



Impact of Bad Oral Habits on Dental Caries among 6-10 Years Old Children in Hilla City

Nabaa Mohammad Obayes, Aseel Haider MJ Al-Haidar*

Department of Pedodontics and Preventive Dentistry, College of Dentistry, University of Baghdad, Iraq

ABSTRACT

Background: There is a clear debate about the role of bad oral habits (thumb-sucking and biting nails) and on oral health and the state of the dental caries, but there is no doubt that continuing these bad habits until advanced ages will lead to deep and difficult problems to solve.

Objective: The purpose of study was to evaluate the effect of bad habits, include finger sucking and nail biting on dental caries among children aged from 6 to 10 years old.

Subjects and methods: In Al-Hilla city, Iraq, a comparative study was conducted in which (200) primary school students aged between 6 to 10 years old were involved. A questionnaire filled out by their parents was used to gather information related to the bad oral habit, and then all the students were examined clinically for caries experience. Data was statically analyzed utilizing (SPSS version 21, Chicago In Press, IL, USA).

Results: The statistical analysis showed a highly significant difference ($p > 0.01$) in the occurrence of dental caries between children with bad oral habits than children without bad habits. The mean of DMFS score of case was $3.480 \pm (0.272)$ and mean of dmfs score of case was $8.380 \pm (0.431)$.

Conclusion: Bad oral habits found to be a risk factor for the development dental caries.

Key words: Bad habits, Children, Nail biting, Thumb sucking.

HOW TO CITE THIS ARTICLE: Nabaa Mohammad Obayes, Aseel Haider MJ Al-Haidar, Impact of Bad Oral Habits on Dental Caries among 6-10 Years Old Children in Hilla City, J Res Med Dent Sci, 2021, 9 (5):88-92.

Corresponding author: Aseel Haider MJ Al-Haidar

e-mail ✉: ali.mario28@yahoo.com

Received: 27/04/2021

Accepted: 12/05/2021

INTRODUCTION

A habit is an automatically done behavior that could be a repetitive and monotonous [1]. Harmful habits are the popular issue of pediatricians, which influences the quality of life. Bad habits are a frequent behavior inside the mouth. They include nonnutritive sucking (of the thumb, pacifier, and lips) and the habit of nails biting, as well as the grinding of teeth in addition to the mouth breathing. If the oral habits are practiced at a higher level, and for a longer duration, the muscular imbalance in the growing dental structures will lead to malocclusion, deformation of the face and slackening of speech

[2, 3]. Finger sucking is very normal and most common bad oral habits in children. It can be defined as the placement of the finger in varying depths into the oral cavity [4]. On the other hand, nail biting is "putting one or more fingers in the mouth and biting on nail with teeth" [5]. Recurring habits are more common during the childhood, and most of them start and end on their own [6]. In fact, due to a lack of awareness and knowledge to the harmful effects of bad oral habits, some children may continue these habits into their teenage years [7]. The use of these habits may have some advantages to the child in that sucking is most often noticed when a child is worry, unsafe, tense or surrounded by strangers. It also can make sleep easy, it keeps the baby and toddler calm and relaxed when the child separated from his family [8]. However, bad oral habits (such as sucking fingers and

nails biting) may have adverse effects. They may lead to distortion to the harmony of the face and the oral cavity by destroying the structure of the mouth leading to disturbances and imbalance in the development of the jaw, poor dental position and malocclusion as well as it may be a cause of tooth decay and gum disease by altering the oral microflora. Meanwhile, they may lead to spreading of many infectious diseases, respiratory disorder, speech difficulty, imbalance in the muscles, and psychological problems [9-12]. The severity of these adverse effects will depend on the nature, appearance, and duration of the habit [13].

This study was done as an attempt to link the bad oral habits with the oral health among children in Al Hilla city.

MATERIALS AND METHODS

After the submission and the revision of the study protocol, approval was obtained from the Scientific and the Ethical Committee at the Pedodontics and Preventive Dentistry Department/ College of Dentistry/ University of Baghdad, Iraq. An approval was obtained from the Directorate of General Education in Al Hilla city to perform the study at the primary schools without any hindrances. In this study, declaration of Helsinki had been followed, where complete information was given to the parents/guardians of each child (concerning the study design, aims and the predictable benefits of the study) before their inclusion in the study. This was done after getting a signed written consent, ensuring them that they have the right to withdraw (if they wanted) from this study at any time they want.

In this study, selection of the sample was done by using a multi-stage cluster random sampling method by which the first stage was the enrollment of 500 elementary school students within the selected age (6-10 years). They were belonged to nine elementary schools that were randomly selected as they belonged to different geographical areas in the center of Hialla city (the capital of Iraq's Babylon Governorate), which is located some 100 km to the south of Baghdad. In the second stage, information through questioners (related to the demographic personal information for each student included in this study was collected.

The questionnaires included the child birthday date, the gender, feeding type, presence of the sucking habit (thumb sucking and nail-biting habits) and duration of the sucking habit. Out of 500 children who got the questionnaire, only 436 return them (they were medically fit and healthy). The exclusion criteria of the sample from the present study were: (1) Incomplete filled questionnaire [14]. (2) Children whose parents refused their participation in the study. (3) If the child aged was over 10 years old or less than 6 years old. (4) If the child treated by an orthodontic device at the time of the study or previously. (5) Children with congenital or acquired deformity (e.g., syndromic and cleft). (6) Presence of bad oral habits other than thumb sucking and nail biting.

General examination

Thumb Sucking: The bad habit was checked first by asking the parents by a special designed questionnaire concerning which finger the child was sucked and the way by which it was sucked. The next step was to examine the thumb finger to find if there was a callus formation, cleaner fingernail, or reddish color [15], or acquired rotation, which is the most frequent deformation [16]. Only those children who sucked their thumb were included in this study.

Nail biting: This habit was checked according to Odenrick et al. [17] by asking whether the students bite their nail often or in frequently. They were also asked whether it was possible to see from their nails that they were nail biters.

Oral examination

Clinical examination for the presence of dental caries was done according to WHO (1997) by using a plan mouth mirror and CPI explorer after drying the teeth with a cotton roll. A systemic approach was adopted for the examination of the dental caries proceeding in an ordered way from one tooth or tooth space to the adjacent tooth or tooth space starting from upper right molar ending with the lower right molar [18].

Statistical analysis

Data analysis was performed by using Statistical Package for Social Science (SPSS Software) version 21. Descriptive (mean, standard error (SE), frequency and percentage) and inferential statistics had been utilized. The level of significance was set at 5%.

RESULTS

In this study, the study sample composed of 200 students (100 students with bad oral habits (thumb sucking and nail biting) and 100 students without any sucking habits matching the age and gender of the study group), as shown in Table 1. Regarding the age of the sample, thumb sucking habit tended to decrease with increasing the age of the students. However, concerning the gender variable of the total sample, girls sucked their thumb more than boys did (56%, 44% respectively). On the contrary, boys were tended to bite their nails more than girls did (54%, 46%

respectively). All of the students with bad oral habits had dental caries (100%) than the students without the bad habits (97%), (Table 2).

Results in Table 3 showed that, concerning caries experience for the permanent teeth, there was a highly significant difference between the students with bad oral habits and those without any sucking habits. This was found to be for all the components of the index (DS, MS, FS), as well as for total DMFS by which students with bad oral habits showed higher mean than those without any sucking habits. This was true for the primary dentition also.

Table 1: Distribution of the sample according to age and gender.

Age (yearS)	Presence of the bad oral habits	Gender				Total		
		Boys		Girls		No.	%	
		No.	%	No.	%			
6	With	Thumb sucking	7	33.33	7	33.33	14	14
		Nail biting	4	57.14	3	42.86	7	7
	Without	11	52.38	10	47.62	21	21	
7	With	Thumb sucking	5	38.46	8	61.54	13	13
		Nail biting	6	54.55	5	45.45	11	11
	Without	11	45.83	13	54.17	24	24	
8	With	Thumb sucking	4	40	6	60	10	10
		Nail biting	6	54.55	5	45.45	11	11
	Without	10	47.62	11	52.38	21	21	
9	With	Thumb sucking	4	50	4	50	8	8
		Nail biting	6	60	4	40	10	10
	Without	10	55.56	8	44.44	18	18	
10	With	Thumb sucking	2	40	3	60	5	5
		Nail biting	5	45.45	6	54.55	11	11
	Without	7	34.75	9	56.25	16	16	
Total	With	Thumb sucking	22	44	28	56	50	100
		Nail biting	27	54	23	46	50	100
	Without	49	49	51	51	100	100	

Table 2: Distribution of sample according to dental caries.

Presence of the habits	Presence of dental caries	No.	%
With (study)	With	100	100
	Without	3	3
Without (control)	With	97	97
	Free	3	3
	Total	100	100

Table 3: Caries experience in primary and permanent teeth between both groups.

Vars.	Bad Habits				t-test	p value*
	With		Without			
	Mean	± SE	Mean	± SE		
DS	2.25	0.181	1.02	0.123	5.629	0
MS	0.5	0.151	0.15	0.086	2.018	0.045
FS	0.73	0.112	0.31	0.072	3.158	0.002
DMFS	3.48	0.272	1.48	0.164	6.293	0
ds	4.32	0.285	1.97	0.157	7.22	0
ms	3.07	0.326	0.63	0.19	6.47	0
fs	0.99	0.149	0.54	0.097	2.536	0.012
dmfs	8.38	0.431	3.14	0.262	10.383	0

* Significant difference.

DISCUSSION

Oral habits have been the topic of interest to the dentists, especially the pediatric dentists. Sample selection was done randomly to be representative of 6-10 years in Hilla city. The distribution of thumb sucking habits found to be more in the younger children than the older children did (Table 1). This agreed with other studies [19-21], this might be due to that as the child becomes older, his/her need to suck decrease and the child will likely give up the habit by his own way, while other children will be motivated to stop the habit by their parents. This can be illustrated relying on the facts provided by the psychoanalytic theory, which states that when children grow up, they are prone to take off some habits and sustaining others [22]. Regarding gender, it was found that girls tended to suck their thumbs more frequently than boys did, and this could be since girls are more sensitive than boys [23-25].

Caries experience was demonstrated by DMFT index for the permanent teeth and dmft index for the primary teeth, which are well-accepted measure for caries experience throughout the world. In the present study, all the students among the group with bad oral habits were affected by dental caries (100%) (Table 2). Meanwhile, for the permanent teeth, the mean of the decayed surfaces among the group with bad oral habits was the higher component of the DMFS index. In the same manner, incidence of dental caries for the primary teeth that represented by dmfs was higher among the group with bad oral habits (8.380) than it was among the group without any sucking habit which was (3.140) (Table 3). For the primary teeth, the higher mean of the dmfs components was related to the decayed surfaces as well as to the missing surfaces among the group with bad oral habits (4.320, 3.070 respectively) compared to the group without any sucking habits (1.970, 0.630 respectively). Therefore, it was observed that bad oral habits increased the odds of having dental caries among children, this was in accordance with the results of other studies [26,27]. Presence of the thumb or the nail inside the mouth may act as a foreign body that aid in carrying of various types of microorganisms from the surrounding environment to the oral cavity. This may lead to altering the oral ecosystem, which in turn may

lead to increasing the chance of affecting by dental caries.

CONCLUSION

Bad oral habits were more prevalent among girls as well as the younger age students and concerning dental caries, the group with the bad oral habits exhibits higher mean of both DMFS and dmfs with a higher statistically significant difference between the two groups. Therefore, one of the important conclusions related to the present study is that there is no doubt that bad oral habit can act as an important predisposing factor aid in increasing the severity of dental caries. So, stopping the bad oral habits can be considered as an important first step for the prevention of dental and oral disease.

REFERENCES

1. Shahraki N, Yassaei S, Moghadam MG. Abnormal oral habits: A review. *J Dent Oral Hyg* 2012; 4:12-15.
2. Jyoti S, Pavanalakshmi GP. Nutritive and non-nutritive sucking habits-effect on the developing oro-facial complex: A review. *Dentistry* 2014; 4:1-4.
3. Piteo AM, Kennedy JD, Roberts RM, et al. Snoring and cognitive development in infancy. *Sleep Med* 2011; 12:981-987.
4. Ferreira HR, Rosa EF, Antunes JL, et al. Prolonged pacifier use during infancy and smoking initiation in adolescence: Evidence from a historical cohort study. *Eur Addiction Res* 2015; 21:33-38.
5. Teng EJ, Woods DW, Twohig MP, et al. Body-focused repetitive behavior problems: Prevalence in a nonreferred population and differences in perceived somatic activity. *Behavior Modification* 2002; 26:340-360.
6. Maguire JA. The evaluation and treatment of pediatric oral habits. *Dental Clin. North Am* 2000; 44:659-669.
7. Thomaz EB, Cangussu MC, Assis AM. Malocclusion and deleterious oral habits among adolescents in a developing area in northeastern Brazil. *Br Oral Res* 2013; 27:62-69.
8. Davidson L. Thumb and finger sucking. *Pediatr Review* 2008; 29:207-208.
9. Srinath KS, Satish R. Management of thumb sucking habit in a 8 year old child-A case report. *Int J Sci Res* 2013; 4:1822-1825.
10. <http://www.jdentistry.ui.ac.id/index.php/JDI/article/viewFile/464/356>
11. Mummolo S, Nota A, Caruso S, et al. Salivary markers and microbial flora in mouth breathing late adolescents. *Bio Med Res Int* 2018; 2018.

12. Grippaudo C, Paolantonio EG, Antonini G, et al. Association between oral habits, mouth breathing and malocclusion. *Acta Otorhinolaryngol* 2016; 36:386-394.
13. Joelijanto R. Oral habits that cause malocclusion problems. *Int Dent J* 2012; 1:86-88.
14. Rajchanovska D, Ivanovska Zafirova B. Prevalence of finger sucking at preschool children in Bitola. *Int J Sci* 2014; 13:292-302.
15. Gellin ME. Digital sucking and tongue thrust in children. *Dent Clin North Amer* 1978; 22.
16. Malek R, Oger P, Rivet F, et al. Deformities of the finger's secondary to finger sucking. *Ann Chir Main Memb Super* 1994; 13:269-73.
17. Odenrick L, Brattstrom. Nail biting: Frequency and association with root resorption during orthodontic treatment. *Brit J Orthod* 1985; 12:78-81.
18. World Health Organization. Oral health survey. Basic method. 4th ed. Geneva.1997.
19. Bishara SE, Warren JJ, Broffitt B, et al. Changes in the prevalence of nonnutritive sucking patterns in the first 8 years of life. *Am J Orthod Dentofacial Orthop* 2006; 130:31-36.
20. Varas VF, Gil BG, Izquierdo FG. Prevalence of childhood oral habits and their influence in primary dentition. *Rev Pediatr Aten Primaria* 2012; 14:13-20.
21. Basra US, Kaur N, Singh A, et al. Deleterious oral habits among school going children-A cross-sectional study. *J Interdisciplinary Med Dent Sci* 2017; 4:1-4.
22. Omer MI, Abuaffan AH. Prevalence of oral habits and its effect in primary dentition among Sudanese preschool children in Khartoum City. *Ind J Dent Edu* 2015; 8:57-62.
23. Kharbanda OP, Sidhu SS, Sundaram KR, et al. Oral habits in school going children of Delhi: A prevalence study. *J Ind Soc Pedo Prev Dent* 2003; 21:120-124.
24. Leite-Cavalcanti A, Medeiros-Bezerra PK, Moura C. Breast-feeding, bottle-feeding, sucking habits and malocclusion in Brazilian preschool children. *Rev Salud Publica* 2007; 9:194-204.
25. Santos SA, Holanda ALF, Sena MF, et al. Nonnutritive sucking habits among preschool-aged children. *J Pediatr* 2009; 85:408-414.
26. Misbah MM. Oral habits in relation to dental caries and gingival health among children attending the dental hospital. *J Bagh Coll Dent* 2005; 17:109-112.
27. Kolawole KA, Folayan MO, Agbaje HO, et al. Digit sucking habit and association with dental caries and oral hygiene status of children aged 6 months to 12 years resident in semi-urban Nigeria. *PLoS One* 2016; 11:e0148322.