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PSYCHOPATHOLOGY AND CLINICAL FEATURES IN AN ITALIAN SAMPLE OF PATIENTS WITH MYOFASCIAL AND TEMPOROMANDIBULAR JOINT PAIN: PRELIMINARY DATA

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ABSTRACT

Objective: Aim of this study was to provide data on the relationships between psychopathological variables and temporomandibular disorders (TMD). Sixty-three TMD patients were investigated using clinical and anamnestical psychiatric informations and psychopathological measures. *Methods:* Three groups of TMD patients were recruited according to the Research Diagnostic Criteria for TMD guidelines: a group of patients presenting myofascial pain alone (RDC/TMD axis I group I), a group with temporomandibular joint (TMJ) pain alone (RDC/TMD axis I group IIIa, IIIb), and a group presenting both myofascial and TMJ pain. Two secondary groups were identified on the basis of the presence/absence of myofascial pain. The study design provided a psychiatric interview and psychometric assessment including the Symptom Check List-90-Revised (SCL-90-R), the Hamilton Depression Rating Scale (HDRS), and the Hamilton Anxiety Rating Scale (HARS). *Results:* -Psychiatric evaluation: Myofascial pain patients had higher scores for personal psychiatric history and a history of more frequent psychotropic

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drug use. -HDRS and HARS: The sample presented scores indicating mild depressive symptoms and moderate anxiety symptoms. -SCL-90-R: The global sample showed acute levels of psychological distress as measured by the GSI score (Global Severity Index). Myofascial pain patients scored higher than TMJ pain patients in the GSI ($p = .028$), PAR (paranoia; $p = .015$), PSY (psychoticism; $p = .032$), and HOS (hostility; $p = .034$) subscales. *Conclusions*: TMD patients showed elevated levels of depression, somatization, and anxiety. These characteristics did not differ significantly between patients with myofascial or TMJ pain. Other specific psychopathological dimensions, detected with SCL-90-R, appeared to be closely associated to the myofascial component.

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Key Words: Hamilton Anxiety Rating Scale, Hamilton Depression Rating Scale, myofascial pain, research diagnostic criteria for TMD, SCL-90-R, temporomandibular disorders

INTRODUCTION

The term Temporomandibular Disorders (TMD) refers to a heterogeneous group of disorders involving the temporomandibular joint, the masticatory muscles, and their related structures [1].

Current theories on TMD etiopathogenesis support the existence of a multifactorial model with a number of risk factors and neurobiological pathogenetic pathways which contribute to the onset of these syndromes [2].

Studies on the lifetime prevalence of TMD in the general population showed that approximately 75% of subjects present at least a sign and 33% a symptom related to these disorders [3-5]. Chronic facial pain is a common cause of disability in both Europe and the United States [6-7]. Painful symptoms and articular dysfunction are the main reasons for TMD patients to look for professional help [8].

In recent years, strong efforts have been made in the attempt to standardize TMD diagnosis. The introduction of a biaxial classification system, the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) represented a progress toward uniformity and homogeneity of TMD diagnosis [9]. Epidemiological data gathered by the use of this classification allowed a comparison of TMD prevalence in different clinical and cultural settings [10-13]. Up to now, data detected from TMD patients are available in Sweden, the United States, Hong Kong, and Italy [8, 9, 13-17].

Since the earliest descriptions of TMD, much attention has been focused on the role of psychosocial aspects, as the presence of anxious-depressive symptoms [17, 18], life events [19-22], personality traits [17, 18, 23, 24], and coping strategies [2, 18, 25, 26], in the genesis, maintenance, and response to treatment of these disorders. Many studies were conducted on chronic TMD patients [17, 24,

25] and efforts were made to assess differences in their psychosocial profile [16-18, 23, 24]. Such approach may have some importance to customize tailored therapies on TMD patients [17, 23, 27, 28].

Literature data seem to suggest that myofascial pain patients had the highest levels of psychological distress [18, 23-25], even though recent findings showed that the pain-psychopathology link is independent by the location of pain, at least as regards the pain-depression link [16, 17, 22, 27, 28].

Recently, some authors found a significantly higher prevalence of both mood and panic-agoraphobic symptoms in myofascial patients than in all other diagnostic groups [29].

Definitive findings have not been described yet and a comprehensive psychological evaluation might be useful to integrate the psychosocial axis of the RDC/TMD classification, in order to better understand more specific differences between myofascial and articular patients [18, 23-25, 30].

The aim of the present study was to explore psychiatric differences between different subgroups of TMD patients.

MATERIALS AND METHODS

Study Design

We considered three groups: myofascial pain (Group 1), "pure articular" patients (Group 2), and TMJ and myofascial pain (Group 3).

Secondly, in the light of a series of studies reporting the presence of greater psychosocial impairment in myofascial patients [18, 23-25] and in order to emphasize the role of the myofascial component, we also decided to join together Group 1 and Group 3, recalled Group M (myofascial) and to compare Group M with Group 2 recalled group A (articular).

Description of the Sample

Seventy-nine consecutive patients aged between 18 and 65 years presenting with painful temporomandibular disorders at the outpatient Clinic for Craniomandibular Disorders of the Department of Maxillofacial Surgery of the University of Padova were asked to take part in this study, which provided an extensive psychiatric evaluation at the Psychiatric Clinic of the Department of Neurosciences. The study included all patients with a first diagnosis of TMD.

Five subjects presenting a rheumatological condition were excluded from the study ($n = 5$, psoriatic arthritis (2), rheumatoid arthritis (3)). Eleven patients were excluded (four refused consensus and seven had not completed the psychiatric test battery).

TMD Assessment

Anamnestical data gathering and clinical examination were conducted according to the RDC/TMD guidelines [9] and the Italian version was used (see Language Translations at Website: RDC-TMDinternational.org).

In the present investigation, only RDC/TMD Axis I findings were considered, without considering the psychosocial assessment provided by the RDC/TMD Axis II, whose findings will be discussed in details elsewhere.

The RDC/TMD Axis I provides standardized criteria for TMD diagnosis [31-33].

All RDC/TMD examinations were conducted by the same investigator (L.G.N.) who included only patients with painful TMD (Group I; Group IIIa; Group IIIb), according to RDC/TMD classification:

Group I: MUSCLE DISORDERS.
Ia. Myofascial Pain
Ib. Myofascial Pain with limited opening
Group III: ARTHRALGIA, ARTHRITIS, ARTHROSIS.
IIIa. Arthralgia
IIIb. Osteoarthritis of the TMJ

Psychiatric Evaluation

The patients were invited to take part in a psychiatric interview. The psychiatrist was blind to the TMD axis I diagnosis. If the patient agreed to participate, he or she was asked to sign an informed consent form.

The following variables were assessed:

- the presence of any psychiatric diagnosis following the DSM IV criteria.
- any positive personal and familial psychiatric history
- any positive psychopharmacological history

Scales

HDRS (Hamilton Depression Rating Scale), HARS (Hamilton Anxiety Rating Scale), and SCL-90-R (Symptom Check List 90 Revised) were administered. These scales have often been used in the literature in TMD patients [8, 9, 16, 23, 34-36].

The HDRS scale is commonly used to assess depressive symptoms in adult patients. Scores below 8 are considered normal, those between 8 and 15 indicate mild, between 16 and 24 moderate, and over 25 serious symptoms [37].

The HARS is a scale frequently used in psychiatry. Scores below 6 are considered to indicate normality, those between 7 and 14 a state of low-moderate anxiety, and higher ones indicate severe anxiety [38].

The SCL-90-R, which many authors consider to be an excellent screening measure for populations affected by chronic pain disorders [39], is widely used for self-assessment of psychological distress and multiple psychopathological dimensions. It consists of a total of 90 items, with 83 items that investigate nine psychopathological dimensions: somatization (SOM), obsessiveness-compulsiveness (O-C), interpersonal sensitivity (I-S), depression (DEP), anxiety (ANX), hostility (HOS), phobic anxiety (PHOB), paranoid ideation (PAR), and psychoticism (PSY). In addition to these nine symptomatological dimensions, the SCL-90-R contains seven more items relating to appetite and sleep disorders. It also uses three global distress indices: the Global Severity Index (GSI), Positive Symptom Total (PST), and Positive Symptom Distress Index (PSDI) [40]. We considered a cut-off score of 0.57 for the GSI, to distinguish between a "functional" and a "dysfunctional" condition, according to Schauenburg and Strack [41]. On the DEP subscale, scores below 0.535 were considered normal, between 0.535 and 1.105 indicated moderate depression, and above 1.105 the presence of severe ongoing depressive disorder. On the SOM subscale, including the pain items, scores lower than 0.5 were considered normal, values between 0.5 and 1 indicated moderate somatization, and above 1 severe somatization [11].

Data Analyses

The chi square test, corrected by Fisher exact test, was used to assess any statistically significant differences in frequency distribution in groups of parameters such as: positive familial and personal psychiatric history, positive psychopharmacological history, ongoing psychic disorder, presence of parafunctions, painful symptoms and stressful events accompanying onset of painful symptoms and impairment in quality of life.

The main sociodemographic variables (age, gender, education) were compared with the help of parametric tests. We used the Kolmogorov-Smirnov test to check for normal sample distribution.

Variance analysis (ANOVA), followed by Bonferroni's test correction, was used to compare mean values obtained by the groups on the various tests and scales. Pearson's correlation was also applied.

RESULTS

Sample Characteristics

The sample consisted of 63 outpatients; 16 were males (25.4%) and 47 females (74.6%). Mean age was 39.1 ± 14.0. The groups did not significantly differ by gender distribution, mean age, schooling years, and illness duration. The demographic characteristics are summarized in Tables 1a-1b.

Table 1a. Sociodemographic Variables by Groups (Groups 1, 2, and 3)

	(Group 1) Myofascial Pain (n = 19)	(Group 3) Myofascial and TMJ Pain Comorbidity (n = 18)	(Group 2) = (Group A) TMJ Pain alone (n = 26)	df	F	p
Age Mean ± *SD*	38.74 ± 14.2	38.72 ± 15.2	39.65 ± 11.9	2	.032	.968[a]
School Years Mean ± *SD*	13.0 ± 2.4	11.61 ± 3.3	12.96 ± 4.26	2	.970	.385[a]
Gender Male *n* (%)	n = 6 (31.6%)	n = 6 (33.3%)	n = 4 (15.4%)	2	χ^2 = 2.47	.310[b]
Positive personal psychiatric history *n* (%)	n = 9 (47.4%)	n = 2 (11.1%)	n = 2 (7.7%)	2	χ^2 = 10.45	.004[b]
Positive family psychiatric history *n* (%)	n = 6 (31.6%)	n = 5 (27.8%)	n = 5 (19.2%)	2	χ^2 = 1.05	.666[b]
Lifetime drugs *n* (%)	n = 5 (26.3%)	n = 8 (44.4%)	n = 3 (11.5%)	2	χ^2 = 5.94	.054[b]
Duration of illness > 6 months *n* (%)	n = 10 (52.6%)	n = 9 (50.0%)	n = 14 (53.8%)	2	χ^2 = 0.127	1.00[b]

[a]Corrected by Bonferroni test. [b]Corrected by Fisher test.

Table 1b. Groups Pooled by Myofascial (Groups M and A)

	(Group M) = (Group 1 + Group 3) (Myofascial + Myofascial & TMJ Pain Comorbidity) (n = 37)	(Group A) = (Group 2) TMJ Pain alone (n = 26)	df	F	p
Age Mean ± *SD*	38.73 ± 15.5	39.65 ± 11.9	1	.065	.799
School Years Mean ± *SD*	12.32 ± 2.92	12.96 ± 4.26	1	.497	.484
Gender Male n (%)	n = 12 (32.4%)	n = 4 (15.4%)	1	$\chi^2 = 2.32$	.107[b]
Positive personal psychiatric history n (%)	n = 11 (29.7%)	n = 2 (7.7%)	1	$\chi^2 = 4.5$	.031[b]
Positive family psychiatric history n (%)	n = 11 (29.7%)	n = 5 (19.2%)	1	$\chi^2 = .888$	.393[b]
Lifetime drugs n (%)	n = 13 (35.1%)	n = 3 (11.5%)	1	$\chi^2 = 4.4$	.031[b]
Duration of illness > 6 months n (%)	n = 19 (51.4%)	n = 14 (53.8%)	1	$\chi^2 = 0.38$	.525[b]

[b]Corrected by Fisher test.

TMD Assessment

On the basis of their RDC/TMD diagnosis, the patients were divided into three groups:

- (Group 1) Patients with diagnosis of myofascial pain alone ($n = 19$; 30.16%);
- (Group 2) Patients with diagnosis of TMJ pain (arthralgia or osteoarthritis) alone ($n = 26$; 41.27%);
- (Group 3) Patients with combined TMJ and myofascial pain ($n = 18$; 28.57%).

Two further groups were then created for statistical analysis with the aim to compare the patients with a muscle disorder alone or combined TMJ pain with those with TMJ pain alone:

- (Group M) = (Group 1 + Group 3) = ($n = 19 + 18 = 37$; 58.73%);
- (Group A) = (Group 2) = ($n = 26$; 41.27%) (Tables 1a-1b).

Psychiatric Evaluation

Twenty-three patients presented ongoing anxious or mood disorders (Generalized Anxiety Disorder $n = 6$, Panic Disorder $n = 4$, Major Depression $n = 11$, Hypomanic Episodes $n = 2$). Two-thirds ($n = 15$) of these patients belonged to Group M; one-third ($n = 8$) to Group A. Comparison of these data yielded only a trend toward significance.

A significant difference was found for personal psychiatric history (positive for a total of 13 subjects) and psychopharmacological history (positive in 16 subjects for antidepressants and/or benzodiazepines). Subjects with myofascial pain (Group 1) presented a positive psychiatric history significantly more frequently ($p = .004$) than did the other two groups (2 and 3). Greater lifetime use of psychotropic drugs ($p = .031$) was also observed in patients with muscle involvement, alone or in association with TMJ pain (Group M), compared with pure TMJ pain patients (Group A). There were no differences in family psychiatric history among the three groups (Tables 1a-1b).

HDRS and HARS

The total sample ($N = 63$) presented a mean HDRS score of 12.38 ± 7.22. This score indicates mild depressive symptoms. The mean HARS score was 14.54 ± 8.61, indicating moderate anxiety symptoms (Tables 2a-2b).

The comparison of the mean HDRS and HARS scores showed no significant differences between the three TMD groups (Groups 1, 2, and 3). Significant differences ($p = .049$) were observed for anxiety symptoms when the group of patients with a muscular component (Group M) was compared with the articular patient group (Group A). Group M presented a mean anxiety score of 16.32 ± 9.36, indicating severe anxiety symptoms (Tables 2a-2b).

Table 2a. HARS, HDRS

	(Group 1) Myofascial Pain (n = 19)	(Group 3) Myofascial and TMJ Pain Comorbidity (n = 18)	(Group 2) = (Group A) TMJ Pain alone (n = 26)	df	F	p
HARS						
Mean ± *SD*	16.21 ± 8.3	16.44 ± 10.62	12 ± 6.8	2	1.98	.146[a]
HDRS						
Mean ± *SD*	14.16 ± 7.04	12.89 ± 8.23	10.73 ± 6.47	2	1.31	.277[a]

[a]Corrected by Bonferroni test.

Table 2b. HARS, HDRS Groups Pooled by Myofascial Component

	(Group M) = (Group 1 + Group 3) (Myofascial + Myofascial and TMJ Pain Comorbidity (n = 37)	(Group A) = (Group 2) TMJ Pain alone (n = 26)	df	F	p
HARS					
Mean ± *SD*	16.32 ± 9.36	12 ± 6.8	1	4.04	.049
HDRS					
Mean ± *SD*	13.54 ± 7.57	10.73 ± 6.47	1	2.36	.129

SCL-90-R

The total sample (N = 63) showed mean depression (DEP) and somatization (SOM) values of 0.704 ± 0.67 and 0.942 ± 0.66, respectively, indicating slight distress in the former and moderate distress in the latter, according to the cut-offs reported in the literature.

The Pearson's correlation between the SOM SCL-90-R score with the subscale ANX was r = .696 (p = .000), DEP r = .773 (p = .000), HARS r = .607 (p = .000) and HDRS r = .544 (p = .000).

A high global psychological distress level, according to the GSI index, was also observed with a score of 0.646 ± 0.52 (Tables 3a-3b).

Comparisons among the three groups (Groups 1, 2, and 3) did not yield significant differences in the somatization (SOM) and depression (DEP) subscales or in the global psychological distress index (GSI). Differences (p = .049) were instead found in the hostility (HOS) subscale, with higher scores for Group 1 (myofascial pain) and Group 3 (combined myofascial and TMJ pain) (Tables 3a-3b). A similar trend toward significance (p = .053) was observed for the paranoia (PAR) subscale.

Comparison between the combined muscle patient group (Group M) and the articular one (Group A) yielded significant differences for the paranoia (PAR) (p = .015), psychoticism (PSY) (p = .032), and hostility (HOS) (p = .034) subscales and global severity index (GSI) (p = .028). Only a tendency toward significance was observed for the somatization (SOM) (p = .052) and interpersonal sensitivity (I-S) (p = .053) subscales (Tables 3a-3b).

DISCUSSION

Our data showed that patients with masticatory muscle involvement are characterized by greater psychic distress than those with TMJ pain, but these differences were not so important as expected. Literature data suggest important differences between muscular and articular patients as regards psychopathological aspects as depression and anxiety [18]. In our study myofascial pain subjects differed from TMJ pain patients for the presence of symptoms related to paranoia, psychoticism, and hostility but there were no big differences as regards psychopathological aspects as depression and anxiety (Tables 2a-2b; 3a-3b).

There was also a significantly higher presence of positive personal psychiatric history in myofascial (Group 1) than in mixed (Group 3) and articular patients (Group 2). Positive psychopharmacological history was significantly higher in Group M (muscle-related patients) than in Group A (articular patients) (Tables 1a-1b). In interpreting data, although the greater drug use of Group M patients may be partially explained by the muscle relaxant effect of benzodiazepines (BDZ), this could not be sufficient: first because the patients referred the utilization of two different categories of drugs (antidepressant and/or BDZ), second

Table 3a. SCL-90-R and Subscales

	(Group 1) Myofascial Pain (n = 19)	(Group 3) Myofascial and TMJ Pain Comorbidity (n = 18)	(Group 2) = (Group A) TMJ Pain alone (n = 26)	df	F	p
SOM Mean ± SD	0.938 ± 0.64	1.223 ± 0.79	0.750 ± 0.51	2	2.905	.062[a]
O-C Mean ± SD	0.816 ± 0.70	1.011 ± 0.67	0.638 ± 0.65	2	1.639	.203[a]
I-S Mean ± SD	0.788 ± 0.95	0.762 ± 0.52	0.428 ± 0.57	2	1.927	.154[a]
DEP Mean ± SD	0.760 ± 0.78	0.906 ± 0.68	0.522 ± 0.56	2	1.867	.163[a]
ANX Mean ± SD	0.805 ± 0.66	0.794 ± 0.60	0.546 ± 0.52	2	1.419	.250[a]
HOS Mean ± SD	0.753 ± 0.55	0.556 ± 0.39	0.391 ± 0.47	2	3.174	.049[a]
PHOB Mean ± SD	0.320 ± 0.51	0.210 ± 0.33	0.240 ± 0.32	2	0.361	.698[a]
PAR Mean ± SD	0.910 ± 0.97	0.920 ± 0.67	0.430 ± 0.65	2	3.092	.053[a]
PSY Mean ± SD	0.405 ± 0.58	0.417 ± 0.43	0.177 ± 0.24	2	2.372	.102[a]
GSI Mean ± SD	0.737 ± 0.62	0.796 ± 0.48	0.477 ± 0.42	2	2.571	.085[a]

[a]Corrected by Bonferroni test.

Table 3b. SCL-90-R and Subscales. Groups Pooled by Myofascial Component

	(Group M) (Myofascial + Myofascial and TMJ Pain Comorbidity) (n = 37)	(Group A) = (Group 2) TMJ Pain alone (n = 26)	*df*	*F*	*p*
SOM Mean ± *SD*	1.077 ± 0.72	0.750 ± 0.51	1	3.921	.052
O-C Mean ± *SD*	0.911 ± 0.68	0.638 ± 0.65	1	2.509	.118
I-S Mean ± *SD*	0.775 ± 0.76	0.428 ± 0.57	1	3.905	.053
DEP Mean ± *SD*	0.831 ± 0.72	0.522 ± 0.56	1	3.325	.073
ANX Mean ± *SD*	0.800 ± 0.62	0.546 ± 0.52	1	2.882	.095
HOS Mean ± *SD*	0.657 ± 0.48	0.391 ± 0.47	1	4.712	.034
PHOB Mean ± *SD*	0.270 ± 0.43	0.240 ± 0.32	1	0.095	.759
PAR Mean ± *SD*	0.920 ± 0.83	0.430 ± 0.65	1	6.286	.015
PSY Mean ± *SD*	0.411 ± 0.50	0.177 ± 0.24	1	4.815	.032
GSI Mean ± *SD*	0.765 ± 0.55	0.477 ± 0.42	1	5.088	.028

[a]Corrected by Bonferroni test.

they presented at the same time an higher rate of personal psychiatric history, suggesting the hypothesis that the psychopharmacological medication is the consequence of a prior diagnosed and treated mental disorder.

Although several patients presented an ongoing psychic disorder, according to DSM-IV criteria (n = 23, 38%) and high mean scores in the administered scales, few of them (n = 13, 20%) had previous contact with a mental health specialist. This result presents a methodological limit because the protocol did not consider a semi structured interview (e.g., SCID I) administration for a standardized axis I diagnosis.

The patients in our study seemed to have some difficulty in identifying and externalizing their emotions, irrespective of the type of TMD present. These observations reflected in difficulties to refer to a specialist those patients who should have required it. Only one patient underwent the recommended pharmacotherapy and brief psychotherapy at the end of the psychopathological assessment. According to this, Meldolesi et al. observed that myofascial patients were little aware of their TMD disorder and had difficulty in expressing their emotions, suggesting a link with alexithymia [24]. Other studies have explored the relationship between the alexithymic construct and TMD symptoms using TAS-20 (Toronto Alexithymia Scale-20) and found an association between the two disorders [42-44].

The study sample presented a mean HDRS depression score of 12.1 ± 6.95, indicating mild depressive symptoms. The mean HARS score was 14.54 ± 8.61, implying moderate symptoms of anxiety. These data confirm findings from other studies reporting signs and symptoms of important psychic distress in patients with TMD [23, 45, 46].

In the SCL-90-R, the study sample showed mild and moderate mean depression (DEP) and somatization (SOM) scores respectively, according to the cut-off values reported in the literature. A high level of global psychological distress, based on the GSI index, was also observed (Tables 2a-2b). Some studies reported the presence of higher anxiety levels and depressive symptoms in myofascial than in articular patients [18, 22, 47].

Interestingly, the other SCL-90-R subscales, particularly DEP and SOM, which are widely used to screen for the presence of ongoing psychic distress in TMD patients, yielded no significant differences among the three groups. It should be pointed out that the mean scores of the TMJ pain group appeared to be lower than the ones obtained by the other groups and often indicated the absence or minimal presence of ongoing psychic distress (Tables 3a-3b). Conversely, myofascial and mixed patients presented high indices of psychic distress.

Variance analysis of the mean scores achieved by the three groups on each of the SCL-90-R subscales, revealed the presence of statistically significant differences on the HOS (hostility) and a trend toward significance on the PAR (paranoia) subscales.

This observation brought to the decision to consider muscle-related and mixed patients as one group in the second part of this study. This also increased the discriminatory power of the tests by reducing the number of groups and increasing sample size, in accordance with a feasible preliminary assumption.

The supposed link between a muscular component and psychic distress advances a secondary hypothesis with regard to mixed patients, i.e., the articular component in mixed patients does not increase the psychic distress of the patients.

The presence of a significant difference in the subscales PAR, PSY, HOS between the two groups justify and impose some consideration about the "personality" in TM joint pain patients, despite SCL- 90-R is not a personality test.

A study adopting Eysenck's Personality Questionnaire (EPQ) revealed a significantly higher presence of psychoticism in patients with muscle-related TMD and cervical pain than in other TMD conditions [47]. In our survey, the mean scores achieved on these scales suggest that Group M presents different psychopathological characteristics from those described in most studies. No significant differences (Group M versus Group A) were observed in the scores of the subscales (ANX and PHOB), indicating more "neurotic" psychopathological dimensions, which other studies have more frequently reported to be altered [4, 5, 8, 18, 23]. These findings underlined the need to investigate the personological and symptomatological characteristics of patients with TMD, particularly those with myofascial syndromes, and to closely analyze the presence of peculiar personality characteristics in patients with muscle-related conditions compared with articular patients or healthy controls.

In our opinion findings from the present work confirmed only partially literature data and suggested the importance to consider other psychopathological characteristics of TMD patients. The presence of a greater psychiatric drug utilization and a previous psychiatric contact seem to reveal psychological problems in myofascial patients.

We decided to underline the clinical complexity of TMD diagnosis, considering the mixed group of articular and muscular comorbidity. The existence of an important number (about 28%) of comorbid syndromes appears important to better explain the greater psychic distress of patients with masticatory muscle involvement (GSI) than those with TMJ pain alone. Such a more complex study design may justify the absence of differences between the two groups when considering depression and anxiety, but introduce the need to better investigate different psychopathological dimensions and personality and temperamental characteristics, when the majority of studies considered the psychic distress for the depressive and anxious manifestations.

Moreover, the complexity of the psychopathological aspects of TMD seem to elude rigid, deterministic, pathophysiological categorization.

In general our preliminary data present methodological limitations: the small sample size; the absence of a semi-structured axis I psychiatric diagnosis; the lack of a healthy control sample; our patients were recruited in a hospital setting

that may represent an extreme situation, characterized by greater clinical severity and subsequent psychopathological distress.

Despite its methodological limits, this study suggests that at least one subgroup of these patients may reasonably be encompassed in the wide sphere of psychosomatic disorders. This would confirm the appropriateness of a multiaxial (biopsychosocial) approach, like the RDC/TMD classification system, which takes account of psychosocial factors from the very first approach to patients with TMD.

Nevertheless, further investigations are strongly needed before advancing hypotheses on which psychopathological factors may be potentially implied in these somatization mechanisms, particularly in the myofascial subgroup.

Some considerations are also required to avoid inappropriate generalizations on any associations between TMD and psychological-psychiatric factors arising from our results.

A greater clinical integration between TMD specialists and psychiatrists may contribute to a more comprehensive approach to these patients and potentially lead to the introduction of multidisciplinary, integrated teams to manage those patients showing signs of major psychological distress directly implied in the somatic suffering caused by TMD.

Identification of a TMD subgroup which presents significantly more intense psychological distress may be one way to study the variables that give rise to heterogeneous clinical presentations and treatment outcomes.

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