

# Severity Patterns of Temporomandibular Disorders in Young Adults with Suspected Clinical Features

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## ABSTRACT

**Objective:** Temporomandibular disorders (TMD) being progressive disorder having relatively higher prevalence in young adults necessitates early recognition in order to prevent development of established TMD.

**Method:** Using a structured proforma and the method of interview, data were collected from 162 subjects for the frequency of severity pattern of Temporomandibular joint disorders in young adults with suspected clinical features. TMD were classified as mild, moderate, severe and individuals having no TMD. According to Fonseca's questionnaire the severity was determined from collective score earned from the response of the patient. TMD was clinically classified as none if the score ranged between 0-15 points, mild if 20-40 points, moderate if 45-65 points and severe if 70-100 points. Score was obtained from response of the patient.

**Results:** Study revealed that out of 162 patients with symptoms 16.0% were categorized as having no TMD, 40.15% as having mild TMD, 35.2% with moderate TMD and 8.6% representing severe TMD.

**Conclusion:** The most significant category of the TMD severity pattern in the young adults of this study was the mild level of temporomandibular disorder. Subjects with moderate level of TMD according to Fonseca's questionnaire should be referred to the specialist clinic for the treatment of established TMD.

**Keywords:** Temporomandibular disorder (TMD), Pain, Fonseca questionnaire

## INSTRUCTION

Temporomandibular disorders (TMD) refer to chronic and persistent painful conditions related to masticatory muscles, temporomandibular joints and associated structures.<sup>1</sup> Multidimensional and multifactorial etiology of TMD is widely accepted.<sup>1,2</sup> Biomechanical, neuromuscular, biopsychosocial, and neurological factors contribute to the development of disorder.<sup>2</sup> Although occlusion has been recognized as an important etiological or perpetuating cofactor, the degree to which it plays a role has not been definitely delineated.<sup>3</sup> In a recent paper by Pullinger and Seligman, occlusal features identified to be potentially related to TMD included anterior open bite, over jet greater than 6mm, slide from retruded contact position (RCP) to maximum intercuspation (MI) that is greater than 4mm, unilateral cross bite and five or more missing posterior teeth.<sup>3</sup>

Factors that contribute to the progression of TMD are classified as predisposing (structural, metabolic), initiating (trauma, adverse loading), and aggravating (parafunctional, hormonal).<sup>2,4</sup> Anxiety, depression, stress and personality disorders were implicated as perpetuating factors in the progression of TMD ultimately leading to degenerative changes in the joint causing joint dearrangement.<sup>2,4,5,6,7</sup> Parafunctional habits, bruxing, clenching and grinding of teeth can also contribute to TMD.<sup>1,2,4,6</sup> Higher risk for developing TMD exists in women as compared to men with additional demonstration of young adults as a high risk category for TMD.<sup>1,5,8</sup> Signs and symptoms associated with this disorder include orofacial pain, difficulty in mouth opening, joint noises, and muscle tenderness around the joint.<sup>5</sup> Nonspecific symptoms include headache, earache, neck and shoulder pain, ear fullness and perceived hearing loss.<sup>8</sup> The aim of this study was to provide locally relevant and current information of frequency of different severity patterns of TMD in young adults with added financial and functional advantages with facilitation toward better evaluation and early prevention of TMD in young adults.

## MATERIAL AND METHODS

Using a structured proforma and the method of interview, data was collected from 162 subjects for the frequency of severity pattern of Temporomandibular joint disorders in young adults with suspected clinical features. TMD were classified as mild, moderate, severe

and individuals having no TMD. According to Fonseca's questionnaire the severity was determined from collective score earned from the response of the patient. TMD was clinically classified as none if the score ranged between 0-15 points, mild if 20-40 points, moderate if 45-65 points and severe if 70-100 points. Score was obtained from response of the patient.

Questions number	Questions number (Answer - No, Sometimes - Yes)
1	Is it hard for you to open your mouth?
2	Is it hard for you to move your mandible from side to side?
3	Do you get tired/muscular pain while chewing?
4	Do you have frequent headaches?
5	Do you have pain on the nape or stiff neck?
6	Do you have earaches or pain in craniomandibular joints?
7	Have you noticed any TMJ clicking while chewing or when you open your mouth?
8	Do you clench or grind your teeth?
9	Do you feel your teeth do not articulate well?
10	Do you consider yourself a tense (nervous) person?

TMJ: Temporomandibular joint

**Data Collection Procedure:** Approval from the hospital's ethical committee was taken. Subjects referred from OPD presenting with suspected features and fulfilling the inclusion criteria were invited to participate in the study. The objectives, procedure, risks and benefits were explained to them. They were given assurance that their personal identity would not be disclosed. After an informed consent data was collected through a well-structured Performa (enclosed)

Relevant history was recorded; signs and symptoms of TMD were thoroughly evaluated. Detailed intraoral and extra oral examination were carried out using standardized techniques of inspection, palpation and percussion along with measurement of mouth opening. Patient were checked for facial pain by palpation, mouth opening and jaw sounds. Para functional habits were inquired. All information was recorded in a Performa.

## RESULTS

Study revealed that out of 162 patients with symptoms 16.0% were categorized as having no TMD, 40.15% as having mild

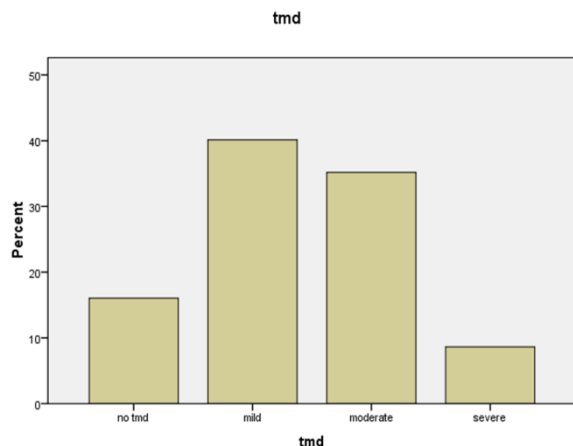
TMD, 35.2% with moderate TMD and 8.6% representing severe TMD.

Regarding ages patients were divided into two age groups. Majority of the cases lie in age group 2 (27-35 yrs) 62.96% as compared to age group 1 (18-26 yrs) 37.04%. Among the total study sample of 162 subjects female patients reporting the department were 83 and male patients were 79 making up 51.2% for females and 48.8% males.

Further analysis, to determine combined effect of age and gender on TMD. Among total of 60 subjects in age group 1 (18-26 yrs) 28 were female and 32 were males representing 53.34% males and 46.6% females. However in age group 2 (27-36 yrs) among 102 patients 55 were females and 47 were males making 53.92% females and 46.08% males. Distribution showed increase in number of female patients with age.

Further evaluation of data was performed to determine gender distribution with respect to TMD. Data revealed more male respondents exhibited severe level of TMD as compared to females (12 vs 2), however females were more in moderate and mild level (31 vs 26) and (38 vs 27). Further 26 categorized as not having TMD 14 were females as opposed to 12 male subjects. Therefore percentage distribution of young adults according to gender and TMD severity showed 17.72% males being free from TMD 39.13% representing mild, 32.91% representing moderate and 15.18% representing severe TMD.

Whereas, 14.45% females showed themselves to be free of TMD 45.78% and 37.34% showed mild to moderate levels and severe TMD was represented by 2.40% of female respondents.



## DISCUSSION

This study is the first of its kind conducted locally aimed to determine the frequency and severity pattern of Temporomandibular joint disorders in young adults reporting to Khyber College of Dentistry, Peshawar. For this situation, 162 young adults who had at least one suspected clinical feature were selected as a convenience sample for screening through interview and filling of a Fonseca's questionnaire. The data available so was thought helpful for the prediction of TMD development in future.

Among the three severity levels of TMD i.e. mild and moderate and severe those comprising the mild and moderate levels were found mostly in terms of score and the number of subjects.

The % age of 40.15 represented more individuals reporting mild levels of TMD. This finding is also supported by those of the previous studies. Studies for our society showed that females had more TMD because of stress.<sup>9</sup> Another theory stated that greater prevalence of TMD in females is due to genetic make-up of females which is associated with TMD.<sup>10</sup> In previous studies;

different parameters were used to assess TMD prevalence and level of severity. A study from Peshawar, Pakistan, showed female predominance in TMD where 74% persons having TMD were females.<sup>11</sup> Female predominance is also depicted in these results representing 51.2% of the subjects. With regards to gender our results are consistent with the findings of Pedroni et al, Nomura et al and Solberg et al. They reported higher prevalence of signs and symptoms associated with TMD among women.

The higher prevalence of women with some degree of TMD may be related to typical physiological differences of feminine sex, such as regular hormonal variations, muscular structure and different characteristics of connective tissue.<sup>12,13</sup>

This can also be seen from the results that 16.0% of subjects represented no TMD, 40.15% represented mild, 35.2% moderate and 8.6% severe category of severity pattern according to Fonseca questionnaire in young adults reporting at Khyber College Of Dentistry Peshawar with at least one suspected clinical feature of TMD among, TMJ sounds, difficulty in mouth opening, pain during chewing, opening deviation of mandible, muscle tenderness. The findings of this study were supported with other studies. In the current study, the level of TMD severity was assessed using the questionnaire alone, 7.9% (11) students were TMD free while 44.3% (62) students were having mild TMD and the same numbers of students 44.3% (62) were having moderate TMD. 3.6% (5) students were facing severe level of TMD.<sup>14</sup> Out of total 140 students, only 11 (7.9%) were TMD free while remaining had some sort of TMD.<sup>14</sup> A study from Brazil evaluated 200 undergraduate students for severity of TMD. 2.45% of them were having severe TMD, 13.93% had moderate level of TMD, 83.60% had mild TMD and 39% were disease free.<sup>15</sup> Comparison of Temporomandibular joint disorders in Iranian Dental or non-Dental students reported among 200 students, a total of 71% showed some degree of TMD as mild 50%, moderate 13% and severe 8%. Therefore it is demonstrated that significant number of population have TMD sign that most of them do not know they have disorders or if the treatment is possible or what is the prognosis.<sup>16</sup>

The mild TMD was the most prevalent category for both the genders in this studies representing 65 (27 males, 38 females) out of total 162 subjects. This finding is also shown in a study conducted at Indian university.<sup>17</sup>

## CONCLUSION

The most significant category of the TMD severity pattern in the young adults of this study was the mild level of temporomandibular disorder.

The combined scores of moderate and severe level of TMD clearly showed that number of individuals falling in this category is significantly high according to score allotted by Fonseca's questionnaire.

It was also concluded that both male and female subjects were almost equally prone to develop established TMD in future.

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