



PREVALENCE OF TEMPOROMANDIBULAR DISORDERS (TMD) AND ITS ASSOCIATION WITH PARAFUNCTIONAL HABITS AMONG UNDERGRADUATE DENTAL STUDENTS.

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ABSTRACT Aim of the study was to determine the prevalence of TMD and to describe the association between Para functional habits and signs and symptoms of TMD among undergraduate dental students. 450 students were evaluated for clinical symptoms of TMD. With the help FONSECA ANAMNESTIC QUESTIONNARE the TMD subjects were classified into mild, moderate and severe. Further correlation was made for the presence and absence of Para functional habits if any. The results were then tabulated and statistically evaluated. A total of 450 students were screened. 59 of which had TMD. Hence, the prevalence rate found was 13.11%. Also, there was a significant association between presence of para functional habits and occurrence of TMD (P-value, 0.001). The study concludes that the prevalence of temporomandibular disorders is increasing day-by-day in young adolescents. There is strong association of Para functional habits and TMD. Hence, counseling of young adolescents at an early stage needs to be done to avoid the long term consequences of TMD.

KEYWORDS : Temporomandibular disorders (TMD), Para functional habits, adolescents, undergraduates, etc.

INTRODUCTION

TMD are considered a group of degenerative musculoskeletal conditions associated with morphological and functional deformities.^{1,2} Epidemiology reports state that TMD affect up to 25% of the population.^{3,4} The reasons of TMD are complicated and multifactorial.^{5,6} It is an inexplicable matter for dentists, as it has damaging effects on the stomatognathic system.⁷⁻⁹ TMD include conditions affecting the masticatory musculature, TMJ and associated structures.^{3,10,11} The common symptoms are muscle and/or joint pain on palpation, impaired mandibular function, and joint noises.^{12,13} Most common factor of TMD is mal-occlusion.^{14,15} All the para functional habits have harmful effects on the entire occlusion and the joint.¹⁴ As TMJ remodeling occurs in adolescence, there is an unswerving necessity for precise evaluation of dental conditions, the joint and neuromuscular apparatus as a whole in this period.^{15,16} Adolescents need to be informed about the negative effects of Para functional habits. The early diagnosis of signs and symptoms of TMD can aid improving the development of treatment and quality of life of adolescents.⁷ Thus, the aim of this study was to assess the prevalence of TMD and to find the association between Para functional habits and signs and symptoms of TMD among undergraduate dental students.

METHODOLOGY-

A descriptive study was designed among undergraduate dental students from January 2019 to March 2019. The study was conducted in department of Oral Medicine and Radiology of our institute after obtaining approval from Institutional Ethical committee. Informed consent was taken from the participants prior to the start of the study.

Inclusion Criteria-

Undergraduate dental students with or without signs and symptoms of TMD. Students with or without Para functional habits, in the age group of 19-23 years.

Exclusion Criteria-

Students absent at the times of screening, undergoing orthodontic treatment and history of trauma or dental pain.

All students from 1st to final year BDS and Interns were screened for presence of any clinical symptoms of TMD. They were further

evaluated clinically for the confirmation of TMD according to WHO criteria (1994).

Presence Of Symptoms

Presence of signs

- Clicking
- Tenderness
- Reduced jaw mobility

Later, FONSECA ANAMNESTIC QUESTIONNARE was distributed to students with positive signs and symptoms of TMD.

The questionnaire was filled by students in presence of observer. Only completely filled questionnaires were considered for evaluation of results. A total of 10 questions were present in the questionnaire which were as follows-

- Difficulty in mouth opening
- Difficulty in movement of jaws side to side
- Muscular pain during mastication
- Frequent headaches
- Neck pain or stiffness
- Pain in or about the ear
- Noise at TMJ while chewing or opening mouth
- Clenching or grinding teeth
- Using only one side while chewing
- Morning facial pain.

Each of these questions had three responses with scores assigned- Yes(10), No(0), Sometimes(5).

The participants were asked for presence of any parafunctional habits like-

- Thumb sucking
- Mouth breathing
- Tongue thrusting
- Nail biting
- Lip biting
- Clenching
- Bruxism

Severity of TMD was evaluated based on scores from questionnaires-

ABSENCE: 0-15
MILD: 20-45
MODERATE: 50-65
SEVERE: 70-100

Statistical Analysis-

After collection of questionnaires, data was segregated, tabulated and analysed using SPSS software version 24.0. Results were subjected to statistical analysis using descriptive statistics. Chi-square Test was applied to evaluate the association between the occurrence of TMD and gender, age group, severity and parafunctional habits. Level of significance was considered at $P < 0.05$.

RESULTS-

A total of 450 students were screened. 59 of which had clinical sign & symptom of TMD. Hence, the prevalence rate was 13.11%.

Out of the total participants 9 were male and 50 were female. Hence there was female predilection with female:male ratio of 5:1 approximately. As per the results, prevalence of TMD was more among the adolescents especially in age range of 20-22 years.

As per the scoring, maximum participants were mild TMD cases, followed by moderate and severe cases.

Tab.1. Shows The Distribution Of Presence Of Para Functional Habits Among All The Cases.

Para Functional Habits	Number Of Correspondents	Percentage %
PRESENT	46	81.36
ABSENT	13	18.64
TOTAL	59	100

Tab.2. Shows The Association Of TMD Signs And Symptoms With Para Functional Habits Among All The Cases.

	Habit Present	Habit Absent	Total	P-Value
TMD Present	44	08	52	0.001
TMD Absent	02	05	07	
Total	46	13	59	

Tab.3. Shows The Association Of Severity Of TMD With Para Functional Habits Among All The Cases.

TMD Severity	Para Functional Habits		Total	Chi- Square Test Value	P- Value
	Present	Absent			
ABSENT	05	02	07	11.280	0.001
MILD	31	08	39		
MODERATE	09	02	11		
SEVERE	02	00	02		
TOTAL	46	13	59		

P-value is 0.001 which showed that there is a significant association of parafunctional habits and occurrence of TMD.

DISCUSSION-

The prevalence of TMD was 13.11% among 19-23 year-old undergraduate dental students. A comparable finding was stated by Feteih who discovered the prevalence of TMD to be 21.3% in 385 teenagers aged between 12 and 16 years.¹⁰ Agarwal et al carried out a study to find out association of TMD and para functional habits. In that study the prevalence rate of TMD was found to be 22.4%.¹ Gazit et al assessed 369 Israeli students in the age group of 10-18 years and reported prevalence of 56.4%.¹¹

Study done by Motta et al¹² and Thilander et al¹³ reported a prevalence rate of 20% and 25% among adolescents. Magnusson et al evaluated through Helmiko index determined that 34% adolescents showed mild symptoms of TMD.¹⁴ The differences in the age group considered, the sample size and its structure, the numbers of examiners as well as diagnostic criteria used between different studies is the reason for diversity of TMD prevalence among different studies.

The most common sign detected was clenching, nail biting followed by bruxism and mouth breathing. Agarwal et al reported similar results.¹

A statistically significant association was found between parafunctional habits and TMD. The results were comparable to the study done by Agarwal et al, Winocur et al, Troeltzsch et al and Motghare et al.^{1,15,16} These parafunctional habits should be considered as risk factor for

TMD as they act as activating fact for the development of TMD due to its consequences on the stomatognathic system.¹⁶

CONCLUSION

The results of this study revealed that there was an association between signs and symptoms of TMD and parafunctional habits. Hence, these habits must be intervened at the right time, so its deleterious effect can be avoided. This study also highlights the need to carry out screening of TMD symptoms frequently in adolescent age groups and to refer these patients for further treatment. The finding of study emphasis to avert deleterious habit that predispose individuals to TMJ pain.

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