اضطرابات المفصل الفكي الصدغي وعلاقتها بالضغط النفسي لدى طلاب منظمة رعاية الأسنان الوطنية

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الملخص

خلفية البحث وهدفه: أُبلِغَ عن علاقة وثيقة بين الاكتئاب والتوتر وعدة أعراض واضطرابات. هذا الأمر صحيح فيما يخص اضطرابات المفصل الفكي الصدغي، وهو مصطلح يجمع عدداً من المشكلات السريرية التي تشمل العضلات المضغية– المفصل الفكي الصدغي والبنى المرتبطة به أو كليهما.

هَدفتْ هذه الدراسة إلى تقييم العلاقة بين التوتر واضطرابات العظم الفكي الصدغي بين طلاب منظمة رعاية الأسنان الوطنية (NDC).

مواد البحث وطرائقه: حجم العينة 80 طالب من السنة الأولى من 37) NDC ذكراً – 43 أنثى) و80 طالباً من السنة الثانية 30)ذكراً و50 أنثى (أولاً: الطلاب جميعهم خضعوا لاستبيانات عن التوتر، ثانياً: الطلاب المتوترون خضعوا لمزيج مختلف من الفحوصات والاستبيانات السريرية وفق معايير تشخيص بحوث اضطرابات المفصل الفكي الصدغي (المحور 1) التي لديها سلسلة معيارية من الاختبارات التشخيصية التي تعتمد على الأعراض والعلامات السريرية. تُحلَّل البيانات باستخدام اختبارZ، ومربع تشي.

النتائج: أظهرت النتائج التي تم الحصول عليها من هذه الدراسة عدم وجود فروق كبيرة بين الصفوف حسب الفحوصات السريرية في نسبة الطلاب المتوترين مع اضطرابات في المفصل الفكي الصدغي، لكن في كلا الصفين كانت نسبة الإناث المصابات باضطرابات في المفصل الفكي الصدغي أعلى من الذكور. كان صرير الأسنان أعلى بنسبة كبيرة عند طلاب السنة الثانية.

الاستنتاج: كشفت هذه الدراسة أنَّ ضغوط الدراسة في السنة الثانية ليس لها أي تأثير في انتشار اضطرابات المفصل الفكي الصدغي.

كلمات مفتاحية: التوتر – اضطرابات المفصل الفكي الصدغي – الليفي العضلي.

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Temporomandibular Disorders in Association with Stress Among Students of National Dental Care

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Abstract

Background: A close relationship had been reported between depression, anxiety and many disease symptoms or disorders. This is true for temporomandibular disorders which is a collective term embracing a number of clinical problems that involve the masticatory musculatures, temporomandibular joint and associated structures, or both. This study designed to evaluate the association of stress with temporomandibular disorders among National Dental Care (NDC) students.

Materials and methods:The sample's size of 80 students of first year (NDC) (37males and 43 females) and 80 (30 males and 50 females) of the second year. Firstly all the students subjected for stress questionnaire, secondly the stressful students subjected to different combination of clinical and questionnaire measures according to the research diagnostic criteria of temporomandibular disorders (axis I) which have standardized series of diagnostic tests based on clinical signs and symptoms. Data are analyzed by using Z-test and chi-square.

Results: The results obtained from this study showed that no significant differences between classes in the percentage of stressful students with temporomandibular disorders according to the clinical examination but in both classes, females' students showed higher percentage of temporomandibular disorders than males of same class. Bruxism was significantly higher among students of second year.

Conclusions: This study revealed that stress of studying at second year has no effect on temporomandibular disorders prevalence.

Keywords: Stress, temporomandibular disorders, myofascial.

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Introduction:

Temporomandibular joint (TMJ) should not be isolated or excluded from being associated with other joints disorders but fortunately the temporomandibular disorders (TMDs) could be an early exploration to other joint disorders[1] Temporomandibular disorders are a collection of disorders involving the temporomandibular joint, the soft tissue structures within the joint, and the muscles of mastication [2]. The etiology of these disorders is multidimensional. Biomechanical, neuromuscular, biopsychosocial, and neurobiological factors may contribute to TMDs [3]. These factors are initiating and aggravating (parafunctions, hormonal, or psychosocial factors) to emphasize their role in the progression of TMD [4]. Some studies revealed that occlusal factors were only weakly associated with TMD signs and symptoms [5, 6]. Moreover, there are people classified as bruxers, who did not present history of pain in masticatory muscles [7, 8]. There is currently considerable evidence that psychological factors are of importance in the understanding of TMD. Research findings have supported a relationship between anxiety, muscular tension, and TMD symptoms, the psychological status assessment showed that 39.8% of patients with TMD experienced moderate to severe depression, and 47.6% had moderate to severe nonspecific physical symptom scores (somatization) [9]. The importance of psychological factors in the etiology of TMD has usually been emphasized; they are believed to predispose the individual to chronicity [10]. Temporomandibular disorders are often associated with somatic and psychological complaints, including fatigue; sleep disturbances, anxiety, and depression [9, 11]. Thus, considering that stress is associated with psychological disturbances such as anxiety and depression [12].

Materials and methods:

This study was carried out in randomly selected students of National Dental Care for evaluation the association of stress with TMDs in students according to the research diagnostic criteria of TMD (RDC/TMD axis I). The sample's size of 80 students of the second year(30 males and 50 females) and 80 (37 males and 43 females) of the first year. Subjects gave their informed consent and the local ethical committee approval. The students subjected for stress questionnaire which consist of 20 questions a score of 7 or more is considered positive for a potential psychiatric problem. Then the stressful students subjected to different combination of questionnaire and clinical measures according to RDC/TMD (Axis I). The stressful students whom subjected to clinical examination had no history of head injury and without orthodontic treatment, dental pain, muscle tenderness due to systemic diseases as fibromyalgia, neuralgia or local infection and had no more than 2 missing posterior teeth. The stressful students who had pain in the face, jaw, temple, priauricular or in the ear and headaches or migraine or pain that limit these activities: chewing, exercising, eating hard or soft food or drinking, smiling, oral hygiene, yawning and talking and those who had clicking, bruxism and oral habit were asked about: the pain history with conformation of pain location plus palpation of masticatory muscle sites, results in report of familiar pain[13], and asked about jaw locking or catching that interfere with eating The students with positive answer subjected to clinical examination, these include ear examination, cervical examination, and determination of masticatory muscles pain during active mouth opening (un-assisted mouth opening) and passive mouth opening (assisted mouth opening).This accomplish by Palpation the TMJ (lateral pole) during opening and closing three times at least to detection the joint sound. Then determination of masticatory muscles and TMJ pain during excursive movement of mandible, with determination of joint sound on excursive movement of mandible by stethoscope placed on lateral pole of TMJ [14] Tenderness of TMJs needs to be palpated in three locations. Tenderness in one of these locations is not necessarily associated with tenderness in another. Pain or tenderness can occur in static position or during opening and closing the mouth. palpation of the first location by asking the patient to open approximately 20 mm and palpating the condyle's lateral pole, then by asking the patient to open as wide as possible while palpating the depth of depression behind the condyle with fingertip, finally with the finger in the depression and the mouth open wide, by pulling forward to load the posterior aspect of the condyle via external auditory meatus using the small finger. The patients were asked about any bad oral habits with observation their evidences.

Results:

There were significant differences between classes in percentage of stressful students by self-report stress,. In this study from all selected males of first year there were 5 (13.5%) stressful students and from selected females of first year there were 26(60.5%) stressful students, so the total number of stressful students in the first year was 31 (38.75%) from 80 students were subjected to self- report questionnaire, while in the second year the percentage of stressful students were higher than those in first year as follow: stressful males were 12(40%) and 42 (84%) stressful females, so the total number of stressful students in second year was 54 (67.5%) These findings were listed in table (1). But there were no significant differences between classes in percentage of stressful students had TMDs

according to the clinical examination, In this study from all selected students of first year there were 2 (5.4%) males and 10(23.25%) females had TMD by clinical examination, so the total number of the stressful students with TMDs by clinical examination in the first year was 12 (15%) which was the same like students in the second year where TMDs showed 12(15%) which divided into 2 (6.66%) males and 10 (20%) females, and these findings were listed in table (2). The number of students in the second year who had Bruxism was (5) 6.25%, which was higher than that in the first year students (2) 2.2% with significant differences.

Table 1: The differences between classes in the percentage of stressful students by self-report stress

Sex	first year			second year		
	Total	No. stress	% stress	Total	No. stress	% stress
Male	37	5	13.5 %	30	12	40%
Female	43	26	60.5%	50	42	84%
Total	80	31	38.75%	80	54	67.5%
P Value						

* Significant using Z-test at 0.05 level of significant

Table 2: The differences between classes in the percentage of stressful students by self-report stress

Sex	first year			second year		
	Total	No. TMD	% TMD	Total	No. TMD	% TMD
Male	37	2	5.4%	30	2	6.66%
Female	43	10	23.25%	50	10	20%
Total	80	12	15%	80	12	15%
P Value						

* Significant using Z-test at 0.05 level of significant

Discussion:

This study revealed that most of students in the NDC were under stress and the differences were highly significant (P value = 0.001) between first year student (38.75%) and second year (68.5%).Several authors have observed that the prevalence of psychological distress is higher among students than among working nonstudent populations of the same sex and age [15] By clinical examination it had been shown that the prevalence of TMDs in stressful students of first and second year was equal (15%), although the percentage of stressful students in second year was significantly higher. The large frequency ranges for signs and symptoms of TMD previously described in reviews are apparently based on very different samples (e.g. random , non-random, different ages, age ranges, sample size, ratio of gender distribution) and different examination methods (e.g. kind of variable, method of data collection) [16]. The role of stress and personality in the etiology of the temporomandibular pain dysfunction syndrome has undergone extensive scrutiny. There is considerable evidence that psychological and psychosocial factors are of importance in the understanding of TMD as with other chronic pain disorders [17] but there is less evidence that these factors are etiologic. Even though studies have indicated the role of stress in the etiology of TMD, the issue of whether psychological factors cause TMD or reflect the impact of TMD on the person remains unknown, due largely to the absence of longitudinal incidence studies designed to test the relationship of the onset of TMD pain to the onset of psychological and psychosocial factors. Several studies have assessed the relationship between TMD and stress, these studies have had shortcomings, e.g., assessment of acute stress, limited sample size, nonstandardzed examination, no controls[12, 18, 19]. Generally females have more signs and symptoms than males. This is in agreement with other reports in the literature [20] .It has been stated that these sex differences could probably be explained by mental factors i.e. young females seem to present a lower pain threshold [20]. Kuttilla et al.[21], found that females showed more signs and symptoms of TMD, and it seems to be explainable by their higher stress. The higher prevalence of TMD in females than in males has been attributed to an interaction of a variety of factors ranging from biological and hormonal factors to psychological and social ones. In this study the students who were recorded with myofascial pain more than students with other TMDs even those students with MFP alone or in combination with other TMDs. Lobbezoo et al., (2004)[22] revealed that between 50% and 70% of all patients with TMDs reported masticatory muscle pain, Deflection (57.1%, 50.9%) and midline deviation (58.7%; 61.8%) were

reported in both second year students and first year respectively. Several studies failed to find strong evidence to support the theory that occlusion plays a role in the etiology of TMD, particularly as the sole cause or the dominant factor [23, 24]. While Gesch et al., (2004)[25] reported a weak association between malocclusion and the functional and clinical parameters of occlusion as well as subjective TMD.Bruxismwas also reported in this study and showed higher percentage among students of second year (6.25%) than students in the first year (2.5%) with significant difference.The higher frequency ofBruxism that had been recorded at clinical examination may consider an evidence that psychological factors are of importance in the understanding of TMD. The issue of whether psychological factors cause TMD or reflect the impact of TMD on the person remains unknown, although there is strong evidence that some patients with TMD are more anxious and/or depressed compared with asymptomatic controls. Research findings have supported a relationship between anxiety,muscular tension,and TMD symptoms [26].

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