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ORIGINAL ARTICLE

Prevalence of Temporomandibular Joint Disorders In Patients From 20 To 50 Years Of Age

Prevalencia De Los Trastornos De La Articulación Temporomandibular En Pacientes De 20 A 50 Años

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ABSTRACT

Introduction: the temporomandibular joint is seen as a very complex component, it is an anatomical structure composed mainly of bone, muscle and ligamentous tissue that performs important movements such as opening, closing, protrusion, retrusion and lateralization from right to left or vice versa of the mandible.
Objective: to determine the prevalence of temporomandibular joint disorders in patients aged 20 to 50 years.
Methods: observational, descriptive, cross-sectional research, carried out during the year 2022 in the DENTIC by ODMESjc dental clinic, a period in which 542 clients were presented as a convenience sample and fulfilling the inclusion and exclusion criteria determined for such purposes, who were informed about the use of the data for the realization of a research project.
Results: 17,30 % of the patients presented myofacial pain, another 17,30 % presented myofacial pain with mandibular opening, and 65,41 % did not present this disorder. 14,05 % presented arthralgia, 13,51 % arthritis, 14,59 % arthrosis, and 57,84 % did not present articular conditions of the left TMJ. 14,59 % of the patients had left TMJ disc displacement with reduction, 10,81 % had disc displacement without reduction with limitation of opening, 17,30 % had disc displacement without reduction, without limitation of opening, and 57,3 % had disc displacement without reduction, and 57,3 % had disc displacement without limitation of opening.
Conclusions: there is no statistical association of the factors of temporomandibular joint disorder with respect to the sex of the patient, although there is a higher prevalence of disorders in women.

Keywords: Temporomandibular Joint Disorders; Temporomandibular Joint; Intervertebral Disc Displacement.

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RESUMEN

Introducción: la articulación temporomandibular es vista como una componente muy compleja, es una estructura anatómica compuesta principalmente por tejido óseo, muscular y ligamentoso que cumple importantes movimientos como la apertura, cierre, protrusión, retrusión y lateralización de derecha a izquierda o viceversa de la mandíbula.
Objetivo: determinar la prevalencia de trastornos de la articulación temporomandibular en pacientes de 20 a 50 años.
Métodos: investigación observacional, descriptiva, transversal, realizada durante el año 2022 en la clínica dental *DENTIC by ODMESjc,* período en el cual se presentaron 542 clientes tomados como muestra a conveniencia y cumpliendo con los criterios de inclusión y exclusión determinados para tales fines, a quienes se les informó sobre el uso de los datos para la realización de un proyecto de investigación.
Resultados: el 17,30 % de los pacientes presentaron dolor miofacial, otro 17,30 % presentó dolor miofacial con apertura mandibular, y el 65,41 % no presentó este trastorno. El 14,05 % presenta artralgia, el 13,51 % artritis, el 14,59 % artrosis, y el 57,84 % no presenta condiciones articulares del ATM izquierdo. El 14,59 % de los pacientes presentó desplazamiento del disco ATM izquierda con reducción, el 10,81 % un desplazamiento del disco sin reducción con limitación de la apertura, el 17,30 % un desplazamiento del disco sin reducción, sin limitación de la apertura, y el 57,3 %.
Conclusiones: no existe una asociación estadística de los factores del trastorno de articulación temporomandibular respecto al sexo del paciente, aunque se presenta una mayor prevalencia de los trastornos en mujeres.

Palabras clave: Trastorno Temporomandibular; Articulación Temporomandibular; Desplazamiento de Disco.

INTRODUCTION

The temporomandibular joint (TMJ) is seen as a very complex component, it is an anatomical structure composed mainly of bone, muscle and ligamentous tissue that perform important movements such as opening, closing, protrusion, retrusion and lateralization from right to left or vice versa. jaw. If there is an alteration and it does not function normally, an alteration occurs that is known as temporomandibular joint disorder (TMD), which can be disorders of the joint, muscle or headaches associated with a temporomandibular disorder.

This is a problem that has increased significantly over time, a disorder that does not differentiate between age. Identified as a leading cause of non-dental and maxillofacial pain, TMD has a wide variety of symptoms that interfere with activities of daily living, such as chewing food, affecting the ability to concentrate and sleep, and even affecting work.[1] Its clinical symptoms are characterized by chewing and joint pain, limited jaw movement, joint murmurs and headaches, normal reasons for requesting a dental consultation.[2]

TMD affects more than 50 % of the world's population and has become an important topic to investigate, starting with the causes, signs and symptoms, since understanding the disease is essential for the dentist to make a diagnosis. Here lies the importance of its study, since TMJ symptoms must be carefully examined to distinguish whether they are within normal parameters or if there is diffusion of TMJ. In this way, by achieving a correct and timely diagnosis, the symptoms of TMJ disorders can be relieved.[3]

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METHODS

Cross-sectional research, to be developed in a specific period of time. Descriptive, since it was necessary to collect data to then organize it and subsequently interpret it in order to know the problematic reality. Applied, because it sought to analyze a problem based on previous knowledge, while enriching the findings of previous research. Exploratory, because it answers the problem that arises, and will serve as a resource for future research.

The present investigation was based on the DENTIC by ODMESjc dental clinic during the period 2022, a period in which 542 clients were presented and were informed about the use of data to carry out a research project.

Of the total clients consulted, 185 signed their consent in addition to presenting the inclusion criteria that will be described below, and having the data of these patients, they were used as a sample for analysis purposes.

Inclusion criteria

- Patients over 20 years of age and under 50 years of age.
- Patients who consented to the use of their data
- Patients treated at the DENTIC by ODMESjc dental clinic in 2022

Exclusion criteria

- Patients receiving treatment for TMD
- Patients who have a multiple fixed prosthesis

Data collection

During the period 2022 at the DENTIC by ODMESjc dental clinic, the data was obtained with prior authorization from the patients that could be used to carry out an investigation. The data were collected in the format presented in ANNEX A. Subsequently, the data were uploaded to an Excel database parameterized so that it is possible to work in the SPSS program as follows:

Age
20-29 years: 1
30-39 years: 2
40-50 years: 3

Sex
Male: 1
Female: 2

muscle disorder
Myofascial pain: 1
Myofascial pain with limitation of mandibular opening: 2
Without muscle disorder: 3

Right TMJ disc displacement
Disc offset with reduction: 1
Disk displacement without reduction with opening limitation: 2
Displacement of the disc without reduction without limitation of the opening:3
Without disc displacement right TMJ: 4

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Left TMJ disc displacement
Disc offset with reduction: 1
Disk displacement without reduction with opening limitation: 2
Displacement of the disc without reduction without limitation of the opening:3
Without disc displacement left TMJ: 4

Right TMJ joint conditions
Arthralgia: 1
Arthritis: 2
Osteoarthritis: 3
Without right TMJ joint conditions: 4

Left TMJ joint conditions
Arthralgia: 1
Arthritis: 2
Osteoarthritis: 3
Without joint conditions left TMJ: 4

The data were transcribed into an Excel document, which was immediately transferred to SPSS where the data tables in Annex A were obtained along with descriptive graphs according to the needs of the table.

RESULTS

In the research it can be seen that 31,89 % are in the range of 20 to 29 years, 37,3 % are between 30 and 30 years old, and 30,81 % are between 40 and 50 years old.

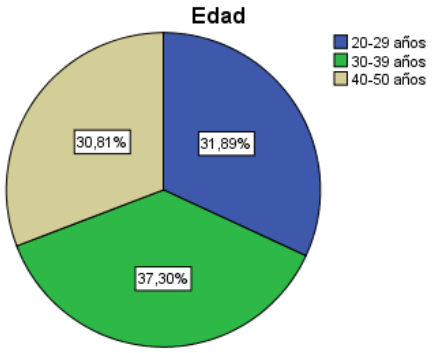

Fig. 1 Age.

It can be seen that the female sex presents TMD in a higher amount than men (51 % to 49 %), where the displacement of the right TMJ disc, the displacement of the left TMJ disc and the right TMJ joint conditions (54 %, 53 % and 51 % respectively) prevails in women, while muscle disorder, and left TMJ joint conditions (52 % and 51 % respectively) prevails in men. Additionally, in general, 55 % of the patients studied have TMD.

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Table 1. Distribution by sex.

Distribución	Sex				Total	
	Male		Female			
	No.	%	No.	%	No.	%
Muscle disorder	33	52	31	48	64	35
Right TMJ disc displacement	36	46	43	54	79	43
Left TMJ disc displacement	37	47	42	53	79	43
Right TMJ joint conditions	39	49	40	51	79	43
Left TMJ joint conditions	40	51	38	49	78	42
Presents TTM	50	49	52	51	102	55

Fountain: Johanna Fiallos, 2023

17,30 % of the patients presented myofacial pain, another 17,30 % presented myofacial pain with jaw opening, and 65,41 % did not present this disorder.

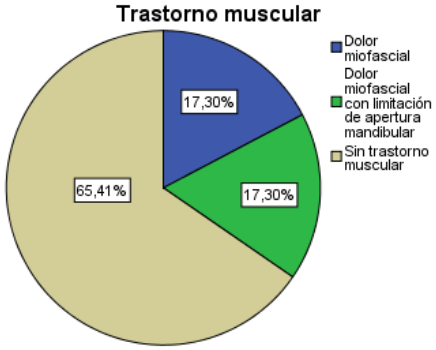

Fig. 2 Muscle disorder.

16,76 % of patients who accepted the use of the data presented right TMJ disc displacement with reduction, 13,51 % a disc displacement without reduction with opening limitation, 12,43 % a disc displacement without reduction without limitation of the opening, and 57,3 % did not present displacement of the right TMJ disc.

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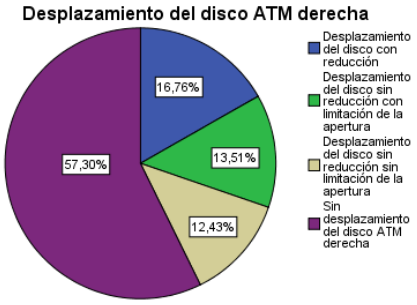

Fig. 3 Right TMJ disc displacement.

14,59 % of patients who accepted the use of the data presented left TMJ disc displacement with reduction, 10,81 % a disc displacement without reduction with opening limitation, 17,30 % a disc displacement without reduction without limitation of the opening, and 57,3 % did not present displacement of the left TMJ disc.

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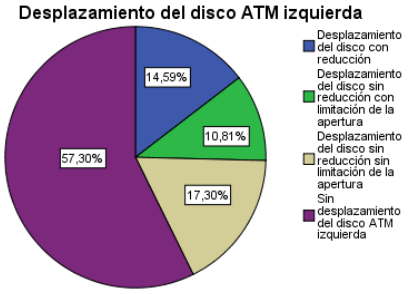

Fig. 4 Left TMJ disc displacement.

According to the data obtained from the evaluation of the patients, 17,3 % present arthralgia, 10,81 % arthritis, 14,59 % osteoarthritis, and 57,3 % do not present joint conditions of the right TMJ.

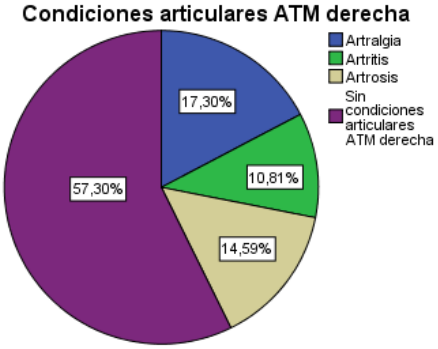

Fig. 5 Right TMJ joint conditions.

According to the data obtained from the evaluation of the patients, 17,3 % present arthralgia, 10,81 % arthritis, 14,59 % osteoarthritis, and 57,3 % do not present joint conditions of the right TMJ.

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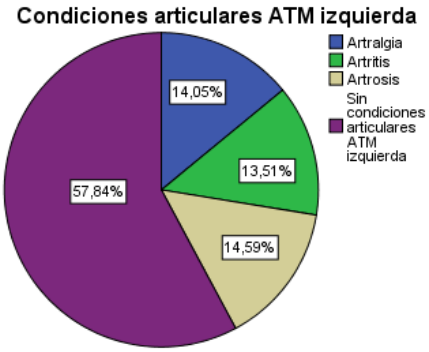

Fig. 6 Left TMJ joint conditions.

It was observed that 17 men had myofacial pain and 16 had myofacial pain with jaw opening, while 15 women had myofacial pain and 16 had myofacial pain with jaw opening. According to the chi square statistic, the p value is greater than 0,05 (0,868), therefore no significant differences in the disorder were found between genders.

Regarding displacement of the right TMJ disc, 16 men had this displacement with reduction, 10 without reduction with limitation of opening, and 10 with reduction with limitation of opening. In the case of the female sex, 15 present this displacement with reduction, 15 without reduction with limitation of the opening, and 13 with reduction with limitation of the opening. According to the chi square analysis, a relationship with p greater than 0,05 (0,676) is presented, which indicates that there were no significant differences between right TMJ disc displacements by gender.

Regarding left TMJ disc displacement, nine men had this displacement with reduction, eight without reduction with opening limitation, and 20 with reduction with opening limitation. In the case of the female sex, 18 presented this displacement with reduction, 12 without reduction with limitation of the opening, and 12 with reduction with limitation of the opening. According to the chi square analysis, a relationship with p greater than 0,05 (0,122) was observed, which indicates that there are no significant differences between left TMJ disc displacements by gender.

The data showed that 16 men and 16 women had arthralgia in their right TMJ, 10 men and 10 women had arthritis, and 13 men and 14 women had osteoarthritis. According to the chi square analysis, there is a higher value of p=0,05 (0,999), therefore there are no significant differences between the sex groups regarding the right TMJ joint conditions.

DISCUSSION

There have been multiple investigations developed around TTM, as well as the methodologies used, each of which produces somewhat different results due to the lack of standardization of criteria when evaluating the ailment.

According to the research, it can be observed that there is a greater prevalence of TMD in the age range of 30 to 39 years, which agrees with the work of Yap A et al.,[4] in which it is mentioned that TMD are They occur in smaller quantities in childhood, increase in adulthood

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and decrease again in old age, the adulthood stage being between 30 and 45 years according to the researcher.

The gender distribution of TMD coincides with what was mentioned in the works of Aravena AR,[5] Pereira L et al.,[6] Okeson J,[7] where a prevalence of them is evident in the female gender. However, it should be noted that the difference is low and statistically non-significant, which could be due to the fact that the sample is made up of patients who gave their consent exclusively, which may influence its homogeneity.

Even with this detail, the results follow what is stated in the literature, in which even to date there is no agreement on the causes for this apparent prevalence of TMD in women over men, due to authors such as Philips J et al.,[8] state that women are more prone to these ailments due to a mixture of social, psychological and biological elements, while Karibe H et al.,[9] mention that this difference is due to psychosocial and neuropsychological factors, possibly due to an apparent greater vulnerability to stress and a lower pain threshold.

It was additionally found that 55 % of the patients evaluated present TMD, with one or several associated factors, which agrees with what was expressed by Grau I et al,[10] Tirado L.,[3] who state that TMD affects more of 50 % of the population in the world, and in fact it is the greatest reason for visiting the dental professional, highlighting his work.

Regarding muscle disorder, it was found that 34,6 % suffer from this type of ailment, which is within the criteria range of Manfredini D et al.,[11] which places it between 31 % and 76 % according to ethnographic criteria. Regarding disc displacement, it was found that patients suffered from it in some form, both on the left and right sides, in a value of, 42,7 % somewhat less than what was reported by Rojas C.,[12] who mentioned 55,3 % for this factor, and somewhat further Manfredini D et al.,[11] with 57,3 %.

CONCLUSIONS

Through the application of the CDI/ TTM index it was possible to diagnose symptoms associated with TMD in patients at the DENTIC by ODMESjc dental clinic. According to this index, it was found that TMD occurs mostly in females over males (51 % to 49 %), and although their difference is not statistically significant, it coincides with what has been reviewed in the literature. More than 50 % of the patients evaluated presented TMD with some sign mentioned in the CDI/TTM index.

Conflict of interest statement
The authors declare that there are no conflicts of interest.

Author contributions
All authors participated in conceptualization, data curation, formal analysis, research, methodology, supervision, writing-original draft, writing-review and editing.

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