

TEMPOROMANDIBULAR DISORDER AMONGST UNDERGRADUATE STUDENTS OF DENTISTRY IN KHYBER PAKHTUNKHWA

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Abstract

Objective: Temporomandibular joint (TMJ) is the main joint of masticatory process in which basal bone, teeth, muscles and ligaments are contributing. The aim of this study was to assess the prevalence and severity of temporomandibular joint disorders (TMDs) among male and female undergraduate students in dental colleges of KPK.

Materials and Methods: Totally 619 students of four dental colleges in KPK were assessed for the present study. The study was based on Fonseca's anamnestic index FAI and its questionnaire, which is composed of 10 questions and classifies the severity of TMDs. The obtained data were coded and entered into Statistical Package for the Social Sciences (SPSS) program. chi-square test was used for gender association with TMD.

Results: 72.3% of the undergraduate students had mild to severe TMD. 438 females and 181 were males. 168 (27.1%) had no TMD, 172 (27.8%) had mild TMD, 255 (41.2%) had moderate and 24 (3.9%) had severe TMDs in four age groups. The statistical analysis showed that the TMD degree has a positive association with gender ($p=0.02$) and no association in age groups ($p=.97$). Moreover, a high TMD rate was observed among the students (72.3%). Chi-square analysis of the frequencies of responses to every question revealed a statistically significant difference ($p < 0.05$).

Conclusion: This study revealed that there is a positive association between TMD and gender. Most signs and symptoms associated with temporomandibular disorders appear to be more prevalent in women than in men, although age patterns for these signs and symptoms does not provide any association.

Keywords: Temporomandibular joint, Temporomandibular disorders, Undergraduate students, Stress

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INTRODUCTION

Temporomandibular joint (TMJ) is the main joint of masticatory process in which basal bone, teeth, muscles and ligaments are contributing.¹ Disorder of TMJ (TMD) is a group of conditions effecting

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temporomandibular joint and the structures related to it. TMDs is associated with a number of medical dental and mental conditions such as parafunctional habits, occlusion, emotional stress, trauma and anatomy of the disk.² The worldwide prevalence of temporomandibular disorders ranges from 20% to 50%.³ Psychological factors such as anxiety and depression play an important role in the etiology and persistence of TMDs.⁴ Stress induced parafunctional habits such as clenching, nail biting and night grinding can cause hypermobility of muscles of TMJ. According to a study exposure to stressful life has been reported in patients suffering from TMD.⁵ Psychological disorder such as Anxiety and depression are commonly found in general population which is highly present among students⁶ Headache and temporomandibular disorders are commonly present in patients suffering from anxiety and depression.⁷ The students are always under pressure due to the assessment going on throughout year. Interpersonal and personal relationship could be the cause of their stress which limit them to accomplish their goal in their academic period.⁸ Gonclave et al found out a higher prevalence of temporomandibular disorders among student population.⁹ Fonseca amnestic index (FAI) was proposed by fonsca etal in 1994. He proposed a questionnaire which is commonly used to measure severity of temporomandibular joint disorders.¹⁰ The questionnaire is composed of 10 questions which measure the severity of pain in TMJ; its association in head and neck region, difficulty in chewing, limitation of jaw movements and a perception of emotional stress.^{10,11} The aim of the current study was to assess the prevalence and severity of TMD among undergraduate dental students and to compare the severity of TMD between male and female in different age groups of the students.

MATERIALS AND METHODS

This descriptive cross-sectional study was approved by ethical committee of Khyber College of Dentistry. The study was carried out from March to September 2018. In this study the temporomandibular joint disorder were assessed among undergraduate students of different colleges in KPK. 619 students of dental colleges were assessed in KPK through Fonseca's anamnestic index FAI. Two were of private and two colleges were of government sector. The students having no history of orthodontic treatment, fillings and trauma were included in the study.

The participants were properly explained about the questionnaire and were filled by them. Students were given to select the options "No" "Sometimes" and "Yes" and were given values of 0, 5 and 10 respectively. They returned it back to the examiner at the same time to reduce the error. The students known for any pathology of the joint and ear were excluded from the study the sample size was decided on the basis of the results of the other previous studies in which the prevalence was found to be 20 to 50%. The data was coded, summed up and entered in SPSS 21 and the subjects were classified according to the given table. Chi square test was used determine the association between gender and age.

RESULTS

Total students who took part in the study were 619 out of which 438 were female and 181 were males. 168 (27.1%) had no TMD, 172 (27.8%) had mild TMD, 255 (41.2%) had moderate and 24 (3.9%) had severe TMDs in four age groups. Among 317 Students under 21yrs of age; 82 (13.2%) had no TMD, 95(15.3%) had mild, 126(20.4%) had moderate and 14(2.3%) had severe TMD. Among 266 students ranging from 21 to 24yrs of age 75 (12.1%) had no TMD, 73(11.8%) had mild, 11(117.9%) had moderate and 7(1.1%) had severe TMD. Among 36 student from 25to 28 yrs of age 11 (1.8%) had no TMD 4 (0.6%) had mild, 18 (2.9%) had moderate and 3(0.5%) had severe TMD.

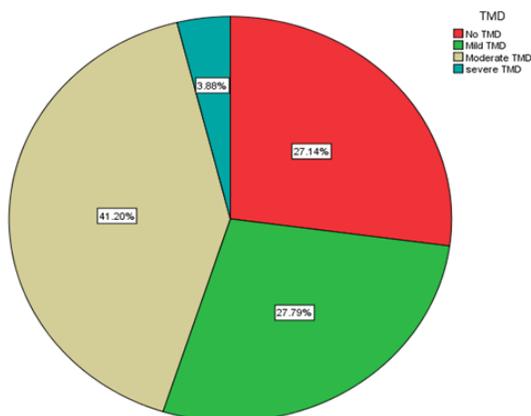
Among 181 male students; 64(10.3%) had no TMD, 33(5.3%) had mild, 76 (12.3%) had moderate

Table 2: Distribution and severity of TMD among university students assessed using Fonseca's questionnaire

	Gender			Chi-square p-value
	male	female	Total	
No TMD	64	104	168	.002
	10.3%	16.8%	27.1%	
Mild TMD	33	139	172	.002
	5.3%	22.5%	27.8%	
Moderate TMD	76	179	255	.002
	12.3%	28.9%	41.2%	
severe TMD	8	16	24	.002
	1.3%	2.6%	3.9%	
Total	181	438	619	
	29.2%	70.8%	100.0%	

Table 3: Distribution and severity of TMD among university students in various age groups

	age of the participant				Chi-square p-value
	less than 21	21 to 24	25 to 28	Total	
No TMD	82 13.2%	75 12.1%	11 1.8%	168 27.1%	.197
Mild TMD	95 15.3%	73 11.8%	4 0.6%	172 27.8%	
Moderate TMD	126 20.4%	111 17.9%	18 2.9%	255 41.2%	.197
severe TMD	14 2.3%	7 1.1%	3 0.5%	24 3.9%	
Total	317 51.2%	266 43.0%	36 5.8%	619 100.0%	



S.no	QUESTION	RESPONSE			Chi-square p-value
		Yes	Some-time	No	
01	Mouth opening	37	211	370	0.00
02	Movement of mandible	25	185	408	0.00
03	Muscular pain	74	199	346	0.00
04	Head ache	121	232	266	0.00
05	Neck stiffness	74	199	346	0.00
06	Tmj and earache	38	211	370	0.00
07	Clicking	84	212	323	0.00
08	Clinching	69	204	346	0.00
09	Articulation	83	191	345	0.00
10	Tension	135	247	237	0.00

and 8(1.3%) had severe TMD. Among 438 female students who participated in the study out of which 104 (16.4%) females had no TMD , 139 (22.5%) had mild and 179(28.5%) had moderate and 16(2.6%) had severe TMD.

Female students showed significant relationship with TMD according to chi -square test having p value less then 0.05 and there was no significant relation found with age . Chi-square analysis of the frequencies of responses to every question revealed a statistically significant difference (p < 0.05).

DISCUSSION

Temporomandibular disorders (TMDs) is an umbrella under which muscular and neuromuscular conditions sit along with the disorders of the temporomandibular joints, muscles and all associated tissues.¹² TMDs in previous studies showed, gender, psychological factors were associated with TMDs according to the systemic review based on clinical studies.¹³ The present study was done on under graduate students which showed no significant association with age but showed significant association of gender among the the students. In our study 72.3% of participants were classified as according to the FAI having light, moderate, or severe TMD. Almost one third of the sample showed the TMDs among the students. Moderate TMD is Previous studies reported prevalence the 20 to 50 %.³ Zhonghua Kou et al in 2016 reported in his study on Chinese students who reported significant association of TMD in females.² The prevalence of temporomandibular joint dysfunction among students is studied in different universities all over the world.¹⁴

The variability in prevalence may be attributed to differences in the race of the population, in the sampling design , criteria, and in the methods used for collecting information.¹⁵ Schwap.S in 2013 reported significant association in females.¹⁴ A study done on pain reported a greater number of comorbid pains confirm previous research that women have higher prevalence of certain types of pain than men. Sex hormones are also known to affect pain responses, which may mediate the sex differences of pain cessation.¹⁶ There are some studies which in contrast to the present result reported no gender association the reason could be due to the environmental, ethnic and socioeconomic status of the sample.¹⁷ Psychological and biological factors are twice times more common

in females than males¹³ The students in the university are having life away from home, residing with new students experiencing reduced adult supervision, these changes increase the risk of depression.³

CONCLUSION

The prevalence pattern derived from this study suggests that etiologic investigations should be directed at biologic and psychosocial factors that are more common in women than in men. Most signs and symptoms associated with particular temporomandibular disorders appear to be more prevalent in women than in men, although age patterns for these signs and symptoms are not as clear as for temporomandibular pain. Moderate TMD is more common among the undergraduate students of the dental colleges.

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