



## Evaluation of Temporomandibular Disorders and Dental Malformations in Iranian Children and Adolescents

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### Abstract

The temporomandibular joint is the most complex in the body; hence diseases related to it should be given special attention. Meanwhile, due to the higher vulnerability of children, the problems of this joint in children are more important. This review aims to find the relationship between occlusion and temporomandibular joint disorders in Iranian children and adolescents.

**Keywords:** *Temporomandibular Joint Disorder; Occlusion; Children and Adolescents*

### Introduction

One of the concerns of parents about the health and condition of the teeth of their children and adolescents is to prevent the occurrence of jaw problems and disturbing the order of their teeth. TMD is one of the common problems in the maxillofacial area, which is often diagnosed with pain, temporomandibular joint malfunction, and masticatory muscle dysfunction. Children and adolescents can be susceptible to TMD.

Many abnormalities are detectable at an early age and are easier to treat during this period; therefore, eliminating the etiological factors could prevent temporomandibular disorder.

A significant number of epidemiologic studies reveal this disorder in children and young adolescents [1-6]. In this review, we will suffice with several studies that have been done in Iran [7-9].

### Epidemiology

The prevalence of signs and symptoms of TMD in children may vary considerably in each population [10-12]. The prevalence of TMD becomes more evident between 15 and 50 years of age. TMD pain in children increases with age in both girls and boys [13].

Wahlund and colleagues found that the prevalence of TMD in children and adolescents (12 - 18 years old) was 7% [14]. On the

other hand, Nilsson indicated that the prevalence of TMD pain in studied youths aged 12 - 19 years was 4.2% and was remarkably higher in girls [15].

### Etiology

The factors are not clear but hypermobility, abnormal hormone levels, psychological stress, trauma, or infections can be the most important ones [16-18]. Predisposing factors for TMDs can be systemic, psychosocial, physiologic, structural, initiating factors, or sustaining factors.

In Children, parafunctional activities such as jaw clenching, bruxism, tooth tapping, cheek biting, lip biting, and object biting occurring alone or in combinations should be considered.

The three main features of TMDs are orofacial pain, jaw joint noises, and restricted jaw functions [19]. The symptoms may suppress for a while but they may recur and may continue for a long period. Hence, the diagnosis and management of the factors could be even more important.

### 3 different studies

In this article, we try to review the result of 3 different studies which have been done in Iran.

### Case 1

The results of this study which was performed by Baradaran [9] showed that the prevalence of TMD in children aged 7 - 9 years in Tehran was 65.2% and they reported at least one clinical complaint. The prevalence of TMD in children seems to be almost the same as in adults. However, most of the symptoms of TMD occur mildly to moderately in children, so it remains latent in children's daily activities and is less noticed by parents and the child than in adults. It becomes chronic and complex and the main reason for 40% of adults referring to dental clinics is TMD disorders.

The etiology of TMD is multifactorial, with trauma, bruxism, and occlusion as its etiological factors which have been addressed in his study.

The prevalence of TMD in children in Tehran is significant and due to its known complications, periodic examinations of children in this field are recommended.

### Case 2

Shojaeipour [7] found interesting findings in their study. The prevalence of TMD in adolescents was 23.5%. In patients with TMD, the most common symptoms of joint pain were as follows: pain in the masticatory muscles, followed by joint pain during jaw movement, joint clicks, headache, jaw's deflection, joint pain at rest, deviation, restriction of eccentric movements, and finally restriction of mouth opening.

The discrepancy in the prevalence of TMD reported in the different studies is due to the following factors including differences in assessment methods, lack of a consistent definition of TMD, as well as the lack of a clear clinical criterion and history in studies, and also the unstable nature during the final stages of occlusion development. Therefore, the dentist should not pay too much attention to the occurrence of signs and symptoms of TMD. These signs and symptoms, such as recurrent headaches and parafunctional habits, should be recorded and reviewed periodically in adolescents.

### Case 3

The results of the present study showed that the prevalence of TMD increases with age so that at the ages of 11 and 12, the high-

est prevalence of TMD is observed. The severity of TMD symptoms also increases with age [8]. The fact that young children have the least symptoms of TMD can be attributed to the remarkable adaptability of their masticatory system and their facial oral muscle structure [20].

Another notable result was that the prevalence of TMD was higher in girls than in boys. This difference can be due to hormonal changes during puberty that occurs earlier in girls [8].

In this study, the most common symptom of TMD was a joint clicking sound, which may be due to changes in joint level surfaces and muscle misalignment [8].

Finally, Sahebi [8] has concluded that temporomandibular joint disorders are associated with dental malformations and the importance of TMD examinations and overall clinical evaluation of pediatric patients should not be overlooked. Detecting these people in the early stages allows the dentist to avoid future developmental problems of TMJ by following up and intervening promptly. From the above findings, we can understand the importance of preventing TMD in childhood and adolescence.

### Conclusion

Due to the relatively high prevalence of TMD in children in our society, and because children are not as capable of expressing pain and determining the exact position of the area as adults, more attention and concern of dentists to TMJ disorders is needed. The timely detection will reduce the lasting changes and occurrence of TMD. Further studies on the causes of TMD in children are also recommended.

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