

## A Cross-Sectional Study to Assess The Prevalence Of Oral Habits In Children Of Age 3 To 10 Years

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### ABSTRACT

**Background:** Oral habits are learned pattern of muscle contraction and have a complex nature. 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. The present study was conducted to assess the prevalence of oral habits in children of age 3 to 10 years.

**Material and methods:** The study was conducted in a sample of 740 children, aged between 3 and 10 years. A closed-ended questionnaire was used to get data from the parents of the study participants. Deleterious oral habits were screened by trained personnel using mouth mirrors and probes. Clinical evaluation for mouth breathing, tongue thrusting, thumb-sucking, bruxism, pencil/nail biting, and lip/cheek biting was done. Following the examination, a health educational talk was delivered using study models. The statistical analysis was done using SPSS version 21.0.  $P < 0.05$  was considered to be statistically significant.

**Results:** In the present study a total of 740 children in which 61.62% were females and 38.37% were males. Among the children assessed, 395 children reported with only one oral habit, 112 had 2 oral habits, and 45 had 3 oral habits and total 552(74.59%) children had habits. Most common oral habits in females were mouth breathing, tongue thrusting whereas in males mouth breathing and thumb sucking was most common. Most common oral habits in the age group 3-6 yrs were mouth breathing, thumb sucking whereas in age group 7-10yrs mouth breathing and tongue thrusting was most common.

**Conclusion:** This study concluded that overall prevalence of oral habit in children of age group 3-10 years was high. Most common oral habits in females were mouth breathing, tongue thrusting whereas in males mouth breathing and thumb sucking was most common. Most common oral habits in the age group 3-6 yrs were mouth breathing, thumb sucking whereas in age group 7-10yrs mouth breathing and tongue thrusting was most common.

**Keywords:** Oral habits, mouth breathing, tongue thrusting, thumb-sucking, bruxism.

### INTRODUCTION

Habits are learned patterns of muscle contractions. It is a tendency towards an act that has become a repeated performance, relatively fixed, consistent, easy to perform and almost automatic. Oral habits, especially if they persist beyond the preschool age,

have been implicated as an important environmental etiological factor with the development of malocclusion.<sup>1</sup> Repetitive behavior of habits is common in infantile period and most of them are started and stopped spontaneously. One of

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the most common and earliest repetitive behaviors seen in infantile period is digit sucking.<sup>2</sup> The reflex of sucking appears in intrauterine life, around 29 weeks,<sup>3</sup> An oral habit in infancy and early childhood is normal, and it is considered abnormal over 3 years of age.<sup>3</sup> 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.<sup>4,5</sup> 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.<sup>6,7</sup> A strong correlation exist between oral habits and development of malocclusion in the primary dentition; 40% of causes of malocclusion were related to oral habits such as anterior open bite, increased overjet, decreased maxillary arch width, posterior cross bite, and Class II canine and molar relation-ships.<sup>8,9</sup> Early recognition of the present of oral habits and proper planning to stop them is so important to avoid harmful effect on the developing occlusion.<sup>10</sup> The present study was conducted to assess the prevalence of oral habits in a children of age 3 to 10 years.

## MATERIAL AND METHODS

The study was conducted in a sample of 740 children, aged between 3 and 10 years. Before the commencement of the study ethical clearance was taken from the Ethical Committee of the institute and informed consent was obtained from the parents/guardians. Children who had permanent or deciduous central incisors, not had any syndromes or clefts lip/palate; not had a current/past orthodontic history; and had not any respiratory infections were included in the study. A closed-ended questionnaire was used to get data from the parents of the study participants. Deleterious oral habits were screened by trained personnel using mouth mirrors and probes. Clinical evaluation for mouth breathing was done with water test. The child was asked to take a little amount of water in his/her mouth with lips in contact without swallowing. Children unable to maintain lips in

contact position for 3 min were considered as mouth breathers.<sup>11</sup> Apart from mouth breathing, the children were screened for tongue thrusting, thumb-sucking, bruxism, pencil/nail biting, and lip/cheek biting. Following the examination, a health educational talk was delivered using study models. The statistical analysis was done using SPSS version 21.0 (Statistical Package for the Social Sciences, SPSS Inc; Chicago, Illinois, USA). Chi-square test was done to compare the prevalence of oral habits according to age group and gender.  $P < 0.05$  was considered to be statistically significant.

## RESULTS

In the present study a total of 740 children in which 61.62% were females and 38.37% were males. Among the children assessed, 395 children reported with only one oral habit, 112 had 2 oral habits, and 45 had 3 oral habits and total 552(74.59%) children had habits. Most common oral habits in females were mouth breathing, tongue thrusting whereas in males mouth breathing and thumb sucking was most common. Most common oral habits in the age group 3-6 yrs were mouth breathing, thumb sucking whereas in age group 7-10yrs mouth breathing and tongue thrusting was most common.

Table 1: Distribution of sample according to age and gender (n=740)

| Age group(yrs) | Males n(%)  | Females n(%) |
|----------------|-------------|--------------|
| 3-6            | 184(64.78%) | 178(39.03%)  |
| 7-10           | 100(35.21)  | 278(60.96%)  |
| Total          | 284(38.37%) | 456(61.62%)  |

Table 2: Number of habits present in the sample

| Number of habits | N(%) |
|------------------|------|
| Single habit     | 395  |
| Two habit        | 112  |
| Three habits     | 45   |

Table 3: Distribution of habits according to gender

| Oral habits      | Females | Males |
|------------------|---------|-------|
| Mouth breathing  | 123     | 114   |
| Tongue thrusting | 111     | 98    |
| Thumb sucking    | 87      | 110   |
| Nail biting      | 76      | 68    |
| Pencil biting    | 45      | 24    |
| Lip/cheek biting | 21      | 28    |
| Bruxism          | 24      | 20    |

Table 4: distribution of habits according to age groups.

| Oral habits      | Age group 3-6yrs | Age group 7-10yrs |
|------------------|------------------|-------------------|
| Mouth breathing  | 138              | 99                |
| Tongue thrusting | 93               | 116               |
| Thumb sucking    | 112              | 85                |
| Nail biting      | 55               | 89                |
| Pencil biting    | 28               | 41                |
| Lip/cheek biting | 18               | 41                |
| Bruxism          | 15               | 29                |

## DISCUSSION

Habits are acquired automatisms, represented by an altered pattern of muscle contraction with complex characteristics, which proceed unconsciously and on a regular basis.<sup>12</sup> Sucking responses in the early ages are necessary for the survival of the infant and they play an important key role in the early exploration of the child's environment. Psychologists include the development of habits as a part of the normal sequence of maturation in children and recognize that these activities have the potential to become a problem or bad habit, under the circumstances of physical, mental stress, and socio-economic stress.<sup>13</sup>

In the present study a total of 740 children in which 61.62% were females and 38.37% were males. Among the children assessed, 395 children reported with only one oral habit, 112 had 2 oral habits, and 45 had 3 oral habits. Most common oral habits in females were mouth breathing, tongue thrusting whereas in males mouth breathing and thumb sucking was most common. Most common oral habits in the age group 3-6 yrs were mouth breathing, thumb sucking whereas in age group 7-10yrs mouth breathing and tongue thrusting was most common.

Onyeaso and Sote<sup>14</sup> reported a low prevalence of oral habits (13.14%) among Nigerian preschool children.

Higher prevalence of oral habits was reported by Quashie-Williams<sup>15</sup> and Bhavya DP<sup>16</sup> who found 34.1% and 38% children examined in Lagos (Nigeria) and Gulbarga (India), respectively, presented with an oral habit.

Further, Gauba et al<sup>17</sup> reported that only 3% of rural North Indian children demonstrated oral habits.

A study by Shetty et al. found that tongue thrusting is more common in boys.<sup>18</sup>

Murshid et al. found that mouth breathing (20.2%) to be more prevalent than thumb sucking (16.7%).<sup>19</sup>

Garde *et al.*,<sup>20</sup> who reported 51% prevalence rate in 6–12-year-old children. Motta *et al.* reported that, among preschoolers, 87.4% had oral habits.<sup>21</sup>

Nail biting was seen in 20% of children in the present study which is very high compared to The prevalence of nail biting reported by Garde *et al.*,<sup>20</sup> was 5.8%. Shetty and Munshi,<sup>22</sup> who reported 6.2% prevalence of bruxism and 9.8% prevalence of pencil biting. The prevalence of lip/cheek biting reported by Shetty and Munshi <sup>22</sup> of 6%.

## CONCLUSION

This study concluded that overall prevalence of oral habit in children of age group 3-10 years was high. Most common oral habits in females were mouth breathing, tongue thrusting whereas in males mouth breathing and thumb sucking was most common. Most common oral habits in the age group 3-6 yrs were mouth breathing, thumb sucking whereas in age group 7-10yrs mouth breathing and tongue thrusting was most common.

## CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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