IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 17, Issue 3 Ver.5 March. (2018), PP 07-12
www.iosrjournals.org

Non-Nutritive Oral Habits, Age, Sex, Socioeconomic Status And Infant Feeding Practices In Children In Sub-Urban Nigeria

Chukwumah NM[1,2], Kolawole KA[2,3,4], Folayan MO[2,3,4], Oyedele TA [2,4], Oziegbe EO[2,3,4], Onyejaka N[2,5], Agbaje HO[2,4], Oshomoji V[2,6].

[1]*Department of Preventive Dentistry, University of Benin Teaching Hospital Benin, Nigeria.*
[2]*Oral Habit Study Group*
[3]*Department of Child Dental Health, ObafemiAwolowo University Ile- Ife, Nigeria.*
[4]*Department of Child Dental Health, ObafemiAwolowo University Teaching Hospital Complex Ile-Ife, Nigeria.*
[5]*Department of Child Dental Health, University of Nigeria Teaching Hospital Enugu, Nigeria.*
[6]*National Assembly Hospital Abuja, Nigeria.*
Corresponding author: Chukwumah Nneka.

Abstract:***Background:*** *Non-nutritive oral habits (NNOH) have been associated with infant feeding practices. Various factors have been implicated in the development of these habits. This study tried to identify if age, sex, socioeconomic status, infant feeding practices and duration of breastfeeding were predictors of NNOH.*

Methods:*This is a secondary analysis of data generated through a household survey conducted to explore the association between digit sucking among 992 children between 1-12years of age resident in a sub-urban area in Nigeria. Information on age, sex, socioeconomic status, method of feeding (breast or bottle feeding), duration of breast and bottle-feeding, and the NNOH each child engaged in were collected. Factors associated with the habits and predictors of NNOH were determined.*

Results:*The prevalence of NNOH in the study population was 13.0%.The form of breastfeeding (p=0.01) was a significant predictor while age (p= 0.59), sex (p=0.62), socio-economic status (p=0.41) and duration of breastfeeding (p=0.53) were not significant predictors of NNOH.*

Conclusion:*Children who were not exclusively breastfed were more likely to engage in NNOH. This finding may have implications for counseling of mothers who opt not to exclusively breastfeed their children.*

Keywords:*Non-nutritive oral habits (NNOH), breastfeeding, bottle-feeding, socioeconomic status, Nigeria.*

Date of Submission: 23-02-2018 Date of acceptance: 12-03-2018

I. Introduction

Non- nutritive oral habits (NNOH) include habits such as sucking of pacifier, digit, lip, tongue sucking/thrusting, mouth breathing, and bruxism[1]. Nutritive sucking habits (breastfeeding and bottle feeding) provide essential nutrients, while NNOH ensure a feeling of warmth and a sense of security[2]. NNOH may be signs of psychological and physiological need for nutrition[3].

The prevalence of NNOH is influenced by a number of factors, which include age, sex, birth rank, and socioeconomic status[4]. It has been suggested that more females than males engage in NNOH[5]. An association between socioeconomic status and NNOH had also been found with more children from higher socioeconomic class engaging in some NNOH when compared with children from the lower socioeconomic class[6]. The educational level of a child's parents has also been associated with the presence of NNOH in children: more children whose parents are highly educated engage in NNOH[4, 7].

NNOH are also associated with infant feeding practices. Some have reported that children who were breast-fed were less likely to engage in NNOH[8]. On the contrary another found children who had prolonged duration of breastfeeding were more likely to engage in NNOH[9], while others have shown no significant association between infant feeding practices and NNOH[10], or an inverse relationship between the duration of breastfeeding and NNOH[11-13].

NNOH is of concern to dentists, because of its detrimental effects on the oral health: they could cause various forms of malocclusions such as anterior open bite, increased overjet, posterior crossbite and other occlusal discrepancies[4]. Object biting and nail biting have been associated with traumatic occlusion while bruxism significantly contributes to tooth wear and temporomandibular joint disorders[14].

Very little is understood about the role of infant feeding practices on the occurrence of NNOH in children. This study therefore tried to identify the predictors of NNOH in a population of children resident in a semi-urban community in Nigeria. Specifically, the study explored the role of age, sex, socioeconomic status and infant feeding practices and duration of breast and bottle -feeding as predictors of NNOH.

II. Materials and methods

Study location: The primary study was conducted in Ife Central Local Government Area (LGA) in Osun State, a semi- urban area and one of the 774 LGAs in Nigeria. Ife Central LGAwas chosen as the study location due to the proximity of the area to the ObafemiAwolowo University and the ObafemiAwolowo University Teaching Hospitals Complex, the host institutions of the authors. The estimated population for the year 2004 was 138,818. The estimate of the child population for the Local Government is 14,000: about 10% of the total population.

Study design: The primary data was collected through a house- hold survey with the objective of determining the association between oral habits and caries in children aged six months to 12 years. A household survey was conducted to enhance the inclusion of all children from various socioeconomic strata in the sampling frame. It also enhanced the inclusion of children in and out of school as study participants.

Study population: Only children whose parents or legal guardians gave written informed consent for their participation in the study were recruited. All children 8 years to 12 years were also asked to provide assent for study participation in addition to the informed consent provided by parent. Children had to be living with biological parents or legal guardians to be able to participate in the study. Only children who were present in the home at the time of study conduct were recruited for the study.

Sample size: Based on a prevalence of 34.1% of oral habits in children 4-15 year old determined by Quashie-Williams et al [15], a sample size of 1,011 children was necessary to identify 345 children with oral habits giving anon-response rate of about 10%.

Sample selection: The sample selection was done using a (three-level) multi-stage cluster sampling aimed at selecting eligible persons with known probability. Stage 1 involved the selection of enumeration areas within the Local Government Area, eight out of 25 sites were randomly selected by a ballot system. Stage 2 involved listing of eligible individuals within households within the enumeration areas, every third household on each street was eligible to be considered for recruiting study participants. Stage 3 involved the selection of actual respondents for interview. Only one child in each household was eligible to participate in the study. Alternative sexes and age range identified for study recruitment was selected to participate in each consecutive household. Study participant recruitment continued in the enumeration sites until the study sample per data collector was reached. The sampling procedure had been described in detail in a prior publication[16].

Data collection tool: Data was collected using a structured interviewer administered questionnaire. Mothers were requested to respond to the questions. This was based on evidence that responses of mothers (or surrogate mothers) had a higher correlation with child's response[17]. Information collected included age at last birthday, sex and socioeconomic status, method of feeding (breast or bottle feeding), form of breastfeeding (exclusive or non exclusive), duration of breastfeeding or bottle-feeding, and the presence of NNOH.

Questions were asked about the following NNOH: digit sucking, tongue sucking, tongue thrusting, lip sucking, lip biting, nail biting, object biting and tooth grinding. For each of these habits, all informants were asked if their child/ward ever had or presently have the habit.

Infant feeding practices: Data was collected to determine the form and duration of breastfeeding. To determine if the child was exclusively breastfed, mothers were asked if the child was strictly breastfed from birth till six months of age. The cross-check question asked was 'when did the child start taking water'. All children who started drinking water or other forms of milk before six months were categorised as non-exclusively breastfed children while those who exclusively fed on breast-milk for six months were categorized as exclusively[18]. Information on history of bottle-feeding and duration of bottle-feeding was also collected. Informants were asked if their child/ward ever bottle-fed.

Socioeconomic status: The data on socio-economic status was determined using an adapted version of the index developed by Olusanya et al [19] and has been used in a paediatric population in the same study environment[20]. It is a multiple item index combining the mother's level of education with the father's occupation and level of education. For this study, data was collected on educational level and profession of parents of respondents. The mother's level of education was classified as 'no formal education, Quranic and primary school education' and scored as 2; secondary school education scored as 1; and tertiary education scored as 0. The father's occupation was also categorised into three: Those who were civil servants or skilled professional with tertiary level of education were scored 1; those who were civil servants or skilled professional with secondary level of education were scored 2; and unskilled, unemployed individuals, students, and civil servants or skilled professional with primary and or Quranic level of education were scored 3. The social class was obtained through the addition of the score of the mother's level of education with that of the father's occupation. Each child was therefore allocated into social class I- V where class I referred to upper class, class II referred to upper middle class, class III referred to middle class, class IV referred to lower middle class and class V referred to lower class. The socioeconomic status was regrouped into three: (i) Class I and II were the high socioeconomic class, Class III

was middle socioeconomic class and Class IV and V were the low socioeconomic class as described by Olusanya[19] and previously used by Folayan, et al [20].

When a child had lost a parent, the socio- economic status was scored using the figure obtained for the living parent.

Data analysis: Descriptive analysis was done using frequencies and means and expressed, as percentages were appropriate. Bivariate analysis was conducted to test the association between the dependent variable (NNOH), and independent variables (form of breastfeeding, the duration of breastfeeding, bottle feeding, and child's age, sex and socioeconomic status). Logistic regression was used to determine the predictors of NNOH, which was age, sex, socioeconomic status, form, and duration of breastfeeding, and bottle-feeding. A 95% confidence interval was set to confirm if a relationship truly exists within or between the variables.

Study participants' age was dichotomised: (i) 1-5 years (ii) 6-12 years. The duration of breast feeding was categorized into two: those who breastfed for less than 12 months and those who were breastfed for 12 months or longer, while form of breast feeding was also categorised into two: those who were exclusively breastfed and those who were not exclusively breastfed. Children were also categorised into those who were bottle-fed and those who were not bottle-fed.

Statistical analysis was done using the Statistical Package for Social Sciences (SPSS) version 21.0. Statistical significance was inferred at $P \leq 0.05$.

Ethical considerations: Ethical approval for the study was obtained from the ObafemiAwolowo University Teaching Hospitals Complex, Ile- Ife(ERC/2013/07/14). Permission was also sought from the Ife Central Local Government authority before the commencement of the study. The study objectives, methods and voluntary nature of the study were explained to parents and older children before commencement of the study. Confidentiality of all information provided was also ensured. All study participants received a gift in form of exercise books, pencils, biros. The values of the gifts were less than $1.00.

III. Results

Sociodemographic profile of study participants: Table I highlights the sociodemographic profile of the 992 children whose data were analysed in this study. This constitutes 98.1% of the proposed study population. The study was unable to recruit the 1,011 proposed sample size within the data collection period. A refusal rate of 0% was recorded for the study. The mean age ± (SD) of participants was 5.83 ± (3.15) years. Of the 992 children who participated in the study, only 941 (94.9%) gave a history of breastfeeding. Of the children who breastfed, 894 (95.0%) could recall the duration of breast-feeding.

The most common NNOH children engaged in was digit sucking (7.7%) while the least commonly engaged NNOH was tongue sucking (0.6%). No respondent reported lip biting. Respondents' age (p= 0.63), sex (p= 0.63), socio-economic status (p= 0.41), duration of breastfeeding (p= 0.56) and presence of bottle-feeding (p=0.08) were not associated with presence of NNOH. There was an association between form of breastfeeding (exclusive/non-exclusive) and NNOH: more children who were not exclusively breastfed had NNOH (52.1% vs. 46.3%; p= 0.01).

Non-nutritive oral habits*:* The prevalence of NNOH in the study population was 13.0%. Table 2 shows the association between types of NNOH and the age, sex and socio-economic status of respondents. None of the oral habits were associated with age, sex and socio-economic status of respondents except tooth grinding: Significantly more children with low socio-economic status had tooth grinding habit when compared with children with high and middle socio-economic status (P=0.04). A higher proportion of children who were not exclusively breastfed had digit sucking (53.6% vs. 46.4%; P= 0.02) and object biting (81.8% vs. 18.2%; p=0.01) habits when compared with childrenwho were exclusively breastfed. Also significantly more children who were not bottle-fed developed digit-sucking habits when compared to those who gave a positive history of bottle-feeding (53.7% vs. 44.9%; P=0.02).

Determinants of non-nutritive oral habits: Table 3 highlights the determinants of the presence of NNOH for the study population. The odds of having NNOH were significantly reduced for children who were exclusively breastfed when compared with children who were not exclusively breastfed (AOR 1.33; 95% CI: 0.29-6.13; P= 0.01).

The odds of having NNOH was lower for children who were 6-12 years when compared with children who were 1-5 years old (AOR 0.88; 95% CI:0.60-1.30; P=0.52); for females when compared to males (AOR 0.90; 95% CI:0.61-1.32; P=0.59); for children from the middle socio-economic status when compared to children with high socio-economic status (AOR 0.98; 95% CI:0.60-1.62; P=0.95), for children who were breastfed for more than 12 months when compared to those who were breastfed for less than 12 months (AOR 0.92; 95% CI:0.63-1.36; P=0.69). These observations were however, not statistically significant.

The odds of havingNNOH increased for children from the low socioeconomic status when compared with children from the high socioeconomic status (AOR 1.32; 95% CI:0.83-2.07; P=0.25) and for children not bottle-

fed when compared to those who were bottle-fed (AOR 1.65; 95%CI: 0.91-3.01; P= 0.10). These observations were also not statistically significant.

IV. Discussion

This study showed that age, sex, socio-economic status, bottle-feeding and duration of breastfeeding were not significant predictors of presence of NNOH in the study population. However children who were not exclusively breastfed were significantly more likely to indulge in NNOH.One of the strength of the study was the use of a population-based survey to recruit study participants. This increased the prospect for recruiting a geographically representative sample of study participants thereby making the findings of the study generalizable to the study population. A limitation with the study was the need for the respondents to recall the form and duration of breastfeeding for the study participants. The reliability and validity of such recall data is high for the first 36 months and decreases after that[17]. Despite the study limitation, the study was providing data on association between nutritive oral habits (breast and bottle feeding) and NNOH for the first time from the study environment for Africa.

The prevalence of NNOH in this study population was 13.0%, a prevalence higher than the prevalence of 9.9% reported in a school based study of 7-10 year old children in Ibadan, an urban community in Nigeria[21], and lower than the prevalence of 34.1% reported by Quashie-Williams et al [15] in a study of 4-15 year old children recruited from schools in Lagos, a highly cosmopolitan city in Nigeria. It is difficult to compare the results since the prevalence data was generated from different age groups. It would however be interesting to explore if social and environmental factors can influence children's indulgence in NNOH.

This study also showed no significant association between socio-demographic variables and NNOH thereby corroborating the findings of a prior study conducted in Nigeria[21]. Pizzolet al[22] had earlier reported the association between NNOH and socioeconomic status, which we observed in this study. This study found that children with low socioeconomic status are more likely to have a NNOH when compared with children with high socioeconomic status. This observation may be related to the likelihood that children with low socioeconomic status have increased risk for hunger, emotional stress and psychological stress[22- 23]; similar risk factors for NNOH[23].

Prior studies had associated breast-feeding with lower occurrence of NNOH[21, 23]. Our study was able to corroborate this finding by highlighting that children who were exclusively breast-fed were significantly less likely to indulge in NNOH when compared with children who were not exclusively breastfed. This finding suggests that children who are not exclusively breastfed may seek to satisfy their instinctive sucking urge by engaging in NNOH while children who are exclusively breastfed may be more content and less anxious, less stressed and feel less lonely[24]. We could not access any literature reporting a relationship between form and duration of breastfeeding and anxiety disorders prior to our study. We therefore think it is important to design an empirical study to assess if there is an association between breastfeeding and anxiety disorders. It is however very unlikely that breast-feeding alone may be the mitigating factor in the development of NNOH since known physical, psychological and environmental factors also influence the development of NNOH[25].

The findings from this study further justify the need for supporting and promoting breastfeeding. However, there is need for caution in promoting prolonged breastfeeding in children. A number of studies had shown increased risk of caries when the duration of breastfeeding is longer than 12 to 24 months[26- 27]. While studies are not conclusive on the association between prolonged breastfeeding and caries - lesions are associated with significant morbidities that negatively affect the quality of life[28] - it is important to err on the side of caution by promoting exclusive breastfeeding for 6 months and complementary feeding along with breastfeeding thereafter[29].

V. Conclusion

There was no significant difference in the proportion of children of different ages, sex and socioeconomic status who engage in NNOH. The duration of breastfeeding and bottle-feeding were also not associated with having NNOH. Children who were not exclusively breastfed were significantly more likely to engage in NNOH.

Conflict of Interests

The authors declare no conflicts of interest.

Acknowledgement

We acknowledge the field workers who helped with data collection, the study participants and their parents who gave their time and relevant information for this study.

References

[1] Harding CM, Law J, Pring T. The use of non-nutritive sucking to promote functional sucking skills in premature infants: An exploratory trial. *Infant*. 2006;**2** (6): 238- 243.

[2] Indushekar GP, Gupta B, Indushekar KR. Childhood thumb sucking: the burden of a preventable problem. *J Dent Med Med Sci*. 2012; **2** (1): 1-4.

[3] Warren JJ, Levy SM, Nowak AJ, Tang S. Non- nutritive sucking behaviours in preschool children: a longitudinal study. *Pediatr Dent*. 2000;**22**: 187-191.

[4] Farsi NMA, Salama FS. Sucking habits in Saudi children: prevalence, contributing factors and effects on the primary dentition. *Pediatr Dent*. 1997; **19**: 28-33.

[5] Infante PF. An epidemiologic study of finger habits in preschool children, as related to malocclusion, socioeconomic status, race, sex and size of community. *J Dent Child*. 1976;**43**: 33-38.

[6] Taylor VJ, Cook PA. The prevalence of dummy sucking in two socioeconomic groups in Leeds. *J Dent Res.*1989; **68**: 567 (abstr 72)

[7] Wolf AW, Lozoff B. Object attachment, thumb sucking and passage to sleep. *J Am Acad child Adolesc Psychiatry*. 1989;**28**: 287-292.

[8] Larsson EF, Dahlin KE. The prevalence and the etiology of the initial dummy and finger sucking habit. *Am J Orthod*.1985;**87**: 432-435.

[9] Vadiakas G, Oulis C, Berdouses E. Profile of non-nutritive sucking habits in relation to nursing behavior in pre-school children. *J ClinPediatr Dent.*1998; **22**(2):133–136.

[10] Finocchi LL. Breastfeeding, bottle feeding and their impact on oral habits. A review of literature. *Dent Hyg (Chic).*1982;**56**: 21-25.

[11] Howard CR, Howard FM, Lanphear B, et al. Randomized clinical trial of pacifier- use and bottle-feeding or cup feeding and their effect on breastfeeding.*Pediatrics*. 2003;**111**: 511- 518.

[12] ScavoneJH, Guimaraes CH Jr, Ferreira RI, Nahas ACR, Vellini- Ferreira F. Association between breastfeeding duration and non-nutritive sucking habits. *Community Dent Health*. 2008;**25**: 161- 165.

[13] Moimaz SA, Zina LG, Saliba O. Association between breast feeding practices and sucking habits: a cross sectional study of children in their first year of life. *J Indian SocPedodPrev Dent.* 2008;**26**: 102- 106.

[14] Surlin P, RautenAM, Popescu MR, Daguci C, Bogdan M. Periodontal changes and oral health. Emerging Trends in Oral Health Sciences and Dentistry. 2015 http://dx.doi.org/10.5772/59248, 817-840.

[15] Quashie- Williams R, Dacosta OO, Isiekwe MC. The prevalence of oral habits among 4 to 15 year old school children in Lagos, Nigerian. *J Health Biomed Sci*. 2007; **6**(1): 78-82.

[16] Folayan MO, Kolawole KA, Oyedele T, et al (2014). Association between preventive oral health habits of parents and caries experience in children resident in a sub-urban Nigeria population. *BMC Oral Health*. 2014; **14**:156

[17] Li R, Scanlon KS, Serdula MK (2005). The validity and reliability of maternal recall of breastfeeding practice. *Nutr Rev*. 2005; **63**:103- 110.

[18] World Health Organization. The optimal duration of exclusive breast-feeding: A systematic review. Available at:http://www.who.int/nutrition/publications/infantfeeding/WHO_NHD_01.08/en/index.html" 2009. Accessed March 18, 2012.

[19] Olusanya O, Okpere E, Ezimokhai M (1985). The importance of social class in voluntary fertility control in developing country. *W Afr J Med*. 1985; **4**: 205-212.

[20] Folayan M, Idehen E, Ufomata D (2003). The effect of socio-demographic factors on dental anxiety in children seen in a sub-urban Nigerian hospital. *Int J Paediatr Dent*. 2003;**13**:20-26.

[21] Onyeaso CO. Oral habits among 7-10 year old children in Ibadan Nigeria. *East Afr Med J*. 2004; **81**: 16- 21.

[22] Pizzol KEDC, Boeck IN, SantosLFP,Lunardi N, Oliveira GJPL. Influence of family environment and socioeconomic status in the introduction and maintenance of non-nutritive oral habits. *Rev Odontol UNESP*. 2011;**40**: 296-303.

[23] Uwaezuoke SN, Ilechukwu GC, Okafor HU. Digit sucking habit of preschool children in Enugu, Eastern Nigeria. *J Pediatr Neurol*. 2003;**1**: 99-101.

[24] Pallarito K. Breastfeeding may reduce kid's stress, study says. http://www.thelizlibrary.org/liz/breastfeeding.htm. 2007. Internet article assessed 16th April 2015.

[25] Rajchanovska D, Zafirova-Ivanovska B. Oral habits among pre-elementary children in Bitola. *Sec Biol Med Sci*. 2012; **33**: 157-169.

[26] Folayan MO, Sowole CA, Owotade FJ, Sote E. Impact of infant feeding practices on caries experience of preschool children. *J ClinPediatr Dent*. 2010;**34**: 297-302.

[27] Colak H, Dulgergil CT, Dalli M, Hamidi MM. Early childhood caries update: A review of causes, diagnoses and treatments. *J Natural SciBiol Med*. 2013; **4**: 29-38.

[28] Chukwumah NM, Folayan MO, Oziegbe EO, Umweni AA. Impact of dental caries and its treatment on the quality of life of 12-15year old adolescents in Benin, Nigeria. *Int J Paediatr Dent*. 2016; **26**: 66-76

[29] Motee A, Jeewon R. Importance of Exclusive Breastfeeding and Complementary Feeding among Infants. *Curr Res Nutr Food Sci*. 2014; **2**(2). doi :http://dx.doi.org/10.12944/CRNFSJ.2.2.02.

Table 1: Socio-demographic distribution of study participants with and without non-nutritive oral habits.

Variable	Non-nutritive oral habit present n =121	Non-nutritive oral habit absent n =773	Total N = 894	P-value
Age				
1-5 years old	63 (52.1)	383 (49.5)	446 (49.9)	0.63
6-12years old	58 (47.9)	390 (50.5)	448 (50.1)	
Total	121 (100.0)	773 (100.0)	894 (100)	
Sex				
Male	64 (52.9)	390 (50.5)	454 (50.8)	0.63
Female	57 (47.1)	383 (49.5)	440 (49.2)	
Total	121 (100.0)	773 (100.0)	894 (100.0)	
Socioeconomic status				
Upper	33 (27.3)	186 (24.1)	219 (24.5)	0.41
Middle	45 (37.2)	337 (43.6)	382 (42.7)	
Lower	43 (35.5)	250 (32.3)	293 (32.8)	
Total	121 (100.0)	773 (100.0)	894 (100.0)	

Duration of breast feeding				
< 12 months	59 (48.8)	354 (45.8)	413 (46.2)	0.56
≥12 months	62 (51.2)	419 (54.2)	481 (53.8)	
Total	121 (100.0)	773 (100.0)	894 (100.0)	
Form of breast feeding				
Exclusive	56 (46.3)	469 (60.7)	525 (58.7)	**0.01**
Non-exclusive	63 (52.1)	292 (37.7)	355 (39.7)	
Total	119 (98.4)	761 (98.4)	880 (98.4)	
*1nformation was not available for 14 respondents				
Bottle feeding				
Yes	16 (13.2)	62 (8.0)	78 (8.7)	0.08
No	105 (86.8)	711 (92.0)	816 (91.3)	
Total	121 (100.0)	773 (100.0)	894 (100.0	

Table 2: Association between types of non-nutritive oral habits, age, sex and socio-economic status of study participants

Variable	Digit sucking N=69 n(%)	Tongue sucking N=5 n(%)	Tongue thrusting N=7 n(%)	Lip sucking N=11 n(%)	Nail biting N=15 n (%)	Object biting N=12 n (%)	Teeth grinding N=12 n (%)
Age							
1-5 years old	38 (55.1)	4 (80.0)	6 (85.7)	3 (27.3)	4 (26.7)	7 (58.3)	7 (58.3)
6-12 years old	31 (44.9)	1 (20.0)	1 (14.3)	8 (72.7)	11 (73.3)	5 (41.7)	5 (41.7)
P-value	0.22	0.19	0.06	0.11	0.06	0.38	0.38
Sex							
Male	39 (56.5)	3 (60.0)	5 (71.4)	5 (45.5)	7 (46.7)	3 (25.0)	6 (50.0)
Female	30 (43.5)	2 (40.0)	2 (28.6)	6 (54.5)	8 (53.3)	9 (75.0)	6 (50.0)
P-value	0.19	0.52	0.24	0.48	0.48	0.06	0.59
Socioeconomic status							
Upper	19 (27.5)	1 (20.0)	3 (42.8)	4 (36.5)	4 (26.7)	2 (16.7)	1 (8.3)
Middle	29 (42.0)	2 (40.0)	2 (28.6)	5 (45.5)	7 (46.6)	3 (25.0)	3 (25.0)
Low	21 (30.5)	2 (40.0)	2 (28.6)	2 (18.2)	4 (26.7)	7 (58.3)	8 (66.7)
P-value	0.70	0.94	0.47	0.47	0.87	0.17	**0.04**
Duration of breastfeeding							
<12 months	34 (49.3)	4 (80.0)	4 (57.1)	3 (27.3)	9 (60.0)	6 (50.0)	4 (33.3)
≥12 months	35 (50.7)	1 (20.0)	3 (42.9)	8 (72.7)	6 (40.0)	6 (50.0)	8 (66.7)
P-value	0.34	0.14	0.42	0.17	0.21	0.51	0.27
		Form of breastfeeding					
Exclusive	32 (46.4)	3 (40.0)	4 (57.1)	4 (40.0)	7 (50.0)	2 (18.2)	6 (50.0)
Non-exclusive	37 (53.6)	2 (60.0)	3 (42.9)	7 (60.0)	8 (50.0)	9 (81.8)	6 (50.0)
P-value	**0.02**	0.67	0.60	0.18	0.34	**0.01**	0.36
		Bottle feeding					
Yes?	31 (44.9)	2 (40.0)	2 (28.6)	4 (36.4)	7 (46.7)	5 (41.7)	2 (16.7)
No ?	37 (53.7)	3 (60.0)	5 (71.4)	7 (63.6)	7 (46.7)	7 (58.3)	10 (83.3)
No response	1 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)	1 (6.6)	0 (0.0)	0 (0.0)
P-value	**0.02**	0.84	0.92	0.80	0.15	0.60	0.51

Table 3: Logistic regression identifying determinants of presence of non-nutritive oral habits

Variable	Multivariate adjusted OR	95% C.I	P-value
Age			
1-5	1.00	-	-
6-12	0.88	0.60-1.30	0.52
Sex			
Male	1.00	-	-
Female	0.90	0.61-1.32	0.59
Socioeconomic status			
Upper	1.00	-	-
Middle	0.98	0.60- 1.62	0.95
Lower	1.32	0.83- 2.07	0.25
Form of breastfeeding			
Exclusive	1.00	-	-
Non-exclusive	1.33	0.29-6.13	**0.01**
Duration of breastfeeding			
< 12 months	1.00	-	-
> 12 months	0.92	0.63- 1.36	0.69
Bottle feeding			
Yes	1.00	-	-
No	1.65	0.91-3.01	0.10
Constant	4.23		0.09

Chukwumah Nneka.. Non-Nutritive Oral Habits, Age, Sex, Socioeconomic Status And Infant Feeding Practices In Children In Sub-Urban Nigeria."IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 17, no. 3, 2018, pp07-12.