



Effect of parafunctional habits on primary dentition in 3-8 years old pediatric population.

Dental Science

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ABSTRACT

Background: Oral habits play significant role in altering the position of the teeth, the inter-arch relationship, interfering with the normal growth of the jaws and the function of the orofacial musculature

Aim: to investigate the prevalence of malocclusion and parafunctional habits in young children and to study the effect of such habits on malocclusion.

Materials & Methods: A cross-sectional study was conducted among 800 school children aged ranges between 3 and 5 years. Occlusal assessments and clinical examination for assessing the oral habits was carried out. After obtaining the data, it was statistically analysed.

Results: The results showed the prevalence of malocclusion was 8.9% and of various oral habits was 47.2%. In the presence of oral habits 13% of children were observed with the malocclusions. The prevalence of normal deciduous dentition was observed in 87% of children even in the presence of habits.

Conclusion: Although the correlation between prevalence of oral habits and malocclusions in deciduous dentition does not seem to be strong, but the higher prevalence of tongue thrusting and mouth-breathing habit is contributing to the malocclusion.

KEYWORDS:

crooked teeth, thumb sucking, mouth breathing, malocclusion

Introduction

A habit is a repetitive action that is being done automatically. Habits are one of the major etiologic factors which will leads to malformation in dentofacial structures.[1] Habits are classified as

- Physiological such as nasal breathing, chewing, phonoarticulation and swallowing.
- Non-physiological habits which are often called harmful or parafunctional such as thumb or lip sucking, mouth breathing and tongue thrust [2,3]

An oral habit in infancy and early childhood is normal and it is considered abnormal over 3 years old. The persistence of the oral habits has little effect on child health but can affect the facial growth [4]. Although a number of studies correlating deleterious oral habits and their effects on mixed dentition have been documented with the incidence ranging from 33.37% to 55%.[5-8] the literature with regard to the effect of deleterious oral habits on deciduous dentition is sparse.

Therefore, this study attempts to understand the relationship of deleterious oral habits and malocclusions in deciduous dentition.

Materials & Methods

A cross-sectional study was conducted to determine the prevalence of oral habits and its relationship with malocclusion. Children aged 3-5 years with all functional deciduous teeth were included in the study.

Following was the exclusion criteria:

- Children with congenitally missing teeth
- Children with deviated nasal septum, enlarged adenoids, clefts of the lip/palate
- Children with systemic disorders such as respiratory disorders, neuromuscular, and cardiac disorders
- Children under orthodontic intervention.

After seeking approval from institutional Ethical Committee and informed parent consent, parents were given a questionnaire form to fill about the medical history, thumb sucking, nail biting and lip sucking habits. Clinical examination of all subjects was done by a single examiner.

Statistical Analysis: Chi-square analysis was used to analyze the effect of the various deleterious oral habits on the prevalence of malocclusion. The Z-test for proportion was used to compare the proportions of the signs of malocclusion among the different types of deleterious oral habits. $P < 0.05$ was considered as significant.

Results

A total of 1082 children (3-5 years old) with complete primary dentitions were examined and 800 were randomly selected (485 girls and 315 boys) on the basis of inclusion & exclusion criteria.

The prevalence of malocclusion in the study sample was 8.9%. Anterior open bite was the most common malocclusion (3.4%) followed by increased overjet (2.6%), posterior crossbite(1.2%), anterior crossbite(1.6%), lower anterior crowding (0.6%), and anterior openbite along with unilateral posterior crossbite was 0.1% [Table 1].

Presence of parafunctional habits noted in 47.2% subjects. Tongue thrusting was the most commonly observed habit (29.5%) followed by mouth-breathing (26.2%) and thumb sucking(0.2%)[Table 1].

Table 1: shows the prevalence of malocclusion and oral habits in study sample

Table shows the prevalence of malocclusion and oral habits in study sample			
Type of malocclusion	Prevalence	Type of para-functional habits	Prevalence
Anterior open bite	3.4%	Tongue thrusting	29.5%
Increased overjet	2.6%	mouth-breathing	26.2%
Posterior crossbite	1.2%	Thumb sucking	0.2%
Anterior crossbite	1.6%		
lower anterior crowding	0.6%		
anterior openbite along with unilateral posterior crossbite	0.1%		

Discussion

The prevalence of oral habit in this study was found to be 47.2% which is consistent with previous studies. [9,10] and lower than the result reported by Pruneda et al and Santos SA et a among Mexican and Brazilian preschool children respectively.[11, 12] In the current study the overall prevalence of oral habits was more frequent among girls although it is not statistically significant ($p = 0.126$). The same findings had been reported by other authors [9, 13]. In contrast Santos et al reported significant different between gender.[12] These controversial results can be better explained if the psychological and cultural differences between boys and girls at different age groups among different population evaluated.

In our present study, we observed tongue thrusting as the most common oral habit constituting 29.5%. It can be explained on the basis that tongue tip function during swallowing is directly-related to the differences in the contiguous anterior dentoskeletal environment. The prevalence of mouth-breathing was 26.2% which is statistically

significant. It is not unusual for a child to continue mouth-breathing even after the nasal airway has been made patent. Some children who have never had any significant nasal airway obstruction develop an open-mouth posture and or mouth-breathing habit to imitate family or friends, because of a short upper lip, or merely as an acquired habit.

In our study, the prevalence of oral habits is significant in primary dentition, but the prevalence of malocclusion in primary dentition is not significant, which may be because of transitional swallow, this period lasting from the 2nd to 8th years of life. Even in the absence of oral habits, malocclusion was observed, this clearly points out that there could be etiological factors other than pernicious oral habits that could be the reason for malocclusions [7,14,15] which would need further investigation.

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