Retrospective Study on School Children with Deleterious Oral Habits

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Abstract: Oral habits are repetitive behaviour in the oral cavity that result in malalignment of the dentofacial structure and they include digit sucking, lip sucking, lip biting, nail biting, bruxism, self-injurious habits, mouth breathing and tongue thrusting. This study was taken to assess the prevalence of deleterious oral habits among school children. A Sample size of 6200 patients under 3 to 15 years of age were taken into study. Their case records were reviewed and retrieved from patients reported to a private Dental Hospital, India. Details regarding their demographic information and presence or absence of oral habits were collected. Statistical analysis was done using SPSS (version 26.0). Prevalence rate among school children with deleterious oral habits was evaluated. Overall 27 % of the school going children had deleterious oral habits. Nail biting (28.52 %) habit was most commonly seen followed by thumb sucking habit (19.39 %), Mouth breathing habit (19.01 %), Tongue Thrusting habit (17.87 %) and Lip biting habit (15.21 %). Higher prevalence of these oral habits among children were seen in this study population. This highlighted the need for preventive orthodontic treatment at an early age of life, so that future occurrence of malocclusion can be avoided.

Keywords: Malocclusion, Oral habits, Prevalence rate, Preventive treatment, School children.

INTRODUCTION

Oral habits are acquired automatisms, represented by an altered pattern of muscle contraction with complex characteristics, which proceed unconsciously and on a regular basis (Ravikumar, Jeevanandan and Subramanian, 2017). Deleterious oral habits are the common problem of paediatricians which affects the quality of life (Dutta and Verma, 2018). Whereas oral habits are repetitive behaviour in the oral cavity that result in the loss of tooth structure and they include digit sucking, lip sucking, lip biting, nail biting, bruxism, self-injurious habits, mouth breathing and tongue thrusting (Nowak and Warren, 2000), Barbosa and Gavião, 2008). Their effect is dependent on the nature, onset and duration of habits (Jeevanandan, 2017), (Govindaraju, Jeevanandan and Subramanian, 2017b). The development of habits is considered as part of the normal sequence of maturation process in children but can have the potential to become a harmful one, under the circumstances of physical, mental and socio-economic stress (Govindaraju, Jeevanandan and Subramanian, 2017a), (Veerale Panchal, Jeevanandan and Subramanian, 2019). An oral habit in infancy and early childhood is normal, and it is considered to be abnormal over 3 years of age.

The persistence of these deleterious oral habits may alter the inter-arch relationship, interfere with the normal growth of jaws and the function of the oro-facial musculature (Christabel and Linda Christabel, 2015), (Packiri, Gurunathan and Selvarasu, 2017). Moreover, it is observed that there has been ascending bend in the prevalence of deleterious oral habits in children, in recent times probably influenced by change in the family and social environment (Gurunathan and Shannugavael, 2016). Habits like non-nutritive sucking behaviours such as (thumb sucking, lip sucking) which prolongs beyond 3 and half years can affect the stomatognathic system, by damaging the structure of the mouth. Both thumb sucking and nail biting habits may allow the spread of infectious disease. Tongue thrusting, may create abnormal swallowing patterns (Subramanyam et al., 2018).

Both mouth breathing and thank sucking habit is associated with anterior open bite, abnormal speech and anterior protrusion of the maxillary incisors. Therefore, habits require a multidisciplinary approach to provide integral care to children (‘Fluoride, Fluoridated Toothpaste Efficacy And Its Safety In Children - Review’,...
Oral deleterious habits are often called harmful or parafunctional, which includes thumb sucking, bottle feeding, tongue thrusting, nail biting, lip biting and mouth breathing (Al-Haifi et al., 2013; Mahesh, Waseem and Siva kumar, 2014). These habits have direct influence on the quality of life and can affect the stomatognathic system of the body (AlSadhan and Al-Jobair, 2017); (Langford, 1939). Development of these habits in school-going children are considered to be the sign of distress and emotional instability (Eslami et al., 2017). Children in particular practice of these anomalous habits use them as the 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 (Lakshmanan et al., 2020).

There are several studies in which researchers have attempted various clinical trials for advanced pedodontic diagnosis, treatment planning and in vitro studies were done and assessed based on various recent advances in pedodontic management (Jeevanandan and G, 2021). There are several studies in which researchers have attempted various clinical trials for advanced pedodontic diagnosis, treatment planning and in vitro studies were done and assessed based on various recent advances in pedodontic management (Jeevanandan and Govindaraju, 2018), (Govindaraju and Gurunathan, 2017). Where this study had assessed frequency of distribution of various deleterious oral habits among school children.

Out of 6200 children, 263 (4.2%) children had various deleterious oral habits. Correlation between age and gender distribution among children with thumb sucking status was done (Graph -1). Among males 6% of them under the age group of 3 to 6 years had thumb sucking habit, under 7 to 9 years it was about 14%, 10 to 12 years it was about 20% and 8% among 13 to 15 years. Among females 6% of them under the age group of 3 to 6 years had thumb sucking habit, under 7 to 9 years it was about 24%, 10 to 12 years it was about 16% and 6% among 13 to 15 years.

Correlation between age and gender distribution among children with tongue thrusting habit was done (Graph -2). Among males 4.26% of them under the age group of 3 to 6 years had thumb sucking habit, under 7 to 9 years it was about 14.89%, 10 to 12 years it was about 14.89% and 17.02% among 13 to 15 years. Among females 2.13% of them under the age group of 3 to 6 years had thumb sucking habit, under 7 to 9 years it was about 14.89%, 10 to 12 years it was about 23.40% and 8.51% among 13 to 15 years.

Correlation between age and gender distribution among children with nail biting status was done (Graph -3). Among males, 2.67% of them under the age group of 3 to 6 years had thumb sucking habit, under 7 to 9 years it was about 22.67%, 10 to 12 years it was about 12% and 17.02% among 13 to 15 years. Among females, none of them under the age group of 3 to 6 years had thumb sucking habit, under 7 to 9 years it was about 18.67%, 10 to 12 years it was about 17.33% and 4% among 13 to 15 years.
Correlation between age and gender distribution among children with lip biting status was done (Graph - 4). Among males, none of them under the age group of 3 to 6 years had thumb sucking habit, under 7 to 9 years it was about 25%, 10 to 12 years it was about 12.50% and 7.50% among 13 to 15 years. Among females, none of them under the age group of 3 to 6 years had thumb sucking habit, under 7 to 9 years it was about 25%, 10 to 12 years it was about 17.50% and 12.50% among 13 to 15 years.

Correlation between age and gender distribution among children with mouth breathing status was done (Graph - 5). Among males, none of them under the age group of 3 to 6 years had thumb sucking habit, under 7 to 9 years it was about 28%, 10 to 12 years it was about 16% and 20% among 13 to 15 years. Among females, none of them under the age group of 3 to 6 years had thumb sucking habit, under 7 to 9 years it was about 12%, 10 to 12 years it was about 16% and 8% among 13 to 15 years.

Graph 6 depicts the frequency of distribution of deleterious oral habits among children shows that out of 263 children who had deleterious oral habits; 75 children (28.52%) had nail biting habit which was considered to be more prevalent, among the frequency of distribution. 51 children (19.39%) had thumb sucking habits, 47 children (17.87%) had tongue thrusting habits, 40 children (15.21%) had lip biting habits and 50 children (19.01%) had mouth breathing habits (Graph - 1).

Owing to higher prevalence of oral habits observed the age group of 3 to 15 years, in this literature this age group was selected in the present study. 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 extra oral muscular activities (Somasundaram et al., 2015).

The overall prevalence of oral habits in this study was found to be (27%) which in accordance with the studies reported by Kanika S Dhill et al (36 %) and Rajchanovska and Zafirova Ivanoska (35 %) and Abuaffan (30%). Contrary to this Oryeaso and Sote reported a low prevalence of oral habits (13.14%) among Nigerian preschool children (Rajchanovska and Zafirova-Ivanoska, 2012), (Omer et al., 2015). This wide range of prevalence of oral habits may be partially accounted to the fact that be partially accounted to the different oral habits were assessed at different age groups and different methodologies were used. Nevertheless, the role of environmental and cultural factors on the occurrence of oral habits cannot be ignored. The higher frequency of deleterious oral habits was biting (28.5%) in this study. Whereas Garde JB et al stated that nail biting was (5.8%) of the children who were evaluated. Therefore, it is lesser than the prevalence rate assessed in our study (Garde et al., 2014).

In our study (19.37%) thumb sucking habit and mouth breathing (19.1%) habits were the next more prevalent oral habit. Whereas Bhayya Dp et al found tongue thrusting and mouth breathing as the most prevalent oral habits. This study shows tongue thrusting habits (17.8%) whereas Munshi et al found that tongue thrusting (3.02%) was comparatively low prevalent among children in Mangalore (Shetty and Munshi, 1998).

In the present study lip biting habit among children (15.2%), whereas there was no case of lip biting seen in Garde JB et al study. These differences in the prevalence may be because of complicated diagnosis, different methods of data collection and also different samples from different ethnic group. The reason behind nail biting being the most prevalent oral habit among school children (3 to 15 years) in our study could be due to behavioural problems which is commonly accompanied with oral aggression. It is more common because the act of biting or chewing on nails reportedly relieves stress tension and anxiety. It is habitual in children who feel nervous, bored, lonely, and even when they become hungry. It may also occur due to obsessive compulsive and related disorders (Reding, Rubright and Zimmerman, 1966). Our institution is passionate about high quality evidence based research and has excelled in various fields (Pe, Marimuthu and Devadoss, 2018; Ramesh et al., 2018; Vijayashree Priyadharsini, Smiline Girja and Paramasivam, 2018; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Ramadurai et al., 2019; Sridharan et al., 2019; Vijayashree Priyadharsini, 2019; Chandrasekar et al., 2020; Mathew et al., 2020; R et al., 2020; Samuel, 2021).
Graph 1: Bar graph showing the correlation between age [3-5 yrs (blue), 7-9 yrs (red), 10-12 yrs (green), 13-15 yrs (orange)] and gender distribution among children with thumb sucking habits. X axis represents the gender distribution of children. Y axis represents the age distribution of children. The frequency of thumb sucking habit among females in the age group 7 to 9 years was higher as compared to other age groups and gender and this difference was not statistically significant when assessed using Chi square test [chi square value = 1.603; P value = 0.657].

Graph 2: Bar graph showing the correlation between age [3-5 yrs (blue), 7-9 yrs (red), 10-12 yrs (green), 13-15 yrs (orange)] and gender distribution among children with tongue thrusting habits. X axis represents the gender distribution of children. Y axis represents the age distribution of children. The frequency of tongue thrusting habit among females in the age group 10-12 years was higher as compared to other age groups and gender and this difference was not statistically significant when assessed using Chi square test [chi square value = 2.535; P value = 0.469].
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Graph 3: Bar graph showing the correlation between age [3-5 yrs (blue), 7-9 yrs (red), 10-12 yrs (green), 13-15 yrs (orange)] and gender distribution among children with nail biting habits. X axis represents the gender distribution of children. Y axis represents the age distribution of children. The frequency of nail biting habit among males in the age group 7-12 years was higher as compared to other age groups and gender and this difference was not statistically significant when assessed using Chi square test [chi square value - 2.941; P value = 0.401].

Graph 4: Bar graph showing the correlation between age [3-5 yrs (blue), 7-9 yrs (red), 10-12 yrs (green), 13-15 yrs (orange)] and gender distribution among children with lip biting habits. X axis represents the gender distribution of children. Y axis represents the age distribution of children. The frequency of lip biting habit among males in the age group 7-9 years was higher as compared to other age groups and gender and this difference was not statistically significant when assessed using Chi square test [chi square value - 0.438; P value = 0.803].
Graph 5: Bar graph showing the correlation between age [3-5 yrs (blue), 7-9yrs (red), 10-12 yrs (green), 13-15 yrs (orange)] and gender distribution among children with mouth breathing habits. X axis represents the gender distribution of children. Y axis represents the age distribution of children. The frequency of mouth breathing habit among males in the age group 7-9 years was higher as compared to other age groups and gender, and this difference was not statistically significant when assessed using Chi square test [chi square value - 2.009; P value = 0.366].

Graph 6: Bar graph showing the frequency distribution of deleterious oral habits [thumb sucking habit (red), tongue thrusting habit (blue), nail biting habit (purple), lip biting habit (pink) and mouth breathing habit (green)] among children. X axis represents the frequency and count of children and Y axis denotes the deleterious oral habits. The frequency of distribution of deleterious oral habits among children shows that nail biting habit is more prevalent as compared to other habits.

CONCLUSION
The results concluded that overall prevalence of deleterious oral habits in the present group was high. Within the limits of the study, the prevalence of nail biting was more common than other habits among school children and females commonly had various deleterious oral habits as compared to males. Children among 7 to 9 years
of age group were more prevalently involved in these oral habits as compared to other age groups. It has the highest frequency than other oral habits.

Therefore, it is important to know the prevalence of oral habits, which as in future it may alter the dentition and verbal communication skills of the child. This data provides the baseline information for planning preventive strategies to eradicate the oral habits among children.

ACKNOWLEDGEMENT

The authors would like to thank the study participants for their participation and Saveetha Dental College for providing a platform to express our knowledge.

REFERENCES


