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Original Research

Prevalence of deleterious oral habits among 4 to 6 year old preschool children

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ABSTRACT:
Aim: The objective of the present study was to know the prevalence of deleterious oral habits among 4 to 6 year-old preschool children. **Materials and methods:** This cross-sectional study was conducted among preschool children, in the age group of 4 to 6 years. To carry out this study, ten schools were selected using cluster sampling technique. A total of 1000 students, studying in LKG and UKG and their respective mothers/caregivers were selected for the study as per the inclusion/exclusion criteria. Prevalence of different oral habits in children was calculated from the data obtained. Using Statistical Package for the Social Sciences (SPSS), version 17.0 software, Chi-square test was applied to compare the differences present between boys and girls and their significant values ($p < 0.05$). **Results:** The result of this study showed a high prevalence of oral habits (46%) among preschool children. Lip biting was found to be the most prevalent habit (13.5%), followed closely by bottle feeding (11.5%), bruxism (11%), and mouth breathing (9%). **Conclusion:** The study revealed a great dearth of a well-established dental education program for preschool children as well as their parents, caretakers, teachers, and pediatricians in order to provide an effective and timely care to the children.
Keywords: Oral habits, Preschool children, Prevalence

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INTRODUCTION

Oral health is an important part of general health as well as well-being. Over the past two decades, traditional methods of measuring oral health, which mainly focus on the absence or presence of oral diseases, have been substituted by a multidimensional concept that includes the psychosocial aspects of oral health and their influence on quality of life.[1]A habit is a repetitive action that is being done automatically. Repetitive behaviors are common in infantile period and most of them are started and finished spontaneously. One of the most common repetitive behaviors in infantile period is hand sucking.[2]

Deleterious oral habits are the common problem of paediatricians which affects the quality of life. Oral habits are repetitive behaviour in the oral cavity that result in loss of tooth structure and they include digit sucking, pacifier sucking, lip sucking and biting, nail-biting, bruxism, selfinjurious habits, mouth breathing and tongue thrusting. Their effect is dependent on the nature, onset and duration of habits.[3]

An oral habit in infancy and early childhood is normal, and it is considered abnormal over 3 years of age.[4] Oral habits could be functional or parafunctional. Functional habits result from repeating a normal function, such as nasal breathing, chewing, phonoarticulation, and swallowing, while the parafunctional habits are acquired by practicing a nonfunctional or unnecessary action, such as thumb or lip sucking, bruxism, mouth breathing, and tongue thrusting.[5,6] The persistence of deleterious parafunctional oral habits have little effect on child health, but play a 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.[7,8]

Review of literature on oral habits among children revealed wide range of prevalences existing between population, races, and countries, and it is believed to be influenced by various factors, such as gender, rank of the child in the family, feeding methods,

socioeconomic status, maternal age, maternal occupation, and education.[8,9]

The present study was designed to identify the prevalence of deleterious oral habits among 4 to 6 year-old preschoolchildren.

METHODS

This study was planned among school going children aged 4 to 6 years. Before scheduling the survey, the official permission was obtained from the Head of the Institutes.

STUDY DESIGN

Prior to the commencement of the study, a notice signed by the principals of the respective schools was sent to the parents through their wards, mentioning the child's oral habit information collection camp to be held in the schools, on parent/teacher meeting day, and hence, attendance was made compulsory. On the specified day, a self-designed questionnaire pro forma constituting questions with multiple choices on demographic profile, feeding habits, about the child's past or present oral habits (such as thumb sucking, mouth breathing, lip biting, and bruxism) was distributed among mothers. They were also explained regarding the purpose of the study and honesty in imparting information in the pro forma sheet. Proformas were then collected and checked for the completeness in answering. Mothers/caregivers who were absent for the meeting also received the pro forma at home and returned back to school, which were collected by the investigator later.

A total of ten schools were contacted and 1000 students from all these schools were selected with simple random sampling technique. Children who were on medications are observed. If it occurs on upper part of the mirror indicates nasal breathing whereas on the lower part indicates mouth breathing.[10] For water test, child is asked to have a small amount of water in his mouth with lips in contact without swallowing for 3 minutes. Those who were unable to maintain the lips in contact position were considered as mouth breathers.[11]

CLINICAL EXAMINATION

All the proform as were screened and a list was prepared consisting of those children whose mothers/caregivers had given a positive response toward presence of deleterious oral habit as mentioned earlier. In a separate appointment, those enlisted children were examinedto confirm the presence of deleterious oral habit using following tests:

- Thumb sucking was evaluated by examining child'smouth and proclination of maxillary incisors.
- Mouth breathing was confirmed by Mirror test/Fog test, presence of incompetent upper lip combined with inflamed marginal gingiva.
- For lip biting habit bite marks or inflammation of lower lip was observed.
- Bruxism was confirmed by inspecting worn-off cusp tips or incisal edges.

Prevalence rates of different oral habits studied were calculated using SPSS version 15.0. Chi-square test was done to compare the prevalence of oral habits according to age group and gender at $p<0.05$.

RESULTS

Table 1: Total and individual prevalence of oral habits in 3- to 5-year-old children

Oral Habits	Male (n=600)	Female (n=400)	Total (n=1000)	Chi square	p-value
One or more than one habit	280 (46.66%)	180 (45%)	460 (46%)	2.98	0.034
Thumb sucking	50 (8.33%)	40 (10%)	90 (9%)	0.16	0.550
Mouth breathing	40 (6.67%)	50 (12.5%)	90 (9%)	0.17	0.632
Lip biting	100 (16.67%)	35 (8.75%)	135 (13.5%)	2.80	0.220
Bruxism	60 (10%)	50 (12.55)	110 (11%)	0.92	0.122
Bottle feeding	70 (11.67%)	45 (11.25%)	115 (11.5%)	1.65	0.110

Table 1 depicts the overall and individual prevalence of deleterious oral habits of 4 to 6 year-old children with gender differences.

Overall prevalence of deleterious oral habits (oneor more than one in a single child) in 4 to 6 year-old preschool children was found to be 46%. In boys, it was higher (46.66%) compared with girls (45%), which was statistically significant ($p < 0.05$). However, these significant gender-wise differences were not present when individual oral habits were assessed.

DISCUSSION

Oral deleterious habits are often called harmful or para functional and include thumb sucking, bottle feeding, tongue thrusting, nail biting, lip biting and the mouth breathing pattern. These habits have direct influence on quality of life and can affect the stomatognathic system of the body.[6]

Development of these para functional habits in the preschool age children is considered as a sign of distress and emotional instability.[12] Children in particular practice these anomalous habits as a way to attract attention, possibly because they find themselves in a violent family environment, lack of parental attention, lack of emotional maturity, or

constant changes in the family.[13] Besides, poor physical health and chronic illness during infancy can also predispose to the development of these habits. Many authors in most of the studies mentioned that oral habits, if persisted beyond preschool age, play a significant role in the development of dental anomalies and malocclusion as they produce a disequilibrium between the intra- and extraoral muscular activities.[14-16]

The overall prevalence of oral habits in this study was found to be 46%, which is in accordance with the studies reported by Rajchanovska and Zafirova-Ivanovska[17] (35.9%) and Omer and Abuaffan[18] (30%), and lower than the results reported by Murrieta-Pruneda et al[13] and Murrieta et al[19] among Mexican preschool children. Contrary to this, Onyeaso and Sote[20] reported a low prevalence of oral habits (13.14%) among Nigerian preschool children.

Further, analysis of data revealed that majority of children had only one oral habit present; however, (46%) children presented with more than one habit. Lip biting was found to be the most prevalent habit (13.5%), which is higher than the observations reported in other studies.Mouth breathing (9%) was the least prevalent habit in comparison to other habits and is in accordance with the study conducted by Ahmed and Abuaffian;[21] however, a slightly higher percentage of prevalence was reported among Indian and Albanese school children respectively.[22,23]

In all the oral habits assessed, boys had higher prevalence than girls; however, these differences were not significant when individual habits were compared. This study also revealed a great dearth of a well-established dental education program for preschool children as well as their parents, caretakers, teachers, and pediatricians in order to provide an effective and timely care to the children.

CONCLUSION

Oral habits, if they persist beyond the preschool age, have detrimental effects on the developing dentition, oral functions, and facial esthetics. The present study provides an insight into the various aspects of oral habits, like their prevalence and implications on primary dentition and facial esthetics. The results of this study also warrant theneed for educating the children, parents as well as teachers about the deleterious effects produced by such habits on the development of normal occlusion and importance of timely intervention.

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