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Digit-Sucking Among Ibo Infants In Eastern Nigeria

Received: 28 February 2011
 Accepted: 24 June 2011

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Abstract *Background:* Digit-sucking is a common habit among infants and toddlers, it is a normal adaptive process and attempts at stopping are discouraged before 2-4 years of age. Prevalence varies along racial lines. This study is intended to document the prevalence and pattern of this habit among Ibo infants and also to determine maternal attitude and response to it

Method: This is a cross-sectional study on infant digit-sucking habit. Subjects were the mother/ infant pairs that attended the well baby clinics at the Institute of Child Health of the University of Nigeria Teaching Hospital, Enugu (ICHUNTH), Mother of Christ Specialist Hospital (MCSH), Enugu and the Ebonyi State University Teaching Hospital (EBSUTH), Abakaliki, between March and May 2006.

Results: One hundred and forty eight (30.8%) infants digit-suck.

The right fingers (66.5%) and the thumbs (42.25%) were the digits most frequently sucked. The prevalence of digit-sucking do not vary with sex ($\chi^2 = 1.17$, $p = 0.28$) and infants' age ($\chi^2 = 49.79$, $p = 0.08$). Hunger (71.7%) was the most common condition in which the infants suck their digits, followed by anger (6.7%) and sleep (6.1%).

Most mothers (67.70%) had a negative perception to digit-sucking and 69.59% of the mothers had attempted to stop the habit in their infants. Methods employed by the mothers include restraint (78.21%), and topical application of bitter substances (23.04%) and pepper (11.37%).

Conclusion: - digit-sucking is a common habit among Ibo infants and most mothers have negative attitude towards it, majority of which had attempted to stop this habit in their infants using mostly deterrent methods.

Introduction

Digit-sucking is a common behavior in children and is thought to be a normal adaptive process during infancy and toddling years, its prevalence is said to vary from 1-50%.¹⁻³ It is said to be more common in western countries and was thought to be uncommon in Africa. Recent African studies have confirmed that it is indeed a common condition; however its prevalence varies along racial and ethnic divide.⁴ It is

said to be more common among females and children of higher socio-economic class.⁵⁻⁷ Though common, parents are generally uncomfortable with it because of its perceived medical and social consequences.^{8,9} The medical consequences of digit-sucking when it is chronic include dental malocclusion, finger deformity, chronic paronychia and increased risk of digesting poisons, while socially it can lead to peer non acceptance and dysfunctional family relationship.^{1-3,8,9}

Regardless of the aforementioned risks associated with chronic digit-sucking, it is very important that the parents maintain a sympathetic, patient, and understanding attitude toward the child. Parental nagging, threats, and criticism can actually worsen the problem rather than improve it. The parent should initially ignore the habit rather than force the child to stop. Any attempts to cease the habit before the age of 2 years can create neurotic symptoms and personality problems.³ In spite of this, most studies report that parents attempt to stop this habit. A Saudi study reported that 48% of mothers did not like to see the habit at any age, and no mother accepted the habit after the age of 4 years. Most mothers (86%) tried to stop their children digit-sucking. The most common method used by these Saudi mothers to stop their children sucking their digits was the application of a bitter tasting lotion to the fingers (66%).⁸

There is scant report on the prevalence of this habit in Nigeria. Uwaezuoke et al⁴ reported a prevalence of 23% among preschool children in Enugu. Their study was not limited to infants and involved a small sample size. This study was undertaken to determine prevalence of digit-sucking among Ibo infants in Eastern Nigeria, their socio-demographic determinants and mothers' attitude towards it.

Materials and Methods

Study design

This cross-sectional study was carried out between March and May 2006 among mother-infant pairs attending the well baby clinics at the Institute of Child Health of University of Nigeria Teaching Hospital, Mother of Christ Specialist Hospital, both in Enugu, and the Ebonyi State University Teaching Hospital, Abakaliki. These centers were chosen because they enjoy large patronage and the authors have working interest in them. Enugu is the capital city of Enugu State while Abakaliki is the capital of Ebonyi State, both in South-East of Nigeria. The populations of Enugu and Abakaliki are 308,200 and 235,000 respectively. The inhabitants are mainly Ibos.

Sample size and sampling technique

Based on the prevalence of digit-sucking of 23%,⁴ and using the formula for sample size determination ($N = Z^2PQ/d^2$), a sample size of 165 was obtained. This was increased to 500 to improve validity and accommodate for attrition.

Subjects:

These were mother with children aged 1 52 weeks and who brought by their infants for immunization and growth monitoring at the clinics. Only mothers who gave informed consent were interviewed.

Study tool

The study tool was a structured pre-tested interviewer administered questionnaire on presence or otherwise of digit-sucking. Information on the fingers sucked, conditions that lead to finger sucking, parental attempts at stopping the habit and what was done by the parents to stop the habit were sought. Demographic information on maternal age, highest educational attainment, occupation, parity (those with 2 or more children were classified as 'experienced' while those with only one were classified as 'inexperienced') and child's sex and age were also obtained.

Ethical Approval

The Ethical Committees of the University of Nigeria Teaching Hospital Enugu, the Ebonyi State University Teaching Hospital Abakaliki, and the authorities of the Mother of Christ Specialist Hospital Enugu, approved the study.

Statistical Analysis

Analysis was done using SPSS statistical package version 11.0 using tables and percentages. Means and standard deviations were determined as appropriate and differences in proportions were tested for statistical significance using the chi square test. Logistic regression was used to determine factors that were predictive of digit-sucking. Significance level was set at $p < 0.05$, with 95% confidence level.

Result

Demographic characteristics

The mother/infant pairs were recruited consecutively as they attended clinics at the 3 sites until the sample size was obtained. The 3 sites contributed 215, 171 and 114 from ICH-UNTH, MCSH, and EBSUTH respectively. Four hundred and eighty mother/infant pairs were analyzed. Twenty were not included in the analysis due to incomplete data.

Table 1 shows the demographic characteristics of the

mothers and infants that participated in this study. Three hundred and twenty eight mothers were aged between 21 and 30 years while the age of 115 mothers was between 31 and 40, the two age categories constituted 92.7% of the mothers. Three hundred and ninety five (83.2%) mothers had at least secondary education. Petty trading and fulltime home-making were the two most common occupations among the mothers. Two hundred and ninety three mothers (61.3%) reported their parity. The mean number of deliveries per mother was 3.29 ± 1.61 . Of these, 26 (8.9%) were primipara, others had two or more infants. Thus 267 (91.1%) of the mothers were experienced.

There were 246 males (51.3%) and 233 females (48.6%), M: F=1:1.06. The mean age of the infants was 14.29 weeks ± 12.82 and 313 (65.2%) of them were aged 1- 12 weeks.

Prevalence of digit-sucking

One hundred and forty eight mothers (30.8%) reported that their infants sucked their digits. Table 2 highlights the distribution of the fingers sucked by the infants; six mothers (4.05%) did not report the digits their infants sucked. Of the 142 mothers that reported the fingers their infants sucked, 95 (66.5%) sucked the right fingers while 47 (33.10%) sucked the left fingers. The thumbs were the most sucked fingers 60 (42.25%), while some infants sucked more than one fingers 29 (20.42%) out of which 3 children (0.6%) sucked all 5 fingers.

Hunger was the conditions mothers felt that most predisposes their infants to suck their digits 129 (71.7%), followed by anger 12 (6.7%) and sleeping 11 (6.1%). Other conditions including boredom were responsible in 19 (10.6%) infants. Digit-sucking habit did not vary significantly due to sex ($\chi^2 = 1.17$, $p = 0.28$), infants' age ($\chi^2 = 49.79$, $p = 0.08$), mothers' age ($\chi^2 = 4.58$, $p = 0.47$), maternal experience ($\chi^2 = 0.89$, $p = 0.35$), maternal education ($\chi^2 = 2.55$, $p = 0.47$). Table 3 shows that on logistic regression, none of the above variables had a predictive influence on digit-sucking among Ibo infants.

Mothers' perception and response to infant' digit-sucking

Three hundred and twenty five (67.70%) mothers felt that digit-sucking were abnormal habit; this perception was more among mothers whose infants were not digit-sucking 242 (72.89%) compared to those whose infants' digit-suck 83 (56.08%). This difference in perception was statistically significant ($\chi^2 = 13.64$, $p < 0.001$). One hundred and three mothers (69.59%) had attempted to stop the habit in their infants. Methods Used to stop this habit include: - restraint 81(78.27%), applying bitter

Substances on the digit 24 (23.04%), application of pepper on the digit 11 (11.37%), and bandaging of the digit 9 (9.31%), some mothers had tried more than one method. The decision to attempt to stop digit sucking habit did not vary according mothers' education ($\chi^2 = 0.91$, $p = 0.82$), mothers' age ($\chi^2 = 7.27$, $p = 0.20$), mothers' experience ($\chi^2 = 0.23$, $p = 0.63$), infants' age ($\chi^2 = 30.24$, $p = 0.22$) and infants' sex ($\chi^2 = 0.41$, $p = 0.52$). Table 4 highlights that on logistic regression analysis none of the above variables had predictive influence on Ibo mothers attempt at stopping digit-sucking.

Table: 1
Distribution of Maternal and Infant Demographics

Maternal Age	Frequency	Percentage
16 –20	21	4.4
20 –30	328	68.3
31 –40	115	24.0
> 40	4	0.8
No Response	12	2.5
Total	480	100.0
Maternal Educational Attainment.		
University/Polytechnic	215	44.8
Secondary Education	180	37.5
Primary Education	73	15.2
No Formal Education	7	1.5
No Response	5	1.0
Total	480	100
Maternal Occupations		
Senior Civil Servant	84	17.5
Junior Civil Servant	53	11.04
Petty Trader	103	21.5
House Wife	120	25.0
Student	20	4.16
Self employed	78	16.3
Corporate office	5	10
No response	17	3.5
Total	480	100
Number of Delivery by Mothers		
1.	26	5.4
1 – 4	194	40.4
> 5	73	15.2
No response	187	39.0
Total	480	100
Age of Infant (Wks)		
1 –12	314	65.4
13 –24	70	14.6
25 –36	66	13.8
37- 52	29	6.0
No response	1	0.2
Total	480	100.0
Sex of Infants		
Male	246	51.3
Female	233	48.5
No response	1	0.2
Total	480	100.0

Table: 2

Pattern of Distribution fingers sucked by Ibo infants in Eastern Nigeria

Fingers	Right N (%)	Left N (%)	Total N (%)
Thumb	42(29.58)	18(12.68)	60(42.25)
Index finger	18(12.68)	9(6.34)	27(19.01)
Middle finger	12(8.45)	5(3.52)	17(11.97)
Ring finger	3(2.11)	2(1.41)	5(3.52)
Little finger	3(2.11)	1(0.70)	4(2.82)
Combination of fingers	17(11.97)	12(8.45)	29(20.42)
Total	95(66.90)	47(33.10)	142(100.0)

Table: 3

Logistic regression analysis of variables with predictive influence of digit-sucking among Ibo infants

Variables	B	S. E.	Wald	R	Exp (B)	P
Mothers Age	-0.08	0.15	0.25	0.00	0.93	0.61
Maternal Experience	-0.49	0.47	1.11	0.00	0.61	0.29
Mothers Educational Status	0.14	0.16	0.61	0.00	1.15	0.44
Age Categories (Weeks)	-0.19	0.01	2.71	-0.05	0.98	0.10
Sex	0.22	0.27	0.67	0.00	1.25	0.41
Constant	0.05	1.55	0.00			0.98

Table: 4

Logistic regression analysis of variables with predictive influence on mothers attempt to stop digit-sucking

Variables	B	S. E.	Wald	R	Exp (B)	P
Mothers Age	0.26	0.28	0.85	0.00	0.77	0.36
Maternal Experience	-0.31	0.79	0.15	0.00	0.73	0.69
Mothers Educational Status	0.29	0.35	0.68	0.00	1.33	0.41
Age Categories (Weeks)	-0.01	0.02	0.12	0.00	0.99	0.73
Sex	-0.17	0.46	0.13	0.00	0.85	0.72
Constant	0.38	2.60	0.02			0.88

Discussion

Though the prevalence of digit-sucking among Ibo infants of 30% is similar to previous report of 23% by Uwaezuoke et al⁴ in Eastern Nigeria, and the 1-50% reported from studies in Western countries, these studies were however conducted among pre school children.¹⁻³ There are no African studies that we are aware of on the prevalence of digit-sucking among infants but Western studies reports a much higher value of 50 -70% with progressive decline to about 12% at 4 years and 2% by 12 years.⁶ The finding in this study site seems to support the postulation that for unknown reason digit-sucking is less prevalent among African than in Caucasians.^{2,3} The review of digit-sucking by Ekatrina Polyakov,³ and earlier studies reported that digit-sucking was more common among females and infants from higher socio-economic setting;^{5,6} this is at variance with the finding of this study where the prevalence did not vary between sexes and maternal educational attainment. Davidson² on the other hand observed that like in this report there were no sex differences but noted that females appear to find it more difficult to stop the habit.

The earlier reported preference for the right fingers and the thumbs is also confirmed in this study.^{6,7} It has been noted that this marked preference for the right thumb is present as early as 15 weeks of intra uterine life.¹⁰ This question the conventional belief that after birth a certain level of physical and brain maturity is required before hand preference can manifest. Unlike in previous studies where infants were noted to digit-suck mainly while sleeping,^{3,6,7} it was reported that hunger was the major conditions that aggravates this habit in this environment, the reason for this difference is not very clear but the fact that this study was not an observational study but based on maternal recall would limit the reliability of this finding.

Majority of Ibo Mothers (68%) had a negative perception of digit-sucking even among infants; this is much higher than the 48% reported among Saudi mothers.⁸ Not surprisingly about 70% of mothers whose infants had this habits had attempted to stop the habit. This attempt at stopping this habit in such an early age has been found to be counter productive and is discouraged by Pediatricians and Dentists.³ Most of the methods used by mothers in stopping this habit are punitive and are non productive, some of them can even harm the child.^{11,12} It is worrisome that the attempt to stop this habit also involves very young infants and Mothers who were relatively well educated also tried to stop the habit among their infants.

In conclusion

digit-sucking is a common habit among Ibo infants and the right thumb is the digit most commonly sucked. Ibo Mothers have a negative attitude towards it, majority of which had attempted to stop this habit

In their infants and the methods they adopted were mostly deterrent. There is need to enlighten Ibo mothers that digit-sucking is a normal adaptive process and that most children stop this habit spontaneously, it is also counter productive to try to stop the habit before 2 years of age.

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