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Clinical and sociodemographic characterization of patients with temporomandibular dysfunction of the University Hospital of Maracaibo.

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Abstract: Objective: To describe the clinical and sociodemographic characteristics of patients with temporomandibular joint (TMJ) dysfunction at the University Hospital of Maracaibo. Methods: A retrospective study was conducted by assessing the clinical history of patients with TMJ dysfunction who underwent orthopedic treatment in the Oral Surgery Unit of the Dentistry Service of the University Hospital of Maracaibo. Information was collected on socio-demographic characteristics (age, gender, origin, and occupation) and clinical findings related to the presence, location, area, beginning, frequency, cause, and duration of pain, and signs present during mandibular dynamics; additionally, a structural and functional diagnosis was made. The data were processed and analyzed using SPSS v.9. Results: 221 patients were included, with only 10% of the disorders observed in males. Regarding occupation, 39.1% worked at home and 28.3% were students. 97.2% of patients presented pain, and of these, pain was localized in 75%. During mandibular movement with maximum opening, 47.4% showed some difficulty, which was more significant in males. TMJ noises were noted in 74.9%, more often in females. In addition, the previous partial displacement of a disk with recapture presented an incidence of 66.4%. Conclusion: The prevalence of TMJ dysfunction was higher in female patients and in adulthood. Noises were present with a high frequency, as was limited mandibular movement.

Keywords: Dysfunction, Temporomandibular Articulation, Venezuela.

Receipt: 08/26/2018
Revised: 10/01/2018
Acceptance: 10/25/2018
Online: 11/23/2018

INTRODUCTION

The WHO defines oral health as the absence of chronic facial pain, cancer of the mouth or throat, mouth sores, congenital defects such as cleft lip or palate, periodontal disease, dental caries, tooth loss and other diseases and disorders affecting the mouth and oral cavity. Under these parameters, dentistry professionals play an essential role in restoring physical, mental, and social well-being.

Temporomandibular dysfunction (TMD) is a very common problem. It presents in 70-90% of subjects with at least one clinical sign such as noises, mandibular deviation, and blockage, and in 33% of subjects with symptoms such as pain and functional limitation *(Velez et al., 2015)*. TMD is defined as a set of alterations related to the temporomandibular joint (TMJ) and the anatomical structures that establish a relationship between the base of the skull and the jaw *(Mesa et al., 2015)*. Most commonly, this structural alteration is based on an incorrect position of the articular disc. These disorders have various signs and symptoms such as joint noise,

Conflict of interests: None.

Ethics approval: Universidad del Zulia and University Hospital of Maracaibo.

Funding: None.

Authors' contributions: All authors carried out the entire study

Acknowledgements: None.

doi: 10.32457/ijmss.2018.019.

muscle pain, mandibular blockage, chewing problems, bruxism, and deviations in the mandibular opening, among others *(Mera et al., 2015)*. However, the characteristic symptoms are pain in the muscles of mastication in the TMJ, aggravated by the manipulation and the alteration of mandibular movements, limitations in mandibular function and articular noises such as crepitus and clicking. Other associated signs and symptoms are: headache, otological symptoms, referred pain in sinus areas, and cervicalgia *(Corsini et al., 2005; Fasanella & Machado, 2011; Pérez et al., 2005)*.

TMD is manifested by an alteration in the normal movement of the condyle disc, which produces joint noises, such as clicking if it is isolated and of short duration, or popping if it is intense; additionally, crepitus can occur, with multiple noises like gravel. TMD can also manifest as a feeling of stiffness when the patient opens their mouth *(Ledezma et al., 2016)*. In the state of Zulia (Venezuela), there are not enough reported studies on this type of alteration in different population groups to allow for characterizing this problem.

The aim of this study was to describe the clinical and sociodemographic characteristics of patients with temporomandibular dysfunction at the University Hospital of Maracaibo.

MATERIALS AND METHODS

A cross-sectional study was conducted in the Oral and Maxillofacial Surgery Unit of the Dentistry Service of the University Hospital of Maracaibo (OSU-UHM) Zulia state, Venezuela.

The study assessed 221 clinical histories of patients with TMD who received orthopedic treatment during the period from April 2014 to December 2017; the records are stored in the archives of the OSU-UHM. All of the patients were analyzed, excluding the clinical histories without complete sociodemographic and clinical information.

For data collection, an instrument was constructed in which the sociodemographic characteristics of the patients were recorded, such as age, gender, origin, and occupation of the patient. Patients were categorized into six age groups: early childhood (0 to 5 years), childhood (6 to 11 years), adolescence (12 to 18 years), young adulthood (19 to 26 years), adulthood (27 to 59 years old), and older adulthood (over 60 years old).

In the second part of the instrument, the clinical findings related to the presence and location of the pain, the affected area, the beginning, frequency, cause, and duration of the pain or its presence in another part of the body were recorded.

The data were organized, summarized and described in tables showing the distribution of absolute and relative frequencies of each variable. To characterize the studied sample, data were analyzed using the statistical program SPSS v.9 (IBM, USA).

RESULTS

Table 1 shows the distribution by sex and age. Table 2 shows the distribution by sex and occupation, only recorded in 138 patients.

TABLE 1. Sample distribution by sex and age.

Age	Female n (%)	Male n (%)	Total n (%)
Preeschoolers	1 (0.5)	1 (4.5)	2 (0.9)
Schoolers	1 (0.5)	1 (4.5)	2 (0.9)
Adolescents	22 (11.1)	1 (4.5)	23 (10.4)
Younger	22 (11.1)	3 (13.6)	25 (11.3)
Adults	125 (62.8)	10 (45.5)	135 (61.1)
Elderly	28 (14.1)	6 (27.3)	34 (15.4)
Total	199 (100)	22 (100)	221 (100)

Table 3 shows the characteristics of pain according to gender. Table 4 shows the characteristics of the signs of temporomandibular dysfunction according to gender.

TABLE 2. Sample distribution by sex and occupation (n=138)

Occupation	Female n (%)	Male n (%)	Total n (%)
Student	35 (28.0)	4 (30.8)	39 (28.3)
Home labor	53 (42.4)	1 (7.7)	54 (39.1)
Commerce	6 (4.8)	5 (38.5)	11 (8.0)
Professional	31 (24.8)	3 (23.1)	34 (24.6)
Adults	125 (100)	13 (100)	138 (100)

TABLE 3. Characteristics of pain according to gender.

Characteristics of pain	Female n (%)	Male n (%)	Total n (%)
Presence of pain	6 (3.0)	0 (0.0)	6 (2.8)
Localizated pain	143 (76.5)	13 (61.9)	156 (75.0)
Irradiated pain	44 (23.5)	8 (38.1)	52 (25.0)
Constant pain	59 (33.9)	7 (38.9)	66 (35.4)
Intermitent pain	109 (62.9)	11 (61.1)	120 (64.5)
Wake-up pain	53 (29.8)	5 (27.8)	58 (32.5)
All day long pain	96 (53.9)	6 (33.3)	102 (55)
Night pain	17 (9.6)	6 (33.3)	23 (12.5)
Preauricular pain	62 (32.8)	6 (28.6)	68 (32.5)
Face or cheek pain	43 (22.7)	8 (38.1)	51 (24.2)
Head pain	59 (31.2)	3 (14.3)	62 (29.5)
Ear pain	18 (9.5)	4 (19.0)	22 (10.4)
Neck pain	7 (3.7)	0 (0.0)	7 (3.3)
Pain outside of head and neck area	83 (47.7)	5 (27.8)	88 (45.5)
No pain in mandibular movements	23 (12.7)	1 (5.3)	24 (12.1)
Pain on maximum aperture	87 (48.3)	11 (57.9)	98 (49.2)
Pain on chewing	65 (36.1)	7 (36.8)	72 (36.1)
Pain on talking	5 (2.7)	0 (0.0)	5 (2.5)

TABLE 4. Characteristics of the signs according to gender.

Signs	Female n (%)	Male n (%)	Total n (%)
TMJ noises	140 (76.5)	12 (60)	152 (74.9)
TMJ luxation	72 (40.9)	4 (21.1)	76 (39)
Occlusal contacts change	76 (43.7)	7 (36.8)	83 (43)
Mandibular movements limitations	119 (67.2)	9 (47.4)	128 (65.3)

DISCUSSION

In Latin America, TMD is traditionally presented with high contrasts and inequalities, which is why it is necessary to study this disorder *(Moyaho-Bernal et al., 2010)*. The results of this study show a higher frequency in adult patients, followed by older adults. In addition, 90% of patients were female, which agrees with the findings obtained by *Moyaho-Bernal et al. (2010)*, whose study showed that TMD is most frequent in adulthood, followed by older adulthood, and may be associated with generative processes. The latter is coincident with the approach of *Ebrahimi et al. (2011)*.

Studies conducted by *González et al. (2016)* and *Verdugo et al. (2011)* show that TMD is prevalent worldwide and more frequent in women, which agreed with this investigation. It should be mentioned that the greater presence of TMD in female patients may be associated with behavioral, hormonal, anatomical, and psychosocial causes *(Mazzetto et al., 2014)*. Most female subjects were household worker (42.4%), while the most frequent occupation in males was trader at 38.5%. *Kim et al. (2015)* showed that TMD has no relation to occupation, but verbal work or bad posture work does seem to be related to the symptoms of TMD.

Pain occurred more frequently in females, and located at the level of the prearicular zone in females, or in the face or cheek in males. In most cases, the onset of pain was gradual and occurred during the day. These results are not congruent with *González et al. (2016)*, who found only 7% of cases with facial and mandibular pain. This may be due to variations in the mechanisms and perception of pain between sexes. Men show greater tolerance to painful stimuli, explained by the traditional social pressures of strength and virility, which is why they are considered less frequently for dental or medical care *(Meneses et al., 2016)*.

Studies report a higher frequency of joint noises in women than in men *(Corona et al., 2015)*, which coincides with the results of the present study. However, the limitation of mandibular movements in patients with TMD was greater during functional acts.

In this study, 43% of patients with a history of TMD presented changes in occlusal contacts. Although alterations in occlusion are not a cause of TMD in all patients, occlusal conditions should be considered from the static and dynamic points of view *(Cabo et al., 2016)*.

CONCLUSION

The prevalence of TMJ dysfunction was higher in female patients and in adult subjects. Noises were presented with a high frequency, followed by mandibular movement with limitation.

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