



Correlation between Age, Gender and Habits among Children - A Retrospective Study

Sanjana Devi, Revathi Duraisamy*

Department of Prosthodontics, Saveetha Dental College, Saveetha Institute of Medical And Technical Science, Saveetha University, Chennai, Tamil Nadu, India



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ABSTRACT

Oral health influences the overall health of an individual. Hence, when oral health is affected the general well-being of the individual is unbalanced. Habits are repetitive actions done automatically. They represent an altered pattern of muscle contraction, done unconsciously and on a regular basis. Some habits are helpful, whereas other habits are deleterious over the long run. Habits can be either functional or non-functional. Functional habits include repeating normal functions unnecessarily like swallowing, chewing and nasal breathing. Whereas non-functional habits are unnecessary extra functions like thumb-sucking, nail-biting and lip sucking. The aim of this study was to evaluate the correlation between age, gender and habits. A retrospective study was conducted in the Saveetha Dental College, Chennai, India. Ethical clearance was obtained from the SRB committee, Saveetha Dental College, Chennai, India. The clinical portion of this retrospective study was conducted over nine months, i.e., between June 2019 to March 2020. Data were collected from a total of 86000 patients who visited the Saveetha dental college between Jun 2019 to March 2020. Chi square test was done to evaluate the association between age, gender and habits. In the present study, there was 35.3% were males, and 64.7% were females. 15.6% were four years of age, 9% were five years of age, 11.3% were six years of age, 10.7% were seven years of age, 17.6% were eight years of age, 12.7% were nine years of age, 0.6% were ten years of age, 10.7% were 11 years of age. 16.8% have tongue thrusting, 36.1% have thumb sucking, 25.7% have nail-biting, 21.4% have mouth breathing. Within the limitations of this study, there was no significant association between habits and age [P=0.086] and gender [P=0.102].

*Corresponding Author

Name: Revathi Duraisamy
Phone: +91-7598267022
Email: revathid.sdc@saveetha.com

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INTRODUCTION

Oral health influences the overall health of an individual. Hence, when oral health is affected the general well-being of the individual is unbalanced (Vigu and Stanciu, 2019). Habits are repetitive actions done automatically. They represent an altered pattern of muscle contraction, done unconsciously and on a regular basis. Some habits are helpful, whereas other habits are deleterious over the long run. Stimulation of the mouth with fingers, tongue or nails provide a source of relief to override anxiety in both children and adults. The overall effect of the habit depends on the duration, intensity and nature of the

habit (Orengul *et al.*, 2019).

During the infantile period, repeated behaviour of habits is quite common and is considered normal. These habits are outgrown as the children age. If the children do not outgrow this after three years of age, then it is considered abnormal (Sabuncuoglu, 2014).

Habits can be either functional or non-functional. Functional habits include repeating normal functions unnecessarily like swallowing, chewing and nasal breathing. Whereas non-functional habits are unnecessary extra functions like thumb-sucking, nail-biting and lip sucking (Kamal and Bernard, 2015).

Thumb sucking is non-nutritive sucking of the thumb. It is common in infants as it gives a sense of comfort and security. However, continuing this habit can lead to problems in the stomatognathic system, which causes an imbalance with the external and internal forces (Hatala, 2017). There will be changes in the position of the teeth, the inter-arch relationship and can also cause tooth mobility. It also interferes with the normal growth of the jaws, and the function of the orofacial musculature (Hylander, 1977).

Nail-biting is biting the nails in the finger. It causes notches to form on the central incisor, which is anaesthetic. Since children are generally active and have a tendency to explore, it is not uncommon to find their hands unclean. Habits like thumb sucking and nail-biting, apart from causing damage to the structures of the mouth, also allow easy spread of diseases (Selvan and Ganapathy, 2016). A study by Vogel stated that there is a statistically significant difference in the prevalence of *Escherichia coli* and *Enterobacteriaceae* among children with oral habits in relation to children without oral habits. In older children undergoing orthodontic treatment, mini implants can be used for anchorage. These habits can be deleterious for the entire treatment as the integrity of the implant is compromised (Duraisamy, 2019).

Another harmful oral habit includes bruxism. It is a regular, nonfunctional forceful contact between occlusal tooth surfaces and can occur due to emotional stress, parasomnias, traumatic brain injury, neurologic disabilities and morphologic factors. It causes dental attrition, headaches, temporomandibular joint dysfunction and soreness of the masticatory muscles (Cortese, 2013).

Tongue thrusting is an abnormal tongue position between the maxillary and mandibular central incisors. Mouth breathing is breathing via the mouth instead of the nose. These habits may

be associated with anterior open bite, abnormal speech and anterior protrusion of the maxillary incisors (Araújo, 2020).

These habits are believed to be influenced by factors like gender, the rank of the child in the family, feeding methods, socioeconomic status, maternal age, maternal occupation, and education. Certain oral, environmental, systemic, psychological factors and dental statuses such as missing teeth and prosthetic crowns can also influence these habits (Basha *et al.*, 2018).

The purpose of this study is to evaluate the correlation between age, gender and habits.

MATERIALS AND METHODS

A retrospective study was conducted in the Saveetha Dental College, Chennai, India. Ethical clearance was obtained from the SRB committee, Saveetha Dental College, Chennai, India. The clinical portion of this retrospective study was conducted over nine months, i.e., between June 2019 to March 2020.

Inclusion criteria

Patients aged between 4-11 years of age, both males and females.

Exclusion criteria

Patients above the age of 11 years. Patients with systemic diseases, Patients with developmental abnormalities.

Data were collected from a total of 86000 patients who visited the Saveetha dental college between Jun 2019 to March 2020. Out of this, the data of 400 patients who visited the institute were retrieved. The data obtained were tabulated in SPSS for Windows, version 20. Descriptive statistics were analysed. Chi-square test was done to evaluate the association between age, gender and habits.

RESULTS AND DISCUSSION

In the present study, there was 35.3% were males, and 64.7% were females Graph 1. 15.6% were four years of age, 9% were five years of age, 11.3% were six years of age, 10.7% were seven years of age, 17.6% were eight years of age, 12.7% were nine years of age, 0.6% were ten years of age, 10.7% were 11 years of age Graph 2. 16.8% have tongue thrusting, 36.1% have thumb sucking, 25.7% have nail-biting, 21.4% have mouth breathing Table 1.

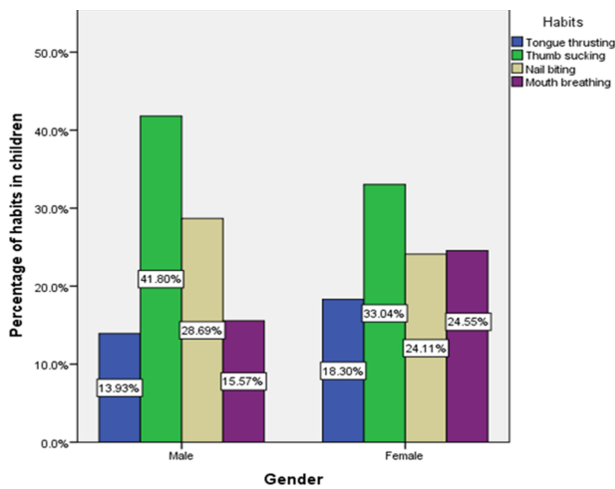
In the present study, there was no significant association between habits and age [P=0.086] and gender [P=0.102] Table 2.

Table 1: Represents the frequencies of gender, age and habits

S.No	Variable	Options	Frequency [%]
1	Gender	Male	122 [35.3%]
		Female	224 [64.7%]
2	Age	4	54 [15.6%]
		5	31 [9%]
		6	39 [11.3%]
		7	37 [10.7%]
		8	61 [17.6%]
		9	44 [12.7%]
		10	2 [0.6%]
		11	37 [10.7%]
		12	20 [5.8%]
		13	21 [6.1%]
		3	Habits
Thumb sucking	125 [36.1%]		
Nail-biting	89 [25.7%]		
Mouth breathing	74 [21.4%]		

Table 2: Represents the chi-square value of the association between age and gender with habits in children

S No	Habits in children		
1	Gender	P-value	0.102
2	Age	P-value	0.086



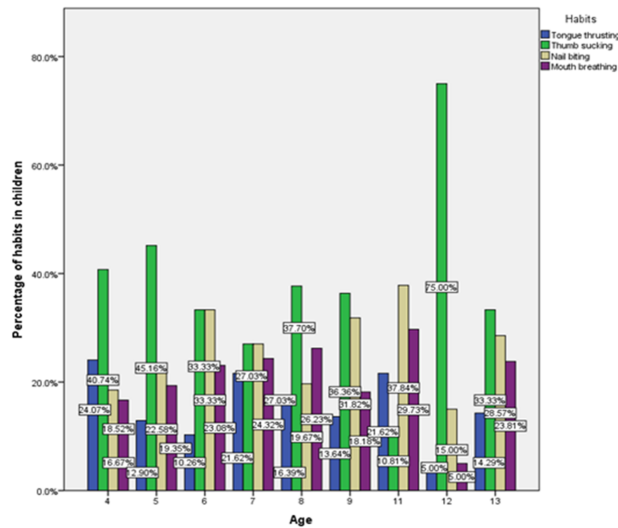
Graph 1: Bar graph represents the association between gender and habits in children. The X-axis represents gender, and Y-axis represents the percentage of habits in children

In the present study, thumb sucking is the most predominant oral habit. This concurred with (Santos and Dos, 2009), who recorded non-nutritive sucking as the highest frequency in their data. However, according to (Dutta and Verma, 2018), Lip biting was the most predominant habit, followed

by bruxism and thumb sucking. Also, the low incidence of thumb sucking has been reported by many authors. (Shetty and Munshi, 1998; Darwish et al., 2018) stated that nail-biting was the most prevalent habit. (Kharbanda, 2003; Abbasi, 2017) stated that the most prevalent habit was tongue thrusting (Shyagali et al., 2017). (Garde, 2014) recorded bruxism as the highest frequency in their study. (Anila, 2018) stated that mouth breathing was the most predominant habit.

In the present study, there was a significant association between gender and habits. This was in accordance with (Dutta and Verma, 2018) stated that boys have a higher prevalence of habits than girls. But, it is not statistically significant when individual habits were compared with gender. (Shyagali et al., 2017) stated that although boys showed greater prevalence rate for oral habits than girls, the difference found was statistically nonsignificant (Duraisamy, 2019). (Garde, 2014) stated that the prevalence of all deleterious habits was more among female children. (Santos and Dos, 2009) stated that girls showed a higher percentage of sucking habits. (Anila, 2018) stated that nail-biting was reported significantly more in females and bruxism significantly more in males. (Abbasi, 2017) stated that thumb sucking and mouth breathing was more

prevalent in males while tongue thrusting was more prevalent in females. However, (Kharbanda, 2003) stated that there were no significant differences between boys and girls for the prevalence of oral habits. However, he stated that individual habits have significant differences in gender, like thumb sucking was more common in girls when compared with boys and mouth breathing was more common in boys than girls.



Graph 2: Bar graph represents the association between age and habits in children. The X-axis represents the age and Y-axis represents the percentage of habits in children

In the present study, there was no significant association between age and habits. However, (Darwish et al., 2018) stated that age was statistically related to teeth clenching and lip sucking habits. According to (Shyagali et al., 2017) there was a significant difference in the prevalence of tongue thrusting, thumb sucking, and mouth breathing and bruxism. These oral habits were more prevalent in older children than in younger children (Shyagali et al., 2017). (Garde, 2014) also stated that significant differences were observed according to age groups. (Anila, 2018) stated that the prevalence of thumb-sucking was very high in younger children [4–8 years] compared to older children [9–13 years].

The limitations of this study include small sample size, the sample size was taken from the same geographical location, and the presence of systemic disease and dental status was not assessed. Since this was a retrospective study, the cause and effect could not be assessed. These limitations can be the aim to be assessed for future studies.

CONCLUSION

The present study was conducted to understand the correlation between age and gender with habits among children. Within the limitations of this study, we can conclude that: 35.3% were males, and 64.7% were females. 15.6% were four years of age, 9% were five years of age, 11.3% were six years of age, 10.7% were seven years of age, 17.6% were eight years of age, 12.7% were nine years of age, 0.6% were ten years of age, 10.7% were 11 years of age. 16.8% have tongue thrusting, 36.1% have thumb sucking, 25.7% have nail-biting, 21.4% have mouth breathing. There was no significant association between age, gender and habits in children.

Author Contributions

The primary author contributed to establishing the materials and methods and analysing the results followed by manuscript writing.

The co-author verified the results and manuscript before submission.

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Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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