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Prevalence of Mpds Vs Disc Disorders

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Abstract: The Temporomandibular joint acts like a sliding hinge, connecting the jawbone to the skull. A temporomandibular disorder can cause pain in the jaw joint and in the muscles that control jaw movement. Some people who have jaw pain also tend to clench or grind the teeth called bruxism.
Injury to the jaw, the joint, or the muscles of the head and neck can lead to temporomandibular disorders. Stress, which causes tightening of facial and jaw muscles or clenching of teeth can also be one of the most common reasons for temporomandibular disorders.The aim of this study is to check the prevalence of Myofascial pain dysfunction syndrome and Disc Condyle disorders in patients suffering from Temporomandibular disorders. Data from 86000 patients visiting Saveetha Dental College during the time period of June 2019 to March 2020 were reviewed and the data was collected. The data was taken from the category - temporomandibular disorders. A total of 61 patients were taken and analysed for MPDS and Disc condyle disorders. The results were tabulated and analysed using SPSS software by IBM. Out of 61 patients, 57.4%of them had disc condyle disorder, 34.4% had MPDS, 3.3% of them had Degenerative disorder and 4.9% of the patients did not show any disorder. The prevalence of disc condyle disorder is much higher than myofascial pain dysfunction syndrome.

Keywords: Myofascial pain dysfunction syndrome, temporomandibular, disc condyle disorder, Patients, Pain.

INTRODUCTION

The temporomandibular joint is the synovial compound joint of an ellipsoid variety consisting of the bilateral articulation with condyles of the mandible with the glenoid fossa of the inferior border of the temporal bone, separated by the meniscus or intra articular disc. Previously we have worked on correlating the width of maxillary anterior teeth using extraoral and intraoral factors and published it (Ariga *et al.*, 2018). Oral hygiene plays a major role in patients wearing prosthesis as food accumulation might be present (Jyothi *et al.*, 2017).Thus the Temporomandibular joint is anatomically made up of two bones but functionally the articular disc serves as third nonossified component that regulates the complex movements of the joint. Previous studies on non original abutments with implants, cephalosporins and effect of resin bonded luting agents were done and this experience led us to work on the present study (Duraisamy *et al.*, 2019) (Selvan and Ganapathy, 2016) (Ganapathy *et al.*, 2016).Temporomandibular system mainly comprises two components, the TMJ and the associated neuromuscular system. Periodic oral health checkup is very helpful to diagnose the problems of the patients at an early stage. Previous studies on ceramic veneer materials have been done, which led to an experience to do the present study (Subasree, Murthykumar and Dhanraj, 2016) (Ranganathan, Ganapathy and Jain, 2017).
Myofascial Pain Dysfunction Syndrome (MPDS) or facial Arthomyalgia is the most common cause of masticatory pain and the limited function for which patients seek dental consultation. Medical management of the patient plays an important role. (Vijayalakshmi and Ganapathy, 2016) (Ganapathy, Kannan and

Venugopalan, 2017). The incidence of MPDS is ever increasing. MPDS patients get first consultation from medical people who classify them vaguely on the basis of their symptoms. Patients from rural areas do not have much awareness on oral health (Ashok and Suvitha, 2016). Patients wearing prosthesis , should have a regular dental checkup (Ashok *et al.*, 2014).

Most of the patients who undergo this pain do not seek any treatment (Toy, 2007). Many prostheses are now available such as magnetically retained silicone facial prosthesis (Venugopalan *et al.*, 2014).The condition thus represents a significant cause of physical and psychological debility in large segments of the population. This study is don on gingival retraction, which lead to an experience to work on the current topic(Kannan and Venugopalan, 2018) .The etiology and pathogenesis of MPDS are controversial although they are considered to be multifactorial, such as excess tension in the muscles of mastication between upper and lower teeth and jaws, disturbed movement of the jaw joint, etc. Oral hygiene must be maintained by the patient on his/her own interest (Basha, Ganapathy and Venugopalan, 2018). Many surface modifications of the implant crowns have come into the market, preferring patient's comfort (Ajay *et al.*, 2017). Different Etiological factors of Temporomandibular disorder documented in medical literature are psychological factors such as personality and behaviour, occlusal discrepancies, improper dental treatment, overloading or overusing joint structures and parafunctional habits (Feteih, 2006). However, some other authors suggested that hyper function may trigger myofascial pain and assert that Temporomandibular disturbance are usually related to dysfunction of masticatory muscles or emotional disturbances Probably because the masticatory muscles result in pain, limitations of jaw movement, joint noises, deviation in opening and closing of mouth and sensitivity in touching one or more muscles of mastication or their tendons (Hoang, Tran and Nguyen, 2016) (Miyake *et al.*, 2004). Occlusal splints are a commonly used treatment for relieving MPDS symptoms. Alternatively , some forms of occlusal adjustment can also be effective. And this could be the permanent treatment course for MPDS.The deterioration of mandibular movements can be accelerated by deterioration of the occlusion. A filling, crown or a bridge will always cause the occlusion to deteriorate (Acharya, 2003) (Weinberg, 1980). Our team has rich experience in research and we have collaborated with numerous authors over various topics in the past decade (Deogade, Gupta and Ariga, 2018; Ezhilarasan, 2018; Ezhilarasan, Sokal and Najimi, 2018; Jeevanandan and Govindaraju, 2018; J *et al.*, 2018; Menon *et al.*, 2018; Prabakar *et al.*, 2018; Rajeshkumar *et al.*, 2018, 2019; Vishnu Prasad *et al.*, 2018; Wahab *et al.*, 2018; Dua *et al.*, 2019; Duraisamy *et al.*, 2019; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Gheena and Ezhilarasan, 2019; Malli Sureshbabu *et al.*, 2019; Mehta *et al.*, 2019; Panchal, Jeevanandan and Subramanian, 2019; Rajendran *et al.*, 2019; Ramakrishnan, Dhanalakshmi and Subramanian, 2019; Sharma *et al.*, 2019; Varghese, Ramesh and Veeraiyan, 2019; Gomathi *et al.*, 2020; Samuel, Acharya and Rao, 2020)

MATERIALS AND METHODS

It is a single centered retrospective study in a private dental institution, Chennai. Data from 86000 patients visiting Saveetha Dental College during the time period of June 2019 to March 2020 were reviewed and the data was collected. The data was obtained from the category- temporomandibular disorders.Ethical clearance for this study was obtained from the institutional review board.

Data collection was done from the clinical archives of the patient management software by Saveetha Dental College and Hospitals. The data is obtained from the category TMJ disorders.The patient list was identified and the case sheets were verified with the help of treatment notes.The disadvantage of this study could be the geographic locations, limitations and trends. Two reviewers are involved in this study. The total number of samples taken from the data is 61, who were subjected to temporomandibular joint disorder treatment.

The data was collected, verified, tabulated and analysed. The data was imported to SPSS and the statistical chi square test was done by usingSPSS software by IBM. The Chi square test was performed to compare the data and check for its distribution. The statistical significance of p value is set at 0.05. The type of analysis done in this study is correlation and association.

RESULTS AND DISCUSSION

The data collected from the patient management software was tabulated and imported to SPSS and the descriptive analysis was done and the statistics were obtained.

Out of 61 patients, 54% of the patients were males and 46% of them were female patients as depicted in Figure 1.From the results, Males are more prevalent than females as shown in Figure 1. According to the study given by Muthukrishnan, et.al; 2015 (Muthukrishnan and Sekar, 2015), Temporomandibular disorders are more prevalent in Males compared to Females. Males are more prone than females due to higher stress levels and trauma. These results might vary due to sample size or geographic limitations.

Out of the patients with TMJ disorders, 44.3% of them were from the age group of 31 to 40 yrs, followed by 18% of them from 21 to 30yrs, 14.8% of them from 11 to 20 yrs, 14.8% from 41 to 50 yrs and 8.2% from 51 to 60yrs of age group as depicted in Figure 2. As per the results, the highest prevalence with 44.3% was seen in the age group of 31-40yrs. According to the study given by Eweka, et.al; 2016 (Eweka, Ogundana and Agbelusi,

2016), The most prevalent age group to undergo temporomandibular disorders is 20-40yrs. This study shows similar ethnicity.
The reasons might be due to psychological distress, pressure, workload stress, emotional distress.
Out of 61 patients, 57.4% of them had disc condyle disorder, 34.4% had MPDS, 3.3% had degenerative disorder and 4.9% of them did not show any disorder as shown in Figure 3. In this study the prevalence of disc condyle disorders is high with 57.4% compared to MPDS and degenerative disorders. In the study given by Ahuja, et. al,2018 (Ahuja *et al.*, 2018), disc condyle disorders have the highest prevalence compared to MPDS. This might be due to abnormal relationship between articular disc and the condyle. This study shows similar ethnicity.
Chi square test was done to correlate age and disorders.The P value was 0.16 which is non-significant, depicted in Table 1 and Figure 4. The age group with highest prevalence is 31 to 40yrs and disc condyle disorder shows the higher prevalence compared to MPDS and degenerative disorder.
Chi square Test was done to correlate gender and disorder. Overall, Males were more prevalent than Females and disc condyle disorder shows highest prevalence. The P value was 0.92 which is statistically non significant as depicted in Table 2 and Figure 5. As per the results,the prevalence of MPDS is higher in females than males and the prevalence of disc condyle disorders is higher in males than in females.Our institution is passionate about high quality evidence based research and has excelled in various fields ((Pc, Marimuthu and Devadoss, 2018; Ramesh *et al.*, 2018; Vijayashree Priyadharsini, Smiline Girija and Paramasivam, 2018; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Ramadurai *et al.*, 2019; Sridharan *et al.*, 2019; Vijayashree Priyadharsini, 2019; Chandrasekar *et al.*, 2020; Mathew *et al.*, 2020; R *et al.*, 2020; Samuel, 2021)

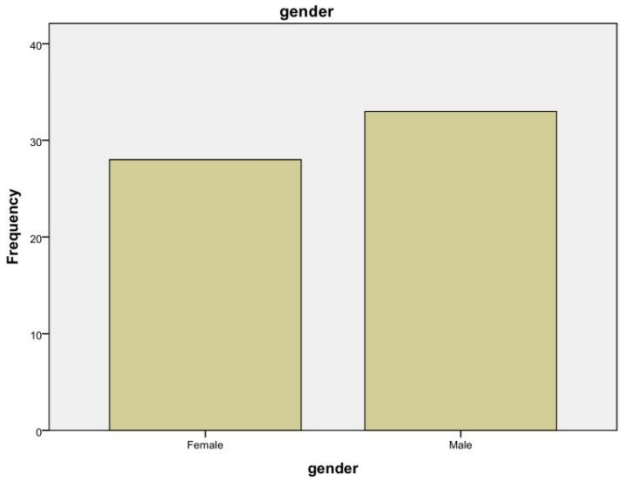

Fig.1: The bar graph depicts the frequency of gender with temporomandibular disorders in a scale of 1-61. X axis represents the gender and Y axis represents the number of patients treated for temporomandibular disorders. The occurrence of temporomandibular disorders is more in males.

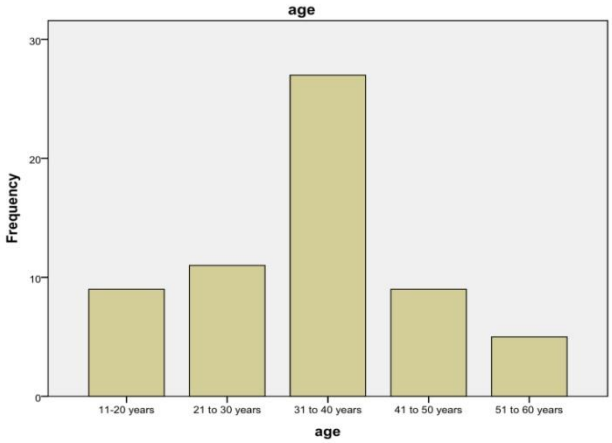

Fig.2: The bar graph showing frequency of age groups with temporomandibular disorders in a scale of 1-61. X axis represents various age groups and Y axis represents the number of patients treated for temporomandibular disorders. More frequent occurrence is noted in the age group 31 to 40 years.

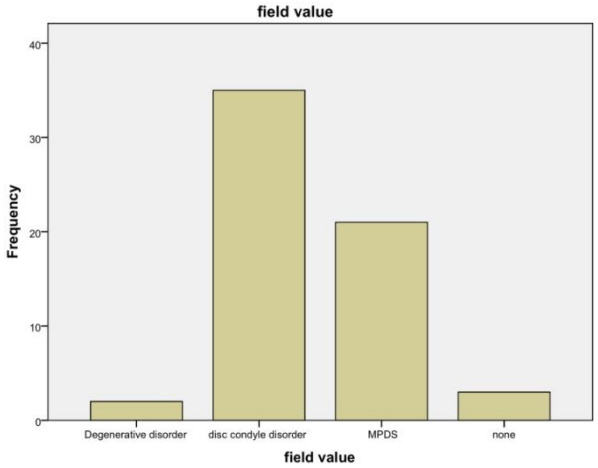

Fig.3: The bar graph showing the prevalence of the various temporomandibular disorders frequencies in a scale of 1- 61. X axis represents the various temporomandibular disorders and Y axis represents the number of patients treated for temporomandibular disorders.Out of the various temporomandibular disorders, disc condyle disorders show the highest frequency.

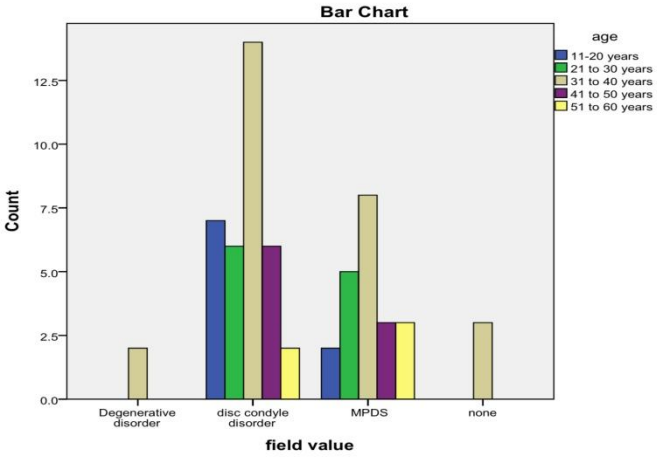

Fig.4: The bar graph represents the association between the temporomandibular disorders and age from the scale of 1 to 61. Blue indicates 11 to 20 yrs, Green indicates 21 to 30 yrs, Light brown indicates 31 to 40 yrs, Violet indicates 41 to 50 yrs and Yellow indicates 51 to 0 yrs. X axis represents the various temporomandibular disorders and the Y axis represents the number of patients with temporomandibular disorders.

Chi-square value = 9.418, P = 0.667 (P > 0.005) which is statistically insignificant.
There is no statistical significance between age and the various temporomandibular disorders.

Table 1: Table showing correlation between age and various temporomandibular disorders.

DISORDER	11 to 20 yrs	21 to 30 yrs	31 to 40 yrs	41 to 50 yrs
Degenerative disorder	0	0	2	0
Disc condyle disorder	7	6	14	6
MPDS	2	5	8	3
None	0	0	3	0

Disc condyle disorder in 31 to 40 years age shows the highest frequency.

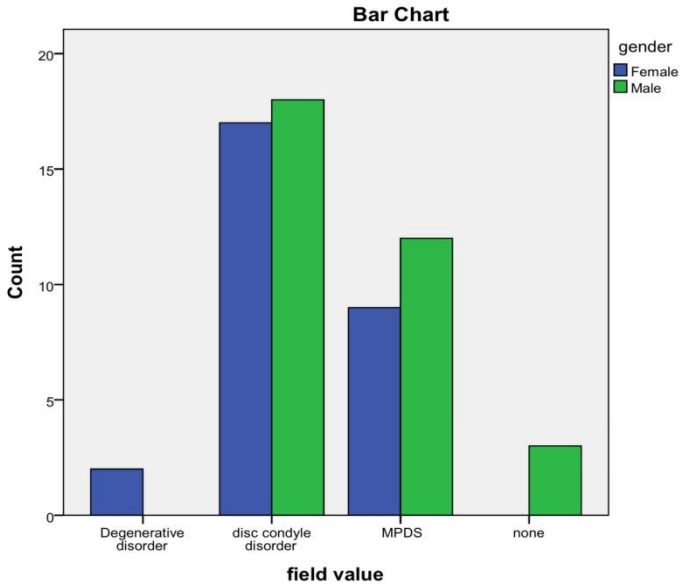

Fig.5: The bar graph showing the association between gender and prevalence of various Temporomandibular disorders. Blue indicates females and green indicates males. X axis represents the various temporomandibular disorders and Y axis represents the number of patients with temporomandibular disorders.

Chi-square value = 5.081, P = 0.166 (P > 0.005) which is statistically insignificant.
There is no statistical significance between gender and the various temporomandibular disorders.

Table 2: Table showing correlation between gender and temporomandibular disorders.

DISORDER	FEMALE	MALE
Degenerative disorder	2	0
Disc condyle disorder	17	18
MPDS	9	12
None	0	3

Disc condyle disorder in males shows the highest frequency .
Limitations of this study include the clinical features, findings and the treatment modalities of the patients with temporomandibular disorders. Studies on more population should be done in order to determine the proper analysis. Diagnosis and treatment planning should also be the criteria for further studies.

CONCLUSION

Within the limits of the study, the prevalence of Disc condyle disorders is much higher when compared to the prevalence of Myofascial pain dysfunction syndrome. The most common age group affected is 30-40yrs. Studies on more population should be done to explore the clinical features and treatment modalities in patients with disc condyle disorders and MPDS. This study will act as a guide to understand the prevalence of disc condyle disorders and Myofascial pain dysfunction disorders in patients treated for Temporomandibular Joint disorders.

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