

A study to determine dentists' knowledge and perception about occlusal splint therapy in temporomandibular joint disorders

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Abstract

Aim: The aim of this study was to determine how much the dentists are aware about the role of occlusal splint therapy in temporomandibular joint disorders (TMDs)

Materials and Methods: A questionnaire containing 15 questions was prepared to determine dentists' knowledge about TMDs and the different therapies for TMDs including Occlusal splint therapy. The survey was carried out by the researchers by sharing the questionnaire to dentists through telephone and email and responses were recorded. The responses obtained were analyzed statistically using SPSS software and Microsoft Excel.

Results: A total of 100 responses recorded from dentists were analyzed. About 90 dentists had <10% of total patients having some form of TMDs with most of the patients being in 4th and 5th decade of life. 48 dentists were of the opinion that Magnetic Resonance Imaging (MRI) was the best radiographic method to evaluate disc displacement with or without reduction.

Conclusion: The knowledge of dentists was found to be insufficient with regards to TMDs and role of occlusal splint therapy in treatment of TMDs. Periodic educational seminars about TMDs & their management are required for educating the dental practitioners about

the recent developments and the line of treatment to follow for treating TMDs.

Keywords: Survey, Occlusal Splint, Temporomandibular Joint Disorders

Introduction

The commonest therapy employed for treatment of pain in musculature surrounding the jaws and for Temporomandibular Joint Disorders (TMDs) is occlusal splint therapy.¹ Occlusal splints are regularly utilized as the primary modality of treatment for Bruxism, occlusal disharmony, ear ache associated with bruxism and clenching, etc. For TMDs, the splints are used as an adjunctive therapy for alleviating symptoms especially those associated with disc derangement.^{2,3} The therapeutic success of occlusal splint therapy is dependent on type of occlusal splint, duration of therapy, adjustment of occlusion and knowledge about TMDs to dentists.^{4,5}

Even though it is a part of the dental curriculum, very few dentists are aware about TMDs as well as its management. So, this study was conducted to know about the awareness amongst dentists about the role of occlusal splint therapy in treatment of TMDs.

Materials and Methods

A questionnaire containing 15 questions was prepared to determine dentists' knowledge about TMDs and the different therapies for TMDs including Occlusal splint therapy. The survey was carried out by the researchers by sharing the questionnaire to dentists through telephone and email and responses were recorded. Statistical analysis was performed using SPSS version 25.0 and Microsoft Excel. Chi square test was employed to determine the level of significance.

Results

Out of 100 dentists who responded to the questionnaire sent to them, 89 responded that the number of patients

observed in their clinics with symptoms of TMDs was less than 10% of total patients they examine every month. The commonest age group for TMDs replied by 76% was 4th & 5th decade of life i.e., between 31 to 50 years of age. According to the responses received, 57% dentists thought that MRI was the best radiological investigation for patients with disc displacement with or without reduction, followed by TMJ radiography with open and close mouth being the choice of 32% of the respondents.

Most of the dentists (89%) replied both intra auricular and extra auricular as the methods for palpation of Temporomandibular joint (TMJ). Almost 2/3rd of the respondent dentists (68%) was unaware about the Research Diagnostic Criteria (RDC) for diagnosis of TMDs. About 75% of the responses were in favor of using the combination of soft occlusal splints along with meditation and stress relieving therapy as a treatment for patients with bruxism.

54% of the dentists had chosen 0.3 cm as the thickness of hard splints and 40% dentists were of the opinion that occlusal splint should be worn by patient for 8 hours. 87% of the respondents agreed that the thickness of the occlusal splint is an important factor for determining the success of the temporomandibular disorders. Semi-adjustable articulator was the articulator of choice by 74% of dentists as the articulator for fabrication of hard splints. Arthrocentesis was the treatment of choice by 60% of dentist in cases of TMDs where occlusal splint therapy has failed to treat the TMDs. Though hydrocortisone is the chemical of choice for Arthrocentesis, about 49% of dentists choose hydrocortisone and normal saline as the chemical of choice for Arthrocentesis. Only 4% of the dentists responded in affirmative when questioned how many patients they have treated with arthrocentesis out of the

total TMDs patients that they have encountered in the routine practice.

Almost all dentists (98%) agreed that treatment of TMDs requires combination approaches and cannot be managed by single modality of treatment and 99% dentists replied in affirmative when they were asked if more educational seminars should be conducted to teach dentists about management of TMDs.

Discussion

Occlusal splint therapy is being used for the diagnosis and treatment of numerous disorders of maxillofacial system including oral problems like bruxism, teeth having severe attrition, parafunctional habits and also for temporomandibular joint disorders. The current study aims to investigate knowledge and perception of dentists about role of occlusal splint therapy in temporomandibular joint disorders.^{6,7}

In the present study, a modified questionnaire was sent to dentists through telephone and email and responses were recorded. The responses were recorded in real time and the dentists were not given time to think over the options for each question. This gave us a snapshot idea of their knowledge about TMDs and occlusal splint therapy. The knowledge amongst dentists about the causative factors for TMDs and role of splints in managing these disorders is very critical factor for the success of occlusal splint therapy.

In our study, 3/4th of the responders (75%) stated that the soft splint therapy with other treatment modalities for treatment of bruxism and this was similar to the findings of the studies carried out by Gnauck et al.⁸ and Lindfors et al.⁴ Soft occlusal splints are often used in combination with other treatment modalities in comparison to combination of hard splints with other treatment modalities. This observation from the study of Lindfors et al.⁴ was similar to the responses that we recorded

wherein the dentists have preferred combination therapy with meditation and with other stress relieving therapies as the treatment for bruxism.

Sufficient knowledge about TMDs and their treatment should be imparted to general dentists by dental associations and dental schools as these dentists are the first persons whom the patients with TMDs look upon for their initial treatments.⁹ Almost all dentists agreed upon the need for continuing education programs especially in regards to updating themselves about TMDs and their treatment modalities.

Conclusion

The knowledge of dentists in this survey was neither satisfactory nor unsatisfactory as most of them answered few common questions correctly and their wrong responses were also confined to certain particular questions only. Dental associations and dental schools should come forward and organize seminars and workshops for improving the overall scenario of knowledge amongst dentist about these disorders. A detailed informative session periodically would help each and every stake holders in the long run as both the patients and dentists are going to benefit from such educational programs.

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Questionnaire:

- 1) Number of patients (% of total patients) with Temporomandibular Joint Disorders (TMDs) encountered in routine practice.
- a) <10%
- b) >20% but <30%
- c) >10% but <20%
- d) above 30%
- 2) Commonest age group for TMDs is
- a) 2nd & 3rd decade
- b) 4th & 5th decade
- c) 6th & 7th decade
- d) 8th & 9th decade
- 3) The best radiographic measure for patients with disc (TMJ) displacement with or without reduction is
- a) CBCT
- b) MRI
- c) TMJ radiographs
- d) OPG
- 4) Method used for palpation of TMJ includes?
- a) Extra auricular palpation
- b) Intra auricular palpation
- c) Both
- d) None of the above
- 5) Are you aware about RDC (Research Diagnostic Criteria) for diagnosis of TMDS?
- a) No
- b) Yes

- 6) For Bruxism, modality of treatment includes
- a) Meditation or any stress relieving therapy
 - b) Soft occlusal splint
 - c) Hard occlusal splint
 - d) Combination of the above three approaches
- 7) For TMD, the ideal thickness of hard splint should be
- a) 0.5 cm
 - b) 0.6 cm
 - c) 0.3 cm
 - d) 0.4 cm
- 8) Thickness of splint affects the end result of the treatment for temporomandibular disorders. Agree or disagree?
- a) Disagree
 - b) Agree
- 9) Occlusal splint should be worn by the patient for ____ hours every day.
- a) 10 hours
 - b) 8 hours
 - c) 24 hours
 - d) 12 hours
- 10) For fabrication of hard splint, the articulator most preferred is
- a) Semi adjustable articulator
 - b) Mean value articulator
 - c) Fully adjustable articulator
 - d) Hinge articulator
- 11) The line of treatment to follow in case of failure of occlusal splint therapy for curing TMDs is
- A) Menisectomy
 - B) Arthrocentesis
 - C) Condylectomy
 - D) Arthroscopy
- 12) The reagent /drug preferred for TMJ arthrocentesis is
- a) Normal saline
 - b) Hydrocortisone
 - c) Both
 - d) None of the above
- 13) Have you treated any patient using arthrocentesis?
- a) Yes
 - b) No

