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TEMPOROMANDIBULAR DISORDERS DIAGNOSIS GROUNDED ON RESEARCH DIAGNOSTIC CRITERIA

Dr Iqra Asghar[1], Dr Saira Lone[2], Dr Abdul Mateen Adil[3]
[1,2,3] PMC Dental institute FMU, Faisalabad/Allied Hospital Faisalabad (Dental Section)

Abstract:
Aim: The Research diagnostic criteria for Temporomandibular Disorders (RDC/TMD) is a tool used by International RDC/TMD Consortium (A Designated Network of the International Association for Dental Research), to diagnose and categorize TMD patients. The aim of the present study was to investigate the frequency of TMD in undergraduate dental and medical students based on RDC/TMD; and its relation with depression and somatization
Methods: 37 dental and medical students were evaluated. Clinical physical diagnosis (axis I) as well as pain-related disability and mental status (axis II) were assessed using a questionnaire and clinical examination according to the RDC / TMD protocol.
Results: Seventeen students diagnosed with TMD showed a significantly higher incidence in women (p = 0.003). The maximum number of TMDs occurred in the group with internal disorders, and then in the groups with pathosis and muscle disorders. A significantly higher incidence of TMD was reported in subjects (p = 0.00, likelihood ratio = 10.80) with Axis II than in those without Axis II. Significant participants in TMD showed somatization than those without TMD (p = 0.000, probability ratio = 12.04).
Conclusion: There has been a relatively lower incidence of TMD in young adults, with a much higher incidence in women. Disc dislocation was the most common diagnosis of Axis I. Patients with TMD showed greater RDC / TMD. Axis II.
Key keywords: Temporal-mandibular disorders, Rerearch Diagnostic Criteria/Somatization.

Corresponding author:
Dr Iqra Asghar,
PMC Dental institute FMU,
Faisalabad/Allied Hospital Faisalabad (Dental Section)

QR code

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INTRODUCTION:

Temporary Mandibular Disorder (TMD), as defined by the American Academy of Orofacial Pain, is a collective term that covers a variety of clinical problems related to muscle chewing, temporomandibular joint (TMJ), and similar structures, or both[1-2]. In the past, TMJ and associated muscle pain / disorders were generally diagnosed as "Myofascial Pain" or "Temporomandibular Pain Dysfunction Syndrome." Non-standardized diagnostic techniques and classification procedures and data generalization influenced the study of the prevalence of TMD[3-4]. Moreover, the diversity of diagnostic and complementary criteria in different studies has made it difficult to compare in TMD studies. Research Diagnostic Criteria for Temporary Disorders (RDC/TMD) is a tool used by the International Consortium RDC/TMD, a designated network of the International Association for Dental Research. RDC/TMD guidelines are designed and used to classify patients with TMD for clinical physical diagnosis (Axis I) and disability related to pain and mental state (Axis II)[5-6]. It provides clinical researchers with a standardized system that can be evaluated for use in the study, diagnosis and classification of the most common TMD subtypes. It is the most commonly used TMD diagnostic system for clinical trials. It has been translated into 18 languages and is used by a consortium of 45 international scientists based on RDC/TMD[7-8]. Since its release in 1992, the use of RDC/TMD has shown sufficient reliability for the most common diagnosis of TMD, thereby supporting the use of clinical trials and decision-making[9-10]. The aim of this study was to examine the frequency of TMD among young selective urban education students who went to students in Pakistan, based on diagnostic test criteria guidelines; relationships with depression and somatization; and the introduction of RDC/TMD as a tool for TMD clinical trials in Pakistan, as well as comparing data with other similar studies.

METHODOLOGY:

Data from the current study were collected from 85 students of medicine and dentistry at Punjab Medical College and PMC Dental institute FMU, Faisalabad/Allied Hospital Faisalabad (Dental Section), Pakistan. The selected patients were volunteers and a sample of convenience based on ease of access. The evaluation of the subjects was based on the RDC / TMD guidelines. RDC / TMD uses a biaxial system, including axis I, to diagnose and classify patients with TMD; and axis II for recording behavioral, psychological and psychosocial status. The evaluation consisted of a questionnaire completed by the subject and a detailed clinical evaluation according to the

prescribed pattern for the physical diagnosis of TMD. The questionnaire included questions about demographics; general and oral health (4 questions); pain history (11 questions); TMJ blocking (2 questions); TMJ clicking (7 questions); common family history of diseases (4 questions); injuries (2 questions); history of headache and migraine (1 question); mandible symptoms related to limited physical activity (12 questions); and stress-related symptoms (32 questions). Axis I provide a physical diagnosis of the most common disorders of the masticatory muscles and / or the temporomandibular joints. The diagnosis was based on a questionnaire history of pain and noise in the joints, as well as a comprehensive physical examination including:

1. Jaw range with or without pain
2. Common sounds
3. Painful muscles outside the mouth and inside the mouth,
4. TMJ palpation

Clinical diagnosis was obtained by scoring the RDC / TMD Axis I algorithm according to the subtypes of the three main physical diagnosis groups of Group I (muscle disorders), group II (temporomandibular joint disc displacement), and group III (joint pathosis) as shown in Table 1. Based on the assessment and algorithm, a person may have more than one major category of physical diagnosis. Participants were also classified as presumptive (accepted as true on ambiguous grounds) cases of TMD in anamnestic (ability to recall past events) of masticatory muscle pain reporting or TMJ in the past month. Axis II recorded behavior (eg, mandibular disability), mental state (eg, depression, somatization), and psychosocial status (eg, chronic pain severity to assess pain severity and interference with life) using a questionnaire and its evaluation using an algorithm. The phenomenon of somatization causes nonspecific physical symptoms presented as harmful or troublesome. The questionnaire completed by the subject was assessed based on the assessment of points regarding depression, non-specific physical symptoms (including pain elements) and non-specific physical symptoms (excluding pain elements). These assessments were used to assess behavioral, psychological and psychosocial factors considered relevant in the management of patients with TMD to categorize depression and somatization (non-specific physical symptoms with and without pain elements). (Table 2). The classification of chronic pain was assessed by assessing the characteristic pain intensity and disability scores. Characteristic pain intensity was assessed using the points in the pain history questionnaire. Disability points were assessed on the basis of the points (Table 3) in the holiday questionnaire; interfering with daily, recreational, social and family activities; and disruption of work

ability, including housework, due to facial pain in the past six months. 6 Data analysis was performed in SPSS version 18.0 (PSS, Inc., Chicago, III., USA) using descriptive analysis, crosstabulation between different variables and a Pearson Chi square.

RESULTS:
A total of 85 students (37 men and 48 women) with an average age of 21.9 years (18-26.5 years and 1.3 years of SD) were assessed. TMD was diagnosed with 17 (20%) 2 men and 15 women. (Figure 1)
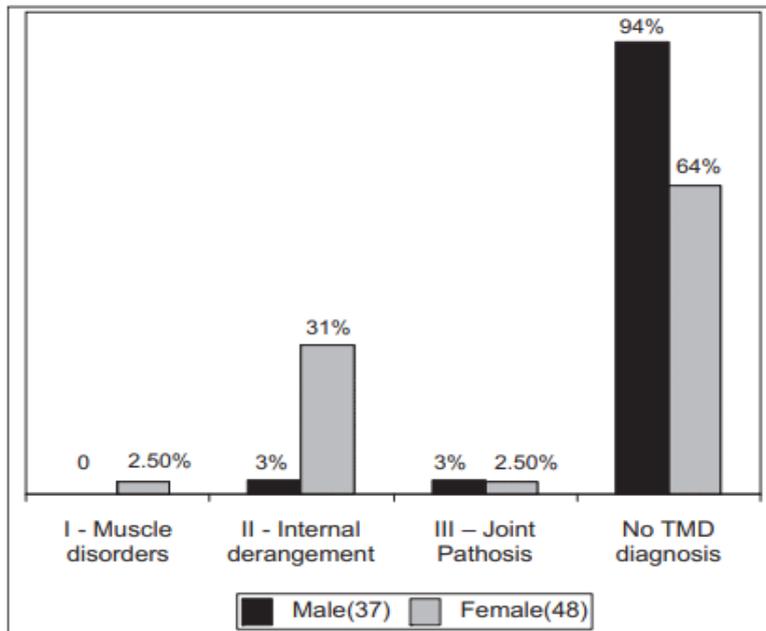

Fig 1: Incidence of TMD in Males & Females.

The frequency of TMD in women was significantly higher than in men (p = 0.003, probability ratio = 9.883). One participant had muscular disorders (one woman diagnosed with myofascial pain with limited mouth opening). The maximum number of TMDs was found in the inner group of disorders, including one male (3%) and 16 female (33%) participants with reduced disc displacement (Fig. 2).

Fig 2: Incidence of internal derangement in Males & Females.
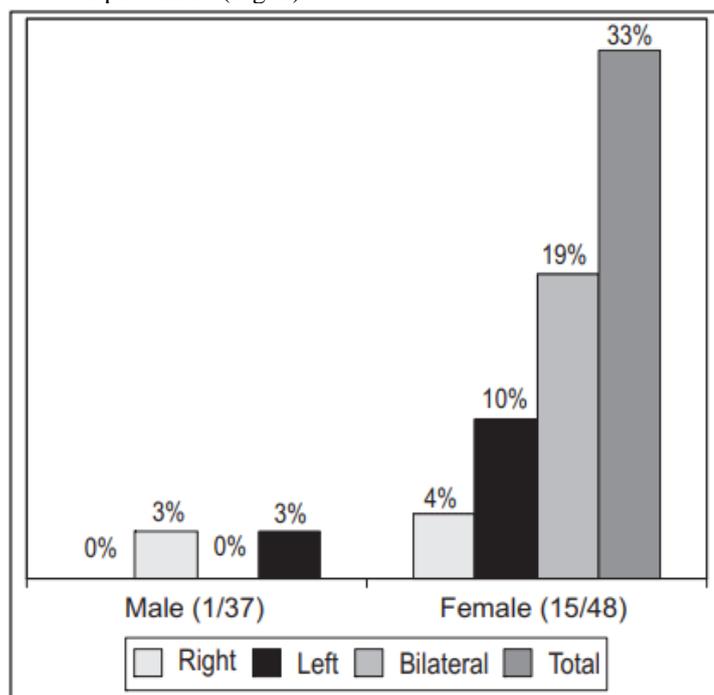
Most participants had internal bilateral disorders. The joint pathology group included two students from the arthralgia category, one male and one female. Two of the participants had multiple diagnoses. This includes one woman diagnosed with myofascial pain with limited mouth opening and reduction disc displacement; and one woman with disc displacement with reduction and joint pain.
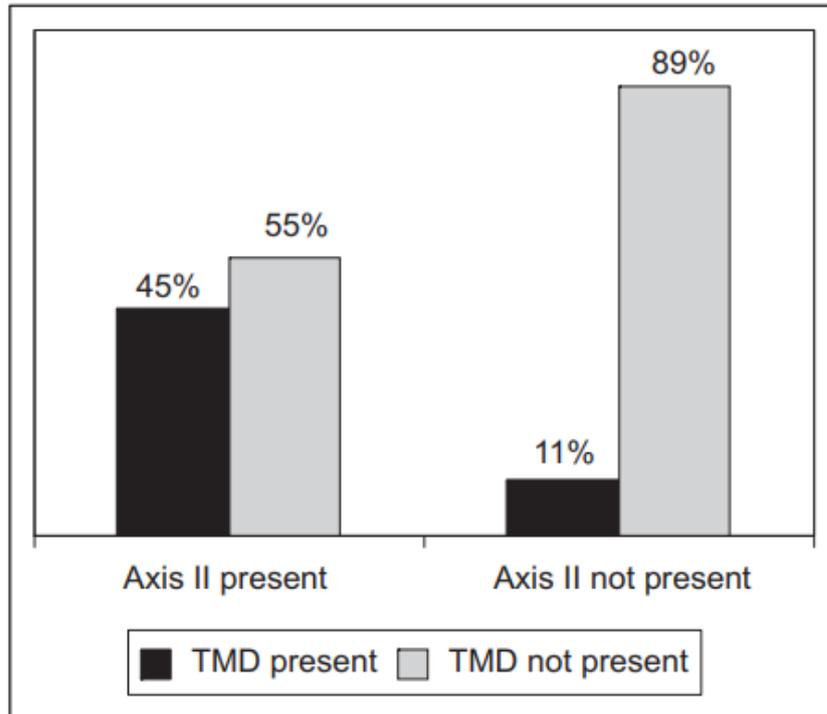
Fig 3: TMD and Axis II.

A total of 3 (3.5%) participants had TMD-related pain, including 1 male (2.7%) and 2 females (4.4%). Seventeen participants reported putative TMD, i.e. in the past they reported pain in the jaw joint or muscles of the chewing region. TMD was confirmed as a physical diagnosis in 6 putative participants, while 11 participants did not meet the TMD criterion (p = 0.078). Five of these participants were diagnosed with reduced temporomandibular disc displacement; and one had myofascial pain with limited mouth opening as well as a reduced temporomandibular disc displacement.

TABLE 1: CLINICAL PHYSICAL DIAGNOSIS
GROUPS[6]

I - Muscle disorders
    a. Myofascial pain
    b. Myofascial pain with limited mouth opening
    No. Group I diagnosis.
II - Internal derangement
    a. Disc displacement with reduction
    b. Disc displacement without reduction with limited mouth opening.
    c. Disc displacement without reduction without limited mouth opening
    No Group II diagnosis
III - Joint Pathosis
    a. Arthralgia
    b. Osteoarthritis
    c. Osteoarthrosis
    No Group III diagnosis

Eleven of the 68 untitled TMD participants had clinical TMD. Nine implicit participants were diagnosed with temporomandibular disc dislocation with reduction; one had joint pain; and one had joint pain as well as a diminished disc displacement. Twenty-two (5 men and 17 women) out of eighty-five participants tested positive for Axis II. A significantly larger number of participants (p = 0.00, likelihood ratio = 10.799) with Axis II had TMD compared to those who did not have Axis II (Fig. 3).

TABLE 2: GRADING FOR DEPRESSION AND SOMATIZATION (NON-SPECIFIC PHYSICAL SYMPTOMS WITH AND WITHOUT PAIN ITEMS)[6]

Grade	Description
0	Not at all
1	A little bit
2	Moderate
3	Quite a bit
4	Extreme

Eight of the ten participants in Axis II are women. Both Axis II men had TMD compared with 8 of 15 women with TMD. The classification of chronic pain (Table 3) showed 4 participants in stage I (mild disability, low intensity) and 1 participant in stage II (mild disability, high intensity). Five (3 - some, 2 - moderate) participants with TMD showed signs of depression (Table 2) based on the questionnaire scores, which was not significant compared to participants showing symptoms of depression without TMD (p = 0.108). Seven out of 11 participants with somatization had TMD, which was highly significant compared to people with somatization but without TMD (p = 0.000, probability ratio = 12.035).

TABLE 3: CHRONIC PAIN GRADE CLASSIFICATION[6]

Grade	Description
0	No TMD in prior 6 months
I	Low disability, low intensity
II	Low disability, high intensity
III	High disability, moderately limiting
IV	High disability, severely limiting

All seven participants of TMD (some) with somatization showed non-specific physical symptoms (including pain elements), while 3 (some) had non-specific physical symptoms (excluding pain elements). (Table 2)

DISCUSSION:

Most epidemiological studies related to TMD are based on anamnesis studies of prophagic/maxillary and/or joint singing (the ability to remember past formations), and only a few were able to conduct a physical examination on TMD[9-10]. The size and representation of the sample group in the current study does not include the community. However, the data can be compared with similar examples. Diagnosis of TMD (20%) (32% of women and 5% of men). In other studies, the incidence of TMD increased in women. Nilsson et al. 28,899 adolescents (73% of the regional population for children aged 12-19) conducted a prevalence study of 4.2% (6% of women and 2.7% of men) in a 2-question study on facial pain or an ATM. In a study on the reliability and validity of self-certifying TMD pain, Nilsson et al. Self-reporting found high reliability and validity of TMD pain and clinical TMD; and this study has been proposed for the TMD epidemiological study[11]. Most other studies report that muscle disorders are the most common. 35% (6 out of 17) of LA TMD followers had clinical TMD, but 16% of non-belie vent subjects had TMD in this study. Other studies have shown that 41 of the forty-three Caucasian and 11 of the 18 African-American putative (pain reported in the past 6 months) found that DrC/TMD-based TMDs in two financial populations. In addition, TMD confirmed that 11% of Caucasian and 5% non-idolatry young women were TMD[11-12]. Based on a study on joint sounds and chewing muscle pain in the university population in Brazil, it classified patients as free TMD and TMD. However, participants without TMD also have common sounds (44%) with muscle sensitivity to chew (30%). The current study shows that the incidence of TMD is high in patients who achieve a positive result for axis II. Axis II recorded depression, somatization and qualified chronic pain with a detailed study. This study of the young Pakistani population shows 30% of patients with tmd depression, 41% somatization and 30% qualified chronic pain[13-14]. A similar study for the population of patients with Caucasian TMD showed 64% depression, 82% somatization and 86% qualified chronic pain; and 70% depression, 80% somatization and 91% qualified chronic pain from the TMD of the African-American population. The basic dimensions of rdc/tmd II axis demonstrate adequate psychometric properties for comprehensive evaluation and management of TMD patients. Axis II warns doctors to notice

potential depressive symptoms; Somatization, which is considered an indicator of poor outcome of TMD treatment; and the psychosocial adaptation level of the patient can be used to adapt the treatment to the level of the qualified scale of chronic pain[15].

CONCLUSION:

The present study shows a lower incidence of TMD in young adults, with much higher prevalence in females. Disc displacement with reduction was the commonest TMD diagnosis. Patients with TMD exhibit much higher RDC/TMD Axis II measures and highlights importance of these factors to be recognized in comprehensive management of TMD.

REFERENCES:

1. Axis II, T. M. D. "Diagnosis of temporomandibular disorders based on research diagnostic criteria." *Pakistan Oral & Dental Journal* 29, no. 2 (2009).
2. Manfredini, Daniele, Luca Guarda-Nardini, Ephraim Winocur, Fabio Piccotti, Jari Ahlberg, and Frank Lobbezoo. "Research diagnostic criteria for temporomandibular disorders: a systematic review of axis I epidemiologic findings." *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology* 112, no. 4 (2011): 453-462.
3. Plesh, Octavia, Sandra E. Sinisi, Patricia B. Crawford, and Stuart A. Gansky. "Diagnoses based on the research diagnostic criteria for temporomandibular disorders in a biracial population of young women." *Journal of orofacial pain* 19, no. 1 (2005).
4. Schiffman, Eric L., Richard Ohrbach, Edmond L. Truelove, Tai Feng, Gary C. Anderson, Wei Pan, Yoly M. Gonzalez et al. "The revised research diagnostic criteria for temporomandibular disorders: methods used to establish and validate revised axis I diagnostic algorithms." *Journal of orofacial pain* 24, no. 1 (2010): 63.
5. Schiffman, Eric L., Edmond L. Truelove, Richard Ohrbach, Gary C. Anderson, Mike T. John, Thomas List, and John O. Look. "The Research Diagnostic Criteria for Temporomandibular Disorders. I: overview and methodology for assessment of validity." *Journal of orofacial pain* 24, no. 1 (2010): 7.
6. Ahmad, Mansur, Lars Hollender, Quentin Anderson, Krishnan Kartha, Richard Ohrbach, Edmond L. Truelove, Mike T. John, and Eric L. Schiffman. "Research diagnostic criteria for temporomandibular disorders (RDC/TMD): development of image analysis criteria and examiner reliability for image analysis." *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology* 107, no. 6 (2009): 844-860.
7. Steenks, Michel H., and Anton de Wijer. "Validity of the Research Diagnostic Criteria for Temporomandibular Disorders Axis I in clinical and research settings." *Journal of orofacial pain* 23, no. 1 (2009).
8. Dworkin, S. F. "Research diagnostic criteria for temporomandibular disorders: current status & future relevance 1." *Journal of oral rehabilitation* 37, no. 10 (2010): 734-743.
9. Rammelsberg, Peter, Linda LeResche, Samuel Dworkin, and Lloyd Mancl. "Longitudinal outcome of temporomandibular disorders: a 5-year epidemiologic study of muscle disorders defined by research diagnostic criteria for temporomandibular disorders." *Journal of orofacial pain* 17, no. 1 (2003).
10. Truelove, Edmond, Wei Pan, John O. Look, Lloyd A. Mancl, Richard K. Ohrbach, Ana Velly, Kimberly Huggins, Patricia Lenton, and Eric L. Schiffman. "Research diagnostic criteria for temporomandibular disorders: validity of axis I diagnoses." *Journal of orofacial pain* 24, no. 1 (2010): 35.
11. Look, John O., Mike T. John, Feng Tai, Kimberly H. Huggins, Patricia A. Lenton, Edmond L. Truelove, Richard Ohrbach, Gary C. Anderson, and Eric L. Schiffman. "Research diagnostic criteria for temporomandibular disorders: Reliability of Axis I diagnoses and selected clinical measures." *Journal of orofacial pain* 24, no. 1 (2010): 25.
12. Look, John O., Eric L. Schiffman, Edmond L. Truelove, and Mansur Ahmad. "Reliability and validity of Axis I of the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) with proposed revisions." *Journal of oral rehabilitation* 37, no. 10 (2010): 744-759.
13. Manfredini, D., and L. Guarda-Nardini. "Agreement between Research Diagnostic Criteria for Temporomandibular Disorders and magnetic resonance diagnoses of temporomandibular disc displacement in a patient population." *International journal of oral and maxillofacial surgery* 37, no. 7 (2008): 612-616.
14. Anderson, Gary C., Yoly M. Gonzalez, Richard Ohrbach, Edmond L. Truelove, Earl Sommers, John O. Look, and Eric L. Schiffman. "Research diagnostic criteria for temporomandibular disorders: future directions." *Journal of orofacial pain* 24, no. 1 (2010): 79.
15. Emshoff, Rüdiger, and Ansgar Rudisch. "Validity of clinical diagnostic criteria for temporomandibular disorders: clinical versus

magnetic resonance imaging diagnosis of temporomandibular joint internal derangement and osteoarthrosis." *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology* 91, no. 1 (2001): 50-55.