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Abstract

Bruxism or teeth grinding is a pathology of not well defined etiology, which currently constitutes a serious problem of oral and mental health, so it involves both the dentist and the psychologist for treatment and care. The influence of a stressful situation on its appearance and development is not perfectly determined, however, there are characteristics that can be related to its presence. Some investigations report a twice higher incidence of headache (headache) in individuals with craniomandibular dysfunction than in subjects seeking routine dental care. It has been found that these headaches are of personal or subjective presentation, and that muscular hyperactivity is an important component in these patients. *Methodology.* An applied, observational, transversal and prospective study was carried out in students of the Faculty of Engineering of the Universidad Veracruzana. *Objective:* To compare levels of anxiety and stress among individuals with and without headaches. *Results:* The stress to which university students are currently subjected makes it necessary to delve into this subject, with the purpose of developing and establishing programs that allow the timely diagnosis and application of preventive measures, thus improving the quality of life of these students.

Bruxism, Teeth Grinding, Headaches

Resumen

El bruxismo o rechinar de dientes es una patología de etiología no bien definida, que en la actualidad constituye un serio problema de Salud Bucal y Mental, por lo que involucra tanto al odontólogo como al psicólogo para su tratamiento y atención. No está perfectamente determinada la influencia de una situación estresante en su aparición y desarrollo, sin embargo, existen características que pueden relacionarse con su presencia. Algunas investigaciones reportan dos veces mayor incidencia de cefalea (dolor de cabeza) en individuos con disfunción craneomandibular que en sujetos que buscan atención dental de rutina. Se ha encontrado que estas cefaleas son de presentación personal o subjetiva, y que la hiperactividad muscular es un componente importante en estos pacientes. *Metodología.* Se realizo un un estudio aplicado, observacional, transversal y prospectivo en estudiantes de la Facultad de Ingeniería de la Universidad Veracruzana. *Objetivo:* Comparar los niveles de ansiedad y de estrés entre individuos con y sin cefaleas. *Resultados*: El estrés al que actualmente están sometidos los estudiantes universitarios hace necesario ahondar sobre este tema, con la finalidad de desarrollar y establecer programas que permitan el diagnóstico oportuno y la aplicación de medidas preventivas, así mejorar la calidad de vida de estos estudiantes.

Bruxismo, Rechinar De Dientes, Cefaleas

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Introduction

Bruxism is a repetitive mandibular-muscular activity characterized by clenching and grinding of the teeth and / or fixation or mandibular thrust. Associated with several dental, musculoskeletal and headache clinical problems. Important factor in the unleashing and perpetuation of myofacial pain. The frequency of association between TMD and bruxism in adults is between 36 and 59 percent.

The occlusal splints are the therapeutic tool most used in the TTM. With a clinical success of 70-90 percent in the reduction of pain, especially the myofacial and although its effect is predictable, its mechanism of action has not been fully clarified. (Romero, 2015)

Because relaxation plates (occlusal guards) have been shown to reduce increased muscle action (muscle hyperactivity) and headache, especially in patients with four or more headaches per week, studies suggest its placement as a conservative, reversible treatment and non-invasive in patients with etiological factors that are difficult to identify and in the absence of tumors, bumps, arteriovenous malformations, lumbar punctures and other obvious organic causes (Kassian, 2001).

Tension headache is characterized by a long-lasting headache, months or years, which occurs in the morning on waking or evening, lasting several hours, intermittent and then continuous, whose distribution in the skull is indicated by the index finger or with the extended hand of hemicrania or bilateral localization with sensation of beginning in the neck or occipital region and irradiated towards the vertex and rarely to the forehead.

Others mention hypersensitivity to the touch in the cervical region, the heat relieves it and the cold aggravates it, neck movements exacerbate it, it can often be accompanied by bruxism and extend to the upper muscle fibers of the trapezius and shoulders, it can radiate towards the anterior or posterior part of the pinna of the ear. Its organic origin is verified by its partial or total relief with analgesics.

The localized headache usually comes from neck-base pathologies, temporomandibular joint, prolonged extension of the neck during intubation for surgeries, vicious positions during work hours, immobility and rigidity in elderly patients and those with onset of Parkinson's disease due to the rigidity characteristic of this condition.

It is usually linked to a sustained contraction of the muscles of the head and neck, producing an ischemia inside the contracted muscle. This muscle tension may be due to incorrect body posture, prolonged exposure to situations of social or psychological stress, or normal reactions of intense fatigue.

This type of headache is often associated with: sleep disorders, affective disorders, anxiety states, bruxism and others (Mosquera, 1998).

Bruxism plays a significant role in Temporomandibular Joint Disorders and craniofacial referred symptoms (Okeson, 1998), considers bruxism as a microtrauma product of dysfunctional tightening and grinding of teeth subconsciously that can exceed physiological tolerance and Structure of the muscles, teeth and joint Greene and Laskin (2000), have shown that at the origin of the Temporomandibular Joint Disorders one of the primary causes is psychological stress (Ramírez, 2005).

Migraine is a common and misdiagnosed disease. The etiology of headaches is not clear or well understood, even the study of headaches is still a subjective area. Intracranial and extracranial inflammatory origins must be ruled out, such as an intracranial tumor, Eagle's Syndrome, Carotid Artery Syndrome, among other etiologies..

Tension and vascular headaches in temporomandibular joint disorders are frequent and highly associated as they share common nociceptive pathways. Some researchers defend the hypothesis that tension headaches and migraines are two different presentations of the same physiopathological mechanism. The traditional explanation of migraine as a pulsatile hemicranial pain associated with prodrome, visual aura and vomiting is not a frequent form of this disorder. Muscle contraction that occurs in the muscles of the back and chewing occurs both in migraines and in tension headaches.

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Headache can affect all aspects of a child's functioning. It has been associated with psychiatric illnesses, such as anxiety and depression, as well as psychosocial problems (for example, school absenteeism, problematic social interactions).

Moskowitz (Ramírez, 2005) states that the trigeminal nerve provides the main afferent conduction in the pathophysiology and transmission of headache in humans. The ophthalmic and maxillary branches of the trigeminal nerve innervate the cerebral arteries in addition to the dura, pia mater in the anterior and middle fossa. Considering also that the cervical and cranial sensory nerves can project painful signals to the trigeminal nerve (caudal subnucleus), as in the meningeal arteries, the peripheral dysfunctional causal-muscular component of Temporomandibular Joint Disorders cannot be ignored.

The phenomenon of bruxism is well known by all stomatologists, who usually observe it in their patients, especially in communities of high intellectual level because of the tensions in which their activities unfold (Barrancos, Money, 1995). Bruxism was defined at the beginning of the last century and has received different names such as: traumatic neuralgia, bruxumanía, occlusal habit neurosis, parafunction.

The origin of this pattern of behavior is not fully clarified. It is considered to have a dual cause where on the one hand there would be the psychic and emotional overload given to the anxieties, fears, frustrations, stress, anxiety, etc. and on the other the association of some occlusal interference. The predominance of one of the factors seems not to be determinant, since very obvious interferences with little tension, or tensional states pronounced with very slight interference, are capable of engendering it, the important thing is that either of the two factors exceeds the resistance limit individual or the adaptive capacity of the individual.

Arnol states that there are three etiological factors, including: factors of dental origin (interference), those of muscular origin (increased tone) and psychological factors (tension, stress, anxiety) (Cairo, González, 2005).

Most people do not know that they suffer from the habit of bruxism, they are surprised by the fact that they are diagnosed and sometimes they feel ashamed to present this habit. It is important to note that it may take years to present this pathology, so that the first signs of alteration or damage due to bruxism become visible.

Methodology to be developed

An applied, observational, cross-sectional and prospective study was carried out. In the Faculty of Engineering of the Universidad Veracruzana, Veracruz region in the period between February and August 2008. The objective of this work was: To compare the levels of anxiety and stress between individuals with and without headaches. We worked with 250 students from the Faculty of Engineering. The instruments used were: Odontological Clinical History, Test of Attitudes that Provoke Stress (Batista, 2007) and Vivencial Self-Report (Batista, 2007) (Grau, 1985).

Results

Headaches, stress and anxiety

Statistically significant differences were found when comparing the level of stress presented by the individuals who reported having headaches and those who did not. As can be seen in Table 6, the fashion for the subjects who did present headaches was found in "moderate stress", while the fashion for the subjects who did not present headaches was found in "mild stress". This difference in fashion is reflected by comparing the percentages of individuals who have "moderate stress" and "mild stress": x2 = 9,029, gl = 3, p = .029, so it can be concluded that subjects with headaches present higher levels of stress.

			Stress level				Total
			High	Moderate	Mild	Low	
Headaches	Yes	Count	0	20	14	0	34
		% in headaches	.0%	58.8%	41.2%	.0%	100.0 %
		% within Stress level	.0%	22.2%	8.9%	.0%	13.6%
	No	Count	1	70	144	1	216
		% in headaches	.5%	32.4%	66.7%	.5%	100.0 %
		% within the Stress Level	100.0%	77.8%	91.1%	100.0%	86.4%

Table 1 Headaches and Stress Level. x^2 =9.02,gl=3, p = .029 s

These results coincide with what was found in the anxiety test. When analyzing the scores of this test, it was found that subjects with headaches had a significantly higher mean than those without headaches: 60.03 ± 9.7 and 55.60 ± 9.6 respectively (t = .2.47, gl = 248, p = .014) This finding can be seen in Figure 1.

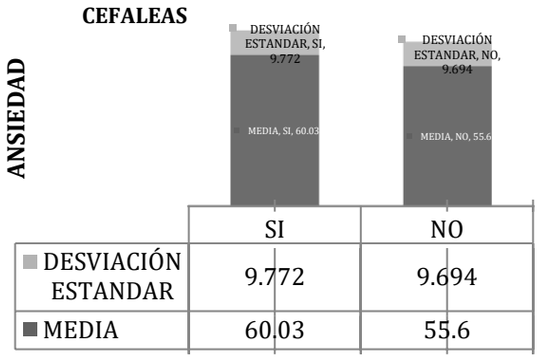

Figure 1 Mean and standard deviation of the anxiety score in individuals with headaches and in those who do not present them

Conclusions

A significant part of the studied population was diagnosed as bruxópatas, which is very young and this constitutes a relevant data for the health of the economically active population of the country in some years. It is important to note that when finding signs of wear or damage caused by bruxism in students, it is an indicator derived from two important observations: that students have a long time showing bruxism and the manifestations are already remarkable, or the habit is very strong and they are causing important health effects.

The presence of stress and anxiety in bruxist and non-bruxist patients did not represent a statistically significant finding, if it was found in the presence of headaches. This leads us to the theory of the multifactorial and not very specific etiology of this pathology, in which it is very clear how it indicates the presence of this habit in an indistinct way in the subjects that present or not emotional alterations, nevertheless it should be noted that Subjects who have high stress and anxiety will generally have greater affectations caused by bruxism.

Recommendations

As a result of this study it is important to establish programs that allow the timely diagnosis of bruxism in the university population, which affect an adequate treatment plan and the establishment of preventive measures or programs, to avoid disorders caused both in physical and emotional health of the student community, which impacts on their mental health.

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