FOLIA MEDICA CRACOVIENSIA
Vol. LXI, 1, 2021: 57–65
PL ISSN 0015-5616
DOI: 10.24425/fmc.2021.137213

Psychoemotional disturbance in adult patients with temporomandibular disorders
Research article

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Abstract: Temporomandibular disorders (TMD) encompass a diverse group of abnormalities in the functioning of the masticatory muscles, temporomandibular joints, and surrounding structures within the facial skull. One of the important etiological factors, contributing to the development of TMD are psychoemotional disorders, which include: depression, dysthymia, personality disorders, panic attacks as well as states and anxiety neuroses.
The aim of the study was to carry out a retrospective evaluation of the occurrence of psychoemotional disorders reported in the application form of medical interview of patients treated at the Consulting Room of Temporomandibular Disorders in Dental Institute (University Dental Clinic) for TMD.
The research material consisted of a subjective survey according to the protocol of the RDC/TMD questionnaire, axis II, of the 360 patients (224 women, 136 men), aged 19 to 43 who came to the University Dental Clinic in Krakow due to TMD management.
Result: The results of the conducted studies indicate the common occurrence of emotional disorders in the group of patients treated for TMD, both in the group of muscular and joint form of dysfunctions. The most often the patients selected: loss of sexual interest or pleasure, crying easily, feeling lonely, indifference to everything and feeling of worthlessness. These aspects show a significant influence of emotional factors on TMD.
Conclusion: The results of the conducted research indicate a significant frequencies of psychological and emotional disturbances reported in a survey among patients with TMD.

Key words: temporomandibular disorder, psychological factor, stress, anxiety, depression, psychological management, medical interview.

Submitted: 05-Mar-2021; **Accepted in the final form:** 16-Apr-2021; **Published:** 23-May-2021.

Introduction

Temporomandibular disorders (TMD) encompass a diverse group of abnormalities in the functioning of the masticatory muscles, temporomandibular joints, and surrounding structures within the facial part of the skull. The name of TMD is recommended by the American Dental Association [1].

The characteristic symptoms of TMD are as follows: pain in the masticatory muscles and/or temporomandibular joints, limitation of the jaw opening, acoustic symptoms in the form of clicking or popping, occurring in the temporomandibular joints during the jaw motion and difficulty in chewing food. One of the important etiological factors, contributing to the development of TMD are psychoemotional disturbance, which include: depression, dysthymia, personality disorders, panic attacks as well as states and anxiety neuroses [1–5].

The causes of emotional disorders in adults often are biological factors, such as diseases of the nervous system, brain damage and malformations, and somatic diseases such as abnormalities in the functioning of the endocrine system (for example, hypothyroidism), abnormal synaptic conduction of neurotransmitters, and hereditary conditions. A frequent cause of emotional disorders in adults is also the abuse of psychoactive substances [6–9].

Emotional disorders are often diagnosed on the basis of characteristic symptoms, reported during medical examination (interview). Depression is diagnosed by the occurrence of low mood, feelings of indifference, trouble with sleeping, lack of self — esteem or a decrease in the efficiency of logical thinking, or a persistent feeling of fatigue and indifference towards the surrounding world [2, 5, 10, 11].

Additionally, there may be an acute increase or decrease in body weight, recurrent thoughts of death or suicide, excitement, or slowness of movement. The above symptoms lasting more than two weeks may indicate the presence of depression. Among the complaints of patients, we can hear about such symptoms as: increased irritability, decreased libido, low self-esteem, apathy, a feeling of frustration and a tendency to be impulsive [2, 3, 5, 7, 9].

Chronic stress is a factor that adversely affects the functioning of the stomatognathic system, masticatory muscles in particular. Hans Selye defined it as a nonspecific reaction of the organism to harmful factors. The hypothalamus, the reticular formation and especially the limbic system are responsible for the emotional state of a person. These structures also affect the activity of masticatory muscles, and the gamma loop and the limbic system are of particular importance. The elevated level of emotional stress also generates parafunctional activity, which is very harmful to the masticatory system, in the form of clenching or grinding of the teeth [2, 4, 8, 12–15].

The aim od the study

The aim of the study was to carry out a retrospective evaluation of the occurrence of psychoemotional disorders reported in the application form of medical interview of patients treated at the Consulting Room of Temporomandibular Disorders in Dental Institute (University Dental Clinic) for TMD.

Material and Methods

The research material consisted of a subjective survey according to the protocol of the RDC/TMD questionnaire, axis II [16, 17], of the 360 patients (224 women, 136 men), aged 19 to 43 (average age 24,4 women and men) who came to the University Dental Clinic in Krakow due to a treating of TMD in the period from January 2019 to January 2021. From among all the questions included in the Axis II questionnaire, the selected ones were related to psychoemotional instability or may indicate emotional disorders.

The survey results were analyzed for the following information; current treatment of depression, anxiety, indifference to everything, tearfulness, trouble falling asleep, feeling hopeless, related to the future, feeling worthless, suicidal thoughts and feeling of being caught or trapped or feeling of quilt.

The analyzed material of the medical interview was verified with the results of further studies and two groups were distinguished based on the type of disorders, diagnosed according to the RDC/TMD Axis I questionnaire. Group Ia (muscle pain disorders) included the results of 191 patients (111 women and 80 men), group II a included a total of 169 patients (113 women and 56 men), these were the results of medical interview of the patients diagnosed with disc displacement with reduction.

The inclusion criterion for the research was; the presence of both clinical forms of TMD, good general health of patients, consent to the analysis of medical records. In these two group of documentation we did not have the exclusion criterion from the research.

Consent of the Bioethics Committee of the Jagiellonian University Medical College of April 20, 2018, No. 1072.6120.57.2018.

Due to the quality of the analyzed data (without measurable values), the authors decided not to made the statistical analysis.

The results

Tables 1 and 2 show the results of the subjective analysis of the RDC/TMD Axis II questionnaire, concerning selected questions related to emotional disturbances, obtained in the group of muscle disorders — (Ia) and joint disorders (IIa). The responses regarding the severity of symptoms are: 0 — not at all, 1 — a little bit, 2 — moderately, 3 — quite a bit, 4 — extremely high.

Table 1. The results of the subjective analysis of the emotional disorders in the group of patients — Ia. **Group Ia**

Reported emotional problems	0	1	2	3	4
Loss of sexual interest or pleasure	21 (11%)	12 (6%)	54 (28%)	72 (38%)	32 (17%)
Fainting or dizziness	88 (46%)	21 (11%)	16 (8%)	45 (24%)	21 (11%)
Energy loss	29 (15%)	44 (23%)	39 (20%)	61 (32%)	18 (9%)
Thought of death/dying	168 (88%)	4 (2%)	5 (3%)	10 (5%)	4 (2%)
Blaming for different things	18 (9%)	32 (17%)	50 (26%)	42 (22%)	49 (26%)
Crying easly	29 (15%)	21 (11%)	31 (16%)	60 (31%)	50 (26%)
Feeling lonely	16 (8%)	24 (13%)	39 (20%)	42 (22%)	70 (37%)
Feeling blue/ sad feeling	19 (10%)	29 (15%)	41 (21%)	53 (28%)	49 (26%)
Indifference to everything	5 (3%)	30 (16%)	51 (27%)	42 (22%)	63 (33%)
Trouble with falling aspleep	40 (21%)	68 (36%)	37 (19%)	16 (8%)	30 (16%)
Hopeless feeling about future	32 (17%)	29 (15%)	45 (24%)	43 (23%)	42 (22%)
Thoughts of suicide	147 (77%)	24 (13%)	4 (2%)	11 (6%)	5 (3%)
Feeling that everything is an effort	49 (26%)	52 (27%)	24 (13%)	39 (20%)	27 (14%)
Feeling of worthlessness	41 (21%)	21 (11%)	38 (20%)	47 (25%)	44 (23%)
Feeling of being caught or trapped	52 (27%)	46 (24%)	25 (13%)	32 (17%)	36 (19%)
Feeling of quilty	86 (45%)	39 (20%)	31 (16%)	16 (8%)	19 (10%)

Table 2. The results of the subjective analysis of the emotional disorders in the group of patients — IIa. **Group IIa**

Reported emotional problems	0	1	2	3	4
Loss of sexual interest or pleasure	21 (12%)	14 (8%)	31 (18%)	24 (14%)	79 (47%)
Fainting or dizziness	77 (46%)	35 (21%)	12 (7%)	19 (11%)	26 (15%)
Energy loss	26 (15%)	41 (24%)	46 (27%)	21 (12%)	35 (21%)
Thought of death/dying	148 (88%)	5 (3%)	5 (3%)	8 (5%)	3 (2%)
Blaming for different things	30 (18%)	42 (25%)	39 (23%)	36 (21%)	22 (13%)
Crying easly	39 (23%)	27 (16%)	28 (17%)	33 (20%)	42 (25%)
Feeling lonely	26 (15%)	19 (11%)	31 (18%)	35 (21%)	58 (34%)
Feeling blue/ sad feeling	15 (9%)	35 (21%)	38 (22%)	48 (28%)	33 (20%)
Indifference to everything	30 (18%)	37 (22%)	44 (26%)	32 (19%)	26 (15%)
Trouble with falling aspleep	44 (26%)	41 (24%)	27 (16%)	35 (21%)	22 (13%)
Hopeless feeling about future	31 (18%)	25 (15%)	39 (23%)	38 (22%)	36 (21%)
Thoughts of suicide	125 (74%)	24 (14%)	4 (2%)	11 (7%)	5 (3%)
Feeling that everything is an effort	52 (31%)	32 (19%)	29 (17%)	34 (20%)	22 (13%)
Feeling of worthlessness	42 (25%)	21 (12%)	28 (17%)	47 (28%)	31 (18%)
Feeling of being caught or trapped	57 (34%)	26 (15%)	24 (14%)	31 (18%)	31 (18%)
Feeling of quilty	83 (49%)	27 (16%)	24 (14%)	16 (9%)	19 (11%)

The results of the conducted studies indicate the common occurrence of emotional disorders in the group of patients treated for TMD, both in the group of muscular and joint dysfunctions. The assessment of the analyzed responses in the Axis II questionnaire indicates that only the question about death or dying was selected by a relatively small group of respondents from both groups, while the remaining questions, indicating anxiety in life issues and low mood, concerned most of the patients.

In group Ia, the highest intensity, marked with the number "4", 37% of patients indicated a feeling of loneliness and 33% of patients — a feeling of indifference to everything, and 26% of patients indicated tearfulness and blaming oneselfves for various things and a sense of sadness. The relatively largest number of patients (0) do not think about death, because 88% and 46% do not feel dizzy and do not feel guilty in various respects.

In group IIa, the greatest number of patients, 47%, indicated that they experienced an extremely strong loss of interest or pleasure in sex and 34% experienced a nagging feeling of loneliness and 25% reported extremely severe tearfulness. Less than 10%, in the grade 4 responses, only thoughts about death and suicide were indicated.

Many positive responses regarding the signs of emotional disorders indicate a high correlation of anxiety, anxiety and depression in the group of patients treated for temporomandibular disorders.

Discussion

Many scientific reports have been written about the etiological factors of TMD [1, 2, 4, 9, 10, 14, 15, 17–26]. This group of patients is of particular interest among dental patients for psychological considerations. The questions concern specific causes causing dysfunction, the assessment of the intensity of pain and emotional instability, as well as the share of genetic factors and the relationship between the occurrence of TMD and depressive states. Experience shows that the group of patients with myofiacial pain dysfunction or myogenic facial pain and the group with intra-articular disorders should be considered separately in psychological aspects.

There are three times more women among TMD patients in the third and fourth decade of life is also associated with the psycho-emotional condition. Long-term observations of the elderly population indicate a significant decrease in the prevalence of TMD in the elderly population, both among women and men [2, 4, 6, 17, 26]. Psychoemotional aspects are perceived as an important factor responsible for the development — especially pain form of dysfunction [20–28]. This group of patients shows significantly higher rates of somatization, stress, anxiety, and depression compared to healthy people, without symptoms of TMD [16, 19, 20–28].

Carlsson *et al.* [29] highlights in theirs project, that orofacial pain in the course of TMD in adolescent patients with juvenile idiopathic arthritis is associated with stress, psychological distress, jaw dysfunction and loss of daily living activities. Pain intensity seems to be the major pain aspect related to these factors. In addition, systemic inflammatory activity appears to be an important factor contributing to orofacial pain.

According to systematic reviews of the literature on the relationship between TMD and psychoemotional disorders, mood disorders, in particular depression, are the disturbance of mental functioning most frequently subjected to empirical analyzes in this group of patients [30–32].

A greater disposition towards psychoemotional dysfunction is observed among patients with a predominant TMD muscular component, compared to patients with a joint's disorder [33]. Selected personality traits, or a tendency to catastrophic cognitive distortions, consisting in predicting a negative future, are considered as a factor, responsible for a higher level of somatization and it is observed in the group of patients with a greater share of the muscle component [34, 35].

The general participation of depressive disorder symptoms in the entire research sample of this study shows that the reports, indicating the participation of the depressive component in the symptomatology reported by patients with TMD, are significantly far-reaching. It is noteworthy that most of the respondents meet the criteria for the diagnosis of a full depressive episode. Without considering the genesis of the observed symptomatology, as well as its individual intensity, the result of our own research should be considered as a significant. This result may indicate a global contribution of deterioration in psychoemotional functioning secondary to TMD, independent of the diversified contribution of psychological factors in the formation of the muscular and joint's type of TMD.

Bearing in mind that one of the many behavioral manifestations of this type of disorder are difficulties in maintaining motivational processes and a sense of self-efficacy so important from the point of view of the patient's involvement in the therapeutic process, taking into account the information on the patient's psychoemotional functioning in the entire process diagnostic seems necessary [2, 7, 16, 25, 35].

The qualitative analysis of the symptoms of psychoemotional dysfunction reported by patients indicates a small share of suicidal thoughts. However, the limitations of the study population should be taken into account — empirical analyzes were performed on the results of people who applied for this study, while major depressive episodes are associated with a very limited mobility of patients.

In addition, previous studies have shown that a higher rate of suicidal ideation in the group of TMD patients who have a history of oncological treatment, or adolescents — especially male, while none of these clinical groups was not included in the study [36, 37].

The quantitative analysis of the symptomatology of the psychopathological state corresponding to mood disorders in the form of depressive disorders in patients in the discussed clinical groups does not indicate significant differences between the analyzed groups of patients. Replicating the research on a larger sample of respondents would be helpful in determining whether the trend of shifting the values of the results towards higher values (e.g. loss of interest or pleasure in sex — in the group of people with joint disorders) takes the form of a certain tendency in the distribution of results observed in the case of selected symptoms. It is possible that the differences in the share of physical, emotional or cognitive symptoms of mood disorders would only be revealed by a qualitative analysis of the results. Thus, it is possible that patients report a similar number of symptoms, with their expression or subjective experience varying depending on the type of TMD. The results of the conducted research indicate the need for psychological support in this group of patients [16, 27, 32, 36].

Conclusion

The results of the conducted research indicate a significant frequencies of psychological and emotional disturbances reported in a survey among patients with TMD.

Conflict of interest

None declared.

Financial disclosure

The authors have no financial contributions.

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