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The digit sucking habit and related factors: Observations from a child dental health clinic in Nigeria

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Summary

An increased prevalence of the digit sucking habit among Nigerian children has been reported. Certain factors are believed to influence its occurrence. This study was carried out to assess these factors and determine possible correlation with the onset and persistence of the habit. The sample population consisted of 81 children - 52 females and 29 males aged 3-16 years who were still actively digit sucking. Findings in this group were compared with a control group made up of 80 children aged 2-16 years who were not digit suckers and had no history of the habit. Results showed no correlation between mode of infant feeding and the digit sucking habit. The duration of breast-feeding was found to have a significant effect on the habit. About 79% of non-suckers had been breastfed for more than 6 months while only 43.2% of digit suckers were breast-fed for the same duration. The digit sucking habit was observed more frequently in children with mothers in high cadre occupations (53.1%) compared to non-suckers (23.8%). More digit suckers (22.2%) than non-suckers (12.5%) were reported to have a history of pacifier use. Neither family size nor position of the child in the family had a significant effect on the occurrence of the habit. In addition, 48.1% of the sample population had siblings with the same habit compared to 16.2% of the controls. The identification of significant factors may be useful in targeting interventions in order to prevent consequences of the prolonged habit.

Keywords: Digit sucking, associated factors, children, Nigeria

Résumé

Parmi les enfants Nigérians, un chiffre prédominance augmentée a été rapporté de ceux qui sucent d'habitude. On croit que certains facteurs ont influencé cet événement. Cette étude est pour répartir ces facteurs et déterminer la

corrélation possible du début et de la persistance de cette habitude. La population de l'échantillon a consisté en 81 enfants - 52 filles et 29 garçons de 3 - 16 ans qui sucent encore activement. Les conclusions dans ce groupe ont été comparées avec un groupe témoin composé de 80 enfants de 2-16 ans qui ne sucent pas et n'avait aucune histoire de l'habitude. Les résultats n'ont montré aucune corrélation entre mode d'alimentation de l'enfant et le chiffre qui sucent d'habitude. Il est a noter que la durée d'élever au sein a eu un effet considérable sur l'habitude. Approximativement 79% de non sucettes avaient été élevé au sein pour plus de 6 mois pendant que seulement 43.2% de sucettes du chiffre ont été élevé au sein pour la même durée. Le chiffre qui suce a été fréquemment observé plus dans les enfants avec les mères de hautes cadre du travaille (53.1%) a comparé aux non sucettes (23.8%). Plus de sucettes (22.2%) que non sucettes (12.5%) a été observe d'avoir une histoire d'usage du pacificateur. La dimension de la famille ou la place de l'enfant dans la famille n'avait pas un effet considérable sur l'événement de l'habitude. De plus, 48.1% de la population de l'échantillon avaient des frères et soeurs avec la même habitude comparée à 16.2% des contrôles. L'identification de facteurs considérables peut être utile de viser des interventions pour prévenir les conséquences de l'habitude prolongée.

Introduction

Digit sucking (thumb and finger sucking) is one of the most common forms of non-nutritive sucking (NNS) [1,2] It is a topic of interest in many fields including psychology, paediatrics and speech therapy. Due to the frequent dentofacial manifestations, the digit sucking habit has become of great interest to dentists and specialists in the field.

At birth, non-nutritive sucking is related to rooting and sucking reflexes (up to 12months of age) [3]. Up to the age of 2^* to 3 years, sucking is considered a normal developmental response[4-7]. After this, it is considered a learned habit [1,3]. The habit is considered prolonged when it is continued up to the age of 7 years and beyond [8]. Although it is mostly believed that the sucking habit

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begins as an adaptive response which eventually becomes a learned habit, there still exists some evidence in the minority of patients that prolonged sucking is maintained by some underlying psychological or emotional disturbance [4].

Thumb and finger sucking habits appear to be influenced by many socially and culturally dependent factors [1]. The prevalence of digit sucking habits in the Western world ranges from 16 to 45%, [9-12] with a reduction in prevalence with increasing age [2,10,12]. There has also been observed an inverse relationship between pacifier use and the level of thumb sucking within the same group [11,13]. Thus, in recent years the prevalence of digit sucking has been noted to decrease due to a proportional increase in the number of children with an initial dummy sucking habit [14-16]. However, there has also been reported an overall increase in the number of children who develop an initial dummy or digit sucking habit [17].

In Nigeria, initial studies on the digit sucking habit showed a very low prevalence (2.1%) [18]. More recent studies carried out over a decade later have shown a marked increase in prevalence to 16.9% and 18.3% [19,20]. Previous reports have observed no gender differences in the distribution of sucking habits during infancy.²¹ However, from early childhood it has been reported to be stronger, more persistent and more widespread in girls than in boys [1,7,11,12,21,22]. It is believed that environmental factors play a more significant role than genetic influences in gender differences of the sucking habit [1].

Other factors believed to be associated with the digit sucking habit include socio-economic status, [11,23]race, [11,17]mode of infant feeding, [22] family size and position within the family [13, 24].

The purpose of this study was to assess a group of Nigerian children presenting in a clinical set-up with a digit-sucking habit. Certain factors were assessed and comparison was made between this group and a control group of non-suckers in order to determine which factors may contribute to the habit and its persistence.

Materials and method

The sample population consisted of 81 children – 52 females and 29 males who attended the Paedodontic or Orthodontic clinics of the Lagos University Teaching Hospital over a 42-month period. The children, whose ages ranged between 3 and 16 years with a mean age of $8.9 (\pm 2.9)$ years, were all actively engaged in a digit sucking

habit at the time they were seen. Each child was examined extra and intra orally while seated on a dental chair and the mother of each child was asked to fill a structured questionnaire. A control group derived from the same clinical setting was made up of 80 children aged 2-16 years with a mean age of $8.2 (\pm 3.8)$ years that were not digit suckers and had no history of the habit were also recruited into this study.

Parental occupations were recorded using a modification of the International Labour Organization (ILO) code of practice [25]. Other factors assessed included mode of infant feeding, duration of feeding, use of alternative non-nutritive sucking methods, family size

Table 1: Mode of infant feeding among children

Feeding	Digit	-suckers	Non-suckers	
mode	No.	%	No.	%
Mainly or on	ly			
Breast	25	30.9	34	42.5
Mainly or on	ly			
Bottle	6	7.4	2	2.5
Breast & Bot	tle			
Equally	50	61.7	44	55.0
Total	81	100.0	80	100.0

 $X^2 = 3.72$ df = 2 p > .05

Association is not significant

and position of the child in the family and siblings with the digit sucking habit.

Statistics

Data for the two groups were compared. Results were analyzed using the chi-square test with p<0.05 being the level of significance.

Results

Table 1 shows that the most frequent mode of infant feeding among both digit suckers and non-suckers was the use of both breast and bottle with relatively equal

Table 2: Age at cessat	ion of	breast	feed	ing
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Age	Digit suckers		Non-suckers	
-	No.	%	No.	%
Below 3 months	7	8.6	3	3.7
3–6 Month	39	48.2	14	17.5
Above 6 months	35	43.2	63	78.8
Total	81	100.0	80	100.0

 $X^2 = 21.39$ df=2 P<.05 Association is significant frequency (61.7% and 55.0% respectively). While mainly or solely breastfeeding occurred slightly more frequently in non-suckers (42.5%) than digit suckers (30.9%) -p > 0.05.

The majority of non-suckers were breastfed beyond 6 months of age (78.8%). This was significantly greater than in the digit-sucking sample where only 43.2% were breastfed for the same period of time (Table 2).

Figure 1 relates the occupational status of the parents to the habit. While more fathers in the digit sucking group were in high cadre occupations this finding was not found



Fig. 1: Occupational status of parents

Table 3: Distribution of pacifier use among children

	Digit suckers		Non-suckers	
Pacifier	No.	%	No.	%
Used	18	22.2	10	12.5
Not used	63	77.8	70	87.5
Total	81	100.0	80	100.0
$X^2 = 2.64$	df = 1	P > 05		

Association is not significant

to be statistically significant. However, mothers of children in the digit-sucking group were observed to be predominantly in high cadre occupations (53.1%), whereas mothers of non-suckers were more frequently in medium and low cadre occupations (67.5% and 8.8% respectively)

Table 3 shows that pacifier use was an uncommon method of non-nutritive sucking between both groups, however it was seen to be more common among digit suckers (22.2%) than non-suckers (12.5%).

This study showed that there was no significant difference in either the number of children in the family or the position of the child in the family between the two groups. The average number of children per family among the digit-sucking and non-sucking groups was 3.3 and 2.9 children respectively. In both groups there were 2-4 children per family in the majority of cases (77.7% and 70.0% respectively). About 33% of digit suckers were first- born children while 40% of the non-sucking group were first-born.

Table 4: Distribution of Siblings with a digit sucking habit

Sibling	Digit suckers		Non-suckers	
Digit suckers	No.	%	No.	%
Present	39	48.1	13	16.2
Absent	42	51.9	67	83.8
Total	81	100.0	80	100.0

X = 45.62 df = 1 P<.05

Association is significant

Almost half (48.1%) of the digit-sucking sample had a sibling or siblings with the habit. This differed significantly from the non-sucking group in which only 16.2% had digit-sucking siblings as seen in Table 4.

Discussion

The prevalence of non-nutritive sucking (NNS) habits in the western world has been reported to range from 70-91% [26,27,28] with digit sucking comprising a small but significant portion of this group. It has been suggested that these artificial sucking habits may be associated with the method of rearing and feeding babies in this region. Previous studies have stated that the prevalence of the digit sucking habit among Africans and developing countries is low [17,29]. However, while agreeing that the prevalence of non-nutritive sucking is not as high in these regions as seen in the Western society, studies have shown that it appears to be on the increase [18-20,30].

Oral deprivation or gratification through breast or bottle-feeding during infancy and childhood has been associated with fixation or regression of NNS habits [31,32]. As concluded by other studies, [13,15,16,21] this study also showed that the mode of infant feeding did not play a significant role in the onset of the digit sucking habit. In contrast, Shoaf [22] on in his study observed an approximate two-fold greater prevalence in thumb-sucking habit in breastfed children when compared to those who were bottle-fed. Similar observations were also reported in a study on Israeli children. Here it was suggested that the oral drive is strengthened and not satiated by the powerful sucking in breastfeeding [33].

While there was no correlation recorded between the mode of infant feeding and digit sucking, the duration of breastfeeding was observed to have a significant effect on the digit sucking habit with 78.8% of non-suckers being breastfed for a period of longer than 6 months whereas less than half (43.2%) of the digit sucking sample were breastfed for the same duration. The effect of breastfeeding duration on NNS habits has also been reported in a recent study by Larsson [27], who observed that the mean duration of breastfeeding was significantly longer for non-suckers (11 months) than for pacifier and digitsuckers (5 months). He also reported that the sucking urge appeared to increase with increased age of the infant. It was observed in his study that 75% of children who were breastfed for more than 1° years did not develop a sucking habit. Comfort which the child derives from nurturing of the mother during breastfeeding as well as satisfaction of the increased sucking urge may play a role in the findings of this study.

The role of socio-economic status on the digit sucking habit has been well documented. These studies have reported an increased prevalence in the digit-sucking habit in higher socio-economic groups [10,23]. The present study assessed only parental occupation in relation to the habit and showed that the digit-sucking habit was seen significantly more frequently in children with mothers in high cadre occupations. The absence of these mothers from the home often for long periods, possibly denying the child of motherly comfort may play a role in this finding. This finding also relates to that of Warren *et al.* [28] who reported that higher maternal education was a significant predictor of NNS.

A decrease in the prevalence of digit sucking has been reported during the last two decades in western societies. On the contrary, pacifier-sucking rates have markedly increased among pre-school children [13,15,17]. It appears that the use of the pacifier has not yet become a popular method of non-nutritive sucking in this region. As seen in this study, the inverse relationship between digit sucking and pacifier use does not exist as more digit suckers had a history of pacifier use (22.5%) than nonsuckers (12.5%). Many mothers of children in the digitsucking group however reported that use of the pacifier was initiated in an effort to deter the digit sucking habit. This was unsuccessful in most cases as it was eventually rejected in favour of the digit.

There have been conflicting reports on the effect of family size on the digit sucking habit in literature. While some studies have reported that the habit is more prevalent with an increase in family size, [16, 24] a more recent study found that first-born children were more affected by the habit [28]. The present study found that neither the number of children in the family nor the position of the child in the family was significantly different in the two groups. This is similar to findings by some other authors [34-36].

It was observed in this study that 48.1% of children in the digit-sucking group had one or more siblings with the same habit. This differed significantly from the nonsucking group where only 16.2% had a sibling or siblings with the digit sucking habit. Similar findings were also reported in a previous study[36]. Although sibling imitation is a possible reason for this occurrence, it is more likely that similarity in family environment and method of child rearing is the main influence.

Conclusion

This study has shown that factors such as duration of breastfeeding, mother's occupation, and presence of the habit in siblings (family environment) are significantly related to the digit sucking habit. The identification of these factors may be useful in targeting interventions in order to prevent consequences of the prolonged habit. These may include increasing parental awareness of possible long term effects of the habit and early introduction of alternative NNS methods (e.g., pacifier), the use of which rarely becomes prolonged.

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