

Original Research

Assessment of role of Orthodontics in TMJ disorders

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ABSTRACT:

Background: TMJ disorders (TMD) refer to a group of disorders with symptoms that include pain, clicking, grating in the jaw joint and/or problems with chewing or opening the jaw. The present study was conducted to assess role of orthodontics in TMJ disorders. **Materials & Methods:** The present study was conducted on 86 patients with complaint of TMJ disorders of both genders. TMJ disorders such as myositis, capsulitis, fibromyalgia, disc displacement, MPDS etc. were considered. All patients were given stabilization splints to be worn 8 hours a day for 6 months. Patients were recalled regularly and improvement was noted on VAS scale. **Results:** Out of 86 patients, males were 36 and females were 50. Common TMDs in males and females was myositis in 6 each, capsulitis in 9 males and 10 females, fibromyalgia in 5 males and 8 females, disc displacement in 8 males and 12 females and MPDS in 10 males and 14 females. The difference was significant ($P < 0.05$). The mean pre-treatment VAS score was 7.3 and post VAS score was 2.1. The difference was significant ($P < 0.05$). **Conclusion:** Authors found that stabilizing splints are useful in management of patients with TMDs.

Key words: Malocclusion, stabilizing splints, Orthodontics

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INTRODUCTION

The temporomandibular joint (TMJ) is the joint between the lower jaw and the base of the skull. TMJ disorders (TMD) refer to a group of disorders with symptoms that include pain, clicking, grating in the jaw joint and/or problems with chewing or opening the jaw. This condition can be known by a variety of conditions including craniomandibular disorders (CMD) and is a frequent cause of facial pain problems.¹

Temporo-mandibular problems are frequently occurring disorders with 45 to 70% of the general population showing some signs of it, 30% being aware of its presence, but only 3 to 12% seeking treatment for it. The principal signs and symptoms of TMD originate in the functioning of various muscular and components of the temporo-mandibular joint of the masticatory system. Pain and articular sounds often appear when patients

open their mouths or during mastication. But the symptoms may also derive from, or accompany a loss of function such as holding a long sound, singing, or just mouth opening. Other symptoms can be present, such as joint pains, headaches, or neck pains. Some patients experience occlusal discomfort, often upon awakening.²

Stabilization splints can provide full or partial occlusal coverage depending on the needs of the case and are worn primarily at night. They are designed to essentially to stabilize and to re-distribute the inter-arch occlusal forces, to protect dental structures from abrasion and to decompress the TMJ but also to stimulate a contraction inhibition reflex by providing anterior guidance.³ The present study was conducted to assess role of orthodontics in TMJ disorders.

MATERIALS & METHODS

The present study was conducted in the department of Orthodontics. It comprised of 86 patients with complaint of TMJ disorders of both genders. All patients were informed regarding the study and written consent was obtained. Ethical clearance was obtained prior to the study.

Data such as name, age, gender etc. was recorded. A through clinical examination was performed in all

patients. TMJ disorders such as myositis, capsulitis, fibromyalgia, disc displacement, MPDS etc. were considered. All patients were given stabilization splints to be worn 8 hours a day for 6 months. Patients were recalled regularly and improvement was noted on VAS scale. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I: Distribution of patients

Total- 86		
Gender	Males	Females
Number	36	50

Table I, graph I shows that out of 86patients, males were 36 and females were 50.

Graph I: Distribution of patients

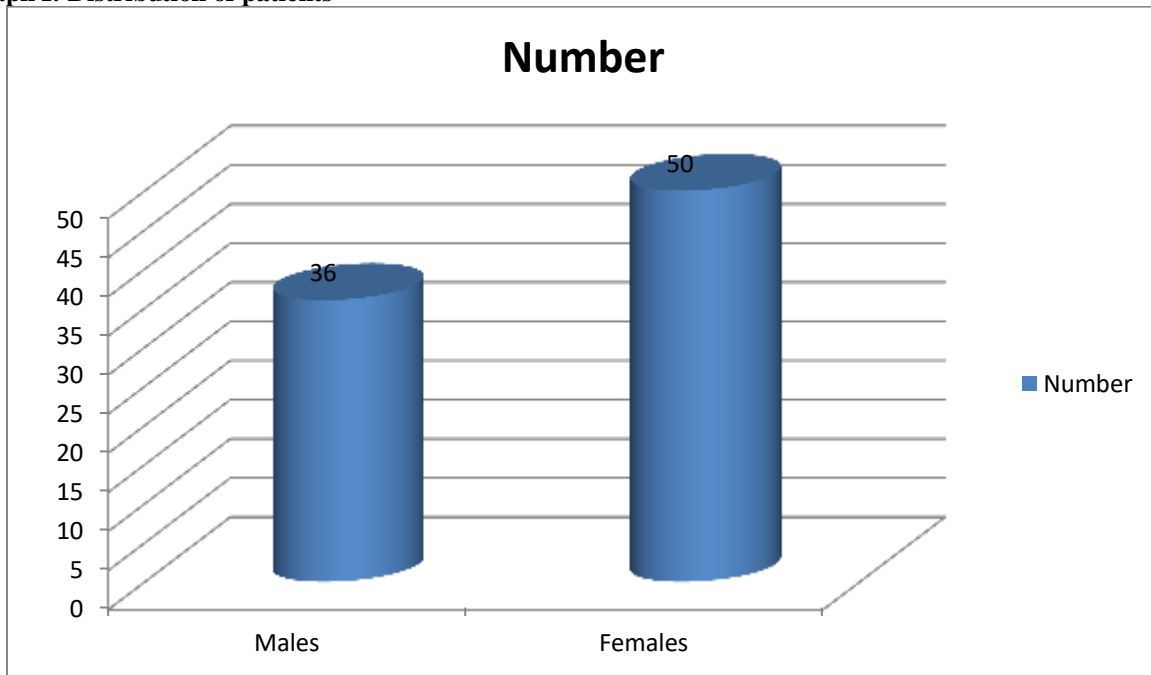


Table II Type of TMDs in patients

TMDs	Males	Females	P value
Myositis	6	6	0.05
Capsulitis	9	10	
Fibromyalgia	5	8	
Disc displacement	8	12	
MPDS	10	14	

Table II, graph II shows that common TMDs in males and females was myositis in 6 each, capsulitis in 9 males and 10 females, fibromyalgia in 5 males and 8 females, disc displacement in 8 males and 12 females and MPDS in 10 males and 14 females. The difference was significant (P< 0.05).

Graph II: Type of TMDs in patients

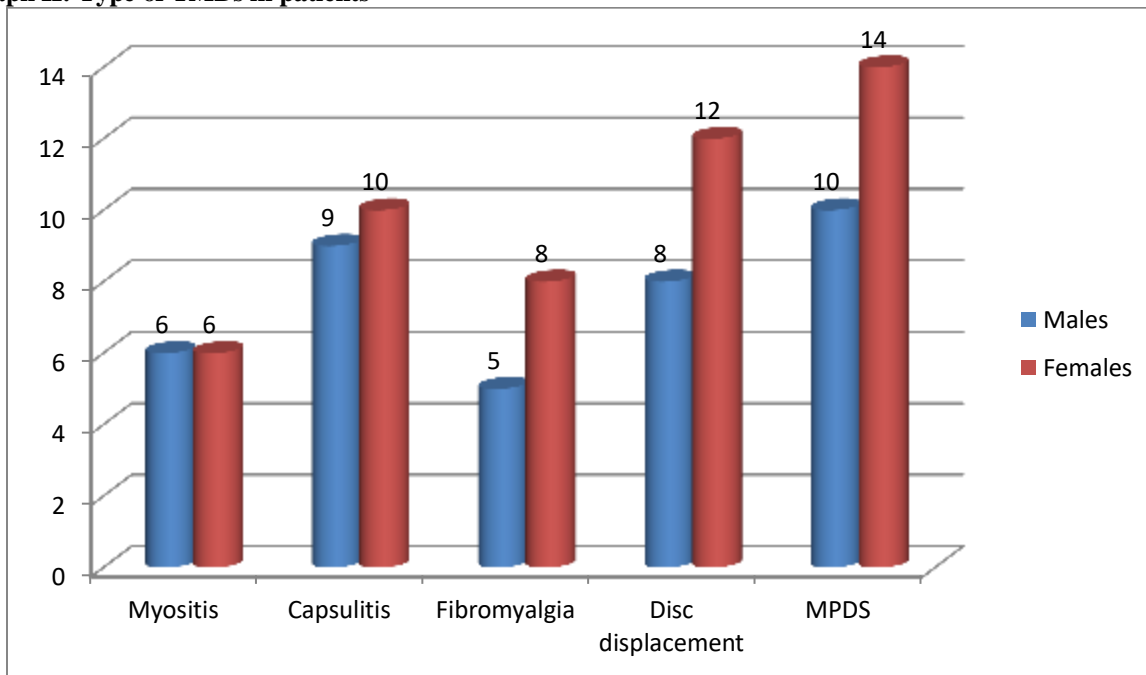


Table III Comparison of VAS in patients

VAS	Mean	P value
Pre treatment	7.3	0.001
Post treatment	2.1	

Table III shows that mean pre- treatment VAS score was 7.3 and post VAS score was 2.1. The difference was significant ($P < 0.05$).

DISCUSSION

The designation temporo-mandibular-disorder, TMD, encompasses an ensemble of muscular, temporo-mandibular-joint, and skeletal signs and symptoms that affect the hard and soft tissues of the masticatory system.⁴ They are characterized by a variety of elements that occur independently or in conjunction: – pain in the pre-auricular, auricular, jugal, and, or, temporal regions; – a limitation of the amplitude of mandibular movements; – and, to a widely varying extent, noises in the temporo-mandibularjoint as it functions TMD have not only an impact on routine activities of a patient’s daily life such as mastication and swallowing as well as phonation and facial expressions.⁵ But when pain is severe it may impede patients’ functioning in their family lives, their professional sphere, and in other social activities. In this domain, as in all of medicine, signs refer to the manifestations observed by the practitioner, while symptoms are the subjective clinical manifestations as perceived and reported by patients.⁶ The present study was conducted to assess role of orthodontics in TMJ disorders.

In present study, out of 86 patients, males were 36 and females were 50. A developing view of TMD is linked

to that of low back pain. The use of the word ‘psychogenic’ suggests there is no known physical cause. However, a biopsychosocial model is developing as the most heuristic approach to chronic pain.⁷ This has been related to TMD whereby the interaction of basic neuroscience processes of pain (the bio of biopsychosocial) with psychosocial factors or how psychological and social factors interact with the processing of information in the central nervous system to influence health. The causation related to the gender predisposition may be associated with genetic variations of pain perception although this is yet to be defined. There are some data that link pain to the circulating hormones.⁸

We found that common TMDs in males and females was myositis in 6 each, capsulitis in 9 males and 10 females, fibromyalgia in 5 males and 8 females, disc displacement in 8 males and 12 females and MPDS in 10 males and 14 females. The mean pre- treatment VAS score was 7.3 and post VAS score was 2.1.

Treatment options for TMD include reassurance (patient education, self care and behaviour therapy), physiotherapy (such as ultrasound, megapulse, acupuncture, short wave diathermy laser, heat exercises,

and biofeedback), splint therapy, drug therapy, occlusal adjustment, surgical intervention and combined treatment. Acupuncture has been a particular treatment modality favoured by List and there are numerous articles in the literature in relation to this topic.⁹ It is, however, outside the remit of this review. Certain authors actually consider conservative, 'low tech' treatment as success rates from invasive treatment do not produce a better result. Furthermore, some authors actually debate the need for treatment: Mohlin¹⁰ suggested only 10% of the population aged over 18 are likely to have symptoms that require treatment whilst others, using other authors' data, estimated that 3.6% to 7% of the population are actually needing treatment.

CONCLUSION

Authors found that stabilizing splints are useful in management of patients with TMDs.

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