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EVALUATION OF TEMPOROMANDIBULAR DISORDERS AMONG DENTAL STUDENTS OF BABOL UNIVERSITY OF MEDICAL SCIENCES

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ABSTRACT:

Objectives: Temporomandibular Disorders (TMDs) is a general term that indicates many clinical conditions involving masticatory muscles and temporomandibular joints and their associated structures**.** Characterizing of this clinical conditions by pain in the particular area, Temporomandibular joint (TMJ), masticatory muscles, deviation or limitation in range of mandible motions and TMJ sounds such as clicking, popping and crepitus during mandible functions**.** Several factors such as emotional tensions, interference of occlusion, masticatory muscles, dental treatments, etc. are proposed as the etiological factors of TMD**.** Since dentistry is one of the stressful and challenging academic fields and much pressure applied on those working in this field, therefore, this study aimed to evaluate of TMD among dental students in Babol**.**

Material and Methods: This cross-sectional study was conducted on 143 students of Babol Dental Faculty includes 68 males and 75 females in 2014. Clinical examination based on Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) in case of any pain in the Joint area and facial muscles with mentioned side and limitation of mandibular movements, TMJ sounds, and others was recorded**.**

Results: signs of TMD were observed in 15 persons (10.5%), 6 males (4.2%), 9 females (6.3%) with the mean of age 22.53 years. The prevalence of TMD among married persons, 4 (2.8%). Students of fifth grade with 5 case had the highest range of prevalence of TMD among other students**.**

Conclusion: Despite the prevalence of TMD that had an increasing trend with increasing years of education to fifth year there is no significant statically relation between the years of schooling, genders, and marital status**.**

Keywords: Dentistry student, Temporomandibular disorders, temporomandibular joint

INTRODUCTION:

Temporomandibular joint (TMJ) function has been the subject of many studies for decades, and despite the high volume of articles, the multifactorial etiology of Temporomandibular dysfunction is even today is not clear [(1)]. The term of TMD has been described as a groups of disorders characterized by pain in the preauricular area, TMJ or masticatory muscles; limitation or deviations in range of

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mandibular motion; and joint sounds such as clicking and popping in the TMJ, during mandibular movements , unrelated to systematic diseases [2]. The prevalence of signs and symptoms associated with TMD can determine by reviewing epidemiologic studies. These studies suggested that signs and symptoms of TMDs are common in people . Main role in their beginning have psychosocial factors (stress); trauma – that may be macro trauma (any sudden force to the TMJ) or micro trauma (functional overloading such as bruxism); and occlusal interferences.[3]

The efficacy and success of diagnosis and treatment of TMD lie in the ability of the clinician to provide the proper diagnosis which is possible only through clinical examination of the patient for the signs and symptoms of TMD.[4]

Therapy procedures to the treatment of temporomandibular disorders widespread. Moreover, the efficiency of diagnosis and treatment are not predictable, and the results are limited. All methods of treatment used for TMD can be generally divided into two groups: definitive treatment and supportive therapy[5] the methods directed to control or eliminate the etiologic factors of the disorder refers to definitive treatment, and the methods directed to alleviate the symptoms of TMD refers to supportive therapy.

The Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) have been the most widely used diagnostic protocol for TMD research since its publication in 1992. This classification system was based on the biopsychosocial model of pain that included an Axis I physical assessment, using reliable and well-operationalized diagnostic criteria, and an Axis II assessment of psychosocial status and pain- related disability. The purpose was to provide a physical diagnosis and identify other relevant characteristics of the patient that could influence the expression simultaneously and thus management of their TMD.[6]

Prevalence of TMD is diagnosed by associating signs and symptoms as some characteristics may be frequent even in a non-patient population. Reported prevalence has a wide range (from 26% to 50%) demonstrating important differences in sample, criteria and methods used for data collecting.[7] It seems prevalence of TMD in women more than men [6,8,9]

AnamariaSiriani de Oliveira et al. reported that the women exhibited some degree of severity (73.03%) at a higher frequency than men (56.26%). [8]

Ieda Milani de Lucena et al. concluded anxiety was the psychological symptom related to the increased risk of having TMD.[9]

Therefore, the current study aimed to evaluate of temporomandibular disorders (TMD) among dental students in Babol University of Medical Sciences.

MATERIAL AND METHODS:

A questionnaire was prepared based on Research Diagnostic Criteria for

Temporomandibular Disorders that had good reliability and validity[10] for 205 students of Babol dental faculty (81 males and 124 females). One part was completed by the students and another part of that related to the clinical examination was completed by prosthodontist or trained a dental student. The written consent from the participants in the study was received.

Clinical examination based on RDC/TMD in case of any pain in the TMJ area ,facial muscles with mentioned side , Pattern of mouth opening , vertical range of mandibular motion, vertical incisal overlap and TMJ sounds during mandibular movements, Extraoral muscles palpation , intraoral muscles palpation and joint palpation was recorded.

According to the RDC/TMD program and its scoring instructions those are available at the end of it, first, kind of TMD was determined and then were divided into three groups:

Group I: muscles function disorders (Myofascial pain, Myofascial pain with limited opening)

Group II: TMJ function disorders (Disc Displacement (DD) with reduction, DD without reduction with limited opening, DD without reduction without limited opening)

Group III: other joint conditions (Arthralgia, osteoarthritis, osteoarthritis)

The Data were assessed using t- tests for continuous variables and X2 tests for dichotomous variables

RESULTS:

Among 205 students of Babol dental faculty who had received the RDC/TMD questionnaire, 143 students were referred for clinical assessment. After clinical examination of the questionnaire based on RDC/TMD program and the scoring instructions which is available at the end of it, the temporomandibular disorder was determined.

Among 143 students, 15 persons (10.49%) with confidence interval 95 % (5.41-15.57) [6 males (4.2 %) and 9 females (6.3%)] with the mean of age 22.53 years had TMD statistically there was no significant difference between two genders (p = 0.536)(Table 1)

The prevalence of TMD among married persons was 4 (2.8 %) which statistically wasn't significant (p = 0.82) (Table 2)

The prevalence of TMD among first-year student was 2 (1.39 %), second year was 1 (0.7%), Third year was 2 (1.39%) , fourth year was 3 (2.09 %) , fifth year was (3.49 %) and sixth year was 2 (1.39%) and there is no statistical relation between TMD and years of education . (p=0.363) (Table 1)

9 students despite suffering from TMD were not aware of their problem but isn't statistically significant (p= 0. 363)

TMJ sounds includes 5 clicking of right joint, 11 clicking of left joint, 11 bilateral clicking and 1 bilateral fine crepitus.

Table 1 – The prevalence of the TMD in participants on the basis of education grades

Years	Total population according to sex		The number of examined students according to sex		The number of students with TMD according to sex	
1st	male	14	male	12	male	1
	female	19	female	16	female	1
2nd	male	12	male	10	male	0
	female	24	female	21	female	1
3rd	male	13	male	10	male	0
	female	23	female	9	female	2
4th	male	14	male	12	male	1
	female	18	female	3	female	2
5th	male	16	male	15	male	2
	female	21	female	12	female	3
6th	male	12	male	9	male	2
	female	19	female	14	female	0
Total		205		143		15

Table 2 – The prevalence of the TMD in participants on the basis of marital status

years	The number of examined students according to marital status		The number of students with TMD according to marital status	
1st	single	28	single	2
	married	0	married	0
2nd	single	31	single	1
	married	0	married	0
3rd	single	17	Single	1
	married	2	married	1
4th	single	13	single	3
	Married	2	married	0
5th	single	22	single	3
	married	5	Married	2
6th	single	15	single	1
	married	8	married	1
Total		143		15

Table 3 – The range of mandibular movements in students with or without TMD

Movement type	Student without TMD (mean mm)	Student with TMD (mean mm)
maximum opening	49.97	48.53
Right Lateral Excursion	6.95	6.93
Left Lateral Excursion	7.10	6.93
Protrusion	7.13	7.10
Midline Deviation	1.20	0.93

Table 4- Frequency of TMD according to RDC/TMD

Clinical TMD		Frequency (%)
Group I	Myofascial Disorders	0 (0%)
	Myofascial Disorders with limited opening	0 (0%)
Group II - Disc Displacements Right Joint	Right Disc Displacement with reduction	10 (7%) *
	Right Disc Displacement without reduction with limited opening	0 (0%)
	Right Disc Displacement without reduction without limited opening	0 (0%)
Group II - Disc Displacements Left Joint	Left Disc Displacement with reduction	7 (4.9 %) *
	left Disc Displacement without reduction with limited opening	0 (0%)
	left Disc Displacement without reduction without limited opening	0 (0%)
Group III - Other Joint Conditions Right Joint	Right Arthralgia	0 (0%)
	Right Osteoarthritis	0 (0%)
	Right Osteoarthritis	0 (0%)
Group III - Other Joint Conditions Left joint	left Arthralgia	0 (0%)
	left Osteoarthritis	0 (0%)
	left Osteoarthritis	0 (0%)
Total		17 (11.9%) *

- Two students had bilateral involvement

DISCUSSION:

Despite the increasing prevalence of TMD by increasing years of education to fifth year, there is no statistically significant relation between the years of schooling, genders, and marital status. Although mandibular movements seemed to be different in healthy students compared to students with TMD, the findings of this study showed no statistical significance between the two groups.

Priyanka modi et al. (2012) reported that relation between gender and TMD severity was not statistical significant and those students who were suffering from TMD, they were not aware of their disorders. [11] According to Oliveira et al. (2006) study no statistical significance were observed between two sexes for severity degree of TMD (p> 0.05). [8] Mahroo Vojdani (2012) reported a high prevalence of signs and symptom of TMD among students in Shiraz University, which was more frequent in women, but they were no aware of their suffering from TMD.[1] Pesqueira et al (2010) reported high rates of TMD among the Brazilian students (40%) and statistical analysis showed that TMD degree has positive association with state of anxiety (p=0.008) and negative relation with trait of anxiety (p = 0.619) [2]

In Goharian et al. study (2006) prevalence of TMD among dentistry students in Mashhad was 51.5 % and between males and females there were no significant differences (p=0.307).[12] Jagdhari Smriti et al (2014) reported that 23 % of the students in VSPM's Dental College of India had mild to moderate degree of TMD, and there was no significant association between TMD with gender or occlusion, but TMD was associated with anxiety. [13]

In the present study, senior dental students had less stress because they had fewer courses, while fourth and fifth grade students had the highest rate of TMD because of their heavy curriculum, thus the stress has significant role in occurrence and developing of the TMD problems. Stress as a systemic factor can affect normal function of TMJ, muscles, and surrounding structures and ne the cause of the TMD.[9]

One of the limitations of this study was that no x-rays and other diagnostic method were not evaluated. As the eruption of wisdom teeth (which is frequent in this age group) can cause symptoms similar to the TMD. It could be excluded as one of the causes of TMD by taking panoramic radiography.

CONCLUSION:

The prevalence of TMD in Babol dentistry student was low than reported by other studies found in the literature reviewed and there was no statistically significant difference between TMD and gender or marital status or grade of education. Despite suffering from TMD, students was not aware of their problems. It is suggested that similar studies in other dental schools and also in other fields to be done.

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