

FACTORS ASSOCIATED WITH TEMPOROMANDIBULAR DISORDERS IN EASTERN LIBYA

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ABSTRACT

Tempromandibular disorders have been identified as a major cause of non dental pain in the orofacial region. So far no work has been done to study these symptoms in Libyan people and their predisposing and contributing factor.

Purpose: The aim of this work was to give a preliminary report about pattern of TMD in relation to contributing factor in eastern part of Libya.

Materials and Methods: A prospective survey of 160 referred patients seen, interviewed and examined by authors a comprehensive history including name, age, sex, marital status, occupation, details history of presenting complaints in order, duration of symptom, history of trauma, past medical and surgical history were also recorded. Also included was social history including the history of various parafunctional habits.

Results: Women constituted more than 75% of the presenting patients. The main age of Presentation was the age group 21-30 years for both sexes. more than third of the patients in both sexes (female 41% and males 46%) the main presentation was the pain (64), truisms was the c to of only 9% of patients, history of past trauma was reported in 42% of patients these include hits and fall, road traffic accidents, long dental visits and orthodontic treatment being single was the most reported status among females, students were the most affected followed by housewives, teachers were among the vulnerable profession (10%) parafunctional habits were reported in 119 patients (81%). Other associated symptoms were elicited by (67%)

Conclusion: there were many factors which were related to TMDs. Those include age, sex, marital status, profession, history of trauma, parafunctional habits reflecting the amount of stress.

Key words: TMD, Eastern Libya, Epidemiology, Pain, Stress, Temporomandibular joint.

INTRODUCTION

Tempromandibular disorders or TMDs (myofacial pain dysfunction disorder syndrome, myofacial pain dysfunction, tempromandibular arthropathy, TMJ arthritis, psychogenic facial pain, and facial arthro-myalgia) have been identified as major cause of the non—dental pain in the orofacial region (1). TMDs are a complex heterogonous group of conditions involving masticatory muscles and Tempromandibular joints (TMJs) (2) and characterised by chronic facial pain and tenderness over one or both TMJs and associated muscles, often with limitation of jaw opening (3).

The epidemiological studies suggest that between 5 to 70% of the population have signs of

TMDs at sometime in their lives (4) and further 20 to 50% of the population suffer symptoms but do not seek treatment (4,5). The condition thus represents a significant cause of physical and psychological debility in large segment of the population. The aetiology and pathogenesis of TMDs are controversial although they are considered to be multifactorial (5,6,7). One of the widely believed factors is the presence of Parafunctional habits secondary to stress and anxiety. TMDs also occur secondary to the internal joint problems.

There are many reports linking these symptoms to adverse life events, stress or lack of emotional support (8). Many recent studies demonstrated the presence of biological active substance such as tissue necrosis

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factor (TNF), oxygen free radicals, substance P and other inflammatory and pain mediators such as cytokines interleukins in the synovial fluid of the joint compartments (9,10,11,12) .

So far, no work has been done to study these symptoms in Libyan people and their predisposing and contributing factors. The aim of this work is to give a preliminary report about pattern of TMDs in Libyan population in the eastern part of the country.

PATIENTS AND METHODS

A prospective survey for 160 patients seen, interviewed and examines by the authors at the Department of Oral and Maxillofacial surgery, Faculty of Dentistry, Garyounis University, Benghazi, the referral center for the eastern part of Libya , during the period between January 1997 and April 2000. All these patients were referred by general dental practioners, physicians, ENT surgeons and other departments of the dental faculty. A comprehensive history of the presenting complaints in order, duration of symptoms at presentation, history of trauma, past medical and surgical history was recorded. Social and family history including the marital status and history of various Parafunctional habits was explored over the repeated visits.

All patients were subjected to direct manual palpation of the TMJs, muscle of mastication as well as neck and shoulder muscles. Further more, the masticatory apparatus was functionally evaluated by measuring the mouth opening, deviation of the jaw and range of mandibular movements and presence of joint sounds. A thorough clinical oral examination and orthopantomogram (OPG) were utilized to exclude dental and other pathological conditions.

Diagnosis of Tempromandibular disorders was established by the following criteria:

- Pain
- Muscles tenderness
- Limitation of jaw movements
- Absence of dental cause and other pathology

RESULTS

Females constituted more than two thirds of the studied subjects (125 patients). The age of the examined group ranged from 15 to 64 years. The maximum age of presentation reported was the age group 21-30

years for both sexes (table 1). More than the third of the patients in both sex groups reported or sought medical advice within three months of the onset of the symptoms; 51 females (41%) and 16 males (46%), but many patients reported as late as more than two years (table 2).

The most presenting complaint was pain as it was the main reason for seeking medical advice in 102 patients (64%) followed by clicking joint sound in 40 patients (25%). Trismus (difficulty of mouth opening) was the chief complaint for only 15 patients (9%) (Figure 1). History of difficult dental extraction was elicited by 35 patients (22%). Hits, falls. Traffic accidents, long dental visits and orthodontic treatment were reported at different percentages, but 72 patients (45%) failed to remember any history of trauma of any kind (figure 2).

Marital status correlation was more obviously noticed among the female group patients. Being single was the most reported status among the female patients (figure 3). Students were the most affected population in this study; 56 patients (35%), followed by housewives; 37 patients (23%). Teachers were among the significantly vulnerable professions; 16 patients (10%). The unemployment was noticeable among this group of patients; 14 (9%) (Figure 4).

Different parafunctional habits like bruxism, day clenching and nail biting were reported in about three quarters of the patients (119 patients) (figure 5). Associated symptoms including other joint pain, back pain, shoulder pain and gastrointestinal disturbances were elicited by 108 patients (67%) (Figure 6).

DISCUSSION

Epidemiological studies on TMD have not yet yielded causes of the diseases; bruxism and microtrauma are frequently suggested to be a cause (13). Reported prevalence of the TMD differs from study to study, because of the methodological errors and lack of standard definition of TMD and their characteristics (14). One of the problems in studies of TMD is that the distinction between disease and nondisease is not always clearly defined. For instance, a TMD related symptoms such as presence of the joint noise are not well defined. Healthy joints may sometimes produce noise. Moreover, a joint may click for many years without being painful or displaying change in symptoms. Such joint may be regarded as being "adapted" and should not considered to be diseased (15).

TABLE 1: AGE AND SEX DISTRIBUTION OF THE PATIENTS

Age Group	10-20	21-30	31-40	41-50	51-60	61-70	Total
Females	25	65	21	10	1	3	125
Males	6	10	13	3	2	1	35
Total	31	75	34	13	3	4	160

TABLE 2: DURATION OF SYMPTOMS AT PRESENTATION

Sex/Period	1-3m	3-6m	6-9m	1 year	2 years	>2 years	Total
Females	51	19	10	13	15	17	125
Males	16	5	2	1	4	7	35
Total	67	24	12	14	19	24	160

Fig 1. Distribution of the most presenting complaints

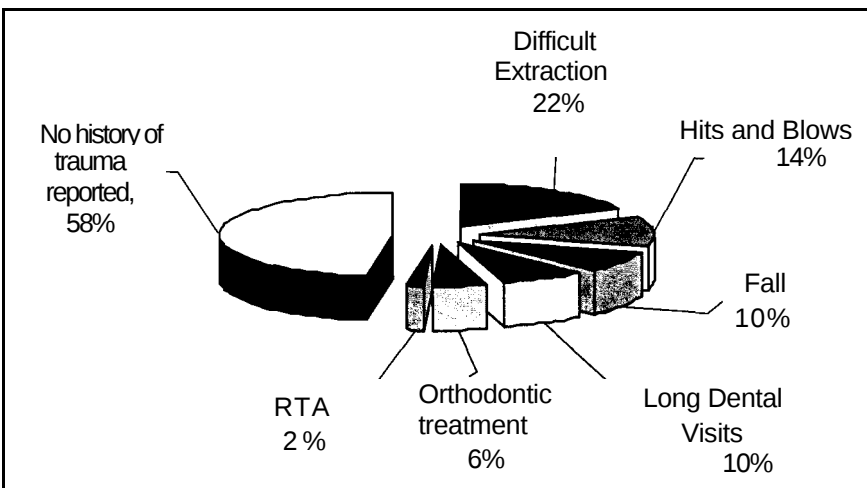
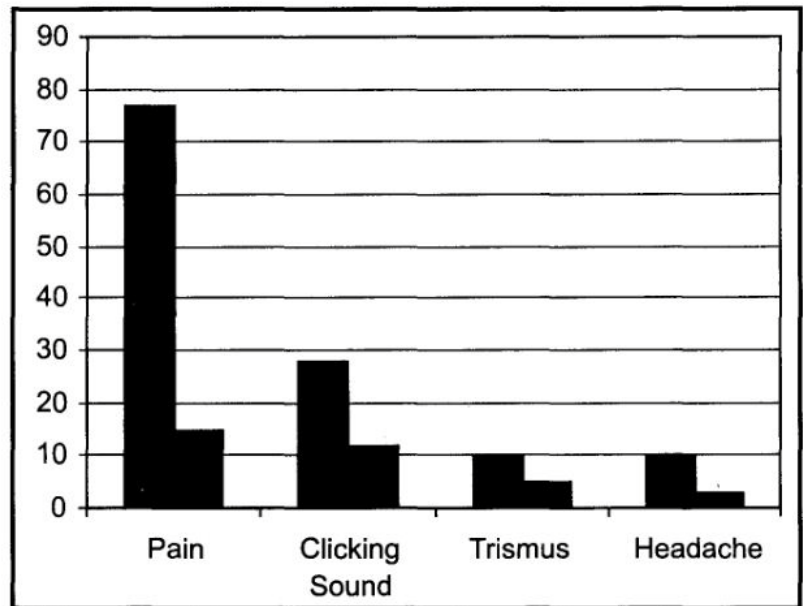


Fig 2. History of Trauma

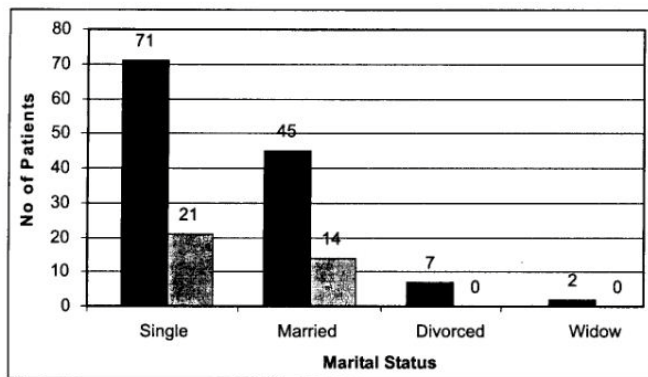


Fig 3. Marital status of the patients

Fig 4. Profession distribution of the patients

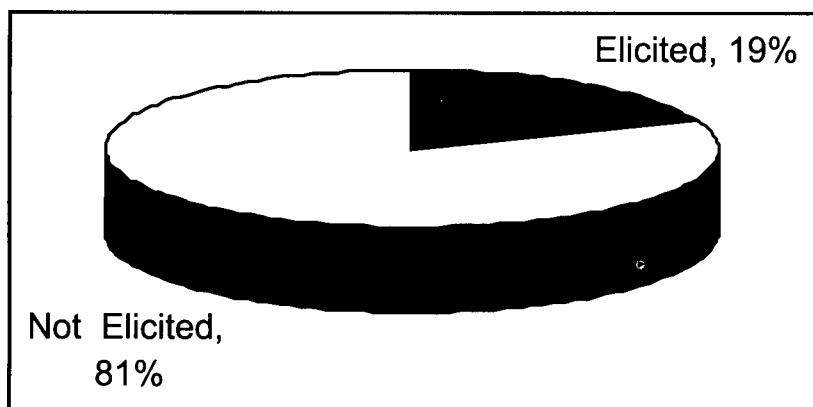
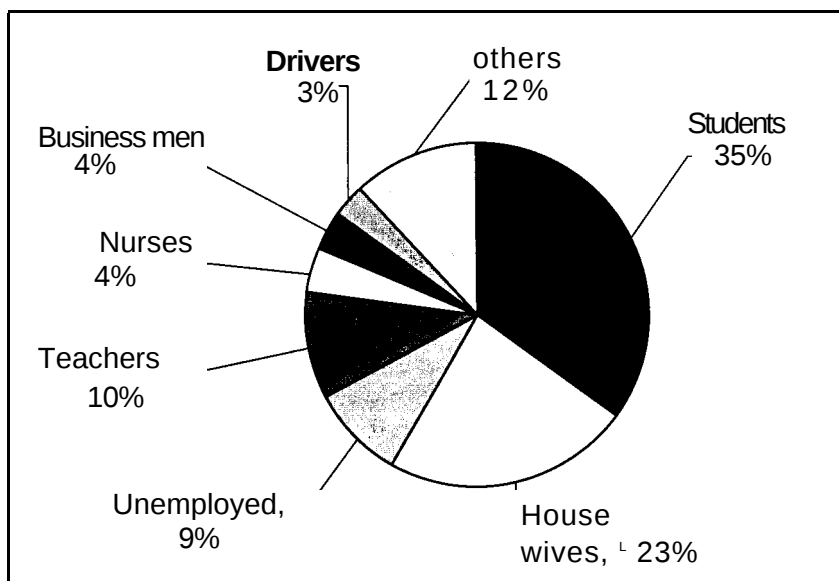
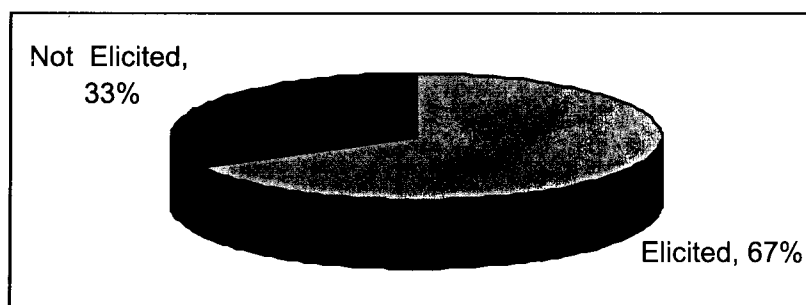


Fig 5. Distribution of the parafunctional habits*

Fig 6. Association with other symptoms



Surveys that use self-reporting illness for diagnostic purposes are prone to considerable methodological errors. To collect a reliable data at least a structured interview and systematic physical examination are necessary.

It has been shown that many patients with this type of problems can go undiagnosed, be misdiagnosed and have multiple diagnostic and therapeutic interventions before being given the correct diagnosis. Kerszun et al 1998 showed that some of their patients sought treatment for their facial pain from as many as 15 different specialists (1).

Although the diagnostic criteria for TMD are quite recognized, not all patients give classic history and often the clinical examination gives information that can be confused with other painful disorders affecting the head and neck.

Gender differences in TMD are hardly reported in epidemiological studies, even though a considerable female predominance is obviously observed in TMD clinics. Female susceptibility for TMD may be sex-linked molecular biologic nature of TMD. Because molecular biology is rapidly progressing area, research in this field probably has the potential to answer questions related to female predominance in several degenerative joint diseases, especially in adolescence. Female susceptibility for TMD cannot be explained simply by sex-linked behavior, such as treatment-seeking behavior, coping style and illness behavior as is frequently suggested but not scientifically supported (14).

Moody et al (16) found that the stress of the TMD patients consistent with their occupation but clearly unemployment brings its own difficulties. These "facts" are clearly applied on our patients as the students; house wives and unemployed individuals consist more than two thirds of the patients.

Patients suffering from TMD tend to have more life changes than those with other illnesses. Examples of these life events include marriage, divorce, death of close family members and change in residence. Moody et al (16) gave a number of explanations for this phenomenon. One explanation was that as the number of life changes being experienced by a patient are increased the psychological stress increases. This stress may be considered to be an etiologic factor for TMD. An other explanation was that as the life changes increase, the patient's ability to cope with the existing symptoms decreases. In either case the symptoms are accentuated and the patient seeks professional help (16).

It was possible for the authors to observe the correlation of the pain and other social and psychological complaints. Moreover, the failed treatment and the recurrent pain episodes contributed to life stresses with a pattern of frustration, hopelessness and even depression.

We believe that the stress has at least a dual role in the development and aggravation of the TMD symptoms. The first by lowering the pain threshold of the patients leading to expression of the minute disorders in the masticatory system which might be created by trauma of different kinds such as difficult dental extraction, long dental visits, hits and blows to the face and fall. The second mechanism by initiating the stress-related parafunctional habits namely bruxism, day clenching of the teeth and nail biting which create more damage to the masticatory apparatus leading to accentuation of the pain and dysfunction which subsequently create more stress and the so called "vicious cycle" operated.

Bruxism according to the American Academy of Orofacial Pain, 1993 is diurnal or nocturnal parafunctional activities that include tooth clenching, bracing, gnashing and grinding (14). Its prevalence rates range from 5 to 96 percent in the adult population (8,16,17,20,21). Although many etiologic factors such as stress and occlusal disorders have been proposed (19), the exact pathophysiology of the bruxism still is unknown. Because of the diminished sensory function during sleep, it seems most unlikely that internal environment of tooth occlusion could make afferent sensory input to central projection of a sleeping subject. It would be consistent with the body physiology, the protective mechanoreceptors stimulated reflex loops are inactive. These physiological considerations indicated that the stimulus for bruxism arise not from the peripheral input but from within the central nervous system of the subject. Bruxism occurs predominantly in D and REM phases of sleep when the cortex is active and when it postulated that memories handled during dreaming are those that are emotional. Furthermore, it is thought that a function of D sleep is to repress and keep from wakefulness material that are arousing or threatening. It has been recognized that bruxism occurs most during the periods of stress (19).

The other associated symptoms were elicited in more than hundred of the patients in our series (67%) appeared to be consistent with findings of Kerszun and his coworkers 1998 as they showed a strong clinical association between TMD and fibromyalgia (FM) and

chronic fatigue syndrome (CFS). Thus TMD can be part of a generalized pain syndrome (1).

Because the etiology and pathogenesis of TMD are not fully understood, causal therapy is not yet feasible. Furthermore no sufficient data available to warrant prophylactic intervention for management of TMDs, nor are there data providing clear evidence that orthodontic treatment prevents, predispose to or causes TMD. As in other TMJ clinics we used a wide range of reversible therapeutic interventions that include; assurance and education of the nature, pathogenesis, elimination of certain behaviors perceived to be harmful such as clenching and grinding of the teeth and providing rest to the masticatory apparatus and dietary modification in addition to the pharmacological pain control through nonsteroidal anti-inflammatory drugs and low-dose antidepressant drugs. Surgical therapy was considered only after reasonable nonsurgical efforts have failed and when patient's quality is being significantly affected. Two main surgical intervention had been carried out in our unit namely arthrocentesis and mensucopexy (mensucoplasty).

Assessment of certain treatment outcome is still dilemma for many clinicians for many reasons; the main evidence of the positive treatment outcome is too often the clinician impression of improvement or the patient's failure to seek further treatment. Moreover there are factors affecting the effectiveness of the treatment that include a positive doctor-patient relationship and fluctuating nature of the orofacial pain which undergo remission and exacerbation independent to the treatment delivered. The increased incidence of concurrent social and psychological problems may also influence the onset of symptoms and treatment outcome. Many patients improved even if the initial treatment failed or received not treatment. This may suggest need for well-controlled randomized clinical trials assessing the different treatment modalities.

ACKNOWLEDGMENT

We would like to express our sincere thanks and gratitude to Dr. *Stephen R. Flint* Consultant in Oral Medicine, Dublin Dental Hospital, (Ireland) for reading the manuscript and for his invaluable advice and help.

Note: (Although a good part of the discussion is not related to the results or findings it is useful because it reviews the situation — Re free)

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