

Original Research

Prevalence of TMJ disorders among children of known population

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ABSTRACT:

Background: The prevalence of temporomandibular disorder (TMD) in children and adolescents is in the range of 6-68% and can be triggered or aggravated by emotional stress. **Aim:** The study was to investigate the prevalence of TMD in children and adolescents and its association with emotional stress. **Materials and Methods:** The sample comprised of 100 students aged 5-15 years. The questionnaire was used to assess the presence of TMD, and was applied in a single moment. **Results:** The sample consisted of 100 children aged 5-15 years, of which 72(72%) were females and 28(28%) were males. In 24 students, TMD was evident while in 76 subjects, it was not present. 14 subjects (58.3%) students presented with mild TMD, 6 (25%) had moderate, and 4 (16.6%) had severe TMD. Of the 24 students with TMD, 19 were females (79.1%) and belonged to the age group of 10-15 years (57%), followed by the age group of 5-9 years (43%). With regard to emotional stress, 20 (83.33%) of the students with TMD considered themselves tense or nervous. **Conclusion:** This study showed a high prevalence of TMD in children and revealed a significant association between dysfunction and the levels of emotional stress. Female students, older students, and those considered tense or nervous have a higher probability of developing TMD. **Keywords:** children, emotional stress, prevalence, temporomandibular disorder

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INTRODUCTION

Temporomandibular disorder (TMD) is a dysfunction that affects the temporomandibular joints (TMJ) and masticatory muscles of the stomatognathic system and associated structures.¹⁻³ The disease can affect individuals of any age group, with a higher prevalence among women in the age group of 20-45 years; however, many studies have reported a high incidence of signs and symptoms of the disorder in children similar to those seen in adults.⁴⁻⁶ Several studies indicate that approximately 60-70% of the population has at least one sign of TMD at some point in their life.⁷ In children and adolescents, the prevalence of TMD ranges between 6% and 68%.^{8,9}

The etiology of TMD is multifactorial and its signs and symptoms involve pain in the TMJ, pre-auricular region, cervical spine, head and face, muscle fatigue in the cervical and craniofacial region and the muscles of mastication, range limitation of jaw motion and joint noises and headaches.^{10,11,12} The spasm of the muscles of mastication is the main cause of painful symptoms in TMD; this can be caused by distention, malocclusion, or the contraction muscle fatigue due to

the presence of parafunctional habits, including bruxism and nail biting.¹³ Several studies conducted in different populations have shown that these habits can be developed or aggravated by emotional stress.^{14,15} Thus, psychosocial factors such as anxiety, stress, and depression play an important role in the pathogenesis of TMD.¹⁶

Hence, this study was conducted to assess the prevalence of TMJ disorders in children.

MATERIAL AND METHODS

This study was cross-sectional, analytical, and of an epidemiological nature. 100 kids in the sample ranged in age from 5 to 15 years. A single application of the questionnaire was made in order to determine whether TMD was present. Students who wished to participate and have brought parental or guardian consent were included in the inclusion criteria. Two age groups of kids were created: the first group was made up of pupils between the ages of 5 and 9; the second group was made up of students between the ages of 10-15. The school name, age, grade school, and gender were among the inquiries regarding the sociodemographic

characteristics of the population. All study variables were given descriptive statistics. Then, in order to assess links between the prevalence of TMD and gender, age group, and emotional stress, the Chi-squared Test of Independence was used. The Statistical Package for Social Sciences (SPSS) version 19.0 was used to conduct the statistical analysis. The cutoff for statistical significance was 0.05.

RESULTS

The sample consisted of 100 children aged 5-15 years, of which 72(72%) were females and 28(28%) were

males. In 24 students, TMD was evident while in 76 subjects, it was not present. 14 subjects (58.3%) students presented with mild TMD, 6 (25%) had moderate, and 4 (16.6%) had severe TMD. Of the 24 students with TMD, 19 were females (79.1%) and belonged to the age group of 10-15 years (57%), followed by the age group of 5-9 years (43%). With regard to emotional stress, 20 (83.33%) of the students with TMD considered themselves tense or nervous.

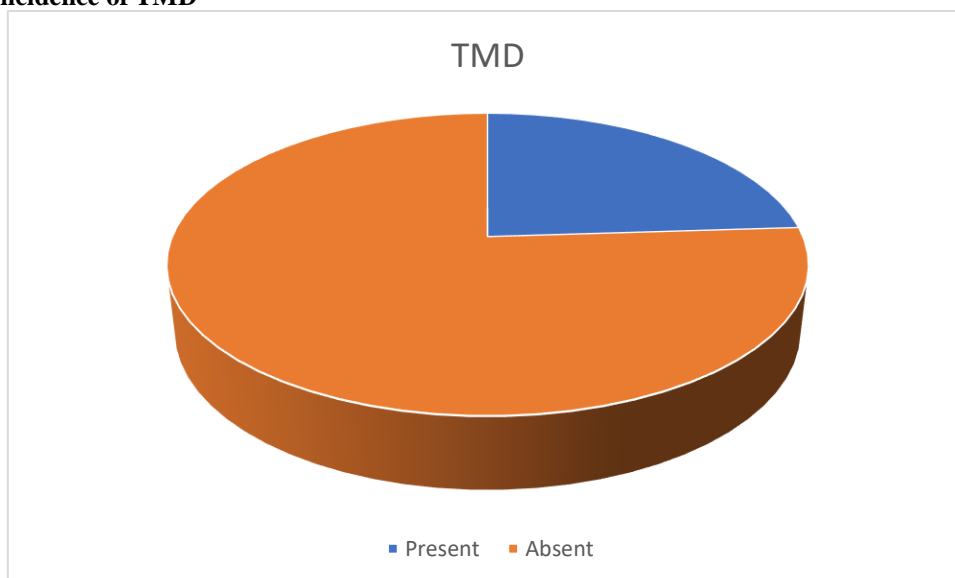
Table 1: Gender-wise distribution of patients

Gender	Number	Percentage
Males	28	28
Females	72	72
Total	100	100

Table 2: Incidence of TMD

TMD	Number	Percentage
Present	24	24
Absent	76	76
Total	100	100

Graph1: Incidence of TMD



DISCUSSION

Temporomandibular disorders (TMDs) are a group of complex conditions involving the temporomandibular joint (TMJ), the jaw muscles, muscles of mastication (chewing muscles), and the nerves that control them.¹⁷ These disorders can cause pain, discomfort, and difficulty with eating, speaking, and other daily activities in children and adolescents.¹⁸ In some cases, the cause is unknown. Symptoms of TMDs may include pain or tenderness in the jaw, neck, or face; a clicking in the jaw joint; difficulty opening or closing the mouth; and headaches.¹⁹

In this study, the sample consisted of 100 children aged 5-15 years, of which 72(72%) were females and

28(28%) were males. In 24 students, TMD was evident while in 76 subjects, it was not present. 14 subjects (58.3%) students presented with mild TMD, 6 (25%) had moderate, and 4 (16.6%) had severe TMD. Of the 24 students with TMD, 19 were females (79.1%) and belonged to the age group of 10-15 years (57%), followed by the age group of 5-9 years (43%). With regard to emotional stress, 20 (83.33%) of the students with TMD considered themselves tense or nervous.

In a study by Minervini G et al²⁰, 1914 subjects were evaluated. 736 on 1914 patients (38.4%) presented TMD. Among 1093 female, 489 (44.7%) presented TMD, while 247/821 male (30%) experienced TMD.

Meta-analysis revealed that the female had a higher TMD prevalence than male (RR 2.10; 95% CI: 1.21–3.65).

Bertoli et al.²¹ evaluated the signs and symptoms of TMD in 50 children in the age group of 4-18 years who had headaches; they found a higher prevalence of signs and symptoms of TMD in patients having headaches compared to the control group. Franco et al.²² evaluated 1,307 students in the age group of 12-14 years, and found that 45.5% of the students presented a headache, and this symptom was associated with the presence of TMD.

CONCLUSION

This study showed a high prevalence of TMD in children and revealed a significant association between dysfunction and the levels of emotional stress. Female students, older students, and those considered tense or nervous have a higher probability of developing TMD.

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