

Mental Disorder and Bruxism

SUMMARY

Background / Aim: Depression as a complex mental, emotional condition, negatively affects productivity, its diagnosis requires accurate emotional analysis for patients who have an imbalance of neuro-psychiatric function. Bruxism is related to teeth grinding, jaw clenching at any time. The purpose of this study was to determine the correlation between patients with mental disorders and the occurrence of bruxism. **Material and Methods:** During 2019-2023 were examined 30 patients from the psychiatry department of QSU "Mother Tereza", Tirana, 13 were female, 17 male, aged 20-50 years. Also was investigated the control group with 119 students, aged 18-25. Two groups were observed according to the questionnaire related to the occurrence, content of bruxism. The treatment of the patients was combined by following methods: psychological, use of relaxing medications, prosthetic treatment by relaxant splints. **Results:** Bruxism with jaw muscle pain, abrasion was found in 80% of cases in the study group with a $p \leq 0.001$, and 50.4% in the control group, finding a statistical relationship of bruxism between 2 groups, $p = 0.01$. **Conclusions:** Psychogenic - emotional is main factor and role in the bruxism presence. Referring our study, local and foreign authors, the treatment of this diagnosis must be done by combined therapeutic-prosthetic method.

Key words: Bruxism, Psychological Emotion, Neuro-Physiatry Disorder, Stress, Muscles Pain

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ORIGINAL PAPER (OP)

Balk J Dent Med, 2023;187-191

Introduction

Depression is a complex mental and emotional condition that negatively affects mental productivity and jaw movements at the individuals. Diagnosing depression as a mental disorder requires accurate emotional examination¹. Patients, which are under the influence of emotional factors, including the patients with a high level of mental disorders, lack subjective awareness and achieve psycho-emotional discharge through teeth grinding^{2,3}. Such patients are under the influence of emotional factors that are discharged by teeth grinding⁴. Depressive patients and those who have an imbalance of neuro-psychiatric function are not themselves aware of such pre-functional habits.

Diagnosing depression as a mental disorder requires an accurate emotional assessment from psychiatrist specialist. The reason is that the psychiatrist must conclude about the causes of depression to prevent the pre-functional consequences that appear in the stomatognathic apparatus.

Bruxism is a strong and unconscious grinding of the teeth, and this has to do with the grinding of the teeth during jaw movement and this pathology is fairly widespread, since social civilization is related to the stresses that every individual goes through. Emotional stress plays an important pathogenetic role in the appearance of bruxism^{4,6}. Bruxism is categorized in the diseases of the century, therefore its study is a requirement of the time to conclude on the influence that mental

disorders have on the pre-functional motor movements that are accompanied by teeth grinding^{3,4}.

Three are factors that lead to the appearance of bruxism: psycho-genic factors: dental factors and muscular factors. Epidemiological analysis and studies shown about 5-96% of the population suffer from bruxism and of these 10-20% are aware of the presence of teeth grinding⁷. In our study, about 80% of patients examined with mental disorders were found to have bruxism accompanied by eccentric movements of the mandible^{7,8}. In addition to the anamnesis data, the presence of these symptoms in a patient such as: abrasion of the dental structure, hypertrophy and pain of the masticatory muscles, hyper-sensitivity of the dental system, evidence that bruxism is present in 100% of cases^{6,8}.

The consequences of bruxism are as follows: i) abrasion at the dental and articular system that appear by TMJ pain during jaw movement, ii) difficulty in opening the mouth as impact of the hypertrophy of the masseter muscle, iii) atypical movement of the mandible, iii) creaking and joint pain^{7,9}.



Figure 1. Abrasion of Dental System



Figure 2. Hypertrophy of the Masseter Muscle

Different treatment modalities are recommended for the management of patients with bruxism and are classified according by treatment methods: psychological treatment; medicament treatment; and prosthetic treatment by using of relaxed splints¹⁰⁻¹².

The aim of study was, to evaluate and compare the correlation that exists between patients with mental disorders and the occurrence of bruxism in both groups of patients, according the following objectives: i) to evaluate the pathogenetic factors that have had impact in this group of population with apparent bruxism, and which are accompanied symptoms to both groups, ii) to determine treatment methods to the bruxism, as well as, which are the results of medicament-prosthetic combined treatment used in our study.

Material and Methods

From October 2019 to March 2023, about 30 patients of the psychiatry department at the “Mother Teresa” University Hospital Center, Tirana-Albania, were examined. Of these patients, 13 persons were female, and 17 persons were male, and their ages ranged from 20 to 50 years old. In addition to these patients, a group of 119 students were also investigated as a control group, and they ranged in age from 18 to 25 years old, of these, 70 persons were female, while 49 persons were male.

The contingents of the number of patients included in our study, were observed based on the distributed questionnaire and related to the appearance and content of bruxism, abrasion and atrophy of masticatory muscles, which were realized according to the respective anamnesis for each of the persons. From the contingent, were treated 8 patients with mental disorders from the study group, while from the control group were treated 20 students, affected by bruxism symptoms.

The treatment of patients for both groups was combined, medicaments-prosthetic, as well as by using the relaxed splints. The results of the treatment were evaluated for different time periods of 3, 6 and 9 months.

Management of patients with bruxism

The segregated samples for our study were managed based on the following protocol: i) anamnesis, ii) extra-intraoral examinations, iii) 3D radiography, and iii) therapeutic-prosthetic treatments using the relaxed splints.

The collected data were statistically analyzed according to the SPSS program (Statistical Package for Social Science), Version 2.1. The data obtained were presented according to the absolute values and percentages in parentheses, using the significant level of a $\leq 5\%$, which data represent the connection between these variables, and was realized through the *Chi-Square* test, presented by diagrams and graphics.

We examined 30 patients of the psychiatry department at the “Mother Teresa” University Hospital Center, Tirana-Albania, and also, a control group consisting of 119 students of the Medicine Faculty.

Table 1. Patients gender examined in study

Groups	Female (%)	Male (%)
Study group	13 (43.3)	17 (56.7)
Control group	70 (58.82)	49 (41.18)
Σ	83	66

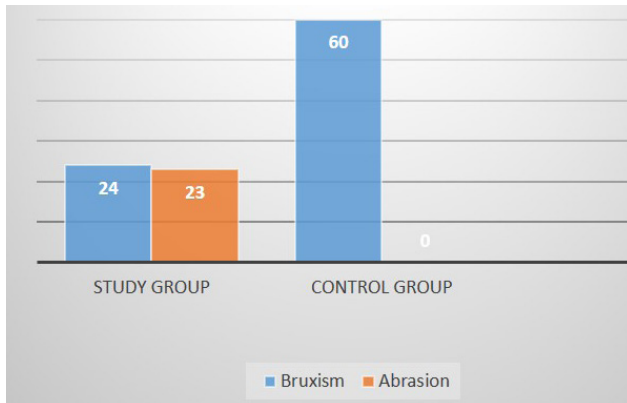


Figure 3. Patients gender examined in study

Table 2. Patients gender with/without Bruxism

Groups	with Bruxism (%)	without Bruxism (%)
Study group	24 (80)	6 (20)
Control group	60 (50.4)	59 (49.6)

Results

The bruxism among others, has several consequences, which are accompanied by abrasion of the dental structure and in our study was identified in both groups, presented in Table 3 and Figure 4. Abrasion was observed in 100% of the cases in the study group, and was compared to the control group by 0 (%). This study presents a significant statistically relationship in both groups with $p \leq 0.001$ a was found.

Table 3. Bruxism and abrasion at both study groups

Groups	Bruxism (%)	Abrasion (%)	p-values
Study group	24 (80)	23 (100)	$p \leq 0.001$ a
Control group	60 (50.4)	0 (0)	

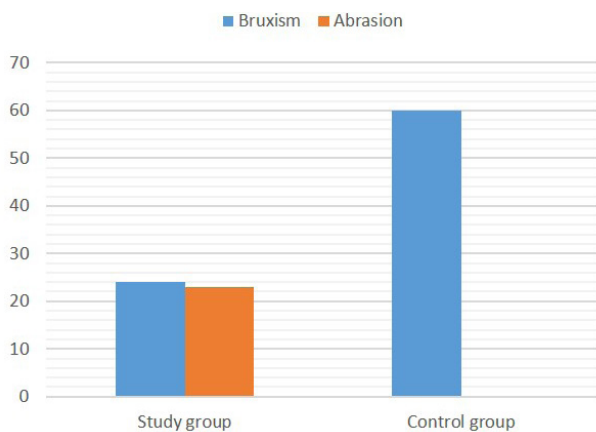


Figure 4. Patients with bruxism and abrasion

The treatment of the patients was combined with medication and prosthetics. For the patients with mental disorders, the psychiatrist specialist used medication, anti-depressant treatment, while for the control group, anxiolytics and muscle relaxants were used. This medication treatment was accompanied by prosthetic treatment, using the relaxed splints (Table 4).

Table 4. Study groups treated with relaxed splints

Groups	Splint's holder (%)	Not Splint's holder (%)	p-value
Study group	6 (75)	2 (25)	$p \geq 5\%$ a
Control group	17 (85)	3 (15)	

Totally, 8 patients were treated with relaxed splints in the study group, 6 (75%) of the cases have been regularly splint's holders, while 2 (25%) of the cases did not used regularly relaxed splints. According the statistical analysis was observed that there is no significant statistically relationship between two groups, because the $p \geq 5\%$ a, has had relatively high value.

Pathogenetic factors causing bruxism were depressive disorders, stress and anxiety. From about 119 students of the control group, 60 (50.4%) were examined to be affected by bruxism, while in the study group was identified the pathogenetic factor in about 30 (100%) of the cases were depressive (mental) disorders, mainly caused by bruxism. The treatment of mental patients was carried out by a psychiatrist specialist with anti-depressants, in order to avoid all external irritants and to create relative silence. While for the control group, therapy with myorelaxant medications was applied to avoid the anxiety and stress that students carry during the exam season.

We support the results of bruxism treatment in our study based at following indicators: 1] Subjective data showing improvement of the functional state, relief of the pain of the masticatory muscles, reduction of teeth grinding until the final disappearance stage of this habit; 2] The clinical data collected observed for both groups have presented that using regularly of the relaxed splints reduce the teeth grinding in one's glory. Every two months, the control for the reduction of the teeth grinding was carried out, and the results of the treatment are shown in Table 5.

Table 5. Control groups with bruxism

Treatment Time	Improvement (%)	Recovered (%)	Same situation (%)	Totally
2 months	2 (10)	1 (5)	17(85%)	20
4 months	6 (30)	6 (30)	8(40)	20
6 months	0 (0%)	17(85%)	3(15%)	20

We have observed that in the first four months, 6 patients (30%) have had improvement, while the complete

elimination of teeth grinding is achieved after 6 months in a considerable number about 17 (85%) of the study cases. Also, from our observation, we stated that from the control group only 3 patients (15%) of the cases did not hold the relaxed splints. The patients of the study group have been under regularly observation for over 8 months, being accompanied by antidepressant medication treatment by a psychiatrist specialist and according to this treatment was observed in such patients, the growth of teeth chattering decreased a lot, not only at night, but also during the whole day of their hospitalization.

Discussions

We have treated 2 groups of patients, one was the study group consisting of 30 patients with mental disorders (depressive), as well as the control group consisting of 119 patients aged 18-25 years. For both groups, the women gender was predominant with 58.82%. This fact is explained according to the experiences of the different local and foreign authors that women gender is more sensitive and protected against the stress compared to men gender.

Bruxism is a pathology that is accompanied by several symptoms like: abrasion of the dental structure and articular system, hypertrophy of the masseter muscle, atypical movement of the mandible, creaking and joint pain etc., that affect different ages of patients, starting from the age of 18-50 years^{13,8}. In the study group at the patients with mental disorders, the bruxism phenomena was observed in 80% of cases, while in the control group it was observed in 50.49% of them. This high prevalence of bruxism in mentally and depressant patients of the study group, which is in accordance with previous studies^{8,10,13,14} of the referring authors, may be explained by the fact that they relieve daily stress by clenching their teeth. While, the high prevalence (50.49%) of the control group of students is explained by the fact that they are exposed to stress due to the academic and personal responsibilities they have during exam seasons.

An important role in the etiology of bruxism play the psychological factor, which is join in with the spiritual world and it was the totality of the spiritual experiences as a reflection of the objective reality in the patient's consciousness and as a product and condition of his interaction with the environment that surround him, observed in the study group at about 100% of cases, as well as at about 50.4% of the cases to the control group and the stress factor was predominant.

Most patients with bruxism have reported: the teeth creaking phenomena night and day was carried out during heavy engagements or from the increase in the daily load of mental work. When the realization of daily objectives is

not achieved, then the nervous overload is discharged with teeth grinding^{15,17}.

We have managed the treatment of patients for both study groups according to the combined therapeutic-prosthetic^{18-20,23} method, and the positive results in 85% of cases were achieved in the control group of students, while in the group of mentally ill patients, positive results were achieved by prosthetic treatment using relaxed splints^{21,22,24,25}. It is preferable to implement care and important prophylactic measures as soon as possible, so that this pathology does not install in this contingent of patients, and does not aggravate it further^{24,25}.

Bearing in mind previously stated, it can be recommended an appointment to the gnathologist specialist when the dentists randomly discover patients with the symptoms of the bruxism. Based in our intense studies, and in order to achieve good results for the management and treatment of several anomalies at the patients with bruxism disorders, a combined therapeutic-prosthetic treatment method must be recommended according to the treatment period. The close cooperation between patients with anomalies of bruxism and gnathologist specialist, should be carried out to forego achievement the positive and appropriate results during their treatment.

Conclusions

From our study we have derived in following conclusions:

1] The psychogenic-emotional factors are sufficient favorable, as well as have an important role in the appearance of the bruxism in the stomatognathic apparatus.

2] The treatment of the symptoms and anomalies of the bruxism in the mentally, depressive disorder patients, must be carried out in particular consultation of the psychiatrist specialist and gnathologist doctor.

3] In our study the prosthetic treatment by using the relaxed splints achieves very good results, when it was regularly maintained for a period over than 6 months.

Acknowledgements: Three contributors of the manuscript (OP), appreciate generally fruitful cooperation with the staff of the psychiatry department at the "Mother Teresa" University Hospital Center, Tirana-Albania, as well as with the statistical office of the Dental Medicine Faculty.

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Received on September 26, 2023.

Revised on October 10, 2023.

Accepted on October 2, 2023.

Conflict of Interests: Nothing to declare.

Financial Disclosure Statement: Nothing to declare.

Human Rights Statement: All the procedures on humans were conducted in accordance with the Helsinki Declaration of 1975, as revised 2000. Consent was obtained from the patient/s and approved for the current study by national ethical committee.

Animal Rights Statement: None required.

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