0.05$). **Conclusion:** Various populations have various prevalence rates of TMD, which is a complex process. Compared to males, females were reported to have a higher prevalence.

Keywords: Temporomandibular disorders, headaches, fibromyalgia

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INTRODUCTION

Temporomandibular disorders (TMD) is a collective term for a group of musculoskeletal conditions involving pain and/or dysfunction in the masticatory muscles, temporomandibular joints (TMJ) and associated structures.¹ Although TMD is defined by pain and dysfunction in the orofacial region, common painful and non-painful comorbidities of common painful TMD include headaches, fibromyalgia, irritable bowel syndrome, tinnitus, chronic fatigue syndrome, depression and sleep disturbances. As with many chronic pain conditions, recent research reinforces the biopsychosocial nature of common

painful TMD (myalgia and/or arthralgia) and their interconnections with general health.²

Temporomandibular disorders (TMD) are a group of conditions that include pain and functional abnormalities of the masticatory system. Temporomandibular discomfort is a prevalent chronic pain problem. TMD symptoms include headaches in the temple area and pain in the jaw or masticatory muscles.³ TMD also encompasses degenerative joint diseases and temporomandibular joint (TMJ) symptoms as joint noises and limited jaw motion.

There are several possible causes for TMD, making its precise etiology still up for debate. Trauma, occlusal

abnormalities, psychological issues, parafunctional behaviors (like bruxism), and systemic problems (like rheumatoid arthritis) are some of these causes. 2. The literature has several different definitions of TMD, which complicates the interpretation of study findings. In both clinical and research settings, a diagnostic criteria for temporomandibular disorders (DC/TMD) tool was recently suggested as an alternative.⁴ The TMD/pain screening tool is a self-reported survey. It was selected to screen the population under study for TMD pain because to its exceptional sensitivity, specificity, and cost-effectiveness. The clinical examination techniques and questionnaires employed in a number of the research with children were comparable to those employed with adults.⁵ It is plausible, therefore, that the way TMD presents itself in adults differs from that of children or adolescents in at least a few significant ways. From a biological perspective, the masticatory

system's components—such as the temporomandibular joint (TMJ), muscles, and teeth—are experiencing varying growth and development patterns.⁶ The present study was conducted to assess TMDs among adult population.

MATERIALS & METHODS

The present study comprised of 80 TMDs patients of both genders. All were informed regarding the study with their written consent.

Data such as name, age, gender etc. was recorded. A self-reported TMD pain variable based on the question “pain in jaw-face region” and “headache,” as well as a self-reported TMD dysfunction variable based on the questions “difficulty opening the mouth wide,” “TMJ sounds,” and “jaw locking” were recorded. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I: Distribution of patients

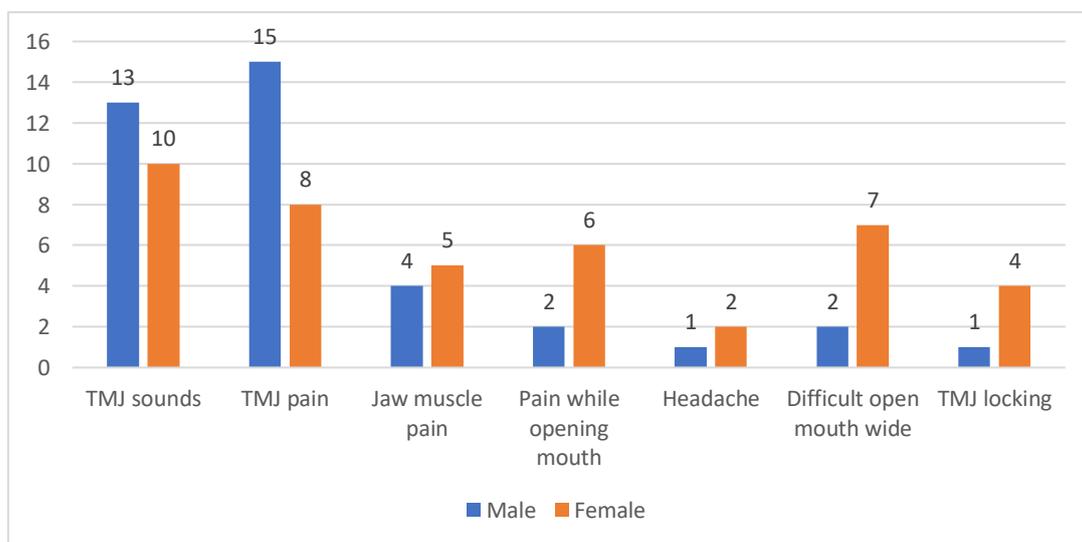
Total- 80		
Gender	Males	Females
Number	38	42

Table I shows that out of 80 patients, 38 were males and 42 were females.

Table II: Assessment of parameters

Clinical symptoms	Male	Female	P value
TMJ sounds	13	10	0.01
TMJ pain	15	8	
Jaw muscle pain	4	5	
Pain while opening mouth	2	6	
Headache	1	2	
Difficult open mouth wide	2	7	
TMJ locking	1	4	

Table II, graph I shows that clinical symptoms in male and female were TMJ sounds in 13 and 10, TMJ pain in 15 males and 8 females, jaw muscle pain in 4 and 5, pain while opening mouth in 2 and 6, headache in 1 and 2, difficult open mouth wide in 2 and 7 and TMJ locking in 1 and 4 patients in group I and II respectively. The difference was significant (P< 0.05).



Graph: I. Assessment of parameters

DISCUSSION

Temporomandibular joint dysfunction (TMD) can be defined as the variety of signs and symptoms assigned to the temporomandibular joint (TMJ) and its related structures, including joint noises, tenderness of the muscles of mastication, headaches, TMJ pain, face and neck pain, decrease in mandibular range of motion, wear of dentition, parafunctional habits, tinnitus, and otalgia.⁷ The exact aetiology of TMD remains controversial, with multiple potential factors involved.⁸ These factors include trauma, occlusal imbalances, psychological factors, parafunctional habits (e.g., bruxism), and systemic factors (e.g., rheumatoid arthritis).^{9,10,11} The present study was conducted to assess TMDs among adult population.

We found that out of 80 patients, 38 were males and 42 were females. Saranya Set al¹² in their study, among 198 adults screened, 23 (11.6 %) had TMD. Among these 60 % of the adults were aged 31–65 years and predominantly females (86.9 %). 39 % of these patients were dentulous. All affected adults experienced TMD related pain for more than 3 months with 90 % of them experiencing moderate-to-severe pain. Myofascial pain was the most prevalent type. Other findings included moderate anxiety levels in 34.8 % and abnormal oral behaviour and high physical symptoms in 40 % TMD patients.

We observed that clinical symptoms in male and female were TMJ sounds in 13 and 10, TMJ pain in 15 males and 8 females, jaw muscle pain in 4 and 5, pain while opening mouth in 2 and 6, headache in 1 and 6, difficult open mouth wide in 2 and 7 and TMJ locking in 1 and 4 patients in group I and II respectively. The prevalence of temporomandibular dysfunction (TMD) in adults was evaluated by Nadershah et al.¹³ There were 250 men and 250 women that took part. 40.6 years old was the average age. In response to the first question, 52% of individuals reported having no jaw or temple pain during the previous 30 days, 46% reported occasional pain, and 2% reported permanent pain. Twenty-seven percent reported jaw pain or stiffness when they woke up, while 39% reported jaw pain when chewing food, 29% when opening their mouth or moving their jaw, 34% when engaging in jaw habits like clenching, chewing gum, or holding their teeth together, and 18% when engaging in other jaw activities like talking, kissing, or yawning. A total score of 3 or more was found in 175 participants, indicating a prevalence of 35%. TMD was significantly more prevalent in females.

Dahlström Let al¹⁴ systematically reviewed the literature on OHRQoL and TMDs. Most studies used the Oral Health Impact Profile, an instrument with good psychometric properties, for evaluation. All articles described a substantial impact on OHRQoL in TMD patients. Only a small proportion of all patients, a few percent, reported no impact at all. The difference between men and women was small and not significant. The impact appeared to be more

pronounced in patients with more signs and symptoms. The perceived impact of pain on OHRQoL seems to be substantial. Two studies found that the impact increased with age among TMD patients. The limitation the study is small sample size.

CONCLUSION

Authors found that various populations have various prevalence rates of TMD, which is a complex process. Compared to males, females were reported to have a higher prevalence.

REFERENCES

1. Bueno CH, Pereira DD, et al. Gender differences in temporomandibular disorders in adult populational studies: A systematic review and meta-analysis. *J Oral Rehabil* 2018 Sep;45(9):720–729.
2. Abubaker AO, Raslan WF, et al. Estrogen and progesterone receptors in temporomandibular joint discs of symptomatic and asymptomatic persons: a preliminary study. *J Oral Maxillofac Surg* 1993;51(10):1096–1100.
3. Nitzan DW. Intraarticular pressure in the functioning human temporomandibular joint and its alteration by uniform elevation of the occlusal plane. *J Oral Maxillofac Surg* 1994;52(7):671–679.
4. Shaefer JR, Holland N, et al. Pain and Temporomandibular Disorders. *Dent Clin North Am* 2013 Apr 1;57(2):233–262.
5. Solberg WK, Hansson TL. The temporomandibular joint in young adults at autopsy: a morphologic classification and evaluation. *J Oral Rehabil* 1985;12(4):303–321.
6. Bush FM, Harkins SW, et al. Analysis of gender effects on pain perception and symptom presentation in temporomandibular pain. *Pain* 1993 Apr;53(1):73–80.
7. Schmid-Schwab M, Bristela M, et al. Sex-specific differences in patients with temporomandibular disorders. *J Orofac Pain* 2013;27(1):42–50.
8. Gage JP, Viridi AS, et al. Presence of type III collagen in disc attachments of human temporomandibular joints. *Arch Oral Biol* 1990;35(4):283–288.
9. Pereira LJ, Pereira-Cenci T, et al. Risk indicators of temporomandibular disorder incidences in early adolescence. *Pediatr Dent* 2010 Jul;32(4):324–328.
10. De Kanter RJ, Truin GJ, Burgersdijk RC, Van't Hop MA, Battistuzzi PG, Kalsbeek H, Kayser AF. Prevalence in the Dutch adult population and a meta-analysis of signs and symptoms of temporomandibular disorder. *Journal of dental research*. 1993 Nov;72(11):1509-18.
11. Hadler-Olsen E, Thon E, Holde GE, Jönsson B, Oscarson N, Tillberg A. Temporomandibular disorders in an adult population in northern Norway: A cross-sectional study. *Clinical and Experimental Dental Research*. 2021 Dec;7(6):1144-53.
12. Saranya S, Janakiram C, Mathew A. Prevalence of temporomandibular joint dysfunction among the indigenous population of India. *Journal of Oral Biology and Craniofacial Research*. 2024 May 1;14(3):312-6.
13. Nadershah M. Prevalence of temporomandibular joint disorders in adults in Jeddah, Kingdom of Saudi Arabia: a cross-sectional study. *J Contemp Dent Pract*. 2019 Sep 1;20(9):1009-13.

14. Dahlström L, Carlsson GE. Temporomandibular disorders and oral health-related quality of life. A systematic review. *Acta Odontologica Scandinavica*. 2010 Mar 1;68(2):80-5.