Prevalence of Pacifier Sucking Habit and Its Effect on Occlusion in Children Aged 1-5 Years in Baghdad City

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ABSTRACT

Background: Non-nutritive sucking habits are common in infants and toddlers. One of the most common non-nutritive sucking habits is pacifier; its prevalence varies from one population to another. This study was conducted to determine the prevalence of pacifier sucking habit among children aged 1-5 years old in Baghdad city and to assess its effect on the occlusion of primary dentition concerning posterior crossbite.

Materials and methods: The study was carried out among 1222 children aged 1-5 years old, from which 50 children with continues pacifier sucking habit were chosen to be the study group, compared to 50 children without any sucking habit (control group) matching the study group in age and gender. Children were examined clinically to record the presence of posterior crossbite.

Results: The prevalence of pacifier sucking habit was 24.54%; it is tend to decrease with age. Posterior crossbite was found in18% of the pacifier sucking group and all of these cases were unilateral, however, none of the control group had posterior crossbite. In this study girls had higher tendency to suck pacifier and to have posterior ccrossbite than boys.

Conclusions: Prevalence of pacifier sucking habit was more among girls, it can cause posterior crossbite which is mainly unilateral and more among girls than boys.

Key words: Pacifier sucking habit, posterior crossbite. (J Bagh Coll Dentistry 2015; 27(4):143-146).

INTRODUCTION

All infants use their mouth to explore their world, some continue this and enjoy non nutritive sucking on a pacifier which is an object that is shaped for babies' mouth; it is a nursing device with an imperforated nipple used by many children to provide a sense of security and pleasure [1]. Under the age of 4 years, 45% of children have sucking habits and most of them stop the habit at (3-6) years and very few of them continue beyond the age of 6 years at that time they must be treated otherwise they may have malocclusion and speaking problems [2,3].

Advantages for both the child and his parents from the use of pacifier may include soothing the child after a fright, helping him to sleep longer at night, decreasing thumb sucking likelihood and help him cope with separation [4].

Conversely, pacifiers have been associated with a number of negative health effects including its adverse relation to breast feeding [5,6], otitis media [7], candidal infection and thrush [8-10], in addition, their prolonged use can be considered as a risk factor that may increase the development of tooth decay [9,11] as well as the development of posterior cross bite which is one of the most frequent malocclusion associated with the prolonged use [12-14].

Prevalence rates of pacifier use may vary according to the age of children, however, its use generally decreases with the increase of age [4].

About 68% of the American infants aged 6 weeks and under used a pacifier [5]. In UK the prevalence rate of children used pacifier at the age 15 months was 36% [15], while Niemela [7] found the prevalence rate among the Finnish children aged 2 months to 7 years which was 26%, however, their use has long been controversial [16].

In Iraq no previous study was done concerning the use of pacifier in children, so this study was conducted on group of Iraqi children to know the prevalence of this habit with special attention to its effects on posterior cross bite.

MATERIALS AND METHODS

After identifying the kindergarten and nursery schools and getting approval of the ministries of work and social affairs, education and health to carry out this study, a contact with school authorities was made to explain the purpose of the study.1222 children aged 1-5 years were selected from fifteen kindergarten and nursery schools in each side of Baghdad city, 600 children were chosen from Al-Karkh area and 622 children were chosen from Al- Russafa area.

Permission was obtained from the parents for including their children in the study and questionnaires were designed to get information from them including general health and the sucking habits of their children.

Continuous pacifier sucking habit was found in 98 children, from which 48 children had been lost because of the discontinuing of the child from the school, thus 50 children formed the study group which was compared to 50 children (control group) matching in age and gender the

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study group from the same school and without any sucking habit. A clinical examination was conducted in the classroom; each child was examined while seated on school chair underartificial light source. Occlusion was examinedwhile the mandible in centric occlusion. A posterior crossbite was recorded if the buccal cusps of themaxillary teeth occluded lingual to the buccal cusps of the corresponding mandibular teeth [17] (Fig.1).

Fig. 1: Four years old child with unilateral posterior crossbite.

RESULTS

Three hundred children from 1222 children were found to have pacifier sucking habit (continuous habit and discontinuous habit), which represents 24.54% from the total sample (Table 1). There was significant difference between boys and girls regarding pacifier sucking habit (z=2.95). Table (2) shows the distribution of children with pacifier sucking habit according to the continuity of the habit, girls were more than boys in both continuous habit and discontinuous habit group.

Distribution of pacifier sucking children in the study group and non pacifier sucking group (the control group) according to age and gender is shown in Table (3). At (1-2) years, 42% of the study sample had pacifier sucking habit which represent the highest percentage, however, the lowest percentage was 12% among those belonged to the (4-5) years group.

In this study, (Table 4) demonstrates the distribution of children according to the presence of posterior crossbite. The results show that 9 children in the pacifier sucking group, which represent 18% from the total sample, had unilateral posterior crossbite and 7(14%) of them were girls, while in non pacifier sucking group none of them had posterior crossbite (neither unilateral nor bilateral).

DISCUSSION

The sample was selected randomly to be representative of 1-5 years in Baghdad city. Prevalence of pacifier sucking habit in this study was 24.54%, Table (1), which is lower than that found by Farsi and Salama [18] among Saudi children (37.90%), but near that reported by Niemelaetal [7] among Finnish children (26%). These differences suggest that non-nutritive sucking habits are influenced by raising practices of the child which in turn differ from one population to another [18].

Results of the present study found that prevalence of sucking habits was more among girls and it is statically significant (Table 2) which is similar to the results of other studies [19,20] and it can be explained as that tendency to develop this habit is greater in girls as they have more emotional problems than boys [19,20].

Prevalence of pacifier sucking habit in the present study, seems to decreased with age (Table 3), which is in agreement with many other studies [4,718],this may be due to that as the child grows older, his need to suck diminished and he will likely give up the pacifier on his own way, while others will be motivated to give up the habit by their parents.

Several studies reported a significantly greater prevalence of posterior crossbite among pacifier sucking children compared with non pacifier sucking children [13, 14, 18,21-24] and this is in agreement with the results of the present study. Posterior crossbite was 18% among pacifier sucking group (Table 4), and this was in accordance with that found by Larsson [23] and Stecksenetal [24] which were 16% and 16-18% respectively.

For many children the teat of the pacifier has become a natural part of the oral environment causing changes in the surrounding tissues, the tongue has to take a lower position in the anterior part of the mouth and in this way the palatal support of the upper primary canines and the first molars against the pressure of the check is reduced. In addition to that, the tongue also will exert increased lateral pressure at the lower canines and the first molar.

The lack of palatal support from the tongue will result in narrow upper arch, while the pressure of the tongue will widen the lower arch, so these changes in equilibrium act to create a transverse disharmony in the canine region, which will increase the risk of posterior crossbite development [27].

A pressure against the teeth has to exist for at least 6 hours to cause tooth movement so that differences in hours per day, rather than sucking intensity, could probably explain the development of posterior crossbite in some children more frequently than other children with the same habit [15].

The presence of crossbite in pacifier sucking group was higher in girls than in boys (Table 4), which is in agreement with other studies [14,21,25], suggesting that among girls, early eruption of teeth and establishment of occlusion may explain this finding.

All the cases of posterior crossbite in this study are manifested unilaterally, which is in agreement with other studies [14,25] suggesting that posterior crossbite in the primary dentition are generally functional.

Table 1: Prevalence of pacifier sucking habit

Presence of Pacifier sucking habit	Total (1222)		Boys (600)		Girls (622)	
	No.	%	No.	%	No	%
No sucking habit	922	75.45	472	51.19	450	48.80
Sucking pacifier	300	24.54	128	42.66*	172	57.33*

***significant difference, z=2.95**

Table 2: Distribution of children with pacifier sucking in relation to the continuity of the habit at the time of examination

Presence of pacifier sucking habit	Continues No. (%)	Discontinuous No. (%)	Total
Boys	46 (46.94)	82 (40.59)	128
Girls	52 (53.6)	120 (59.40)	172
Total	98 (32.66)	202 (67.33)	300

Table 3: Distribution of children in the study group and in the control group by age and gender

Age (years)	Pacifier sucking			Non pacifier sucking		
	Boys	Girls	Both	Boys	Girls	Both
1-2	10 (20%)	11 (22%)	21 (42%)	10 (20%)	11 (22%)	21 (42%)
2-3	8 (16%)	7 (14%)	15 (30%)	8 (16%)	7 (14%)	15 (30%)
3-4	4 (8%)	4 (8%)	8 (16%)	4 (8%)	4 (8%)	8 (16%)
4-5	2 (4%)	4 (8%)	6 (12%)	2 (4%)	4 (8%)	6 (12%)
All ages	24 (48%)	26 (52%)	50 (100%)	24 (48%)	26 (52%)	50 (100%)

Table 4: Distribution of children according to the presence of unilateral posterior crossbite among pacifier and non pacifier sucking children

Age group	Gender	No.	Crossbite among pacifier sucking		Crossbite among Non-pacifier sucking	
			No.	%	No.	%
1-2	Boys	10	0	0	0	0
	Girls	11	3	27.27	0	0
	Both	21	3	14.28	0	0
2-3	Boys	8	1	12.50	0	0
	Girls	7	2	28.57	0	0
	Both	15	3	20.00	0	0
3-4	Boys	4	0	0	0	0
	Girls	4	1	25	0	0
	Both	8	1	12.50	0	0
4-5	Boys	2	1	50	0	0
	Girls	4	1	25	0	0
	Both	6	2	33.33	0	0
All ages	Boys	24	2	4	0	0
	Girls	26	7	14	0	0
	Both	50	9	18	0	0

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