Research Article

Clinician awareness on the etiology of the temporomandibular joint disorder – A survey

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ABSTRACT

Aim: The aim of the study was to evaluate the knowledge and awareness of the dentists on the etiology of the temporomandibular disorders with an online questionnaire survey. **Materials and Methods:** The study was a questionnaire-based cross-sectional study. A total of 120 dentists participated in the study. The target population entailed was general dentists practicing in Chennai. A pre-tested questionnaire was mailed to the respondents following informed consent. The data were extracted from the responses and analyzed. **Results:** The total response rate recovered was 84%, and the respondents consisted of 19 males and 81 females. Around 83% of the dentists considered stress a perpetuating factor for temporomandibular joint disorders. **Conclusion:** The results showed that the knowledge and awareness of the general dentists regarding temporomandibular joint disorders in Chennai were satisfactory. However, the practice regarding the diagnosis of the etiology and treatment was inadequate. To ensure the proper diagnosis and treatment of these temporomandibular joint disorders, proper diagnostic protocols must be followed, and the dentists must be trained to diagnose the condition appropriately for referral of the patient to an expert.

KEY WORDS: Chennai, Dentists, Etiology, Survey, TMD

INTRODUCTION

Alterations of the temporomandibular joint and the associated structures, including the muscles of the face and neck, are known as temporomandibular joint disorders.[1]

This disorder leads to pain in the temporomandibular joint, usually in front of the ear or in the form of a headache.

This pain in the TMJ can be due to trauma, such as a blow to the face, inflammatory or degenerative arthritis, poor dental work, and structural defects that push the mandible back toward the ears, whenever the patient chews or swallows. Stress-induced grinding or clenching of the teeth is a frequent culprit. Sometimes muscles of mastication around the TMJ can go into spasm, causing pain in the head and neck as well as difficulty in opening the mouth normally.

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Pain, difficulty in mastication and speech are common complaints by the patients. Most of the general dentists poorly understand the etiopathogenesis of the temporomandibular joint disorders. This proves to be a major problem leading to the misdiagnosis and treatment of TMD. Understanding the etiology of temporomandibular joint disorders is extremely important in identifying and avoiding potential pathologic factors.[2] Temporomandibular joint disorders are more commonly seen in girls and the teenage population.[3] Around 60–70% of the population have at least one or two signs of TMD joint disorders, but very few individuals are aware of these problems and report them to the specialists.[1,4] According to a study done on the prevalence of temporomandibular joints in the Chennai population, more than 54% of the population had at least one to two clinical signs of temporomandibular joint disorder (Muthukrishnan and Sekar, 2015). The diagnosis of orofacial pain often presents a serious challenge to most practitioners. Thus, sufficient knowledge and skill regarding TMD helps the dentist in recognizing any irregularities in the temporomandibular joint during the examination, and then, referring the patient to the

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appropriate professionals, thereby terminating the cycle of perpetual medical referrals. The general dentists need appropriate training to diagnose these conditions and an appropriate treatment plan or referral to the concerned doctor for treatment.

Many surveys have been conducted to determine the prevalence of temporomandibular joint disorders amongst patients, but a few have assessed the knowledge of the dental practitioners on this subject.

This survey aims at determining the current knowledge and awareness among dentists about the etiology of temporomandibular joint disorders among the general dentists practicing in Chennai.

MATERIALS AND METHODS

A cross-sectional study was conducted to assess the knowledge, awareness of the etiology of temporomandibular joint disorders among dental practitioners in Chennai, Tamil Nadu, India. An extensive questionnaire is comprising five main domains with 30 questions. The main domains under which the questions were formulated include:

1. The prevalence of temporomandibular disorders
2. The etiology of the temporomandibular disorders
3. The diagnostic criteria used
4. Relationship of occlusion and temporomandibular joint disorders
5. Treatment plan for temporomandibular disorders.

These questions were extensively vetted, and after obtaining clearance from the institutional research and ethical committee, a mailed questionnaire was distributed among general dentists and compiled after their responses. The questionnaire included multiple-choice questions. The results were compiled in the form of percentages and presented.

RESULTS

The total response rate recovered was 84%, and the respondents consisted of 19 males and 81 females.

About 83% of the dentists considered stress a perpetuating factor for temporomandibular joint disorder. About 12% of the dentists were of the opinion that stress is the main cause of temporomandibular joint disorder, whereas 5% felt that stress had no effect on the temporomandibular joint disorders [Figure 1].

About 76% of dentists suggested that faulty restorations were a risk factor for temporomandibular joint disorders, whereas 24% were unsure of the effect these restorations would have on the TMJ. Only 3% of the dentists were aware that it has been proven that there is no correlation between the temporomandibular joint disorders and faulty restorations [Figure 2].

About 40% of the dentists suggested that neurogenic pain acted as a causative factor for temporomandibular joint disorders, whereas 44% suggested that neurogenic pain only acted as an adjunctive cause to the temporomandibular joint pain. About 12% of the dentists suggested that neurogenic pain has no effect on the temporomandibular joint disorders. About 2% dentist's considered it as the definitive cause for the temporomandibular joint disorders [Figure 3].

About 80% of the dentists suggested that headaches that radiate from the back to the neck were a symptom and causative factor for temporomandibular joint disorders [Figure 4].

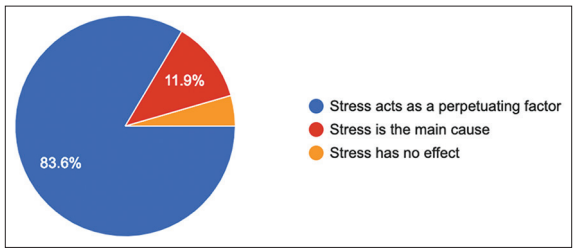

Figure 1: Do you consider stress as a causative factor of temporomandibular joint disorder?

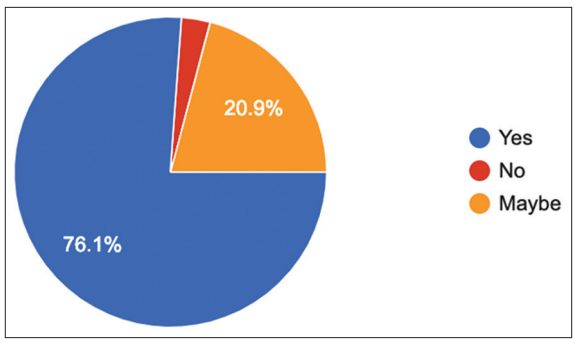

Figure 2: Do you think faulty restorations are a risk factor for temporomandibular joint disorders?

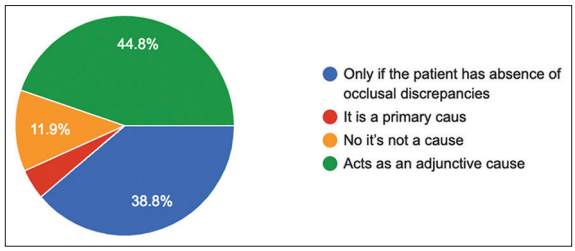

Figure 3: Do you consider neurogenic pain as a causative factor for temporomandibular joint disorders?

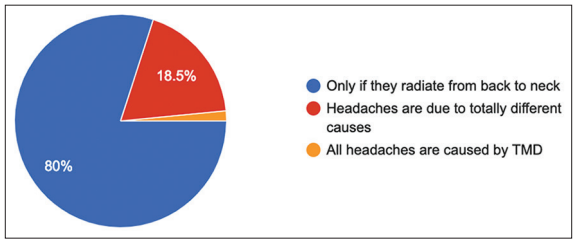

Figure 4: Are radiating headaches and temporomandibular joint disorders related?

About 59% dentists suggested temporomandibular joint disorders to occur as an early sign before onset of systemic arthritis. About 14% of the dentists suggested that systemic arthritis was a definitive cause of TMD but 27% said both these problems were unrelated [Figure 5].

DISCUSSION

The total response rate recovered was 84%, and the respondents consisted of 19 males and 81 females. Around 83% of the dentists considered stress a perpetuating factor for temporomandibular joint disorders. Manfredini *et al*. performed a study using stress measurement questionnaires and indicated that in comparison to other various oral conditions, stress was significantly higher in patients with TMJ disorder.[5,6] Madani *et al*. indicated that stress had an important role in the prevalence of TMD and concluded that risk factors such as premature contact, clenching, bruxism, and trauma to the joint are of less importance. Psychological factors affect the masticatory system and TMJ and are able to induce parafunctional habits.[5,7,8]

About 76% of dentists suggested that faulty restorations were a risk factor for temporomandibular joint disorders, whereas others were unsure of the effect these restorations would have on the TMJ. A systematic review by Manfredini *et al*., in 2017, reviewed the literature on the association between features of dental occlusion and temporomandibular disorders. The findings support the absence of a disease-specific association. The review also emphasized that there was no major role in dental occlusion in the pathophysiology of TMDs. Dental clinicians are thus encouraged to move forward and abandon the old-fashioned gnathological paradigm.[9]

About 40% of the dentists suggested that trigeminal neuralgia pain acted as a causative factor for temporomandibular joint disorders, whereas 44% suggested that the pain only acted as an adjunctive cause to the temporomandibular joint pain. The causes of the onset of pain, especially in trigeminal nerve neuropathy in patients with a history of TMJ-D is

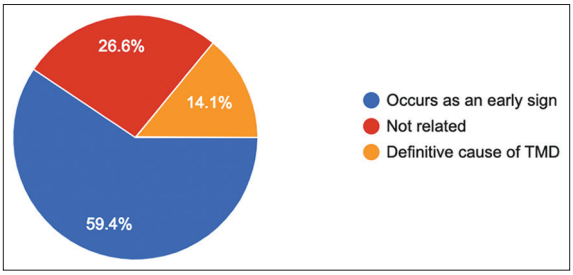

Figure 5: Are patients with systemic arthritis more prone to temporomandibular joint disorders?

controversial.[10-12] In 1934, Costen[13] described many neuropathic symptoms in temporomandibular joint disorders, but over time this theory was disproved due to the lack of convincing evidence. The difference between the temporomandibular joint pain and neurogenic pain was that the temporomandibular joint pain was localized only near the TMJ region, whereas the neurogenic pain was diffused throughout the face and head.[12,14]

About 80% of the dentists suggested that headaches that radiate from the back to the neck were a symptom and causative factor for temporomandibular joint disorders.

Headache occurs frequently in patients with TMD symptoms.[15] According to the new diagnostic criteria for TMD (DC/TMD), masticatory myofascial pain and headache are correlated. The palpation of a myofascial trigger point, leads to the headaches that lead to temporomandibular joint pain which does not originate from intracranial structures.[16] The temporal relationship between headache and TMD should be assessed with regard to onset, development, and improvement.[17]

About 59% dentists suggested temporomandibular joint disorders to occur as an early sign before the onset of systemic arthritis. About 14% of the dentists suggested that systemic arthritis was a definitive cause of TMD, but 27% said both these problems were unrelated.

Clinical TMJ involvement is found in 4–80% of rheumatoid arthritis (RA) patients. About 50% of RA patients clinically exhibit TMJ involvement, according to most studies.[18,19] This wide range in values occurs due to different diagnostic examinations performed, patient's selection, and the use of different criteria for classifying joint involvement.[20,21] The diagnosis of TMJ involvement with RA is based on history, physical findings, radiographic findings, and laboratory values. CBCT reveals early degenerative changes in the TMJ more accurately; this leads to timely diagnosis and management.

CONCLUSION

Thus, the knowledge and awareness of the etiology of temporomandibular joint disorders among the general dentist population in Chennai were inadequate. Efforts need to be made to improve the overall knowledge of the dentists to aid in the appropriate care of the patient. Further educational programs regarding the diagnosis and treatment plan of the temporomandibular joint disorders must be made mandatory for enhanced patient care.

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