



Evaluation of the Relationship Between Bruxism, Temperament and Childhood Trauma History

Bruksizm Yakınması Olan Kişilerde Mizaç Özelliklerinin ve Çocukluk Çağı Travma Öyküsünün Değerlendirilmesi

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Abstract

Objective: It is known that psychological factors play a role in the development of bruxism and temporomandibular joint disorders. The purpose of this study was to examine the effects of depressive disorder, anxiety disorder, childhood psychological trauma levels, and personality temperament characteristics on bruxism.

Materials and Methods: Patients who applied to the Aydın State Hospital, Psychiatry Polyclinic and Aydın Adnan Menderes University Faculty of Dentistry with a complaint of clenching were included in the study. Clinical interview, SCID-I, Beck Depression Rating Scale (BDRS) Beck Anxiety Rating Scale (BARS), Temperament Evaluation of Memphis, Pisa, Paris and San Diego Autoquestionnaire (TEMPS-A), childhood trauma scale (CTS) were applied.

Results: The mean BDRS was determined as 13.5 BARS 20.7. According to the cut-off values of the Beck depression scale, mild depressive symptoms were observed in 25 people, moderate depressive symptoms in 20 people, and severe depressive symptoms in 7 people. Twenty-five people had mild anxiety symptoms, 14 people mild, 21 people had severe anxiety symptoms. Hyperthymic (n=1), depressive (n=11), anxious temperament (n=15), irritable temperament (n=4), and cyclothymic temperament (n=1) were found. Almost no hyperthymic or cyclothymic temperament was found in patients with bruxism. No statistically significant difference was found between men and women in terms of temperament (p>0.05), the mean of CTS was 58.6, and no difference was found in the sub-dimensions of physical, sexual emotional abuse and emotional and physical neglect.

Conclusion: Although many factors are related in the etiology of bruxism, studies on the effect of personality and temperament are less. In our study, anxious temperament was found to be significantly higher in patients with bruxism.

Keywords: Bruxism, temperament, childhood trauma

Öz

Amaç: Diş sıkma ve temporomandibular eklem hastalıklarının etiyolojisinde psikolojik faktörlerin önemli olduğu bilinmektedir. Bu çalışmanın amacı diş sıkma hastalarda depresif bozukluk, anksiyete bozukluğu çocukluk çağı ruhsal travma düzeylerini ve kişilik mizaç özelliklerinin etkisini saptamaktır.

Gereç ve Yöntemler: Aydın Devlet Hastanesi Psikiyatri Polikliniği'ne ve Aydın Adnan Menderes Üniversitesi Diş Hekimliği Fakültesi'ne diş sıkma şikayeti ile başvuran hastalar çalışmaya alınmıştır. Katılımcılara, SCID-I, Beck Depresyon Derecelendirme Ölçeği (BDDÖ), Beck Anksiyete Derecelendirme Ölçeği, Memphis, Pisa, Paris ve San Diego Mizaç Değerlendirme Anketi Türkçe formu, Çocukluk Çağı Travma Ölçeği (ÇÇTÖ) uygulanmıştır.

Bulgular: Hastalarda BDÖ ortalaması 13,5, BAÖ 20,7 olarak belirlenmiştir. BDDÖ kesme değerlerine göre bakıldığında 25 kişide hafif, 20 kişide orta, 7 kişide şiddetli depresif belirtiler gözlenmiştir. Yirmi beş kişide hafif, 14 kişide orta, 21 kişide şiddetli anksiyete belirtileri vardı. Hipertimik mizaç (n=1), depresif mizaç (n=11), anksiyöz mizaç (n=15), iritabl mizaç (n=4), siklotimik mizaç (n=1) olarak saptanmıştır. Bruksizm olan hastalarda neredeyse hipertimik ve siklotimik mizaca rastanmamıştır. Mizaç açısından kadın ve

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erkekler karşılaştırıldığında fark saptanmamıştır ($p>0,05$). ÇÇTÖ ortalaması 58,6 olup, fiziksel, cinsel, duygusal istismar, ve duygusal, fiziksel ihmal alt boyutlarında fark saptanmamıştır.

Sonuç: Bruksizm etiyojisinde birçok faktörün ilişkisi olmakla birlikte kişilik ve mizaç etkisi ile ilgili çalışmalar daha azdır. Çalışmamızda bruksizmi olanlarda anksiyöz mizacın belirgin olarak daha yüksek olduğu saptanmıştır.

Anahtar Kelimeler: Bruksizm, mizaç, çocukluk travması

Introduction

Oral health and hygiene is an integral part of overall health. It is also an important role in quality of life, which affects an individual's appearance, speaking, eating and social status. Oral diseases qualify as major public health problems owing to their high prevalence and incidence in all regions of the world, and as for all diseases, the greatest burden of oral diseases is on disadvantaged and socially marginalized populations. It is known that the evaluation of oral health in individuals with psychiatric disorders has a weak priority. Psychiatric patients who report significant oral health problems due to the side effects of the drugs used and the nature of the disease are prone to more negative effects (1).

As a result of the chronicity of the psychiatric illness, there is reluctance to provide oral hygiene. Chronic psychiatric patients constitute a high risk group in terms of oral health due to inadequate dental visits, irregular eating habits, poor oral hygiene and side effects of the drugs used. The data on this subject show that individuals with psychiatric diseases have more oral health problems and treatment needs. Impairment in executive functions, reluctance towards dental treatment, financial difficulties resulting from job loss, long-term hospitalizations, family and community difficulties such as lack of support, stigma in the society, and the reluctance of some dentists to treat these individuals contribute to the high incidence of dental caries and periodontal disease in these patients. Therefore, the necessity of considering the possible negative effects of treatment options on oral and dental health during the treatment of psychiatric patients is emphasized in many studies (2).

However, apart from hygiene, it is known that psychological factors are play a role in the etiology of temporomandibular joint disorders and bruxism. Bruxism is a common, unusually increased jaw activity caused by strong jaw movements accompanied by teeth grinding and/or clenching.

In the past years, it has been suggested that morphological factors such as occlusal disorders and the anatomy of the bone structure of the orofacial region cause bruxism. However, nowadays, the role of various neurotransmitters in the central nervous system, especially in the dopaminergic system, dysfunction in the afferent and efferent thalamic and/or striatopallidal pathways, and the basal ganglia that play a role in the coordination of movements are emphasized (3).

If bruxism occurs during a neurological disease such as parkinsonism, a psychiatric disorder such as depression, schizophrenia or with the use of a drug, it is called "secondary bruxism". Dopamine antagonist drugs have the effect of inducing bruxism or worsening existing bruxism (4). Periodontitis may also be exacerbated in some patients using SSRIs because these drugs cause a motion sickness including bruxism. These drugs may cause bruxism by increasing extrapyramidal serotonin levels and thus suppressing the dopaminergic pathways of these control movements.

When the literature is examined, it has been noticed that there are not enough studies on this subject. The aim of this study is to detect the prevalence of depressive disorder, anxiety disorder, childhood trauma and personality temperament traits in people with bruxism.

Materials and Methods

This study was approved by Aydın Adnan Menderes University Non-Invasive Clinical Research Ethics Committee (protocol no: ADÜDHF2018/041, date: 15.08.2018). Patients between 18-79 years of age who applied to the Aydın State Hospital, Psychiatry Polyclinic and Aydın Adnan Menderes University, Faculty of Dentistry with a complaint of clenching were included in the study. Patients who applied to the clinic and accepted to participate in the study were first examined by an experienced dentist and those who could not find any underlying disease related to bruxism were included in the study. The psychiatric evaluation was made by the psychiatrist after the patients with the complaint of clenching were evaluated by the dentist.

Demographic and clinical variables such as age, gender, educational status, marital status, past psychiatric disease, drug use history, alcohol, smoking, substance use status, clenching and comorbid disease were collected through the sociodemographic data form created by the clinician.

Clinical interview, The Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I), Beck Depression Rating Scale (BDRS), Beck Anxiety Rating Scale (BARS), Temperament Evaluation of Memphis, Pisa, Paris and San Diego Autoquestionnaire (TEMPS-A), childhood trauma scale (CTS) was applied by clinician.

Patients who did not read and sign the informed consent form, were diagnosed with schizophrenia, bipolar disorder, had a history of mental retardation and substance use disorder, and had systemic diseases that could cause bruxism were not included in the study.

Statistical Analysis

Independent Sample t-test was used for the comparison of normally distributed quantitative data between the groups, and Pearson chi-square test was used for the comparison of qualitative data.

Data Collection Tools

Diagnostic interviews with the Turkish version of SCID-I were conducted with each patient. The Structured Clinical Interview for DSM-IV Axis I Disorders was developed by First et al. (5) to diagnose according to the DSM-IV system.

TEMPS-A questionnaire was developed by Akiskal et al. (6) to identify affective temperament. The questionnaire consists of 99 items arranged to determine irritable, depressive, cyclothymic hyperthymic and anxious temperaments. Temperament is an individual's characteristic level of emotional excitability or intensity and is typically recognized within the first few weeks after birth. It is often assumed to be an early indication of personality, though personality combines temperament with experiences to shape life-long traits. Thinking about his whole life, the person answers the items as yes or no to determine the presence of dominant depressive (18 items), cyclothymic (19 items), hyperthymic (20 items), irritable (18 items) and anxious (24 items) temperaments in a person. The cut-off points (minimum "yes" response required to determine temperament) were 13, 18, 20, 13 and 13, respectively.

The Turkish validity and reliability studies of this form were carried out by Vahip et al. (7). The test-retest reliability of the Turkish form, calculated for each temperament trait, is between 0.73 and 0.93 and the Cronbach-alpha coefficients between 0.77 and 0.85.

BDRS measures the emotional, physical and cognitive symptoms of depression. It is a self-assessment scale that includes 21 symptom categories and used to assess the severity of depression. The highest score to be obtained is 63. It was developed by Beck et al. (8) and its validity and reliability study in Turkey was performed by Hisli (9).

BARS is used to evaluate the anxiety symptoms of individuals. It is a Likert-type self-assessment scale consisting of 21 items. The high total score indicates the high level of anxiety experienced by the person. It was developed by Beck and Steer (10) and its validity and reliability study in Turkey was performed by Ulusoy et al. (11).

CTS developed as 70 items by Bernstein in 1994 (12). The scale was adapted into Turkish in 1996 by Şar et al. (13). It is a five-point Likert type self-report scale. The scale, which includes questions evaluating emotional, physical, sexual abuse and verbal violence in childhood, has five factors: emotional, physical, sexual abuse and physical and emotional neglect. It is a self-report scale for retrospectively evaluating childhood and adolescence experiences of abuse and neglect. In the scale, physical or sexual abuse scores range from 7-35, emotional neglect scores range from 16-

80, physical neglect scores range from 8-40, and emotional abuse scores range from 12-60.

Results

Of the 82 people who agreed to participate in the study, 70 (86%) were female and 12 (14%) were male, and the rate of females was found to be more frequent among the people who came to the psychiatry outpatient clinic with the complaint of teeth clenching randomly. In terms of their marital status, 46.3% were married, 41.5% were single and 3.7% were divorced, with an average age of 35.7 and an average education level of 9.9 years.

The mean BDRS was determined as 13.5 BARS 20.7. According to the cut-off values of the BDRS, mild depressive symptoms were observed in 25 people, moderate depressive symptoms in 20 people, and severe depressive symptoms in 7 people. Twenty-five people had mild anxiety symptoms, 14 people moderate, 21 people had severe anxiety symptoms.

Hyperthymic (n=1), depressive (n=11), anxious temperament (n=15), irritable temperament (n=4), cyclothymic temperament (n=1) were determined. Almost no hyperthymic or cyclothymic temperament was found in patients with bruxism.

No difference was found between men and women in terms of temperament ($p>0.05$), the mean of CTS was 58.6, and no difference was found in the sub-dimensions of emotional, physical, sexual abuse and physical, emotional neglect.

Discussion

Psychological factors have an important place in the etiology and progression of the bruxism. The present study attempted to highlight this role by evaluating the patients who applied to the dental clinic. According to the results of our study, psychiatric evaluation is very important in people with bruxism. Anxiety disorder and anxious temperament were found to be more common in patients with bruxism.

The most acceptable diagnostic criteria for bruxism are specified in the third edition of the International Classification of Sleep Disorders. In this classification, bruxism is included in the group of "sleep-related movement disorders". For a diagnosis of sleep-associated bruxism to occur, there must be abnormal wear on the tooth surfaces due to teeth grinding. In addition, at least one of the clinical conditions such as pain and fatigue in the jaw muscles that occur temporarily in the morning, temporal headache and jaw locking must be present (14). Sleep bruxism (nocturnal bruxism) is included in DSM-IV-TR as "parasomnias not otherwise named" among parasomnias. However, bruxism is not included in the DSM-5. In addition to sleep bruxism, the diagnosis of psychogenic bruxism (F45.8 Other somatoform disorders) is also included in the International Statistical Classification of Diseases and Related Health Problems 10th Revision. Psychogenic bruxism is defined as bruxism in which there is sensory, function, and behavioral impairment resulting from physical disorders, which is

closely related to stressful events or problems over time, but is not mediated by the autonomic nervous system.

Many theories have been proposed over the years, and a multifactorial model to explain bruxism etiology seems to be the most plausible hypothesis, according to which psychosocial and pathophysiological factors interact with morphological-peripheral ones (15).

In our study, patients with schizophrenia, bipolar disorder, substance use disorder and etc. were excluded by applying SCID 1. In studies with a larger number of patients, the frequency of comorbidity with other psychiatric diseases in people with bruxism can be examined. In order to eliminate confounding factors, conditions such as drug use were determined as exclusion criteria in this study.

Although many factors are related in the etiology of bruxism, studies on the effect of personality and temperament are less. In our study, anxious temperament was found to be significantly higher in patients with bruxism.

The disquiet temperament of the schoolchildren was shown to be associated with the occurrence of this parafunctional activity (16).

In particular, studies based on the clinical diagnosis of bruxism have provided a detailed description of temperamental features that characterize bruxism (e.g., perfectionism aggressiveness, hostility and sensitivity to stress), also pointing out a high prevalence of psychosocial disorders in populations of bruxers. These studies seem to reinforce the widely held view that a bruxism-psychosocial factors relationship exists among practitioners (17,18).

Further studies are needed to understand the link between anxiety and wake bruxism. Indeed, wake bruxism may be the result of a transient anxious response to stressful life events or a phenomenon related to a more complex psychopathological disorder (trait anxiety). Findings based on the use of questionnaires associated bruxism with both types of anxiety (19). These considerations seem to suggest that existence of a wake bruxism personological profile, strictly related to the sphere of mood and anxiety disorders, exist, even though it has not been defined yet.

The prevalence rate found especially for hyperthymic temperament is much higher than that reported in the healthy population (20) and unipolar disorders (21) in line with the results of studies conducted in our country and abroad. This finding supports the long-held assumption that there are specific temperamental characteristics of depression and mania. In other words, depression is primarily associated with depressive temperament and mania with hyperthymic temperament (22).

In our study, it was determined that anxious and depressive temperaments were more common in people with bruxism, but hyperthymic temperament was rare. Those with serious mental disorders such as bipolar disorder and schizophrenia were excluded.

In a study by Şahpolat et al. (23), the mean CTS score of the group of individuals with bruxism was found to be similar to the values in our study (66.88 ± 12.41). However, it was stated that there was no statistically significant difference with the healthy control group. Friedrich (24) indicated that childhood physical and sexual abuse increased somatic complaints in victims. In a study conducted in the adult age group, it was reported that somatization disorder and chronic gastrointestinal disorders were more common in cases with a history of abuse (25).

The small sample size is the main limitation of our study. The lack of control group is another important limitation. In this respect, repeating the study with a larger sample may yield more accurate results.

Conclusions

In our study, childhood abuse and neglect experiences were determined based on the self-report of the patients and with the help of the scale as it was defined. Therefore, it may have caused the patients to have lower psychological traumatic life scores.

Ethics

Ethics Committee Approval: This study was approved by Aydın Adnan Menderes University Non-Invasive Clinical Research Ethics Committee (protocol no: ADÜDHF2018/041, date: 15.08.2018).

Informed Consent: Informed consent was obtained.

Peer-review: Externally and internally peer-reviewed.

Authorship Contributions

Concept: A.D., Design: A.D., G.Ö., Data Collection or Processing: A.D., G.Ö., Analysis or Interpretation: A.D., Literature Search: A.D., G.Ö., Writing: A.D.

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