

Temporomandibular Disorder Prevalence in General Dental Practice in Ahmedabad District, Gujarat

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Abstract

Aim and Objectives: The aim of the study was to evaluate the prevalence of temporomandibular disorder.

Design: A questionnaire based survey was carried out among General dentist for signs and symptoms of TMD. The results were scored and according to scoring severity of TMD were assessed in the specified population.

Materials and Method: Randomly 167 dentists (64 males and 103 females) with their age ranging between 25 to 55

years were assessed for TMD. Descriptive statistical analysis was done.

Results: The present study has shown that the prevalence of symptoms Headache were 59.3% respectively, with no apparent gender difference. In this Study TMJ noise being the most common symptom. Among all age oral parafunctional were common.

Conclusion: To summarize, TMDs are not self-limiting and they do not resolve with time. They may increase with time along with increase in stress level.

Keywords: Dentist, Temporomandibular disorder, Temporomandibular joint.

Introduction

The term temporomandibular joint disorders (TMJDs) is an umbrella term, covering a number of acute and chronic problems related to the areas of head, jaws, face and neck. In the dental community, TMD is often called ‘The Great Imposter’. This nickname stems from the difficulty that most dentists have in diagnosing TMJD because of the wide range of symptoms associated with it.¹ Temporomandibular disorder (TMD) is a wide-ranging term used to describe a number of related disorders involving the temporomandibular joint (TMJ), masticatory muscles, and occlusion, with common symptoms such as pain, restricted movement, muscle tenderness, and intermittent joint sounds. The most frequent symptoms of TMD include sound in the area of the TMJ sensation of fatigue in the jaw area, sensation of stiffness of the jaw upon waking up or when opening the mouth, luxation or locking of the mandible when opening the mouth, pain when opening the mouth, and pain in the region of the TMJ or in relation to masticatory muscles. The most frequent signs of TMD include restricted mandibular movements, lower limited TMJ function, painful mandibular movement, muscle pain, and pain in the TMJ.² The growing public interest in oral health has increased the demand for treatment of TMD. It is therefore important and valuable to have epidemiological data to estimate the proportion and distribution of these disorders in the population. Due to high prevalence and variability of the complaints, TMD is diagnosed by associating signs and symptoms as some characteristics may be frequent even in a nonpatient population.¹ The rationale of this

study was to pay deeper attention to TMD, as it is found in the literature, for high prevalence of TMD in professional. The present investigation aims at cross-sectional epidemiological study for TMD signs and symptoms in general dentist through self reported questionnaire.

Materials and method

This study was conducted at Goenka research institute of sciences dental college of Gandhinagar. The study sample consisted of 167 dentists (64 males and 103 females) with their age ranging between 25 and 55 years. Set of questionnaire were distributed among the general dental practitioners. Questionnaire included questions (as shown in the Table 1), regarding the nature of pain, jaw joint and muscular symptoms, stress and parafunctional habits. Data were collected from August 2020 to November 2020. Participants were given no time limit to fill questionnaire (in days) so as to reduce induced error. Ethical Committee clearance was obtained from the Institutional Review Board. Subsequently, examination of the TMJ (proper) for obvious asymmetry, tenderness, swelling in the preauricular region, noises/crepitations, path of midline of the mandible (deviation/deflection) were done and findings were registered as ‘absent’ or ‘present’.

Inclusion and exclusion criteria

The inclusion criteria were, all are Dentists, and absence of pain of dental origin, dentist with all permanent dentition is present. The exclusion criteria were clinically diagnosed TMD and undergone any treatment and students with any gross pathology of ear were excluded from the study.

Questionnaire

Questionnaire comprised which includes answers to questions in “yes” or “no”. (Table. 1)

Data analysis

SPSS statistical was used. The frequency and forms of appearances of TMD signs and symptoms were analyzed

Questionnaire regarding signs and symptoms of temporomandibular joint disorders.

- 1) Do you have pain related to TMJ?
- 2) Do you have an extra oral pain?
- 3) Do any normal activities cause pain?
(During Mastication or Speech)
- 4) Do you have any parafunctional habit?
(Bruxism, Clench, Grind)
- 5) Do you have pain on opening mouth wide or yawning?
- 6) Do you have Deviation your jaw?
- 7) Do you hear noise within your TMJ while opening or closing the jaws?
- 8) Do you have trismus?
- 9) Do you suffer from headache?
- 10) Does pain increase in stress?
- 11) Does rest position of head relieve pain?
- 12) Have you ever had injury to your jaw, head or neck?
- 13) Have you had orthodontic treatment?
- 14) Have you ever had bite adjustment done by your dentist?
- 15) Have you ever taken treatment for TMDs?

regarding the total number of subjects, for females and males, separately. Comparisons were then carried out by using Pearson's Chi-square test. The level of significance was set at $p < 0.05$.

Results

The mean age of the respondents from the (mean \pm SD) was 36.79 ± 0.41 with range of 22–55 years and the median age was 36.0 years (Table 2, Fig. 1). The prevalence of TMD signs differences are shown in (Table 3, Fig.2) there was significant difference in awareness of different years. The mean awareness was significantly increased from the age 22 to 55. ($p < 0.01$). It was observed

that there was gradual increase in awareness about TMJ and TMDs and its signs and symptoms among the individual groups.

Discussion

Table 1. Questionnaire regarding signs and symptoms of TMD

The term "TMDs" involves changes in masticatory muscles, TMJ, and its associated structures. These changes affect a large portion of the population which can be related to the presence of signs and symptoms such as masticatory muscle pain, TMJ pain, joint noises, restricted mouth opening, inadequate occlusion, auditory disorders, and headache.³ TMD can affect patients of any age or gender with the presence of various signs and symptoms. However, the diagnosis of this clinical entity may be difficult due to the variation in the presence of symptoms

Table 2 Age and Gender of dentist distribution of study population

| Age & Gender | Value |
|---------------|-----------------|
| AGE (in year) | |
| Mean \pm SD | 6.79 \pm 0.41 |
| Median | 36 |
| Range | 22-55 |
| p value | 0.00(NS) |
| GENDER (n) | |
| Male | (64) 41.1% |
| Female | (103) 59.9% |

NS: Nosignificant; * $p < 0.05$, (n) number of participated male & female among different patients and in the same patient at different times.⁴ The etiology of TMD is multifactorial which may be related to various medical and dental conditions such as emotional tension, occlusal interferences, teeth loss, postural deviation, masticatory muscular dysfunction, internal and external changes in TMJ structure and various associations of these factors.⁵

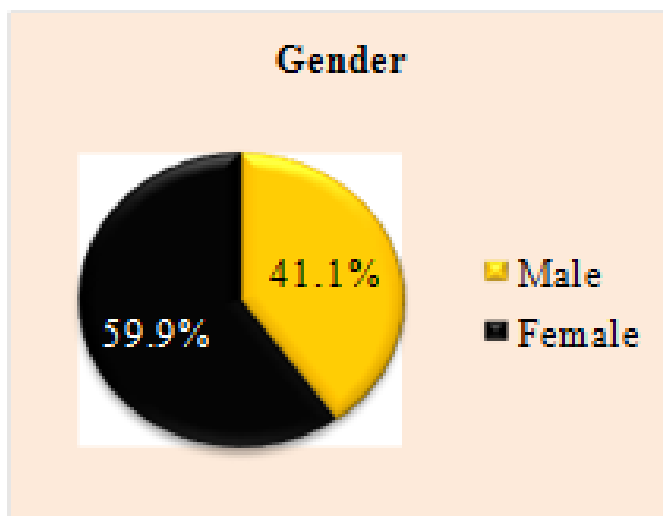


Fig.1: Number of participated

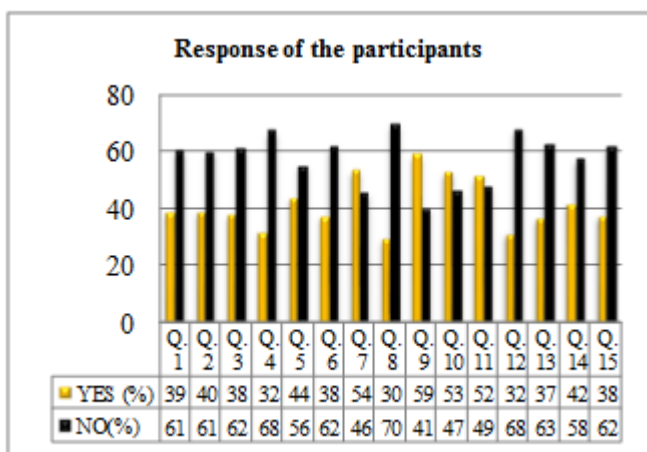


Fig. 2: Response for TMD Questionnaire Prevalence of symptoms among the Dentists

The present study was conducted to assess the prevalence of TMD in the dentist by the use of a self reported questionnaire based survey.

Study founded a greater response to the prevalence of symptoms headache which was 59.3% and low response with trismus which was 29.9%, reported injury of jaw and head and neck & parafunctional habits were not common was which is respectively 31.7% and 32.2%.

TMJ sounds are often an indication of mechanical interferences with the joint. In the present study, most prevalent sign of TMD was TMJ sound which was 53.9%. This was in agreement with the reports by Ogura⁶ and Widmalm.⁷ TMJ sounds was been found to be

significantly more common in girls than boys by Farsi NM⁸ this was not confirmed in this study or in other previous studied by Nilner M.⁹ Methods and criteria for recording joint sounds differ in the various reports and thus, combined with natural fluctuations, were possible reasons for wide range of joint sounds.¹⁰ It was believed that there was a large psychosocial component of this disease. Increased stress levels were believed to result in poor habits including bruxism, clenching, and even excessive gum chewing. These lead to muscular overuse, fatigue and spasm, and subsequently pain.¹¹ Many symptoms might not have manifestations related to TMJ itself, for example, headache, earache, sounds. Study shown TMJ sound (clicking or crepitus) 53.9% was the most common problem which was in accordance with the study done by Gopal et al.¹² Although the methods and criteria for recording joint sounds differ in the various reports apart from natural fluctuations, they are so many possible reasons for the wide range of joint sounds. In this study, deviated/deflected path of midline of the mandible was 37.7%. Study shown that Rest position of head relieve pain was 51.5%. Pain on mouth opening wide or yawning was 44.3%, Bite adjusted by dentist was 41.9%. Were found other symptoms extra oral pain was 39.5%, pain cause TMJ which was 38.9% and do the normal activities during pain was 38.3% were low in occurrence. Inger Egermark et al.¹³ concluded that patients with history of orthodontic treatment in childhood do not have an increased risk of developing signs or symptoms of TMDs later in life, and correlations between signs and symptoms of TMDs and different types of malocclusion were generally nonexistent or weak; however, in this study, the correlation was found between history of orthodontic treatment done which is a 37.1%.

Studies have been reported regarding the relationship between prevalence of signs and symptoms of TMDs

gender, suggestive of female predilection. Bagis et al.¹⁴ concluded that signs and symptoms of TMD are present more frequently in females than males. However, in this study couldn't comment on female preponderance due to unequal male and female ratio. The most common symptom was pain in both the genders. Various studies have been reported in literature suggesting the relationship between stress and TMDs.

Mottaghi et al.¹⁵ and Kanehira et al.¹⁶ in their study suggested the probable role of psychological factors such as stress in causation of TMDs.

Conclusion

This report has primarily been a description of clinical sign and symptoms of TMD and oral parafunctions in adults with special reference to gender differences. The prevalence of TMD signs were 53.9% with joint sounds being the most prevalent sign. While symptoms were found to be 59.3% with headache being the most prevalent. Among the oral parafunctions habit was most prevalent 32.2 %

Women showed a higher prevalence. Subjects who had bruxism were more likely to have tenderness in masseter muscles and limited opening. TMDs are not self-limiting and they do not resolve with time. They may increase with time along with increase in stress level.

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