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ASSESSING
PREVALENCE OF SIGNS
AND SYMPTOMS OF

TEMPOROMANDIBULAR DISORDERS
AMONG DENTAL STUDENTS USING
FONSECA'S QUESTIONNAIRE



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Introduction

The term TMJ dysfunction or Temporomandibular disorders (TMDs) is used for structural and functional disorders related to the TMJ, masticatory muscles and surrounding structures, negatively impacting individuals' quality of life.

Classification

TMDs are a heterogeneous group of musculoskeletal and neuromuscular conditions that cause pain and dysfunction in the jaw joint and muscles that control jaw movement. Temporomandibular disorders are the most common cause of pain that is non-dental origin.

Okeson J.P. Management of temporomandibular disorders and Occlusion. 8th Edition, Mosby 2019.

• BOX 10.1 Classification System for Diagnosis Temporomandibular Disorders

Masticatory Muscle Disorders

- A. Protective co-contraction (11.7)*
- B. Local myalgia (11.7)
- C. Myofascial pain (11.7)
- D. Myospasm (11.7)
- E. Central mediated myalgia (11.7)

II. Temporomandibular Joint Disorders

Derangements of the condyle-disc disorders

- 1. Disc displacement (11.7.2.1)
- 2. Disc displacement with intermediate locking (11.7.2.1)
- 3. Disc displacement without reduction (11.7.2.2)

Structural incompatibility of the articular surfaces

- 1. Deviation in form (11.7.1)
 - a. Disc
 - b. Condyle
 - c. Fossa
- 2. Adhesions (11.7.7.1)
 - a. Disc to condyle
 - b. Disc to fossa
- 3. Subluxation (hypermobility) (11.7.3)
- 4. Luxation (11.7.3)

Inflammatory disorders of the temporomandibular joint

- 1. Synovitis/capsulitis (11.7.4.1)
- 2. Retrodiscitis (11.7.4.1)
- 3. Arthritides (11.7.6)

- a. Osteoarthritis (11.7.5)
- b. Osteoarthrosis (11.7.5)
- c. Polyarthritides (11.7.4.2)
- 4. Inflammatory disorders of associated structures
 - a. Temporal tendonitis (11.7)
 - b. Stylomandibular ligament inflammation (11.7)

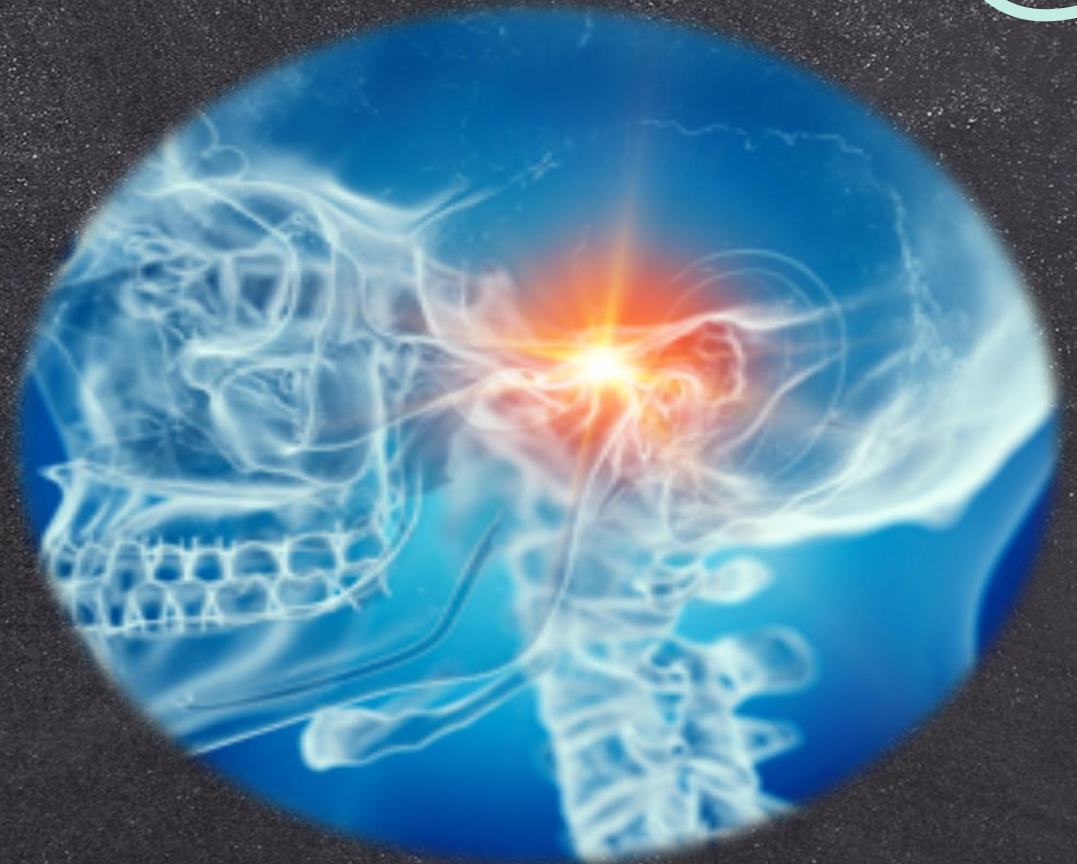
III. Chronic Mandibular Hypomobility

- A. Ankylosis (11.7.6)
 - 1. Fibrous (11.7.6.1)
 - 2. Bony (11.7.6.2)
- B. Muscle contracture (11.8.5)
 - 1. Myostatic
 - 2. Myofibrotic
- C. Coronoid impendance

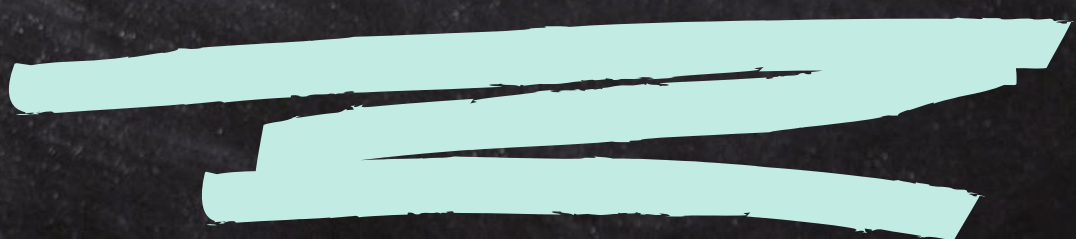
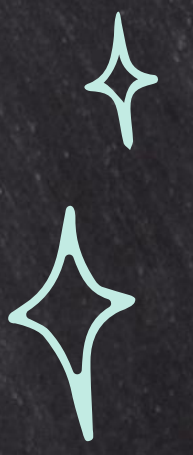
Growth Disorders

- A. Congenital and developmental bone disorders
 - 1. Agenesis (11.7.1.1)
 - 2. Hypoplasia (11.7.1.2)
 - 3. Hyperplasia (11.7.1.3)
 - 4. Neoplasia (11.7.1.4)
- B. Congenital and developmental muscle disorders
 - 1. Hypotrophy
 - 2. Hypertrophy (11.8.6)
 - 3. Neoplasia (11.8.7)

Diagnostic codes are from the Headache Classification Committee of the International Headache Society (IHS): *The International Classification of Headache Disorders*, ed 3, Cephalalgia 38(1)



ETIOLOGY





The etiology of temporomandibular disorders is multifactorial, involving numerous factors that can contribute to TMD.

Predisposing factors

Factors that increase the risk of TMD.
systemic conditions, psychological factors, structural factors and genetic factors.

Initiating factors

Factors that cause the onset of TMD.
microtrauma and macrotrauma.

Perpetuating factors

Factors that interfere with healing or enhance the progression of TMD.
metabolic problems.

There are five major etiological factors that contribute to the occurrence of temporomandibular disorders:

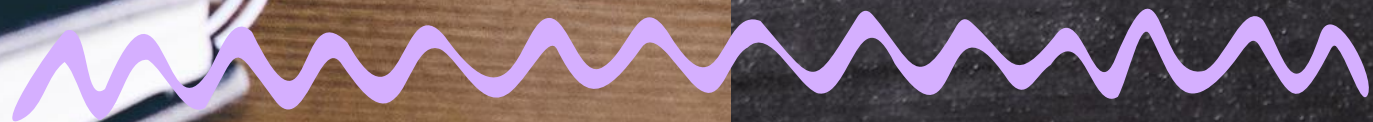
occlusal condition


trauma

emotional stress

deep pain input




parafunctional activity





The significance of TMD epidemiology lies in its complex etiology, which necessitates the integration of multiple diagnostic methods and therapeutic approaches to alleviate its signs and symptoms.

Research has confirmed that individuals exhibiting TMD symptoms tend to access the healthcare system more frequently, seeking care from various providers. Furthermore, these individuals with TMD often experience a considerable negative impact on their quality of life.



EPIDEMIOLOGIC

STUDIES

41% of these individuals in this population reported at least one TMD-related symptom

a conservative estimate of the percentage of people in the general population experiencing some form of TMD falls within the range of 40% to 72%, with the highest incidence occurring between the ages of 20 and 40.

In a study among university students in Jordan the prevalence of TMD was 68.6%, in Brazil was 71.9%, India was 42%.

Ryalat, Z. H., Baqain, W. M., Amin, F., Sawair, O., Samara, O., Badran, D. (2009) Prevalence of temporomandibular joint disorders among students of the university of Jordan. *Journal of Clinical Medicine and Research*. 1(3):158–164.

Augusto, V., Perina, B., Penha, D., Santos, D. and Oliveira, V. (2016). Temporomandibular dysfunction, stress and common mental disorders in university students. *Acta Ortopedica Brasileira*. 24(6):330–333.

MATERIAL AND METHODS

Volunteers

This study was done in the period from April 2023 to July 2023. The research was conducted on 95 dental students (40 males, 55 females, age range 18-26) using Fonseca's questionnaire to measure the prevalence and to identify the severity of symptoms of temporomandibular disorders along with their clinical examinations.

The clinical examination of all the subjects was done by a single examiner. The students were divided into two groups according to their age: Group 1 (18 - 22) consisted of 60 and Group 2 (23 - 27) of 35 students.

01

CONSENT FORM

All volunteers received appropriate instructions regarding the objectives of the research and signed an informed consent form. The trial included only subjects who had not been diagnosed with previous stomatognathic system impairments, previous TMD, or any other clinical alterations.

02

FONSECA QUESTIONNAIRE

In order to classify the severity of TMD among the respondents we used the Fonseca questionnaire. This questionnaire is composed of 10 questions that include a check for the presence of pain in the TMJ, as well as the head and neck, the presence of parafunctional habits, limitations in the movement of the lower jaw, the presence of sounds and emotional stress.

All respondents were explained that they could choose only one of the answers offered, which could be "Yes" (10 points), "Sometimes" (5 points) and "No" (0 points).

03

DATA ANALYSIS

Data were analyzed by Statistical software SPSS for Windows version 23. Frequency distributions, means, and standard deviations were calculated for the study variables. The total score of the Fonseca questionnaire was calculated by summing up the responses of each item.

Fonseca questionnaire

Sr. No.	Question responses: Yes, Sometimes and No.
1.	Is it hard for you to open your mouth?
2.	Is it hard for you to move your mandible (jaw) from side to side?
3.	Do you get tired /muscular pain while chewing?
4.	Do you have frequent headaches?
5.	Do you have pain on the nape or stiff neck?
6.	Do you have earaches or pain in craniomandibular joints?
7.	Have you noticed any TMJ clicking while chewing or when you open your mouth?
8.	Do you clench or grind your teeth?
9.	Do you feel your teeth do not articulate well?
10.	Do you consider yourself a nervous (tense) person?

Results and discussion

A total of 95 dental students participated in this study, consisting of 42.10% male participants and 57.89% female participants, with an age range of 18 to 26 years.

Age group	gender	No TMD (n)	Mild TMD (n)	Moderate TMD (n)	Severe TMD (n)	Number of students
Group 1 18-22 ages	Male	10	13	2	0	25
	Female	10	20	4	1	35
	Total	20	33	6	1	60
Group 2 23-27 ages	Male	12	1	2	0	15
	Female	8	9	2	1	20
	Total	20	10	4	1	35
Total		40 (42.10%)	43 (45.26%)	10 (10.52%)	2 (2.10%)	95 (100%)