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Research Article

PREVALENCE OF TEMPOROMANDIBULAR JOINT DISORDERS IN PATIENTS VISITING TO A DENTAL HOSPITAL IN JHARKHAND

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ABSTRACT

Temporomandibular joint (TMJ) disorders have multifactorial aetiology and manifests as a painful condition in the orofacial region and have a high prevalence rate among different populations. The aim of the study was to assess the prevalence of TMJ disorders among patient visiting the outpatient department (OPD) of a dental college situated in Jharkhand.A total of 8,000 people visiting the OPD of Dental College in Jharkhand were screened for a period of 6 months, and out of them, 100 patients were having temporomandibular disorders (TMDs). Five parameters were evaluated, and positive as well as negative findings were recorded. Females were found to be more affected with TMDs than males in the 19-29 years age group. Clicking was the most common symptom among the parameters that were analyzed. Dental professionals need to educate and motivate the patients to take up preventive measures and early treatment to maintain and prevent TMJ manifestation.

INTRODUCTION

Temporomandibular disorders (TMDs) embrace class of conditions affecting the temporomandibular joint (TMJ), muscles of mastication, and/or related structures (Habib SR *et al,* 2015). The prevalence of TMDs ranges from 20% to 50%. The variability in prevalence may be attributed to differences in the race of the population, in the sampling design and criteria. Screening for TMDs in a population is a challenge for researchers and clinicians, and several TMD assessment tools have been proposed in the literature.(Lee JY *et al,* 2013; Modi P*et al*, 2012; Vojdani M *et al,* 2012)

These disorders are characterized by facial pain in the region of TMJ, inability or discomfort in mouth opening, hyperalgesia and clicking or crepitus sounds during jaw movement and function (Elagib MF *et al,* 2018)

Available literature evidence highlights that TMD is most prevalent between ages of 20 and 40 years and that prevalence rate decreases by 60 years of age .TMD in community occurs at about twice the rate in women as in men , yet women are more common in clinic population compared to men (Gauer RL *et al,* 2015). The most common etiological factors are :Instability of maxillomandibular relationships, TMJ hypermobility, Trauma, parafunctional behaviours, sleep disturbance, comorbidity in form of rheumatic fever, emotional distress, poor general health (Gauer RL *et al,* 2015; Atsu SS*et al,* 2019; Ozdinc SP *et al,* 2020)

Till date, there is not much literature available on the prevalence of TMDs in the population of Bihar , Jharkhand Hence, the purpose of this study was to determine the ubiquitousness of TMJ disorders in the patients visiting the outpatient department (OPD) of dental college Jharkhand.

MATERIAL AND METHODS

A total of 8,000 adults were screened with age ranging from 19to 69 years. Out of these, 100 patients were showing the presence of various symptoms of TMDs determined based on the inclusion and exclusion criteria and assessed on the basis of

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five parameters by the authors on observation of patients at the Department of Oral Medicine and Radiology, Dental college Jharkhand. The study was conducted over a period of 6 months, i.e., from June 2019 to November 2019, and the findings were recorded on a clinical proforma. Informed consent was obtained from each of the participants. The study was approved by the institutional ethical committee. All patients were asked for a history of parafunctional habits (if any). Any relevant medical history revealed by patients during routine case history taking was also recorded

Inclusion criteria

1. Male and female having mixed or permanent dentition
2. No previous history of orthodontic treatment
3. Nocraniofacial anomalies were included in the study.

Exclusion criteria

1. Children in the stage of primary dentition
2. Patients with any musculoskeletal or neurological disorders, ear pathologies, any other related systemic conditions
3. Patients with parafunctional habits, a history of previous TMJ surgeries or fracture, and noncooperative patients

All patients visiting the department who fulfilled the inclusion criteria were screened for TMD signs and symptoms. The demographic data and the signs and symptoms of TMDs were recorded, and *P* values were drawn to check for their significance.

Table 1 Demonstrating the percentages of male and female patients among the collected sample

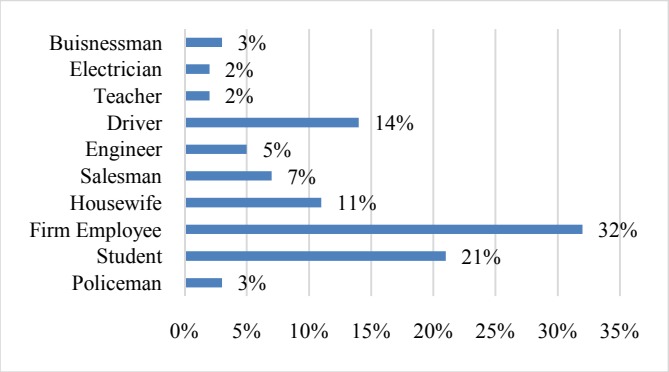
Gender	Number (n)	Percentage
Male	65	65%:
Female	35	35%

Table 2 Showing the percentages of the collected sample of 100 patients and their respective age ranges

AGE	Males (n)	%	Females (n)	%	Total Number (n)	Total %
19-29 years	15	15	41	41	56	56%
30-39 years	11	11	10	10	21	21%
40-49 years	6	6	10	10	16	16%
50-59 years	2	2	3	3	5	5%
60-69 years	1	1	1	1	2	2%

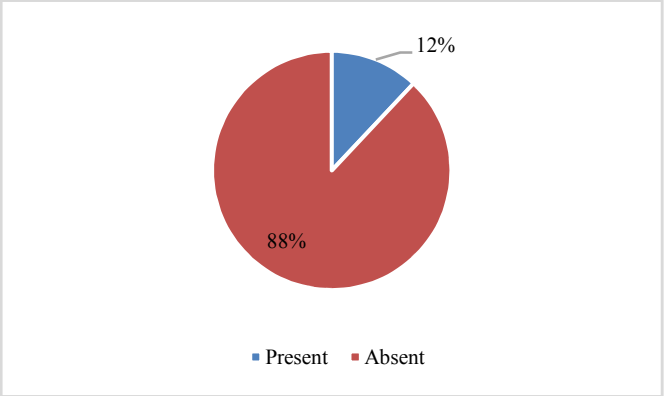
RESULTS

Among the screened 8,000 patients, 100 (1.25%) patients showed presence of various symptoms of TMDs. Thus the prevalence of symptomatic TMDs in our population was 1.25 %. Among the 100 patients 35 (35%) were females and 65 (65%) were males, thus the prevalence of symptomatic TMDs among males was 0.81 % and females was 0.43%. (Table 1) The age range in our study was form 19 years to 69 years with average age of 31.58 years. Among the 100 of symptomatic TMDs patients 56 (41 males and 15 females) were in age group of 19-29 years; 21 (11 males and 10 females) were in age



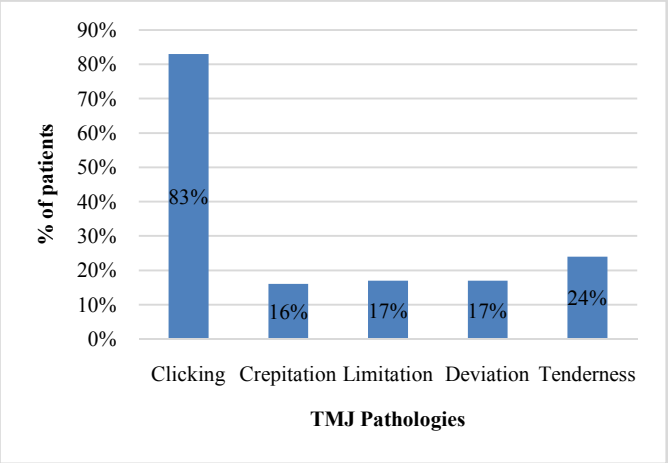
Graph 1 Bar graph representing the percentages of the collected sample of 100 patients with their respective occupations

group of 30-39 years; 16 (10 male sand 6 females) were in age group of 40-49 years ; 5(3 males and 2 females were in age group of 50-59 years; 2 (1 male and 1 female) were in age group of 60-69 years. (Table 2)The distribution of patients according to their occupations have been categorised in 10 sections in Graph 1.



Graph 2 Among the 37% of the patients having the TMJ disorder, only 12% of the patients had an occupation-related habit that could be a precipitating factor of the TMJ disorders

Occupation related TMDs were found in 12 % (Graph 2).



Graph 3 Bar graph showing the percentages of the patients having the different TMJ pathologies

Pecentages of different Pathologies among the TMJ disorders were categorised into 5 sections of clicking (83%), crepitation (16%), Limitation (17%), Deviation (17%) and Tenderness (24%). (Graph 3)

DISCUSSION

TMJ joint is also named as "ginglymoarthrodial:" combination/ fusion of the terms ginglymoid (rotation) and arthroidial (translation) (Herb K *et al,* 2006). The aim of research was to assess the prevalence of signs and symptoms of TMDs in patients visiting the OPD of a dental college.

It was observed that TMDs were seen most frequently in people of the age group of 19-29 years, and it can be implied from the results that their incidence decreases as the age of an individual advances. This is derived from [Table2], which has provided the age-wise distribution of patients. TMDs are generally seen more commonly in females as compared to males, which is in contrary to the present study (Lee *et al*, 2013) reported in their study, the predominance of the male with TMJ disorders; Many more studies (Melis M *et al,* 2010; de Leeuw R *et al,* 2013; Katyayan PA *et al,* 2017) have also concluded that the prevalence of TMDs is more common in females as compared to males, which is not in accordance with the results obtained from our study. This indicates a greater need for treatment in females than males. The observed difference between genders was accounted to the fact that girls are more anxious and sensitive to tenderness and pain on palpation of the TMJ and adjoining muscles mainly in older age because of hormonal changes (List T *et al,* 1999).

It can be inferred from the data that TMDs in the Jharkhand population mostly comprise of firm employee(32%) &students (21%). The most significant symptoms include clicking joint (83%), tenderness 24%limitation &deviation (17%), crepitation(16%) . This is in accordance to the results of a study conducted by Bagis *et al*. in Turkey (Bagis B *et al,* 2012) where clicking sound had a statistically significant difference between both the genders. An epidemiological study carried out in Chennai (Muthukrishnan A *et al,* 2015) to determine the prevalence of TMDs revealed that deviation of mandible on mouth opening was the most common parameter. This could be due to the fact that patients have reported at advanced later stage when they became symptomatic, and TMJ dysfunction interfered with their quality of life.

One study conducted in the year 2010 revealed that smokers with TMD reported higher pain intensity and life interference from pain than nonsmokers (NS) with TMD.[13] But this limitation of present study were deleterious habits of patients were recorded but not subjected to statistical analysis.

The other limitations of the present study were that the study sample size with respect to the population of the representative region was less. Furthermore, fewer variables were included in the study. We recommend that future studies should incorporate larger sample size with the inclusion of more variables and its association with stress and anxiety and with habits.

CONCLUSION

Clicking was the most common symptom among the parameters that were analyzed. Dental professionals need to educate and motivate the patients to take up preventive measures and early treatment to maintain and prevent TMJ manifestation.

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