



A survey of methods and practices used to stop digit sucking in 2-5 year old children in Benin City, Edo State.

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Abstract

Objective: To analyse the methods and practices used to stop digit sucking in 2-5-year old children in Benin City, Edo State, Nigeria.

Method: A prospective study was carried out on a study group comprised of 1031 pre-school children aged 2-5years, selected from day care centres and pre-schools in three local government areas using stratified random sampling.

Results: The results showed that 15.4% of the children had a digit sucking habit (thumb and finger sucking) which increased with age, with the highest number seen in the 3 and 5-year-old age group ($p < 0.05$). Boys tended to have a higher prevalence of digit sucking than girls. Attempts to stop the habit were made by 73.6% of the parents or guardians of the children with the most common method being the use of adhesive plaster on the digit in 41.9% of the children. Negative practices were found in 9.4% and included the use of razor blade to cut the digits, and the application of bitter or peppery tasting substances in 12.8%. Reward system was used in 6.8% and the use of appliances in only 0.8%.

Conclusion: The findings from this study show that the most common method used to stop digit sucking habit was the use of adhesive plaster. Negative practices included the use of razor blade to cut the digits and the application of bitter or peppery tasting substances. The use of appliances was not common and many mothers were not aware that such a method existed.

Key words: Digit sucking, children, Benin City.

Introduction

In infancy, sucking appears to be the most well developed sensation of the child. The infant does not only receive sustenance from it, but also derives sensory pleasures that are transmitted from the mouth to the brain. The infant who is poorly nursed or is given a bottle with a poorly designed nipple loses the feeling of well-being and therefore is deprived of the suckling pleasures⁽¹⁾. This deprivation may motivate the child to suck on the thumb, digit or other object for additional comfort. In this way, the child develops a non-nutritive sucking habit which is seen in some children from an early age^(1,2). Fukuta et al in a study on Japanese children, estimated that approximately 50% of one-year-old infants sucked a finger or thumb with a prevalence of 7.7% to 15.1% in 3-5-year-old children⁽³⁾. Ravn demonstrated a prevalence of 84% in 3-year-old Danish children who had a digit sucking habit⁽⁴⁾. A study in Sweden found a prevalence of 88% in 4-year-old children with a history of non-nutritive sucking⁽⁵⁾. Furthermore, other studies from different countries showed sucking habits and their effects in children aged 2-5years of age⁽⁶⁻⁸⁾. Onyeaso and Sote⁽⁸⁾ found a prevalence of digit sucking in 13.14% of 3-5 year old Nigerian pre-school children.

Isiekwe also examined the effect of thumb sucking in school children in Lagos and described the effects on the

dentition to include an asymmetric anterior open bite⁽⁹⁾. Digit sucking has been seen to cause deformities of these digits in children as young as 3 years of age. They include dystrophic calcinosis, radial rotation of the index finger, and skin changes as a result of chronic irritation⁽¹⁰⁻¹²⁾.

Various methods have been used to prevent non-nutritive habits and include the use of pacifiers⁽¹⁴⁻¹⁵⁾. It has been reported that children who use a pacifier are less likely to develop a digit sucking habit^(17, 19-22). However, the use of pacifiers has been found to have negative consequences on the development of the dentition and should be stopped before 3 years of age^(16, 19-21). Other studies have shown the use of a reminder on the thumb or fingers in the form of adhesive bandages, socks, mittens or flavored or bitter tasting substances placed on the thumb or digit to stop the habit^(17, 22). Other methods used to stop the habit have been identified, and include the reward system and appliance therapy but should only be applied if the child is willing to stop the habit⁽²¹⁾. These appliances include the goal post, hayrake, the palatal crib and the "bluegrass" appliance^(9, 22, 24). The purpose of this study is to analyse the methods used by Nigerian mothers to stop the digit sucking habits and also aimed at educating parents and school children in our environment on better and more positive methods and practices to stop these habits.



Materials and method

This prospective study was carried out using the stratified random sampling method. A list of pre-schools and day-care centres was obtained from the State Ministry of Education and every 'n'th school selected (n was a number taken from a statistical table). In each, all children within the age range were selected for the study.

A questionnaire with close ended questions was administered to the parent or guardian of each selected child. Information required included the age of each child which was approximated to the nearest birthday, sociodemographic data, habits, attempts to stop the habit and the method used.

Statistical analysis was performed with the Statistical Package for Social Sciences software (SPSS) version 10.0. In addition to descriptive statistics, the chi-square test was used to test for significance at 95% confidence level. Probability values (p-values) less than 0.05 were regarded as significant.

Result

The study population consisted of 1031 pre-school children from various nursery schools and day care centres in Benin City Nigeria. It comprised 602 (58.3%) girls and 429 (41.7%) boys aged 2-5-years of age (**Table 1**).

There were 159 (15.4%) digit suckers consisting of 81 (50.9%) boys and 78 (49.1%) girls. Thumb sucking was observed in 88 (55.3%) and finger sucking in 71 (44.7%) (**Table 2**).

Table 1. Total number of boys and girls

Gender	No.	%
Boys	429	41.7
Girls	602	58.3
Total	1031	100

Table 2: Age and gender distribution of oral habits

Age (years)	Thumb Sucking		Finger Sucking		Total n%
	M n%	F n%	M n%	F n%	
2	7(8)	8(9.1)	3(4.2)	4(5.6)	22(14)
3	11(12.5)	11(12.5)	13(18.3)	12(16.9)	47(29.5)
4	15(17)	10(11.4)	6(8.5)	12(16.9)	43(27)
5	14(15.9)	12(13.6)	12(16.9)	9(12.7)	47(29.5)
Total	47(53.4)	41(46.6)	34(47.9)	37(52.1)	159(100)

Age distribution of the total number of children with a digit sucking habit showed a high percentage in the 3 and 5-year-age groups (47%). The 2 and 4-year-age groups showed a percentage of 14% and 27% respectively There was no significant difference between boys and girls in the prevalence of digit sucking (p > 0.05).

The highest number of children with digit sucking was in the 5-year-old males with (32.1%), while the 2-year-old males had the lowest number seen in digit sucking (**Table 2**). There was an attempt by parents or guardians of 117

Table 3. Age distribution and attempt to stop habit

Age (years)	Yes n(%)	No n(%)	Total n(%)
2	12(10.3)	10(23.8)	22 (14)
3	35(29.9)	12(28.6)	47(29.5)
4	30(25.6)	13(30.9)	43(27)
5	40(34.2)	7(16.7)	47(29.5)
Total	117(100)	42(100)	159(100)

Table 4. Methods used to stop digit sucking habit in the study population

Method	Male n (%)	Female n (%)	Total n (%)
Socks or bandage	12(20.3)	9(15.5)	21(18)
Application of substances (bitter or peppery)	6(10.2)	9(15.5)	15(12.8)
Reward	2(3.4)	6(10)	8(6.8)
Appliance	1(1.7)	-	1(0.8)
adhesive plaster	26(44)	23(40)	49(41.9)
Use of razor blade to cut digit	5(8.5)	6(10)	11(9.4)
Physical force	6(11.9)	5(9)	12(10.3)
Total	59(100)	58(100)	117(100)

(73.6%) children to stop the habit, while 42 (26.4%) made no attempt to stop the habit (**Table 3**).

Parents of children in the 3 and 5-year age groups showed a higher percentage (29.9%) and 34.2% respectively, in an attempt to stop the habit. This was statistically significant (p > 0.05). The 2-year-age group recorded the lowest number with 10% (**Table 4**).

The method used to stop digit sucking habit included the use of socks or bandages to tie the whole hand in 18%. The most common method used was adhesive plaster on the digit sucked in 41.9%. It was more commonly used in boys 44% than in girls 40%. The least common method was the use of an appliance seen in only 0.8% and this was in a boy. Adverse methods used included use of razor blade to cut digit in 9.4%, the use of physical force in 10.3% and the application of substances (bitter or peppery) on the digit in 12.8%. A small percentage, 6.8%, was promised a reward to stop the habit. Parents made an attempt to stop the habit more in boys (50.4%), than girls (49.6%) (**Table 4**).

Discussion

This study shows that the digit sucking habit is seen in 15.4% in 2-5-year old Nigerian children and this is in agreement with studies by Onyeaso and Sote, which showed a prevalence of 13.1%⁽⁸⁾. This figure is low when compared with recent and previous studies carried out in India, (25.5% and 29.7% respectively)^(25,26). Ravn demonstrated a prevalence of 84% in 3-year-old Danish



children who had a digit sucking habit⁽⁴⁾. A study in Sweden found a prevalence of 88% in 4-year-old children⁽⁵⁾. This contrast could be due to the fact that other studies analysed different sample sizes. A review of the literature however shows that the prevalence of sucking habits varies from race to race and from one population to another^(2, 4, 5, 8). Thumb sucking was the most prevalent oral habit seen in 55.3% and then finger sucking in 44.7%. This is in contrast with studies by Kharbanda et al,⁽²⁵⁾ which showed thumb sucking to be the least common habit in 0.7% and more common in girls than boys. Earlier studies in Nigeria however show an initially low prevalence rate in the thumb sucking habit^(8, 9).

An attempt was made by 73.6% of parents to stop the habit. Al-Jobair and Al-Emran found out that 86% of mothers tried to stop digit sucking in their children⁽²⁷⁾. This is due to the fact that almost all parents could not tolerate the digit sucking habit. This is in contrast with studies in other countries where it is believed that no attempt should be made to stop the habit until the child is willing to do so^(10, 17, 22). Finnish studies showed an attempt made in 2.7% of children with finger sucking through educating the child⁽¹³⁾. Van Norman⁽²⁸⁾ believes that children can be helped to eliminate their sucking habits quickly, without coercion and in a positive way.

The most common method employed by parents to stop the thumb and digit sucking habit was the use of adhesive plaster on the digit in 41.9% of children. This is in contrast with Saudi Arabian mothers where the most common method used was the application of bitter tasting solution to the fingers in 66%⁽²⁷⁾. This method was adopted in 12.8% of Nigerian children.

Other practices included the use of socks or bandage to tie the whole hand in 18%. This is similar to a method used as a reminder therapy technique where a 'long sleeve sleeping gown' was used to stop the digit sucking habit in 71.4%⁽²⁹⁾. Reward as a means of stopping the digit sucking habit was seen in 6.8% and should be carried out when the child and parent agree the habit should be stopped by a particular time⁽²¹⁾.

Extreme and adverse methods were utilized by parents trying to stop the sucking habit. They included the use of razor blade to cut the digit being sucked in 9.4% and the use of physical force in 10.3%. No data was found in the literature to compare with. This could be due to the fact that such practices may not have been documented in other studies.

The use of appliances including the pacifier to stop the digit sucking habit was not common and was only seen in 0.8%. This agrees with a study on Nigerian children by Onyeaso and Sote⁽⁸⁾ where no child was seen using a pacifier. In contrast, a study on Finnish children showed that 77% used a pacifier⁽¹⁹⁻²⁰⁾. This could be as a result of cultural differences between Nigeria and Finland.

Conclusion

Based on our survey, we conclude that negative practices do exist as a means to stop the digit sucking habit in Nigerian children. Our findings show that the most common method used to stop the digit sucking habit was

the use of adhesive plaster. Negative practices included the use of razor blade to cut the digits and the application of bitter or peppery tasting substances. The use of appliances was not common and many mothers were not aware that such a method existed.

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