

GENDER DIFFERENCE IN THE DEVELOPMENT OF ORAL HABITS- A RETROSPECTIVE CROSS SECTIONAL STUDY.

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ABSTRACT

Oral habits are a result of frequent repetition of certain definitive sets of nerve impulses. The etiology of the development of oral habits include anatomical, mechanical, pathological, physiological, imitation or just plain behaviour. Commonly occurring oral habits include thumb sucking, tongue thrusting, mouth breathing, bruxism, finger biting, finger nail biting, cheek biting and masochism. Treatment may vary from different oral habits. The aim of this study is to investigate the gender difference in the development of oral habits among patients. **Materials and methods:** Data collection was done in a university setting. One hundred case records were reviewed from the time period of June 2019 to March 2020. Excel tabulation and SPSS Version 22 was used for data analysis. **Results and discussion:** There was no statistical significance between the variables that were analysed. (p -value >0.05) **Conclusion:** This study shows that there is no significant difference between gender and oral habit development.

KEYWORDS:

Development, Lip sucking, Mouth breathing, Oral Habits, Tongue thrusting, Thumb sucking

INTRODUCTION

Oral habits have been defined by various authors based on their understanding at that time[1]. The four main definitions include Boucher O.C., who said that, "Habit is a tendency towards an act or an act that has become a repetitive performance, relatively fixed, consistent, easily performed and almost automatic[2-4]. Dorland in 1957 then defined oral habits as a fixed or constant practice established by frequent repetition. In 1961, Buttersworth claimed it to be a frequent or constant practice and acquired a tendency which has been fixed by frequent repetition. Matterson simplified the definition as oral habits with less words, saying oral habits are a learned pattern of muscular contraction. Oral Habits can be classified based on causative factors and based on authors[5]. The causative factors include obsessive and non-obsessive habits. The obsessive habit is deep rooted and can either be intentional live nail biting, thumb sucking or lip biting[6]. Obsessive habit can also be masochistic, which is an injurious habit that includes gingival stripping. The non-obsessive habit can easily be dissolved as they are either unintentional like chin propping or functional like tongue thrusting mouth breathing and bruxism.

The aetiology explained based on authors include James who classified it into useful and harmful habits[7]. Kinsley who classified it into functional, muscular and combined, Klien into empty and meaningful habits and lastly Finn who categorised it into compulsive and non-compulsive, and primary and secondary habits[8]. The types of oral habits include thumb sucking, tongue thrusting, mouth breathing, bruxism, lip biting, cheek biting and nail biting[9]. Thumb sucking is the placement of the thumb in the mouth with various depths[10]. This habit can either be due to psychology or mane habit[11]. The clinical features include proclination of maxillary anteriors, anterior open bite and posterior cross bite[11–13]. Treatments include bluegrass appliance, habit breaking appliance and thumb guard[14]. It is mostly in children that regresses as they mature. Retained oral habit, however rare, should be avoided[15].

Tongue thrusting was defined by Schneider in 1982 as the forward placement of the tongue between the anterior teeth and against the lower lip during swallowing[16–18]. It can be classified into psychological, habitual, functional as well as anatomical[19,20]. The causes of tongue thrusting include retained infantile swallow, neurological disturbance like a hypersensitive palate, feeding practices, induced by other oral habits and may be hereditary[21]. The clinical features include incompetent lips, speech disorder and the increase in anterior facial height[22]. Treatment includes pre-orthodontic retainer or habit breathing appliances[22,23].

Lip biting, also known as lip habits, involves the manipulation of lips and perioral structures[24]. For instance, wetting the lips with the tongue and pulling the lips into the mouth between the teeth[24,25]. The causes include an existing oral habit like thumb sucking, emotional stress and Angle's class 2 div. 1[24]. The clinical features include protrusion of maxillary incisors and retrusion of mandibular incisors[26]. Treatments include treatment of malocclusion, orthodontic appliance and removal of oral habits[27,28].

Previously, our research team carried out and published case reports[4,29], in vitro studies[30,31], clinical trials[32,33], randomised controlled trials[34–37], systematic reviews[6,38,39] and questionnaire surveys[40,41]. Since this study is based on epidemiological findings, the purpose of this study is to evaluate the gender difference in the development of oral habits among patients visiting Saveetha Dental College. This study will provide statistics about the prevalence of the development of oral habits among patients visiting Saveetha Dental College.

MATERIALS AND METHODS

This study is based on a university setting where only a certain population was covered. Data collection is done from June 2019 to March 2020. This is a retrospective study. Case sheets of patients are reviewed individually and the data is cross-verified by another examiner to avoid missing data. The samples were both male and female patients, 100 in size. Sampling bias is minimised by photographic evaluation. Incompetent or missing data was eliminated. Thumb sucking, lip biting and tongue thrusting habits were recorded. No masochistic habits were recorded. Excel tabulation was done consisting of age, gender and oral habits. SPSS Version 22 was later used to import the data and analyse the data. The statistical test use was chi-square. Independent variables include age and gender. Dependent variables include oral habits. The type of analysis was co-relation in association with gender and the development of oral habits.

RESULTS AND DISCUSSION

A total of 20 sample sizes were included where 11 (55%) of them were female patients and 9 (45%) of them were male. Female patients are more prevalent to develop oral habits compared to male patients for

the time period of June 2019 to March 2020. This indicates that females have a higher tendency to develop oral habits compared to males.

Table 1 and Figure 1 compares the age of the children with different deleterious oral habits. There was no statistical significance between the age and oral habits. [(p-value>0.05)- Chi-square test] It showed that lip biting was present only among children of ages 9-10, thumb sucking was equally prevalent from ages 7-13, and tongue thrusting was equally prevalent from ages 7-8 and 11-12.

Table 2 and Figure 2 compare the gender of the child with oral habits. There was no statistical significance between gender and oral habits. [(p-value>0.05) Chi-square test] It showed that lip biting was more prevalent in male children, thumb sucking was also prevalent in male children. Tongue thrusting was highly prevalent in male children.

Given below are the tabulation and graphical representations of the analysis between the parameters with representations in the form of bar charts. The results show association between all the parameters, its significant value and corresponding statistics in the form of bar charts. This study shows the association between gender and development of oral habits.

In this study, we observed the tongue thrusting habit is the most common oral habit, specifically among female children. Lip biting and tongue thrusting are most common among ages 8 – 12. In a contradictory study by Friman PC et al, thumb sucking was prevalent in children up to 5 years of age[42,43]. However, similar studies by Jabur SF et al, said that thumb sucking was prevalent among children of age 8 – 11[11].

In the analysis of oral habits and gender, thumb sucking was more prevalent among male children, tongue thrusting was more prevalent in female children and most common oral habit. In a study conducted by KRS et al, oral habits were more common in male children than females[2]. In another study by Shetty SR et al, tongue thrusting was more common in male children[44]. This can be due to the small sample size. Depending upon the child and its upbringing, his/her personality might vary. This can also affect the development of oral habits. The limitations of this study is that it is retrospective in design, therefore there is no follow up data. Futuristically, a prospective study of gender relation towards oral habits with proper standardised follow up should be done.

Table 1: Shows the relationship between different types of oral habits in various age groups. Tongue thrusting (n=10) was the most common habit in the study population, compared to lip biting (n=3) and thumb sucking (n=7). The association between habits and age group showed no significant correlation, Chisquare value 6.600, P value 0.580(p >0.05).

Age (years old)	Lip Biting	Thumb Sucking	Tongue Thrusting	Total	Chi square value	P value
5-6	0	1	2	3		
7-8	0	2	3	5		

9-10	3	0	2	5	6.600	0.580*
11-12	0	2	3	5		
13 and above	0	2	0	2		
Total	3	7	10	20		

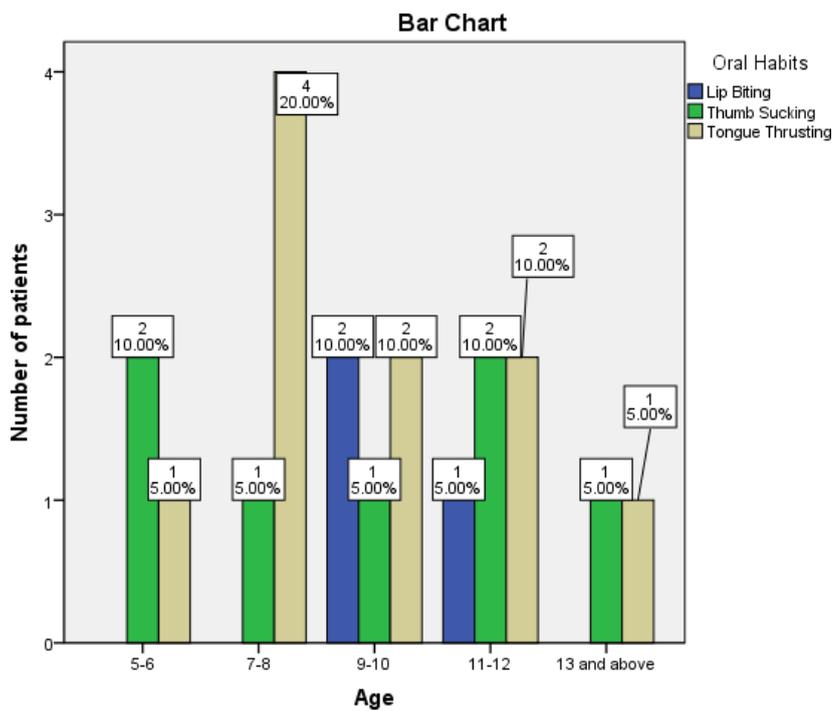


Figure 1: Bar chart showing the association between age and oral habits where X-axis represents age and Y-axis represents the number of patients. Tongue thrusting(yellow) is the most common oral habit among children of ages 7-8 and 11-12 (15%) followed by lip biting(blue) among children of ages 9-10(15%), and thumb sucking(green) being the least common among children of ages 5-6 (5%). Hence, the most common oral habit is tongue thrusting however is not statistically significant with a P-value of $0.580 > 0.05$ (Chi-square test).

Table 2: Comparison of different types of oral habit with gender of the child. Although males (n=11) showed a higher count compared to female (n=9) the correlation is not statistically significant Chi-square value 1.837, P value 0.399 ($P > 0.05$)

Gender	Lip Biting	Thumb Sucking	Tongue Thrusting	Total	Chi square value	P value
Male	2	5	4	11	1.837	0.399*
Female	1	2	6	9		
Total	3	7	10	20		

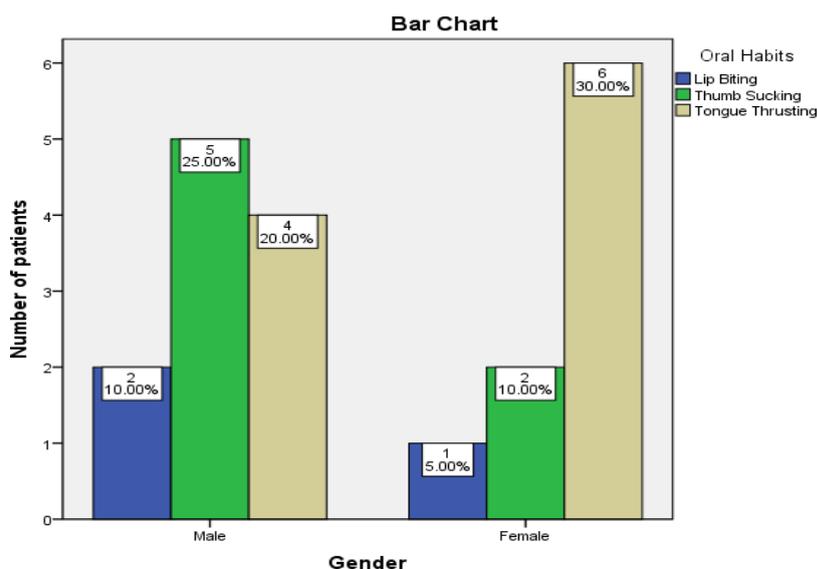


Figure 2: Bar chart showing the association between gender and oral habits where X-axis represents gender and Y-axis represents the number of patients. Tongue thrusting (yellow) is the most common oral habit among female patients (30%) while thumb sucking (green) is the most common among male patients (25%). Hence, the most common oral habit is tongue thrusting however is not statistically significant with a P-value of $0.399 > 0.05$ (Chi-square test).

CONCLUSION

Within the limits of the study, the assessment of gender difference in the development of oral habits has shown that there is no difference between gender and oral habits development.

AUTHOR CONTRIBUTIONS

Rinieshah Nair: Data collection, data analysis and interpretation, drafting the article
Mahesh Ramakrishnan: Final approval of article to be published
Balaji Ganesh S: Critical revision of article

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CONFLICT OF INTEREST

None

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