

The Relation of TMJ Disorders with Stress Level and Blood Groups among Dental Students in Baghdad, Iraq

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Abstract

Introduction: TMDs are a common group of disorders that affect approximately 60–70% of the general population. The aim of current study is to find out the association between TMJ disorders with stress levels and blood groups among dental students in Baghdad, Iraq.

Methods: A cross-sectional study was conducted among 60 dental students in Baghdad, Iraq using convenience sampling method. Perceived stress scale questionnaires were used to measure stress level among respondents.

Results: The majority of respondents had a headache (55.0%), with pain (28.3%), clicking (45.0%) and bruxism (31.7%). Regarding bad habits, only (23.3%) had bad habits. There was a significant association between TMJ Pain, Bruxism and stress level with P value (0.016, 0.02) respectively. Also, there was a significant association between bruxism and blood group type with P value (0.014).

Conclusion: There was a significant association between TMJ disorders (pain, bruxism) with stress level and also between bruxism and blood group types. More education and promotion are needed regarding TMJ disorders and how to deal with complications especially among young adults like university students.

Keywords: TMJ disorders, Stress level, Blood groups, Dental Students

Introduction

The temporomandibular joint (TMJ) is among the most complex joints of the human body, and it opens and closes the motions of the mouth as well as the protrusion. Mandible pressure on the temporal bone for a retraction and lateral divergence. It is a structure that is extremely important because its function is directly connected with a context that emotional contact and feeding, i.e. a set of factors influencing the quality of life of the person. [1]

TMDs are a common group of disorders that affect approximately 60–70% of the general population [2,3]. TMDs are common in all disorders. TMD includes all problems associated with orofacial pain. The symptoms include pain in the temporomandibular region, tired

chewing muscles, restricted jaws and clicking of the joint. There have been extensive reports of the correlation between TMD and psychosocial factors such as stress. [4-9]

Chronic pain such as TMD has a biological as well as psychological and social impact. Oliveira et al. [10] have researched the impact of TMD in 22 physical therapists and found that more than half of the patients have function and pain studies. Everyday activities, including social occurrences, are also known to be a potential source of stress, as they demand individual adaptation. In order to achieve behaviour adaptation, this adaptation involves changes in the physiology processes. Excessive muscle activity may also be related to psychosocial aspects [11].

The relation of ABO blood group to periodontal disease was first investigated by Weber and Pastern [12]. A study by Kaslick et al. [13] found that patients with

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blood group O substantially less aggressive compared to blood group. Roberts' study [14] describes the interaction between blood ABO and chronic disease susceptibility as family genetic predispose. The study of Koregol et al. [15] found a significantly higher blood group A in the gingivitis group, higher blood group O in the periodontitis group and the lowest percentage in blood group AB in the periodontal diseases.

The current study aimed to find out the association between TMJ disorders with stress levels and blood groups among dental students in Baghdad, Iraq.

Materials and Methods

A cross-sectional study was conducted among 60 dental students in a Public University, Baghdad, Iraq. The sampling method used was convenience sampling with self-administrative questionnaires regarding TMJ disorder (Pain, clicking, headache, bruxism), stress level, bad habits, blood groups type. Perceived stress scale questionnaires were used to measure stress level among respondents.

All participants signed the consent form prior to answering the questionnaires and ethics approval was obtained from college of dentistry/ Iraqi University.

Statistical Analysis

Mean and standard deviation was used for descriptive statistical analysis. The association between TMJ disorders, bad habits and Stress level was assessed using independent t test, while association between TMJ disorders and blood groups was assessed using Fisher exact test. All analyses were performed using SPSS version 24.

Results

The majority of respondents had a headache (55.0%), with pain (28.3%), clicking (45.0%) and bruxism (31.7%). Regarding bad habits, only (23.3%) had bad habits such as mouth breathing, chin rest and unilateral chewing. Regarding blood groups, the majority of respondents with A+ (31.7%) followed by B+ (26.7%) and then O+ (25.0%) as shown in table 1. The mean score for the stress level among respondents was 6.48 ± 1.66 .

Table 1: Clinical characteristics of the respondents

Variables	N	%
Pain		
No	43	71.7
Yes	17	28.3
Clicking		
No	33	55.0
Yes	27	45.0
Headache		
No	27	45.0
Yes	33	55.0
Bruxism		
No	41	68.3
Yes	19	31.7
Bad Habits		
No	46	76.7
Yes	14	23.3
Blood Groups		
A-	4	6.7
A+	19	31.7

Cont.. Table 1: Clinical characteristics of the respondents

Ab-	1	1.7		
AB+	2	3.3		
B-	2	3.3		
B+	16	26.7		
O-	1	1.7		
O+	15	25.0		
	Minimum	Maximum	Mean	SD
Stress level	2.0	10.0	6.48	1.66

Table 2: Association between TMJ disorders, bad habits and Stress level among respondents

Stress level	N	MEAN	SD	T	P-Value
TMJ Pain					
Yes	17	7.29	1.89	2.47	0.016*
No	43	6.16	1.46		
TMJ Clicking					
Yes	27	6.59	1.86	0.457	0.649
No	33	6.39	1.49		
Headache					
Yes	33	6.85	1.71	1.924	0.059
No	27	6.04	1.50		
Bruxism					
Yes	19	7.21	1.71	2.398	0.02*
No	41	6.15	1.54		
Bad Habits					
Yes	14	7.14	2.21	1.724	0.09
No	46	6.28	1.42		

*Independent t-test was performed, level of significant at P value <0.05

Table 2 represents the association between TMJ disorders, bad habits and Stress level among respondents. There was a significant association between TMJ Pain, Bruxism and stress level with P value (0.016, 0.02)

respectively. The mean stress score among students with TMJ pain was 7.29±1.89 compared to 6.16±1.46 among respondents with no pain. While for bad habits, the mean score for stress level was 7.14±6.28 compare to 6.28±1.42 among those without bad habits such as

mouth breathing or chin rest.

There was a significant association between bruxism and blood group type with P value (0.014)

, while there was no association between pain, clicking, headache, bad habits and blood group type (P value= 0.480,0.105,0.603, 0.260) respectively, as shown in table 3.

Table 3: Association between TMJ disorders and blood groups among respondents

	Blood Groups								X2	P-Value
	A+	A-	O+	O-	B+	B-	AB+	AB-		
Pain										
No	11	4	11	0	12	2	2	1	6.445	0.480
Yes	8	0	4	1	4	0	0	0		
Clicking										
No	9	0	10	1	8	2	2	1	10.031	0.105
Yes	10	4	5	0	8	0	0	0		
Headache										
No	8	2	6	0	8	0	2	1	5.827	0.603
Yes	11	2	9	1	8	2	0	0		
Bruxism										
No	16	4	11	1	7	2	0	0	14.374	0.014*
Yes	3	0	4	0	9	0	2	1		
Bad Habits										
No	14	2	9	1	15	2	2	1	8.160	0.260
Yes	5	2	6	0	1	0	0	0		

*Fisher exact test was performed, level of significance at p value<0.05.

Discussion

The key findings in our research that TMJ pain and bruxism are correlated with dental students’ stress rates. Bruxism among respondents was also correlated with types of blood groups.

According to previous studies, TMJ disorders were associated with stress levels and this in accordance with our findings. TMD and parafunctional habits, such as perceived stress and CMD, are related. While there has been an incoherent link between psychological factors and TMD in literature, this is biologically plausible. [16]

Psychological factors, followed by biomechanical changes and consequent pain, may cause muscle hyperactivity, according to Kindler et al. [17], they can also cause imbalances and pain induced by neurotransmitters serotonin and catecholamines. In addition, pain may be the physical manifestation of CMD in the temporomandibular region. TMD sufferers are anxious, perfectionist, dominant and tend, with physical symptoms, to express their anxiety. Among these people are common feelings of apprehension, frustration, hostility and fear. [18]

Oliveira et al. [19] results from university students in Brazil to confirm high TMD symptoms and signs incidence (71.9%) at 68.6%. Studies indicate that TMD was less popular among university students, but the study conducted by Minghella et al. [20], which assessed health university students with TMD, found only 37.3 per cent. These differences may be linked to the variation of the courses under examination, their context and the academic status of the students.

The parafunctional habits that most prevailed in Medeiros et al. [21] confirmed the high prevalence of these habits by leaning the chin across its hands and chewing gum. Parafunctional patterns are assumed to be the unconscious way of reducing stress, and it can be achieved consciously or without understanding how to cause temporomandibular problems or their perpetuation during sleep and wakefulness.

Conclusion

There was a significant association between TMJ disorders (pain, bruxism) with stress level and also between bruxism and blood group types. More education and promotion are needed regarding TMJ disorders and how to deal with complications especially among young adults like university students.

Conflict of Interest – Nil

Source of Funding- Self

Ethical Clearance – Not required

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