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The Statistical Evaluation of the Relationship Between Pain and Age, Occupation gender and Marital Status in Craniomandibular Disorders

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Abstract: The most important factor in the treatment of craniomandibular disorders is establishing the correct diagnosis. Identifying the specific systems associated with the diagnosis and the experience of the doctor to determine their relevance, is important. The most significant symptom that prompts the patient to look for treatment alternatives, is pain. This study examines a total of 286 patients that have been referred to the Ege University, Faculty of Dentistry, complaining of craniomandibular symptoms and evaluates the statistical relationship between pain and other symptoms. The results showed a significant correlation between occupation and gender and pain in this study group. Pain was seen in a higher percentage of women, in housewives and in teachers.

Key words: Craniomandibular disorders, pain, gender, occupation,

Introduction

The subject of craniomandibular disorders is one of the most important clinical issues of our day. There is a constant increase in the number of patients complaining of disorders of the craniomandibular system. Cross-section epidemiological studies of specific populations show that about 75% have at least one sign of joint dysfunction (movement abnormalities, joint noise, tenderness on palpation, etc.) and about 33% have at least one symptom (face pain, joint pain, etc.) (Attanasio and Mohl, 1992; McNeil and Mohl, 1990; McNeil *et al.*, 1990; Rugh and Solberg, 1985; Schiffman and Fricton, 1988).

The elements of the stomatognathic system form a very complex, functional unit. The disturbance of harmony within this system causes dysfunction, disorders and irregularities. Most of the individuals seeking treatment are those complaining of pain. Myofascial pain, particularly in the head and neck, is often accompanied by additional signs and symptoms associated with coincidental pathologic conditions and frequent behavioural and psycho-social problems (Dawson, 1989; Fricton, 1991; Ramfjord and Ash, 1983).

The patients who have been referred to our clinic with complaints of pain, have been evaluated relative to their age, occupation, gender, marital status and the relationship of these factors with pain.

Materials and Methods

Two hundred and 86 patients complaining of disorders of the craniomandibular system were examined by clinicians, qualified in this field. The first part of this examination consists of a questionnaire developed by the investigators according to the recommendations of both the European and American Academies of Craniomandibular Disorders. The second part includes data related to the clinical evaluation of the patients. In the clinical examination, temporomandibular joint regions and muscles of mastication are palpated bilaterally; analysis of the occlusion is performed on a Dentatus articulator; transcranial joint radiographs are interpreted; and mandibular movements in three planes are recorded.

The symptoms of pain, joint noises, limitation on opening, functional disturbances and irregularities during mandibular excursions have been evaluated and compared statistically. For the statistical analysis the chi square and Fisher's chi square tests were performed.

Results

The distribution of the 286 patients according to occupation is seen in Table 1. Pain is found in a higher percentage of housewives and teachers ($p< 0.05$).

There is also a statistically significant relationship between pain and gender (Table 2). Pain is more frequent in women ($p< 0.05$).

Table 1: Occupation-pain relations

	Pain	No Pain
Housewife	62	11
Teacher	27	4
Student	65	19
Employee	28	16
Private enterprise	7	5
Health personnel	11	1
retired	3	1
Not working	20	3
Others	3	0

Table 2: Gender-pain relations

	Pain	No Pain
Female	185	40
Male	41	20

Table 3: Distribution of patients having symptoms other than pain

Group no	Joint noise	Limitation of mouth opening	Functional pathology in the system	Irregularity of mandibular motions	Number of patients
1	+	+	+	+	55
2	+	+	+	-	26
3	+	+	-	+	10
4	+	+	-	-	11
5	+	-	+	+	41
6	+	-	+	-	24
7	+	-	-	+	31
8	+	-	-	-	37
9	-	+	+	+	10
10	-	+	+	-	8
11	-	+	-	+	2
12	-	+	-	-	6
13	-	-	+	+	7
14	-	-	+	-	6
15	-	-	-	+	4
16	-	-	-	-	8
Total					286

(+) present, (-) not present

The distribution of the patients having symptoms other than pain are given in Table 3.

Discussion

The cardinal symptoms of craniomandibular disorders are pain, joint sounds, limitation on opening, disturbance of mandibular function (e.g. not chewing well) and irregularity in mandibular movements (Dawson, 1989; Eversole *et al.*, 1985; Ramfjord and Ash, 1983). The most common of these complaints are pain and joint sounds (Bell, 1990). Although the percentage of patients with joint sounds in the population are higher than the patients with

pain, the number of patients seeking treatment because of pain is significantly higher. In other words, pain is the main symptom for which patients seek treatment (Bell, 1989).

Of the symptoms other than pain and joint sounds, only functional disturbances of the stomatognathic system seem important to the patient (Agerberg and Carlsson, 1972). Problems with eating hard and chewy foods and the difficulty during opening and closing are the other important signs seen in patients (Agerberg and Carlsson, 1972). These symptoms are seen only with other symptoms in our study. We have not been able to determine why a patient has a functional disorder without any pain.

The other symptom that is common among our patients is the irregularity of mandibular movements. This is characterized as difficulty upon opening, closing and lateral excursions (Dawson, 1989; Mongini, 1984; Ramfjord and Ash, 1983). This symptom, too, can be seen together with other symptoms, especially with pain. We have not encountered a patient that had irregularity in mandibular movement but had no pain.

The other important symptom is the limitation in opening (Agerberg and Carlsson, 1972; Dawson, 1989; Mongini, 1984; Ramfjord and Ash, 1983). As, a number of factors affect this symptom, it is hard to conclude that this complaint stems only from the stomatognathic system. As we show in Table 3, the symptoms usually occur together. Pain is the most frequent symptom that accompanies other symptoms (Solberg, 1983).

Signs and symptoms of TMD generally increase in severity and frequency beginning in the second decade of life (Agerberg and Bergenholz, 1989; Egermark-Eriksson *et al.*, 1987; Salonen and Hellden, 1990). In a recent study, the majority of 3428 patients were between the ages of 15 and 45 years (mean, 32.9 years) (Howard, 1990). It is reported that the deformities of joint elements become more prominent with age, and the symptoms related to these changes are more significant than pain as the person gets older (Agerberg and Carlsson, 1972; Solberg, 1983). In our study there is no correlation between pain and the age of the patient.

There is evidence that some patients with TMD often have a history of other stress related disorders (Gold *et al.*, 1975). The relationship between pain and occupation, has also been examined in this study. In the population sample we evaluated, craniomandibular disorders are mostly seen in housewives and teachers. The level of stress in these patients is high. The "psycho-emotional theory" in the aetiology of craniomandibular disorders is supported by many investigators today (Dawson, 1989; Mongini, 1984; Ramfjord and Ash, 1983).

When individual TMD symptoms are evaluated separately women have been found to experience slightly more headache, TM joint clicking, TM joint tenderness, and muscle tenderness than men (Agerberg and Bergenholz, 1989; Agerberg and Inkapool, 1990; Helkimo, 1974; Pullinger *et al.*, 1988; Salonen and Hellden, 1990; Solberg *et al.*, 1979). There are also recent clinical studies demonstrating a female to male ratio of 3:1 to 9:1 in persons seeking care for TMD (Centore *et al.*, 1989; Howard, 1990; Mc Neill, 1985). Whether the reason for this is biological or psycho social is a controversial subject. Our results also show a significant similar relationship between pain and gender.

There are also studies reporting a relationship between marital status and pain. Pain is seen more often in married people. The problems and responsibilities of marriage apparently increase the stress level in people. This appears to be why the tendency of these groups of people to craniomandibular disorders increases (Eversole *et al.*, 1985; Helöe *et al.*, 1980). In our study we have found no significant relationship between marital status and pain.

In conclusion, pain is the symptom that brings the patient to our clinic and the most frequent symptom that accompanies other symptoms. There is a meaningful relationship between pain and gender in the patient groups we examined ($p < 0.05$)(Table 1) and also a relationship between occupation and pain ($p < 0.05$)(Table 2).

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