

Prevalence and Severity of TMJDS among Undergraduates

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ABSTRACT

Objective: The purpose of study was to explore the prevalence of TMD and level of severity among undergraduate students.

Method: This analytical crosssectional study was conducted in Lahore. Data was collected from 406 undergraduate students using Fonseca's anamnestic index. After data collection, it was entered and analyzed in SPSS version 25. Frequencies and percentages were calculated as descriptive analysis and Chi-Square test was used to explore the difference between the prevalence of TMD according to severity in terms of gender and age.

Results: 234 (57.6%) of the students didn't have TMD while 172 (42.4%) reported TMD on the basis of questionnaire. Of the total 172 students who had TMD, 159 (92%) Mild TMD, 10 (6%) had Moderate TMD and only 3 (2%) had sever TMD.

Conclusion: In undergraduate students almost half of the population had TMD whereas mild form of TMD was observed in majority of the undergraduate students.

Keywords: Temporomandibular disorders, Fonseca's anamnestic index, undergraduate students, Severity of TMD

INTRODUCTION

Temporomandibular Disorders is known as the part of orofacial problems in which alteration in temporomandibular joints may take place resulted in normal functioning of jaws. The symptoms of these disorders are pain while moving of jaws, limited mouth opening, fatigue to masticatory muscles and articular clicking occurrence.^{1,2,3,4} From a long time, the interest of exploration of the cause and treatment of these disorders are very common due to their multifactorial etiology. It was explored that it could be due to the malfunctioning at biological, neuromuscular, biomechanical or psychological level.⁵ But it is necessary to explore the TMD etiology to detect and prevent the possible pathological factors. Anxiety, emotional stress and depression are the major psychological factors resulted in temporomandibular disorders whereas biomechanical factors may include tooth loss, grinding, malocclusions and bruxism.^{1,2,3,4,5} Biological factors may include hormonal changes such as raise in estrogen level. Other factors which are known as the causative factors of TMD are poor posture, alterations in outer or inner regions of joints, malfunctioning of masticatory muscles & adjacent structures, neoplastic growths, traumatic injuries, immune-mediated systemic diseases and hereditary factors.^{1,2,3,4} It is also thought that dental esthetic procedures along with fractures may contribute to the change or deteriorates the existing TMD condicions.^{2,3}

Temporomandibular joint disorders' prevalence varies between 20% -50%.² It is more prevalent in females than males.^{3,4,6} Among university students, the association between TMD and psychological factors along with functional occlusal parameters was found significantly

positive.⁷ Although early diagnosis of TMD is very difficult and challenging but is of great value^{1,3,4}, for which Fonseca's anamnestic index⁹ is considered as the most reliable tool to detect TMD.¹⁰ In Pakistani undergraduate population, the prevalence and severity of TMD is still not explored at a wider level which is required due to the morphological differences along with the various mode of stressors faced by students in their daily lives. So there is a dire need to explore the prevalence of TMD and level of severity among undergraduate students.

METHODOLOGY

This analytical crosssectional study was conducted in Lahore. Sample size of the study was 449 undergraduate students. Of the total enrolled students, 43 students either didn't returned or returned incomplete questionnaire. After taking the approval from institutional ethical review committee, data collection was started. A questionnaire based on classification of TMD proposed by Fonseca was used which comprised of 10 questions. The responses were recorded as "Yes, No, or Sometimes" whereas as yes means 10 points, Sometimes means 5 points and No means 0 points. To score the responses of a participant, sum of all the items was taken to evaluate the level of severity of TMD. Severity of TMD was categorized in four levels: (1) No TMD score ranges from 0 to 15, (2) Mild TMD score ranges from 20 to 40, (3) Moderate TMD score ranges from 45 to 65, and (4) Severe TMD score ranges from 70 to 100.

Data was collected from undergraduate students before which brief introduction of the study was given to the each participant. After taking the consent form signed, participants were allowed to fill the questionnaire. After

data collection, it was entered and analyzed in SPSS version 25. Frequencies and percentages were calculated as descriptive analysis and Chi-Square test was used to explore the difference between the prevalence of TMD according to severity in terms of gender and age.

RESULTS

A total of 449 students from medical, dentistry and pharmacy departments were enrolled in the study. Of the total enrolled students, 43 students either didn't returned or returned incomplete questionnaire. The response rate was 90.42%. This study had 218 (53.7%) male and 188 (43.7%) female participants. Majority of these participants 271 (66.7%) belonged to medical side followed by 132 (32.5%) dental students. The mean age of the study population was 21.01 ± 1.72 years. The age of students ranged between 18-28 years with most of them 259 (63.8%) belonging to ≤ 21 years followed by 134 (33%) in 22-24 years and 13 (3.2%) in ≥ 25 years age group.

234 (57.6%) of the students didn't have TMD while 172 (42.4%) reported TMD on the basis of questionnaire. Of the total 172 students who had TMD, 159 (92%) Mild TMD, 10 (6%) had Moderate TMD and only 3 (2%) had severe TMD.

Table 1: Prevalence of TMD according to Severity

Classification	Frequency (%)
No TMD	234(57.6%)
Mild TMD	159(92%)
Moderate TMD	10(6%)
Severe TMD	3(2%)

The data suggested that there was significant difference ($P < 0.05$) in mean Fonseca scores between male (14.59) and female students (18.94). However, when genders were compared with respect to TMD classification, the frequency of having no TMD was higher 137(62.8%) in male as compared to female students 97 (51.6%). Conversely the frequency of mild, moderate and severe TMD was higher in female students as compared to male students. However, the results didn't show any statistical significance ($P > 0.05$) difference in frequency of TMD in male and female students.

Table 2: Gender wise TMD prevalence and severity

Gender	No TMD	Mild TMD	Moderate TMD	Severe TMD	Sig.
Male	137 (62.8%)	76(34.9%)	4(1.8%)	1(0.5%)	0.128
Female	97(51.6%)	83(44.1%)	6(3.2%)	2(1.1%)	

Table 3: Age wise TMD prevalence and severity

Age Group	No TMD	Mild TMD	Moderate TMD	Severe TMD	Sig.
Up to 21	146(56.4%)	105(40.5%)	7(2.7%)	1(0.4%)	0.670
22-24	82(61.2%)	47(35.1%)	3(2.2%)	2(1.5%)	
25 and above	6(46.2%)	7(53.8%)	0(0.0%)	0(0.0%)	

The data when compared in relation to age group of students, the frequency of no or mild TMD was 97%, 96% and 100% in the age groups of less than 21, 22-24 and

above 25 years respectively. No statistical significance ($P > 0.05$) was found with respect to mild, moderate and severe TMD among the three age groups.

DISCUSSION

The finding of the study revealed that 172 (42.4%) reported TMD on the basis of questionnaire among undergraduate students which in line with the findings of previous studies reported about prevalence rates ranges from 42 to 68%.^{2,3,11,12,13} Of the total 172 students who had TMD, 159 (92%) Mild TMD, 10 (6%) had Moderate TMD and only 3 (2%) had severe TMD. Mild TMD prevalence was found highest among the participants which is similar to the findings of Karthik et al⁶, Pedroni et al¹⁴ and Dekon et al.¹⁵

When genders were compared with respect to TMD classification, the frequency of having no TMD was higher 137(62.8%) in male as compared to female students 97 (51.6%) which was in accordance with the findings of Wahid et al. study results reported that TMD is found in about 92% females⁴ but it is less in Pakistani undergraduate females. Conversely the frequency of mild, moderate and severe TMD was higher in female students as compared to male students. However, the results didn't show any difference in frequency of TMD in male and female students which are not in accordance with the findings of previous studies.^{3,4,6}

The data when compared in relation to age group of students, the frequency of no or mild TMD was 97%, 96% and 100% in the age groups of less than 21, 22-24 and above 25 years respectively. No difference was found with respect to mild, moderate and severe TMD among the three age groups.

To conclude, in undergraduate students almost half of the population had TMD whereas mild form of TMD was observed in majority of the undergraduate students.

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