

# FEEDING PRACTICES AND NON-NUTRITIVE SUCKING HABITS IN CHILDREN FROM RURAL PARAÍBA

*Práticas de aleitamento e hábitos de sucção não nutritivos em crianças de área rural da Paraíba*

Artigo Original

## RESUMO

**Objetivo:** Verificar o padrão de aleitamento e a presença de hábitos de sucção não nutritiva em crianças na Unidade Saúde da Família de Chã de Areia em Mogéiro-PB. **Métodos:** Estudo descritivo de tipo transversal, envolvendo 71 mães de crianças de 0 a 24 meses. O instrumento foi a entrevista estruturada, sendo realizada por uma única profissional. **Resultados:** Observou-se que 67 (94,4%) crianças foram amamentadas no peito, sendo exclusiva até os três meses de vida em 35 (49,3%) destas. Em relação ao aleitamento artificial, 38 (53,5%) o faziam. Quanto ao uso de outras formas de ingestão, as colheres/copos foram os mais citados por 51 (71,8%) das mães. Cerca de 38 (53,5%) entrevistadas relataram que o conteúdo da mamadeira mais utilizado foi o leite artificial associado ao açúcar e farináceo, e 43 (60,2%) afirmaram a presença de hábitos de sucção não nutritiva. **Conclusão:** A prática do aleitamento materno na região foi relatada por muitas mães, entretanto observou-se a introdução precoce das mamadeiras e de outros alimentos, principalmente do leite artificial e/ou açúcar na dieta das crianças. A prevalência de hábitos foi expressiva na amostra.

**Descritores:** Aleitamento Materno; Programa Saúde da Família; Hábitos; Alimentação.

## ABSTRACT

*Objectives:* To verify the patterns of breastfeeding and frequency of non-nutritive sucking habits in children at Chã de Areia Family Health Unit (FHU) in Mogéiro-PB. *Methods:* A cross-sectional descriptive study involving 71 mothers of children aged 0 to 24 months. The instrument was a structured interview, being performed by a single professional. *Results:* We found that 67 (94.4%) children were breast fed, being exclusive until 3 months old in 35 (49.3%) of these. In relation to artificial feeding, 38 (53.5%) did it. Regarding the use of other forms of ingestion, spoons/cups were the most mentioned by 51 (71.8%) mothers. About 38 (53.5%) interviewers reported that the contents of the bottle mostly used was artificial milk associated to sugar and farinaceous dough, and 43 (60.2%) confirmed the presence of non-nutritive sucking habits. *Conclusion:* The practice of breastfeeding in the region was reported by many mothers; however we observed an early introduction of bottles and of other foods, especially artificial milk and/or sugar in the diet of children. The prevalence of habits was significant in the sample.

**Descriptors:** Breast Feeding; Family Health Program; Habits; Feeding.

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## INTRODUCTION

Human milk is arguably the ideal food source for infants, as it provides essential nutrients for their growth and development, affords immunization, fulfills emotional needs, gives pleasure and establishes the baby's relationship with the outside world<sup>(1-3)</sup>.

Breastfeeding provides more oxygen for children, and due to the rhythm of sucking they become less stressed, while those bottle-fed tend to develop a habit of non-nutritive sucking. The influence of suction in the different types of feeding as well as the time the child spends on breastfeeding are related to the proper development of the stomatognathic complex<sup>(4)</sup>.

Breast milk is not only the most complete and digestible food for younger children; it is complete due to its immunization actions, protecting children from various diseases. Children have better physical, mental and emotional balance. It is a nutritionally adequate food for the newborn, adapted to their metabolism and playing an important role in their development<sup>(2,5)</sup>.

In Brazil, it is noted that although most women start breastfeeding, more than half of children are no longer exclusively breastfed in the first month of life<sup>(5-7)</sup>.

With the replacement of breastfeeding by bottle-feeding before the establishment of lactation, children are deprived of adequate nutrition, the immunizing action of breast milk and are prone to oral disease, problems of speech, swallowing and breathing. A serious problem also caused by the use of bottles are bacterial infections due to their misuse, lack of proper hygiene and milk packaged for very long periods<sup>(3,8,9)</sup>. Bottle-feeding can have adverse consequences for health and child development – bottle-fed children have more chances of getting sick from diarrhea, acute respiratory infections and early carious lesions than those breastfed<sup>(3)</sup>.

The type of child feeding is one of the etiological factors of sucking habits. Some authors believe that babies fed artificially are more predisposed to finger and pacifier sucking compared to breastfeeding<sup>(2,8)</sup>. Pacifiers induce early weaning by differences in handling, "nipple confusion," replacement of feeding and consequent lower milk production; pacifier use produces a larger number of oral and upper airway infections because of the ease of contamination, and it can also lead to a deviation in facial and arch growth, depending on the frequency, suction force and its use, bringing respiratory changes, such as oral breathing<sup>(4,8)</sup>.

The damage due to prolonged finger sucking, usually greater than those caused by pacifier sucking, are related to the jaw, such as open bite<sup>(4)</sup>, crossbite and deep bite,

depending on the position where the finger is put in the mouth, suction force or position of the jaw during suction.

In this perspective, it is observed that the educational planning for the encouragement of exclusive breastfeeding should be prioritized in the community in order to achieve better results. The aim of this study is to assess the characteristics of feeding and the presence of non-nutritive sucking habits among 0- to 24-month-old children in a rural area of Paraíba.

## METHODS

Mogéiro is located in rural area of Paraíba, it has 13,198 inhabitants (IBGE/2004) and its main economic activity is subsistence agriculture<sup>(10,11)</sup>. Among the families enrolled in the unit, most do not have clean water, basic sanitation, garbage collection and electrical power. Initially, mothers of children aged between 0 and 24 months were identified from the records of the Family Health Unit. With these data, mothers were located and contacted by Community Health Agents. After this stage, they were informed about the purpose of the research and only joined in the study those who authorized by signing the consent form. Confidentiality and exclusive use of the information in the study were assured. The research procedures followed national and international standards and ethical resolutions for conducting research in human beings.

This was a descriptive study that used as a tool for a data collection a questionnaire, addressing the proposed subject and applied to mothers of children in the period of May to July, 2006. There were 80 women registered as mothers of 0- to 24-month-old children; however, 71 were interviewed, meaning 88.75% of the population previously defined in the research project. In some cases the location made difficult the access and participation in the interview. There was no refusal by any mother. Inclusion criteria for mothers in this study were: mothers of children aged between 0 and 24 months belonging to areas ascribed to the *Chã de Areia* Family Health Unit (FHU), in Mogéiro-PB.

The interviews occurred both by appointment of the Community Health Agents at the FHU and in researcher's visits to ascribed communities. Standard-structured interviews were used, which were performed by a single researcher. The script for the interview followed the order: demographic and social status, mother's educational level in years, child's gender and age in months; data relating to breastfeeding (presence and time), non-breastfeeding (form of intake, quantity, frequency and content of the bottle), presence of non-nutritive sucking habits, mouth breathing and lip sucking.

For this study, the concept of exclusive breastfeeding was considered when the child was fed only by breast milk from the mother or wet-nurse, or harvested breast milk. Mixed feeding was considered when the child was breastfed and also received other types of milk.

Afterwards, only the researcher (previously trained) entered the data. The instrument of data recording was revised after the end of data collection in order to verify inconsistencies, which were corrected. The data analysis plan started with the analysis of the frequency of each variable studied, allowing its characterization concerning the socio-economic conditions, feeding, and non-nutritive sucking habits.

The following steps were observed to protect the rights of people involved, according to Resolution 196/96 of the National Health Committee: referral to the Ethics Committee on Human Research of the Center for Health Sciences at the Federal University of Paraíba (UFPB) for advice, which was approved (n. 399/06).

## RESULTS

Table I shows the characteristics of the sample concerning maternal schooling in years and the gender of children surveyed. Most mothers studied up to eight years and approximately 44 (62%) of children were male.

Most children were fed by non-breast milk. Regarding the practice of breastfeeding, it was verified according to time that 35 (49.3%) of children were breastfed until 3 months. Other methods of non-maternal nutrition were referred, such as cups and spoons. Mothers reported having been advised on breastfeeding (Table II).

Foods introduced in bottles included: non-breast milk, dough and sugar, with non-breast milk with sugar as a second choice (Table III). Few children used pure cow milk or breast milk offered in a bottle.

Table I – Maternal schooling in years and gender of children surveyed. Mogeiro-PB, 2007.

	n	%
<b>Maternal schooling</b>		
No formal education	05	07.0
Up to 8 years of study	58	81.7
Over 8 years of study	08	11.3
<b>Gender of children</b>		
Male	44	62.0
Female	27	38.0
<b>Total</b>	71	100.0

Table II - Characteristics of feeding of children surveyed. Mogeiro-PB, 2007.

	n	%
<b>Feeding</b>		
Non-breast milk	40	56.3
Breastfeeding	18	25.4
Mixed feeding	13	18.3
<b>Period of breastfeeding</b>		
Less than 1 month	04	05.6
1-3 months	35	49.3
4-6 months	15	21.1
7-12 months	04	05.6
More than 1 year	09	12.7
Never	04	05.6
<b>Use of other forms of non-breast-feeding*</b>		
Does not use	15	21.1
Cup or spoon	51	71.8
Spoon	03	04.2
Cup	02	02.8
<b>Received guidance on breastfeeding</b>		
Yes	67	94.4
No	04	05.6
<b>Total</b>	71	100.0

\* Each interviewee could express more than one answer.

Regarding the reason for the addition of sugar/honey/ flour/chocolate to the milk, mothers mentioned the taste or due to a familiar habit (Table IV). Concerning the habits of non-nutritive sucking, pacifier sucking was reported in 39 (54.6%) of children, and 27 (38%) of those have no harmful sucking habits (Figure 1).

## DISCUSSION

In this study, a very good response rate was obtained, although small areas covered by the FHU are in the rural area and there are difficulties in geographical access, particularly because the research was carried out during the rainy season, which further worsens access to home users.

Another important aspect was the approach of the Oral Health Team with many users who have difficulty accessing the FHU. On the other hand, some obstacles needed to be overcome by the team, especially with regard to the work of promoting and monitoring the children's health. The

Table III - Bottle contents in the studied sample. Mogeiro-PB, 2007.

Contents of the bottle	n	%
Breast milk	01	1.4
Pure artificial milk	01	1.4
Artificial milk + sugar	07	9.8
Artificial milk + dough	04	5.6
Artificial milk + dough + sugar	38	53.5
Artificial milk + chocolate	04	5.6
Fruit juice + sugar	03	4.2
Milk + fruit	04	5.6

\* Each interviewee could express more than one answer.

Table IV - Reason for addition of sugar/honey/flour/chocolate to the milk. Mogeiro-PB, 2007.

	n	%
Medical advice	02	2.8
Family habit	24	33.8
Provide calories / energy	01	1.8
Flavor	26	36.6
Prevent rejection of content	05	7.0

\* Each interviewee could express more than one answer.

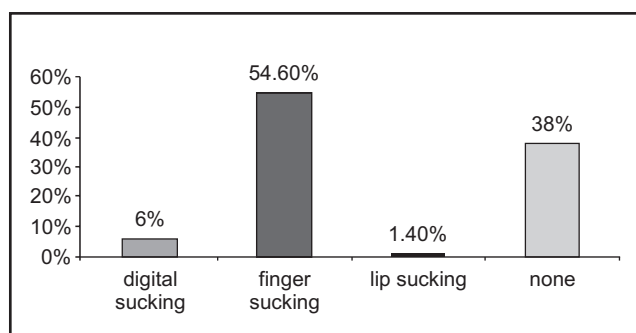


Figure 1 - Prevalence of non-nutritive sucking habits. Mogeiro-PB, 2007.

methodology of the proposal could be implemented with few changes from the original project; it proved to be low-cost, rapid analysis, and guiding to the family health team.

It was observed that the surveyed mothers had low educational level in years. Data from the Atlas of Human Development (2000)<sup>(11)</sup> of Mogeiro-PB showed that in the population over 25 years of age, 93.7% and 89.6% in 1991 and 2000 respectively, had less than 8 years study. Recent studies have highlighted the role of instruction level and motivation in breastfeeding<sup>(12-14)</sup>. Mothers in developed countries with more years of education were more likely

to breastfeed their children and to have had access to information on caring for their newborn child and pre-natal care<sup>(14)</sup>.

Breastfeeding exclusively up to 3 months was observed in a significant portion of the population. The percentage of those who breastfed their children at least once is similar to nationwide studies<sup>(5,6)</sup>. The highest percentage was verified between 1 and 3 months, lower than that recommended by the WHO and those verified by the National Survey on demography and health survey conducted by BEMFAM (1997)<sup>(6)</sup>. It was also noticed the decline in the prevalence of exclusive breastfeeding, a fact confirmed by nationwide studies<sup>(5)</sup> and in São Paulo<sup>(15,16)</sup>. The importance of breastfeeding and its relationship to growth and development of children is well known, especially in the prevention of malnutrition and infant mortality<sup>(2,3)</sup>.

Only four children were not breastfed at all. Among these, two were adopted children; as for the other two, the mother of one of them reported that the child could not “get” to the breast, and the mother of the other did not have enough milk flow.

While there are health professionals at the FHU sensitized and trained in the health care of children and women, and mothers reported having received guidance, there was poor adherence to exclusive breastfeeding. Thus, the actions developed are still insufficient to generate a satisfactory conduct. Other studies have reported difficulties in adherence to breastfeeding after imposition of education. Among the reasons cited by mothers in the search for non-compliance are “child refusal”, “milk reduction” and “work”<sup>(15)</sup>.

So, the need to find ways to encourage breastfeeding that can effectively sensitize families is evident. One of the first steps towards overcoming this challenge is to identify the characteristics of breastfeeding present in families and communities, with the objective of a situational diagnosis practiced by mothers/children in the FHU.

During prenatal care, guidelines can be discussed with pregnant women, having the dialogue as a starting point of the conversation, trying other ways instead of the use of punitive, authoritarian, vertical and impersonal instruments, but trying to keep the dialogue of the actors involved. Thus, allowing subjectivities, cultural values, local and individual customs can appear and be discussed<sup>(14)</sup>, working from the perspective of social, family, political and institutional support<sup>(17-18)</sup>.

Non-breast-milk feeding was reported by most mothers, being a common habit in our society, even referring to a study of a rural region. A study conducted in João Pessoa also noted the frequent use of baby bottles in children, with

the intake of vegetables and fruits seldom reported among mothers<sup>(19)</sup>. It is interesting to note that complementary feeding to breast milk and the substitution of breast milk itself are opposite to the protocols and national and international guidelines<sup>(1,2)</sup>. In this study, many mothers reported substitution of breastfeeding or complementing it. There is the possibility of microbial contamination of bottles, nipple, pacifiers, in addition to the presence of microorganisms in non-breast milk<sup>(3)</sup>.

Socio-economic, cultural customs and psychological factors can influence communities with regard to diet habits<sup>(14,18)</sup> especially in the early introduction of baby bottle and the continuing of its use. Bottle-feeding does not have social restrictions, because it is part of the baby's trousseau and are well accepted by children, as their content is usually sweetened and easy handled by children from 13 months<sup>(20)</sup>.

Although it is a controversial issue, it has been reported that bottles may favor the development of non-nutritive sucking habits such as sucking pacifier and/or finger. Some aspects can be highlighted, such as a large supply of milk in bottles, which contributes to faster hunger satiation. Thus, the child does not exercise the non-nutritive sucking activity, releases tensions and fears and, on the other hand, does not stimulate the development of bones and muscles that will perform chewing in the future<sup>(21-25)</sup>.

Furthermore, children who use pacifiers tend to wean earlier<sup>(3)</sup>. The explanation for this fact is unclear and is the object of study of many investigations. The pacifier is a contributing factor to weaning, particularly for mothers who do not feel comfortable with breastfeeding, or whenever there is a problem with breastfeeding. The fact is that health professionals can discuss this question with parents, the benefits, risks, care, and the population can make decisions from this discussion<sup>(3,18)</sup>.

The practice of non-maternal feeding at night, using bottles, can be an etiological factor in the development of caries, especially when the contents are farinaceous added with sugar. The flow of saliva decreases during the night, reducing the possibility of action of protective agents in saliva: buffering, food dilution favoring the elimination of sugar from oral cavity and the remineralizing potential through calcium and fluoride. In addition to this factor, the diet may promote the colonization of cariogenic bacteria and therefore the change of dental biofilm into pathogenic biofilm<sup>(20,21)</sup>. This is worsened when the unattended child holds her own bottle, spending hours taking it or being fed at night. A study in Bahia found that 77.8% of children with 30 months used a bottle with sugar-added content. Finally, for the development of early childhood caries, as well as frequent exposure to sugary foods, it is necessary that teeth have been colonized early by microorganisms which metabolize sugar<sup>(24)</sup>.

The frequent practice of bed-time feeding by mothers was associated with the development of aggressive lesions, previously called bottle caries, today named caries of early establishment in childhood<sup>(20)</sup>. A study in Londrina<sup>(20)</sup> found a significant association between breastfeeding at night or the child falling asleep with a bottle, with the presence of carious lesions. Recent research conducted in João Pessoa-PB did not observe the relationship between bottle use and caries in early childhood<sup>(19)</sup>.

The eating habits of families and communities are the reason for the introduction of sugar in children's bottles. According to research in Recife-PE<sup>(14)</sup>, the early introduction of other foods through bottles can interfere with the absorption of nutrients leading to nutritional deficiencies. The results also showed that as adding sugar to the bottle's content, mothers impose features of their own taste in their children. It was observed in this study that the addition of sugar is also associated with family's culture to which the child belongs. Good infant feeding practices are important not only for the child to have proper growth and development, but also because it is this period when feeding behaviors are established<sup>(21,22)</sup>.

Sugar addition to food is influenced by economic factors, individual exposure and availability of products in trade<sup>(18)</sup>. A report from the Ministry of Health and PAHO strengthens the idea of not ingesting sugar during the first two years of life<sup>(2,5)</sup>.

If on the one hand, this study has some limitations in better understanding the low adherence of mothers to exclusively breastfeeding, on the other it supports interventions of health promotion with these mothers and pregnant women.

It is necessary to investigate further cultural, social and economic dimensions as well as the identification of weaknesses that are barriers to this practice. It is intended from this diagnosis that a plan of activities and strategies be devised to be worked out in prenatal care, involving health professionals (all levels) in this intervention in a multidisciplinary way. Thus, there will be greater approximation between the health team and the population enrolled in the FHU, including the search for partnerships with neighborhood associations, churches, mothers and elderly clubs, aiming at a greater knowledge and understanding to strength these actions.

We understand that there is a need for improvement and expansion of activities to support and encourage exclusive breastfeeding, as well as showing the mothers all the negative effects in the administration of any other liquid in the child's first months of life, leading to early weaning.

## CONCLUSIONS

The practice of breastfeeding in the region enrolled by the Family Health Unit is below the current recommendations of the Ministry of Health. Although the team encourages breastfeeding, the prevalence of exclusive breastfeeding still is very low and the introduction of other foods, especially non-breast milk in the diet of children, happens early. The prevalence of non-nutritive sucking habits was significant in children.

## REFERENCES

1. Fewtrell MS, Morgan JB, Duggan C, Gunnlaugsson G, Hibberd PL, Lucas A, et al. Optimal duration of exclusive breastfeeding: what is the evidence to support current recommendations? *Am J Clin Nutr*. 2007;85(2):635-8.
2. WHO World Health Organization's infant feeding recommendation. *Bull World Health Or*. 1995;73:165-74.
3. Victora CG, Matijasevich A, Santos IS, Barros AJD, Horta BL, Barros FC. Amamentação e padrões alimentares em três coortes de nascimento no Sul do Brasil: tendências e diferenciais. *Cad Saude Publica*. 2008;24(Supl3):409-16.
4. Duncan K, Mcnamara C, Ireland AJ, Sandy JTR. Sucking habits in childhood and the effects on the primary dentition: findings of the avon longitudinal Study of pregnancy and childhood. *Int J Paediatr Dent*. 2008;18(3):178-88.
5. Ministério da Saúde (BR), Secretaria de Políticas de Saúde, Área de Saúde da Criança. Pesquisa de prevalência do aleitamento materno nas capitais e no Distrito Federal. Brasília; 2001.
6. BEMFAM - Sociedade Civil Bem-Estar Familiar. Pesquisa nacional sobre demografia e saúde. Rio de Janeiro: Fundo das Nações Unidas para a Infância - UNICEF; 1997.
7. Armstrong H. Nutrition Section, Techniques of feeding infants: The case for cup feeding – Research. In: Action Numbers 8. UNICEF, New York: June, 1998.
8. Gois EGO. Influence of nonnutritive sucking habits, breathing pattern and adenoid size on the development of malocclusion. *Angle Orthodontist*. 2008;78(4):647-54.
9. Peres KG, Barros AJD, Peres MA, Victora CG. Effects of breastfeeding and sucking habits on malocclusion in a birth cohort study. *Rev Saúde Pública*. 2007;41(3):343-50.
10. Instituto Brasileiro de Geografia e Estatística. Censo 2000 [acesso em 2007 Mai 20]. Disponível em: <http://www.ibge.gov.br>.
11. Atlas de Desenvolvimento Humano no Brasil. PNUD. 2000. [acesso em 2009 mai 20]. Disponível em <http://www.pnud.org.br/atlas>
12. Amador M, Silva LC, Valdéz-Lazo F. Tendencias de la lactancia materna en Cuba y las Américas. *Bol Ofic Sanit Panam*. 1994;116:204-11.
13. Faleiros FTV, Trezza EMC, Carandina L. Aleitamento materno: fatores de influência na sua decisão e duração. *Rev Nutr*. 2006;19(5):623-30.
14. Melo AMCA, Cabral PC, Albino E, Moura LMD, Menezes AEB, Wanderley LG. Conhecimentos e atitudes sobre aleitamento materno em primíparas da cidade do Recife, Pernambuco. *Rev Bras Saúde Matern Infant*. 2002;2(2):137-42.
15. Spinelli MGN, Sesoko EH, Souza JMP, Souza SB. A situação de aleitamento materno de crianças atendidas em creches da Secretaria da Assistência Social do município de São Paulo - região Freguesia do Ó. *Rev Bras Saúde Matern Infant*. 2002;2(1):23-8.
16. Audi CAF, Corrêa AMS, Latorre MDO. Alimentos complementares e fatores associados ao aleitamento materno e ao aleitamento materno exclusivo em lactentes até 12 meses de vida em Itapira, São Paulo, 1999. *Rev Bras Saúde Matern Infant*. 2003;3(1):85-93.
17. Vasconcelos MGL, Lira PIC, Lima MC. Duração e fatores associados ao aleitamento materno em crianças menores de 24 meses de idade no estado de Pernambuco. *Rev Bras. Saúde Matern. Infant*. 2006;6(1):99-105.
18. Machado MMT, Bosi MLM. Compreendendo a prática do aleitamento exclusivo: um estudo junto a lactantes usuárias da Rede de Serviços em Fortaleza. Ceará, Brasil. *Rev Bras Saúde Matern. Infant*. 2008;8(2):187-96.
19. Ribeiro, AG, Oliveira, AFB, Rosemblat A. Cária precoce na infância: prevalência e fatores de risco em pré-escolares, aos 48 meses, na cidade de João Pessoa, Paraíba, Brasil. *Cad Saúde Pública*. 2005;21(6):1695-700.

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20. Fraiz FC, Walter LRF. Study of the factors associated with dental caries in children who receive early dental care. *Pesqui Odontol Bras.* 2001;15(3):201-7.
  21. Katz CR, Rosemblat A, Gondim PP. Nonnutritive sucking habits in Brazilian children: effects on deciduous dentition and relationship with facial morphology. *Am J Orthod Dentofacial Orthop.* 2004;126(1):53-7.
  22. Peres KG, Latorre MRDO, Sheiham A, Peres MA, Victora CG, Hernandez PG, et al. Social and biological early life influences on the prevalence of open bite in Brazilian 6-year-olds. *Int J Paediatric Dent.* 2007;17:41-9.
  23. Albuquerque SSL, Duarte RC, Cavalcanti AL, Beltrão EM. A Influência do Padrão de Aleitamento no Desenvolvimento de Hábitos de Sucção Não Nutritivos na Primeira Infância. *Ciênc Saúde Coletiva.* 2010;15:247-54.
  24. Telles FBA, Ferreira RI, Magalhaes LNC, Scavone-Junior H. Effect of breast- and bottle-feeding duration on the age of pacifier use persistence. *Braz Oral Res.* 2009;23(4):432-8.
  25. Scavone-Jr H, Guimarães-Jr CH, Ferreira RI, Nahás AC, Vellini-Ferreira F. Association between breastfeeding duration and non-nutritive sucking habits. *Community Dent Health.* 2008;25(3):161-5.
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