

## ORIGINAL ARTICLE

### Prevalence of oral habits among preschool children of Ludhiana City

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Received: 16 February, 2022

Accepted: 17 March, 2022

#### ABSTRACT

**Aim:** To access the Prevalence of oral habits among preschool children of Ludhiana City. **Settings and Design:** Study was conducted on pre-schoolers of Ludhiana city. **Total 1600 parents of preschoolers were given questionnaire regarding oral habits.** **Methods and Material:** In the present cross-sectional study, 1600 questionnaires were distributed to the parents/caregivers. The parents/caregivers were included in the study whose children were 3-5 years of age and with primary dentition and no history of orthodontic treatment. **Statistical analysis used:** The data collected was subjected to descriptive analysis. **Results:** The present study showed that the prevalence of oral habits among pre-school children in Ludhiana city was 31.9%. No significant difference was found on the basis of gender and sex ( $p\text{-value} \geq 0.05$ ). **Conclusions:** Present study showed that nail biting showed highest prevalence rate and tongue thrusting was least common oral habit.

**Key-words:** Oral habits, prevalence, pre-schoolers.

#### INTRODUCTION

Habits are represented as an altered pattern of muscle contraction which proceed unconsciously and on a regular basis leading to alterations in oral functions, i.e., articulation, swallowing, chewing etc. which may lead to malocclusion.<sup>1</sup>

Certain oral habits are considered normal in early childhood but considered abnormal when it prevails beyond 3 years of age. The digit and dummy sucking habits are common in pre-school children.<sup>2][3][4]</sup> The digit sucking habit develops around 29 weeks in intrauterine life and disappears by 1 or 3 1/2 years of age.<sup>5]</sup> Children having digit sucking habit showed higher prevalence of distal molar and canine relationships, larger overjet and open bites as compared to those without any sucking habits.<sup>6]</sup>

Similarly, if mouth breathing habit persists, it can result in the protrusion of upper anteriors or anterior open bite. Nail biting habit can lead to attrition of lower anteriors. According to Alexander and Lane (1990), the etiological factors for nail biting are stress, hereditary or imitation of family members. Tongue thrusting habit is when the tongue rests between the

incisors causing obstruction of incisor eruption which can further lead to the development of anterior open-bite.

Studies have reported that there is co-relation between oral habits and malocclusion. It was found that 40% cause of malocclusion were related to oral habits. According to AAPD, child's well-being can be affected by oral habits and encourages health practitioners in the management of these habits.<sup>[7]</sup>

Oral habits could be parafunctional or functional. Functional habits result by repeating normal function such as nasal breathing, chewing and swallowing while parafunctional habits are acquired by practicing non-functional or unnecessary practices such as thumb or lip sucking, bruxism, mouth breathing and tongue thrusting.<sup>[8],[9]</sup> These parafunctional habits have a significant effect in altering the position of the teeth, inter-arch relationship, interference with the normal growth of the jaws and function of the orofacial musculature.<sup>[6],[10]</sup> A Study conducted by Gauba K et al on 3164 North Indian children reported 3% of prevalence rate of oral habits. However, Sheety RM et al reported 33.2% prevalence rate in 1891 children in Chhattisgarh.

Hence, one of the most valuable services that can be rendered as a part of interceptive orthodontic procedures is elimination of the abnormal habits before they can cause any damage to the developing dentition.<sup>[13]</sup> To implement such services it is imperative to widen our knowledge regarding the prevalence of oral habits in the selected segment of population.

## **SUBJECTS AND METHODS**

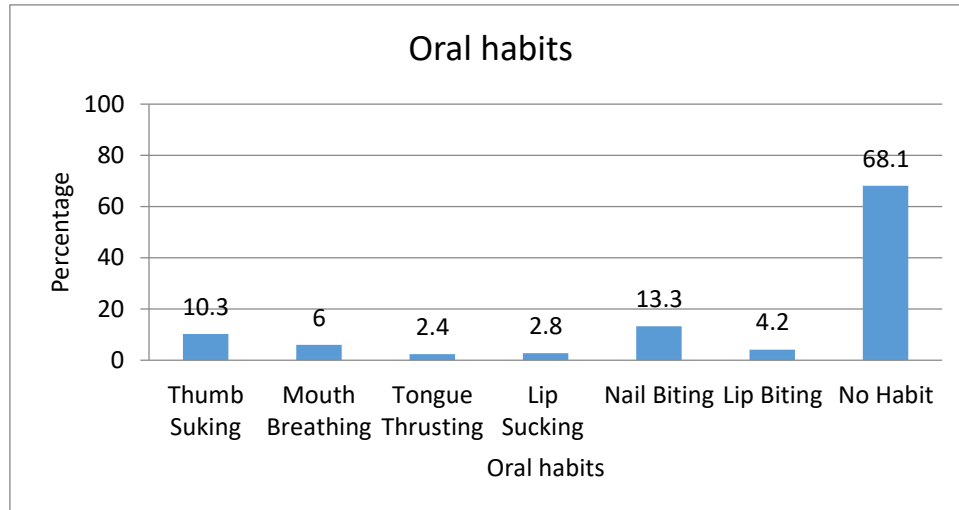
To evaluate the prevalence of oral habits in pre-school children, a self-administered and validated questionnaire was designed regarding questions of demographic and oral habits. In the present cross-sectional study, 1600 questionnaires were distributed to the parents/caregivers. The parents/caregivers were included in the study whose children were 3-5 years of age and with primary dentition and no history of orthodontic treatment. On the basis of age, children were grouped as less than 4 years and more than 4 years of age. This was done to compare early and late primary dentition. Oral habits such as thumb sucking, mouth breathing, tongue thrusting, lip sucking, nail biting and lip biting were evaluated.

The recorded data was compiled and entered in the spreadsheet computer program (Microsoft Excel 2010) and then exported to data editor page of SPSS version 20 (SPSS Inc., Chicago, Illinois, USA).

Descriptive statistics included computation of percentage. The statistical test applied for the analysis was Pearson's chi-square test. The confidence interval and p-value were set at 95% and  $\leq 0.005$  respectively.

## **RESULTS**

A total of 1600 children participated and 100% response rate was achieved. In the present study, 51.3% were males and 48.8% were females. On the basis of age 63.6% were < 4 years of age and 36.4% were >4 years of age. The present study showed that the prevalence of oral habits among pre-school children in Ludhiana city was 31.9%. No significant difference was found on the basis of gender and sex ( $p$ -value  $\geq 0.05$ ). Nail biting was found to be the most prevalent oral habit affecting 18.1% of children followed by thumb sucking (10.3%), mouth breathing (6%), lip biting (4.2%), lip sucking (2.8%) and tongue thrusting (2.4%). (figure 1).

**Figure -1 Prevalence of oral habits.**

## DISCUSSION

In the present study the prevalence of oral habits in the preschool children in Ludhiana city was 31.9%, which is consistent with previous studies, Dhull KS et al. (2018) reported that the prevalence of oral habits in Bhubaneswar, India was 36%.<sup>[1]</sup> Omer MI and Abuaffan AH reported that the prevalence of oral habits in Khartoum city, Sudan was 30.3%.<sup>[14]</sup> Rajchanovska and Zaffirova -Ivanovska reported 35.9%.<sup>[15]</sup> The results of above-mentioned studies were in support of present study. But there are studies which contrast these results. OP K et al reported slightly lower prevalence of oral habits in school going children of Delhi (25.5%).<sup>[16]</sup> Chour RG et al. reported higher prevalence (47.2%) of oral habits in Davangere city, India.<sup>[17]</sup> However, Verma L et al. reported lower prevalence rate (11.7%) of oral habits in Chandigarh, India.<sup>[18]</sup>

Difference in these prevalence rate of oral habits may be partially accounted by the fact that different oral habits were assessed in different age groups and different methodologies have been used. However, the role of cultural and environmental factors on the occurrence of oral habits cannot be ignored.

No significant difference was seen in the prevalence of oral habits on the basis of age and gender ( $p \geq 0.05$ ). In the present study different oral habits showed different prevalence rates. Nail biting was the most common oral habit found in the study population with a prevalence rate of 13.3%. Agrawal S. et al. also reported that nail biting is the most common oral habit in school children of Dharan, Nepal but the prevalence rate was higher 24.8%.<sup>[13]</sup> Similar results were reported by Shetty SR et al. 12.7%, which support the results of present study.<sup>[14]</sup> But according to a study conducted by Verma L et al. reported lower prevalence of 5.5%. Studies have reported that nail biting starts at the age of 3-4 years with 10 years being the peak age. This habit is also associated with psychological disorders mainly with attention deficient hyperactivity disorder (ADHD). It does not have sex predilection in children less than 10 years of age but its incidence in boys is more than girls among adolescents (Tanaka et al., 2008).

Thumb sucking was found to be the second most common oral habit in pre-school children of Ludhiana city with a prevalence rate of 10.3%. Dhull KS et al. (2018) also reported that the prevalence rate of thumb sucking in Bhubaneswar, India was 12.8%, which support the results of present study.<sup>[1]</sup> But there are studies with contrasting results also Chour RG et al. reported 0.2% of prevalence rate which is lower than the present study but Aggarwal S et al. reported much higher prevalence rate 30.8%.<sup>[17]</sup> <sup>[13]</sup> Onyesao et al reported very low prevalence rate (9.9%) in Nigerian children. Higher prevalence rates were observed in

Mexican and Brazilian pre-school children. A prevalence of 45% was reported by Gellien in 3-4.5 year old children, 13.6% was seen in 6 years old and 5.9% in 7-11 year olds. Prevalence studies indicate that the prevalence of digit sucking decreases as the age advances.

Mouth breathing was seen in 6% of study population. Omer MI and Abuaffan AH reported similar prevalence rate of 6.7% which supports the results of present study.<sup>[14]</sup> OP K et al. also reported similar results 6.6%.<sup>[16]</sup> But Chour RG et al. reported a prevalence rate 26.2% which is higher than the present study.<sup>[17]</sup> Children with mouth breathing habit tend to have open-mouth posture, resulting rotation of mandible downwards and posteriorly resulting in long face appearance.

Lip biting was present in 4.2% of study population. Hegde AM and Xavier AM reported comparable results with the present study with a prevalence rate of 9.32%. But Kharbanda OP et al. reported a lower prevalence rate of 0.004%.<sup>[20]</sup><sup>[16]</sup> Lip sucking was seen in 2.8% of children in the present study. Mtaya M et al. also reported similar prevalence rate of 2%.<sup>[21]</sup> According to prevalence studies, it is considered as rare oral habit. Sucking is often a compensation activity stemming from excessive overjet and difficulty closing the lips at the moment of swallowing. The least common oral habit which was seen in the present study was tongue thrusting (2.4%). Omer MI and Abuaffan AH reported a similar prevalence rate of 2.7%.<sup>[14]</sup> Verma L et al. also reported a prevalence rate of 1.8%,<sup>60</sup> which supports the results of present study.<sup>[18]</sup> Kharbanda OP et al. reported higher prevalence rate of tongue thrusting (10.7%).<sup>[16]</sup> However, the prevalence rate informed by Chour RG et al. was much higher than the present study.<sup>[17]</sup> This habit can change into a bad habit if tongue pressure pushes upper and lower teeth leading to open bite and other associated malocclusions. This habit illustrates imbalance of orofacial muscles.

In the present study, 30% of the study population practice oral habits. So, there is a need of knowledge & awareness among caregivers about the effect of these habits. Habit is a pattern of behaviour which is learnt by a child actively, good or bad, is decided by its effect on the orofacial musculature. If these habits are prolonged beyond the preschool age it can cause serious malocclusions. Hence having an oral habit at this age is not a tragic situation, but regular check-ups of occlusion and assessment of oral habits are very important to prevent malocclusion.

## CONCLUSION

Based on the results of present study, the following conclusions can be made:

1. Nail biting showed highest prevalence rate.
2. Tongue thrusting was least common oral habit.
3. There was no significant association of oral habits with gender and age.

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