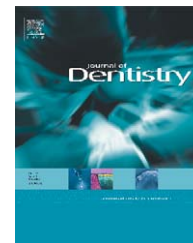


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Age peaks of different RDC/TMD diagnoses in a patient population

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ABSTRACT

Aims: To evaluate the prevalence of different Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) diagnoses in a population of patients seeking for TMD treatment at a tertiary clinic in Northern Italy; to evaluate the pattern of age distribution of RDC/TMD diagnoses and to compare data with those from similar studies in the literature.

Materials and methods: Two-hundred-forty-three ($N = 243$) consecutive patients seeking TMD treatment at the TMD Clinic, Department of Maxillofacial Surgery, University of Padova, Italy, during the period from July 1st to December 31st, 2008, underwent a RDC/TMD axis I assessment by the use of a systematically translated Italian version of the RDC/TMD guidelines.

Results: One-hundred-ninety-nine ($N = 199$) patients (female:male ratio 5:1, mean age 39.7 ± 17.1 years, range 18–80) satisfied the RDC/TMD consortium inclusion criteria. Group I disorders (muscle disorders) were diagnosed in 49.7% of patients, group II disorders (disc displacements) in 57.3%, and group III disorders (arthralgia, osteoarthritis, and osteoarthritis) in 81.4%. The majority of patients (64.3%) received RDC/TMD diagnoses of more than one group. On the basis of the age distribution of RDC/TMD diagnoses, two main distinct groups of TMD patients could be identified: a first group of patients showing disc displacement in the absence of degenerative disorders (any group II diagnoses alone or combined with group I diagnoses of muscle disorders and/or group IIIa diagnosis of arthralgia), and a second group of patients with signs and symptoms of inflammatory-degenerative joint disorders (group IIIb diagnosis of osteoarthritis and/or group IIIc diagnosis of osteoarthritis). The former comprised 107 patients (20 males, 18.7%; 87 females, 81.3%) with a mean age of 32.7 ± 14.5 years, while the latter comprised 46 patients (4 males, 8.7%; 42 females, 91.3%) with a mean age of 54.2 ± 15.1 years, thus accounting for about 80% of the study population and being characterized by a significantly different age peak.

Conclusions: Along with descriptive relative frequencies of the RDC/TMD diagnoses, which have been compared with other similar studies in the literature, the main findings of the present investigation were that at least two distinct age peaks are identifiable within this population of patients seeking for TMD treatment. These data might be useful to gather data on the specific epidemiologic features of each single RDC/TMD diagnoses. These findings have to be confirmed by means of multicenter studies involving many calibrated investigators.

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1. Introduction

Temporomandibular Disorders (TMD) represent a heterogeneous group of pathologies affecting the temporomandibular joint, the masticator muscles, or both,¹ characterized by a classically described triad of clinical signs: muscle and/or temporomandibular joint (TMJ) pain; TMJ sounds; and restriction, deviation, or deflection of the mouth opening path.²

TMD are considered the most common orofacial pain condition of non-dental origin, even though the reported prevalence differs between investigations.³ The actual prevalence of TMD at population level is the matter of debate, due to the lack of homogeneity in the diagnostic criteria adopted by the various research groups, even if there is evidence that the prevalence of TMD signs and symptoms may be also high in non-patients populations.⁴ In particular, early reviews suggested that the prevalence of TMD in the general population ranges from 1% to 75% for objective signs and from 5% to 33% for subjective symptoms.⁵ It is also a common belief that the age distribution of TMD patients is characterized by a Gaussian curve, with a peak of prevalence between the 35 and 45 years and a decrease in younger and older people.⁶

Notwithstanding this, in the light of recent suggestions that the proportion of subjects with TMD signs and symptoms who actually need for treatment is actually lower than believed in the past,⁷ it seems that data gathered on populations of patients may be much useful to get a deeper insight to the epidemiology of TMD. Such consideration is mostly valid if one considers that very few researches have been conducted on patients populations by the use of the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD), the standard of reference among classification systems in the research setting, which was originally developed to help multicenter and cross-cultural data gathering and comparison.⁸

Some limits related with the use of RDC/TMD have emerged over the years,⁹ to the point that a new version seems to be necessary,¹⁰ but such instrument still represents the most suitable tool for the epidemiological investigation on TMD and it has been used in the present investigation to record data of a population of consecutive TMD patients.

The aim of the study was multiple: to evaluate the prevalence of different RDC/TMD diagnoses in a population of patients seeking for TMD treatment at a tertiary clinic in Northern Italy; to evaluate the pattern of age distribution of RDC/TMD diagnoses and to compare data with those from similar studies in the literature.

2. Materials and methods

Data of the present study were collected from 243 consecutive patients seeking TMD treatment at the TMD Clinic, Department of Maxillofacial Surgery, University of Padova, during the period from July 1st to December 31st, 2008.

Criteria for exclusion were age under 18 (due to the characteristics of the RDC/TMD, the reliability of which has been tested on adult populations) and presence of polyar-

thritis and other rheumatic disease. Anamnestic data gathering and clinical examination were conducted according to the RDC/TMD guidelines,⁸ by the adoption of the standard, internationally accepted Italian version of the RDC/TMD instrument available since 2002 on the RDC/TMD consortium website.¹¹ This study reports prevalence data of RDC/TMD axis I diagnoses, without considering the assessment of the psychological status of TMD patients as provided by the RDC/TMD axis II, the findings of which will be discussed in detail elsewhere.

Clinical assessment was made by two trained investigators (D.M. and L.G.N). They did not receive RDC/TMD calibration training by a gold-standard examiner, but they are both examiners with years of experience in the field of TMD management and took part also in previous investigations adopting the RDC/TMD. Patients were given one or more of the following group diagnoses: muscle disorders (group I), disc displacement (group II), and arthralgia, osteoarthritis and osteoarthrosis (group III), the diagnostic criteria of which were reported below.

2.1. Group I: muscle disorders

Ia. Myofascial pain:

- report of pain or ache in the jaw, temples, face, preauricular area, or inside the ear at rest or during function;
- pain reported by the subject in response to palpation of 3 or more of the following muscle sites (right side and left side count as a separate sites for each muscle): posterior temporalis, middle temporalis, anterior temporalis, origin of masseter, insertion of masseter, posterior mandibular region, submandibular region, lateral pterygoid area, and tendon of the temporalis;
- at least one of painful sites must be on the same side as the complaint of pain.

Ib. Myofascial pain with limited opening:

- myofascial pain as defined in Ia;
- pain-free unassisted mandibular opening of less than 40 mm;
- maximum assisted opening (passive stretch) of 5 or more mm greater than pain-free unassisted opening.

2.2. Group II: disc displacements

IIa. Disc displacement with reduction:

- reciprocal clicking in TMJ (click on both vertical opening and closing that occurs at point at least 5 mm greater interincisal distance on opening than closing and is eliminated on protrusive opening), reproducible on 2 of 3 consecutive trials; or
- clicking in TMJ on both vertical range of motion (either opening or closing), reproducible on 2 of 3 consecutive trials, and click during lateral excursion or protrusion, reproducible on 2 of 3 consecutive trials.

IIb. Disc displacement without reduction with limited opening:

- history of significant limitation in opening;
- maximum unassisted opening ≤ 35 mm;
- passive stretch increases opening by 4 mm or less over maximum unassisted opening;

- contralateral excursion <7 mm and/or uncorrected deviation to ipsilateral side on opening;
- absence of joint sound or presence of joint sounds not meeting criteria for disc displacement with reduction.
 - IIc. Disc displacement without reduction, without limited opening:
- history of significant limitation of mandibular opening;
- maximum unassisted opening >35 mm;
- passive stretch increases opening by 5 mm or more over maximum unassisted opening;
- contralateral excursion \geq 7 mm;
- presence of joint sounds not meeting criteria for disc displacement with reduction;
- in those studies allowing images, imaging conducted by either arthrography or magnetic resonance reveals displacement of disc without reduction.

2.3. Group III: arthralgia, osteoarthritis, osteoarthritis

IIIa. Arthralgia:

- pain in one or both joint sites (lateral pole and/or posterior attachment) during palpation;
- one or more of the following self-reports of pain: pain in the region of the joint, pain in the joint during maximum unassisted opening, pain in the joint during assisted opening, and pain in the joint during lateral excursion;
- for a diagnoses of simple arthralgia, coarse crepitus must be absent.

IIIb. Osteoarthritis of the TMJ:

- arthralgia as defined in IIIa;
- either coarse crepitus in the joint or radiological signs of arthrosis.

IIIc. Osteoarthritis of the TMJ:

- absence of all signs of arthralgia;
- either coarse crepitus in the joint or radiological signs of arthrosis.

The RDC/TMD classification system allows multiple diagnoses. Different diagnoses within each group are mutually exclusive, but it is possible to have a minimum of 0, viz., absence of any positive group I, II and III diagnoses, to a maximum of 5 diagnoses, viz., a group I diagnosis of muscle disorders plus a group II and a group III diagnoses for each joint.

The prevalence of the different RDC/TMD axis I diagnoses and all the descriptive statistics were calculated with the software SPSS 15.0 for Windows (SPSS, Chicago, IL, USA).

3. Results

3.1. RDC/TMD axis I diagnoses

One-hundred-ninety-nine ($N = 199$) patients satisfied inclusion criteria; 33 of them were men (16.6%) and 166 (83.4%) were women (F:M = 5:1). Mean age of the patients was 39.7 ± 17.1 years (range 18–80).

Group I disorders (muscle disorders) were diagnosed in 99/199 patients (49.7%), group II disorders (disc displacements) in 114/199 (57.3%), and group III disorders (arthralgia, osteoarthritis, and osteoarthritis) in 162/199 (81.4%).

Table 1 shows specific RDC/TMD diagnoses.

Muscle disorders alone were diagnosed in 9 patients (4.5%), disc displacement disorders alone in 24 patients (12.1%) and a group III diagnosis alone in 38 patients (19.1%), thus indicating that the majority of patients (64.3%) received RDC/TMD diagnoses of more than one group (Table 2).

3.2. Age distribution of diagnoses

In order to ascertain the age-related pattern of diagnoses distribution, the sample was divided in 4 groups on the basis of percentile-derived intervals within the variable "age" (25th percentile was 25 years, 50th was 38 years and 75th was 52 years).

Group A consisted of patients aged under 25 and comprised 47 patients, of whom 11 (23.4%) were males and 35 (76.6%) females. The most common diagnoses were those of RDC/TMD group II (disc displacement) 83.0%, and III 63.8%, while 38.3% of patients were given a RDC/TMD group I diagnoses (Fig. 1).

Group B comprised 51 patients with an age between 25 and 37 years. As regards sex distribution, there were 9 (17.6%) males and 42 (82.4%) females. RDC/TMD group I diagnoses were made in 51.0% of patients, group II in 64.7% and group III was made in 74.5% of patients.

Group C was made of 45 patients aged between 38 and 51 years; 4 of them were males (8.9%) and 41 (91.1%) females. RDC/TMD criteria for group I diagnoses were satisfied in 53.3% of patients, group II in 44.4% and group III was made in 93.3% of patients.

Group D consists of patients aged more or equal than 52 years and comprised 56 patients, 9 of whom (16.1%) were males and 47 (83.9%) females. RDC/TMD group I diagnoses were made in 46.5% of patients, group II in 39.4% and group III in 92.9% patients.

The relative frequencies of each single and combined diagnoses for the age groups were reported in Table 3.

3.3. Mean age comparison of different RDC/TMD diagnoses

The age distribution of the overall sample is illustrated in Fig. 2.

On the basis of the age distribution of RDC/TMD diagnoses, two main distinct groups of TMD patients could be identified. A first group was represented by patients showing disc displacement in the absence of degenerative disorders (any group II diagnoses alone or combined with group I diagnoses of muscle disorders and/or group IIIa diagnosis of arthralgia), and a second group was represented by people with signs and symptoms of inflammatory-degenerative joint disorders (group IIIb diagnosis of osteoarthritis and/or group IIIc diagnosis of osteoarthritis).

The former comprised 107 patients (20 males, 18.7%; 87 females, 81.3%) with a mean age of 32.7 ± 14.5 years, the age distribution of whom is represented in Fig. 3. The latter comprised 46 patients (4 males, 8.7%; 42 females, 91.3%) with a mean age of 54.2 ± 15.1 years, the age distribution of whom is represented in Fig. 4. A comparison of the mean age of the two

Table 1 – Prevalence of the different RDC/TMD axis I diagnoses in the study population (R—right joint; L—left joint).

RDC/TMD diagnoses	Ib		IIa		IIb		IIc		IIIa		IIIb		IIIc	
	R	L	R	L	R	L	R	L	R	L	R	L	R	L
84 (42.2%) 49.7%	15 (7.5%)	55 (27.6%) 57.3%	57 (28.6%)	57 (28.6%)	9 (4.5%)	16 (8.0%)	3 (1.5%)	8 (4.0%)	78 (39.2%) 81.4%	65 (32.7%)	28 (14.1%)	36 (18.1%)	9 (4.5%)	10 (5.0%)

Table 2 – Distribution of single and combined RDC/TMD axis I diagnoses in the study population.

RDC/TMD group	Patients (N)	Prevalence (%)
I	9	4.5
II	24	12.1
III	38	19.1
I + II	4	2.0
I + III	38	19.1
II + III	43	21.6
I + II + III	43	21.6

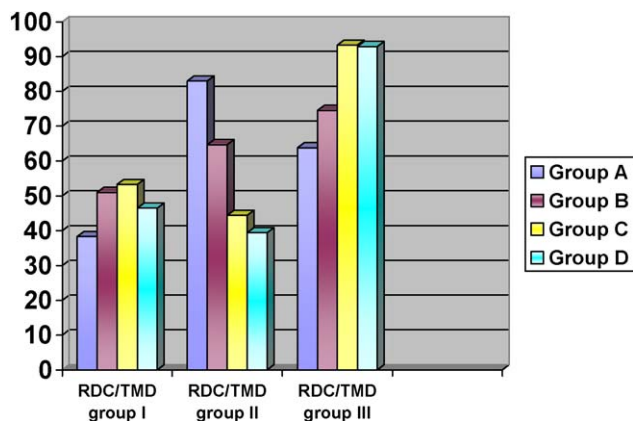


Fig. 1 – Age distribution of RDC/TMD diagnoses (Legend: group A < 25 years; group B (25 ≤ age < 38); group C (38 ≤ age < 52); group D ≥ 52.).

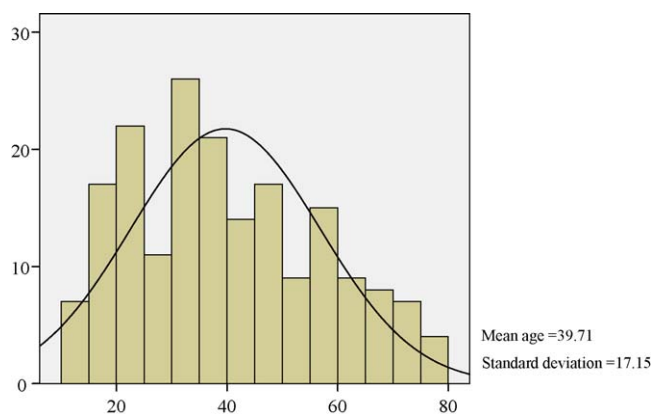


Fig. 2 – Age distribution of patients in the overall sample (N = 199) (description of variables: X-axis—age; Y-axis—no. of patients).

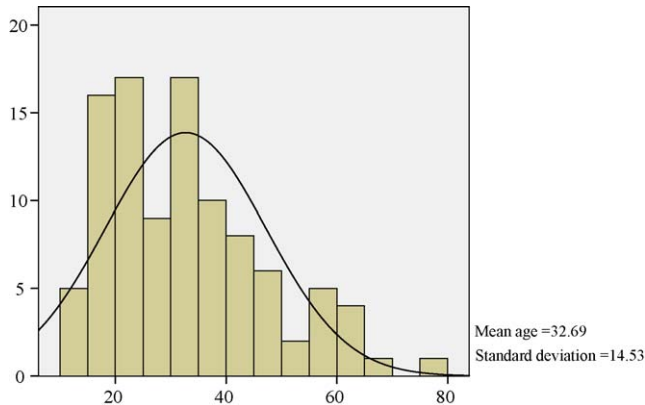
clusters of patients with respect to the overall sample is illustrated in Fig. 5.

4. Discussion

A limitation of current knowledge on TMD is that most data came from studies performed at general population level, while a deeper description of populations of patients attending TMD Clinics all over the world, which collect the most

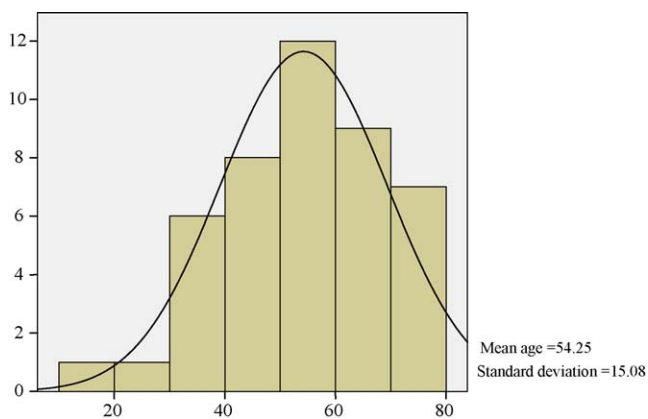
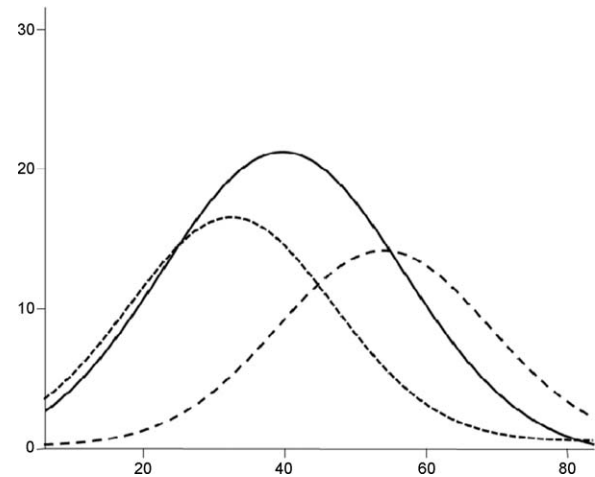
Table 3 – Patterns of age-related distribution of single and combined RDC/TMD diagnoses.

Age groups	RDC/TMD diagnoses						
	I	II	III	I + II	I + III	II + III	I + II + III
Group A (age < 25)	3 (6.4%)	13 (27.7%)	4 (8.5%)	1 (2.1%)	1 (2.1%)	12 (25.5%)	13 (27.7%)
Group B (25 ≤ age < 38)	3 (5.9%)	8 (15.7%)	5 (9.8%)	2 (3.9%)	10 (19.6%)	12 (23.5%)	11 (21.6%)
Group C (38 ≤ age < 52)	2 (4.4%)	1 (2.2%)	11 (24.4%)	0 (0%)	12 (26.7%)	9 (20.0%)	10 (22.2%)
Group D (age ≥ 52)	1 (1.8%)	2 (3.6%)	18 (32.1%)	1 (1.8%)	15 (26.8%)	10 (17.9%)	9 (16.1%)

**Fig. 3 – Age distribution of in patients with RDC/TMD diagnosis of disc displacement with or without arthralgia (N = 107) (description of variables: X-axis—age; Y-axis—no. of patients).**

severe and treatment-demanding cases should be much useful to provide a mirror of the real clinical impact of such conditions.¹² Populations of patients at tertiary clinics have been described in several studies, but generalization of data is limited by the frequent use of non-standardized diagnostic and classifying procedures. Thus, data gathering with the use of RDC/TMD is fundamental to compare findings from different studies and to draw suggestions for the implementation of RDC/TMD usefulness in the clinical setting.

In the present investigation, demographic features of the study population attending a tertiary clinic in Northern Italy (mean age approx. 40 years; female:male ratio of about 5:1)

**Fig. 4 – Age distribution in patients with RDC/TMD diagnosis of arthritis and/or arthrosis (N = 46) (description of variables: X-axis—age; Y-axis—no. of patients).****Fig. 5 – Comparison of the mean age of the two main clusters of TMD patients with respect to the overall sample (Legend: continued line—overall sample, 39.71 years; dotted line—disc displacement with or without arthralgia, 32.69 years; interrupted line—arthritis and/or arthrosis, 54.52 years; X-axis—age; Y-axis—no. of patients).**

were consistent with those of similar studies in the literature, which reported a sex ratio ranging from 2.6:1 to 7.3:1 and a mean age of about 40 years.¹²

As for RDC/TMD axis I diagnoses, the prevalence of group I disorders (muscle disorders), alone or combined with other diagnoses, was 49.7%, which is within the wide range of prevalence described in the literature and varying between 31%, as reported in Asian patients,¹³ and 76%, as reported in the first cross-cultural study, conducted more than a decade ago on populations of Swedish and Americans.¹⁴ Also, 7.5% of patients received a group Ib diagnosis of myofascial pain with limited opening, which is higher than the 2% prevalence described in another study on Italians¹⁵ but much lower than the 30% reported in other investigations.^{14,16}

Group II diagnosis of disc displacement, alone or combined with other diagnoses, was made in 57.3% of patients. Disc displacement with reduction was the most prevalent diagnosis of this group, affecting 27.6% and 28.6% of the left and right joints respectively. Also, these data are consistent with literature findings that reported a prevalence ranging between 10% and 34% for each joint. In particular, a study on Italians¹⁵ as well as reported data on Swedish¹⁴ and Israeli patients¹⁷ found a prevalence of disc displacement with reduction of about 30% for each joint, in line with this study's findings, while available data on Americans¹⁴ and Asians¹³ have described a lower prevalence. Disc displacement without

reduction, with or without limited opening, was diagnosed in 1.5–8% of joints, and confirmed to be the least prevalent group II diagnosis in patients populations, as suggested by the literature.

Group III diagnoses were made in 81.4% of patients. In particular, a diagnosis of arthralgia was made in about one-third of joints, while diagnostic criteria for osteoarthritis/arthrosis were satisfied by about 20% of joints. Such a high prevalence for group III diagnoses was much higher than that reported in the literature, which is about 50% in almost all studies, with some exceptions in the investigations in Israeli¹⁷ and Asian patients,¹³ which described lower prevalence data.

As for multiple diagnoses, they account for 64.7% of the study population. It is a common suggestion that a high percentage of patients presents more than one RDC/TMD diagnosis, as a confirmation of the complexity of clinical symptomatology in TMD patients but, unfortunately, their prevalence was not reported in all studies and little attention was given to the relative frequency of single and multiple diagnoses so far. In the patients populations for which data on this issue were recorded, the prevalence of multiple diagnoses was about 50%.¹⁵

Taken together, data on the prevalence of RDC/TMD axis I diagnoses in this study population present some interesting similarities and some peculiar differences with respect to findings of other similar studies in the literature. In particular, the distribution of diagnoses pointed out the very high percentage of patients with inflammatory-degenerative joint disorders, alone or combined with other diagnoses, and the very low percentage of patients with muscle disorders alone (4.5%). Such findings may be partly explainable with the characteristics of the tertiary center where data have been collected, which is a specialized TMD Clinic within a maxillofacial surgery unit. This might explain the peculiar pattern of diagnoses and the much higher prevalence of joint disorders with respect to other studies in the literature, which were likely based on data gathered at TMD tertiary centers within dental clinics, as in the case of the other studies on Italians.^{15,18} Notwithstanding this, the low prevalence of muscle disorders alone, which is not counterparted by the presence of inflammatory-degenerative joint disorders alone (about 20%), is hard to explain with some peculiarities of the study sample. The low frequency of a diagnosis of myofascial pain in the absence of concurrent joint disorders is partly confirmed by two studies for which the presence of single and multiple diagnoses were described,^{15,19} even though they reported an higher prevalence of group I diagnosis alone with respect to the present investigation. In general, it may be suggested that a “pure” diagnosis of myofascial pain, viz., with no other RDC/TMD diagnoses, is a non-frequent condition, and we agree with recent suggestions that the actual prevalence of clinically relevant muscle disorders might be even lower with the adoption of more strict diagnostic criteria.⁹ For instance, the prevalence of myofascial pain, alone or combined with other diagnoses, should decrease to less than 20% if a higher number of muscle painful sites with palpation (5 out of 20 RDC/TMD sites) was requested to put diagnosis.²⁰ Thus, it is a plausible hypothesis that the prevalence of muscle TMD has been overestimated, and thus clinically overemphasized, by the selection of low cutoff

criteria to diagnose myofascial pain. This means that, on the way toward a new version of the RDC/TMD classification system, selection of diagnostic criteria should be based on an accurate assessment of their clinical significance and their actual impact on clinical decision-making. In particular, the hypothesis that current criteria for myofascial pain actually identified patients with signs of muscle fatigue and tenderness, and not only patients with primary muscle pain is worthy to be considered in the selection of more specific criteria for muscle pain. Also, multicenter studies are strongly needed to give external validity of these results and to confirm the findings that primary muscle pain is a non-frequent occurrence and that a diagnosis of muscle hyperalgesia referred from another origin may be the true diagnosis in many cases of supposed myofascial pain.

Another interesting issue which raises up from this investigation is the distribution pattern of diagnoses in the different age groups. The youngest age groups, A and B, were characterized by an higher prevalence of disc displacement diagnoses, while the oldest groups, C and D, were characterized by a marked predominance of group III diagnoses.

Interestingly, two distinct clusters of patients could be identified which account for almost 80% of the study population. A first cluster of patients is represented by a large amount of subjects ($N = 107$) seeking for TMD advice and receiving a diagnosis of disc displacement, with or without pain in the temporomandibular joint area, viz., arthralgia. A second cluster is identified by those patients ($N = 46$) who received a diagnosis of osteoarthritis/osteoarthrosis. The two groups of patients are characterized by a significantly different mean age (32.7 vs. 54.2). Their age distributions in comparison with the age distribution of the overall sample are illustrated in Figs. 2–4.

The identification of such distinct profiles of TMD subjects within a population of patients, despite it may appear obvious at a first glance, has never been described in the literature, and is worthy to be discussed in the light of common beliefs that TMD have a peak within the 35–45 years age range.⁶ Such claim can be referred to TMD patients as a whole and it has also been confirmed by findings of the present investigation, describing a mean age of about 40 years for the overall sample. Notwithstanding this, it should be remembered that TMD are different clinical entities grouped under a common umbrella term, and that achieving a deeper knowledge of the epidemiology of the different clusters of symptoms may be much useful for future researches on these disorders. The present investigation allowed identifying two distinct age distribution patterns for the two main groups of patients seeking for TMD treatment, which depict two distinct Gaussian curves that combine to form a typical curve of age distribution for the overall TMD patients population (Fig. 5).

Briefly, it should be interesting to reconsider some statements on TMD epidemiology in the light of these findings, which clearly suggest that the demographic features of a population of TMD patients may be the expression of a younger age group of subjects who ask for TMD advice due to pain and/or click sounds in the TMJ and an older age group of subjects who ask for TMD advice due to inflammatory-degenerative disorders of the TMJ. In the present investigations, the mean age of the two groups differed of more than 20

years, allowing to suggest that two distinct age peaks for TMD "onset" may be identified on the basis of these findings.

Within this contest, it seems that myofascial pain, as currently diagnosed by the RDC/TMD, is of poor significance to detect specific pattern of TMD patients, once again suggesting that, also in the light of findings that a combination of muscular and articular disorders is a frequent clinical reality, an improvement in knowledge about how and when such disorders relate to each other is a compelling need for the near future.

This study has some limitations, the first of which being the single-setting recruitment of patients, which prevents from generalization of findings to other cultural and racial realities. Nonetheless, the sample size was well within the range of similar studies in the literature, which is comprised between 61²¹ and 377¹⁵ patients. Also, the use of a systematically translated Italian version of the RDC/TMD which has not been validated yet and the fact that the two main investigators did not receive RDC/TMD calibration training by a gold-standard examiner of the RDC/TMD consortium may have hypothetically affected the study findings, even though it is unlikely that the main findings of this investigation should have been significantly different, since both the protocol and the researchers have been involved in several RDC/TMD projects over the past years. Lastly, this study did not gather data on the psychosocial aspects of TMD, viz., RDC/TMD axis II, which should represent another interesting aspect to investigate in the future as for their relation with axis I findings and demographic features. Thus, it should be interesting to try gathering cross-cultural and multicenter data in the near future to verify or dismantle this study's findings.

5. Conclusions

The present investigation allowed describing some interesting features related with a population of patients seeking for TMD treatment at a specialized university clinic in Northern Italy. In particular, the prevalence of inflammatory-degenerative disorders seems to be higher than previously reported in other similar investigations, with up to 81.4% of patients receiving at least one RDC/TMD axis I group III diagnoses. In line with literature data, multiple diagnoses seem to be a frequent clinical reality, accounting for up to 64.3% of patients and confirming that an improvement in knowledge about the relationship between the different muscle and joint disorders is a compelling need for the future to get deeper into the issue of TMD diagnosis and classification. Muscle disorders, especially if diagnosed alone, seem to be less prevalent than previously reported and, more importantly, their presence/absence had little influence to identify the two main distinct clusters of symptoms characterizing this study sample. A first cluster was represented by the presence of disc displacement, alone or in combination with myofascial pain and/or arthralgia, and a second one was represented by the presence of arthritis/arthrosis of the TMJ. The two clusters of symptoms allowed identifying two distinct groups of patients, which accounted for up to about 80% of the total study population and are characterized by a significantly different mean age, viz., more than 20 years.

These findings imply that at least two distinct age peaks are identifiable within this population of patients seeking for TMD treatment, one about at 30-35 years and the other one about at 50-55 years. Thus, common statements that TMD have a peak between around the age of 40 seem to be valid only as general statements for TMD populations as a whole, and more specifications for the epidemiologic features of any RDC/TMD diagnoses are needed. Obviously, these findings have to be confirmed by means of multicenter studies involving many calibrated investigators before generalization.

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