



Feeding practices of Greek children with and without nursing caries

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Abstract

Purpose: This study was performed to examine the feeding practices and demographic and nursing characteristics of Greek children with and without nursing caries. It was also intended to evaluate what dentists and pediatricians tell parents when they examine children with nursing caries.

Methods: 260 children, ages 3-5 (130 with nursing caries, NC group, and 130 without, NNC group) participated in the study.

Results: 95% of the NC group used the bottle at night. In the control, although 85% of the group used the bottle, none of the children developed nursing caries.

Conclusions: 1) The nursing habit of bottle feeding is not the only factor determining the development of nursing caries. 2) Falling asleep with the bottle seems to be the most determinant factor associated with the development of nursing caries. 3) Breastfeeding of the child for more than 40 days may act preventively and inhibit the development of nursing caries in children. (*Pediatr Dent* 21:409-416, 1999)

Nursing caries (NC) is a specific form of rampant caries observed in the primary dentition of pre-school children.¹ Typically, the condition is associated with children who frequently suck a nursing bottle filled with fermentable carbohydrates, use pacifiers dipped in sweetener, or have prolonged, on-demand breastfeeding habits.²

In the scientific literature there are many different names used as synonyms for nursing caries. Nursing bottle caries (NBC), baby bottle tooth decay (BBTD), nursing bottle syndrome (NBS) and milk bottle syndrome are but some. These terms may be useful for communicating with the lay public,^{1,3} but they only partially⁴ describe the etiologic factors of the condition. The term nursing caries (NC) has become more accepted in the literature since it is more precise, although it fails to include the sweetened pacifier as a causative factor. In 1994, the Centers for Disease Control and Prevention⁵ (USDHHS, Atlanta) introduced the broader term of Early Childhood Caries (ECC) in order to include all types of dental caries in the primary dentition. This new disease entity describes the forms of dental caries that initiate prior to 36 months of age. BBTD, NC, NBC, etc., are different manifestations of ECC. Since ECC is a general term, it fails to describe certain characteristics of the disease like the rapidity with which

the disease develops.⁶ For the purposes of this paper the term nursing caries (NC) will be used.

In the dental literature many studies have been conducted in an attempt to elucidate the association of the disease with different variables. This association might help to understand and eventually minimize or even solve the problem. Literature suggests that even though baby bottle use seems to be a rather widely used practice among infants and young children,⁷⁻¹¹ not all children with the nursing bottle habit develop nursing caries.^{8,11-14} This evidence suggests that the role of the bottle in caries development is not clear and further clarification of the association of infant feeding habits and caries is required.

Another factor that may influence the prevalence of caries in children is breastfeeding during the first months of a child's life. There is evidence¹⁵ that breastfeeding seems to be associated with low caries activity. This effect of breastfeeding may be attributed to the low cariogenic effect of the milk.^{16,17} However, any relationship between breastfeeding and dental caries is very difficult to establish conclusively, since it may be masked by the influence of other factors, such as socioeconomic status of the family and parental education,¹⁸⁻²⁰ or factors like enamel hypoplasia,²¹ *S. mutans* infection,^{22,23} diet,²⁴ medical conditions in infancy,²⁵ or long term medications such as antihistamines, adrenoreceptors,²⁶ etc. In spite of these considerations, it would be interesting to examine the association between nursing caries and breastfeeding, and to evaluate the effect of different variables involved with nursing caries.

In the attempt to investigate the effect of different factors on NC, attention has been given to the association of the disease with demographic parameters along with variables concerning the patient's nursing habits. There are two major demographic variables addressed in the literature of NC: ethnicity and race, and socioeconomic status. Many studies indicate that children with minority backgrounds in different countries present a higher level of caries activity. In Sweden, it was found that children with immigrant backgrounds present a three times higher possibility of having dental caries.²⁷ Similar results have been reported from England,²⁸ Netherlands,²⁹ and South Africa.¹⁵ The same results come from studies conducted in the United States and Canada, as well. Native American children and Canadian Aboriginal children present increased NC that can be as high as 70-80%.^{30,31} Studies in-

Table 1. Sample

Age (years)	NC Group			NNC Group		
	Males	Females	Total	Males	Females	Total
3	20	14	34	6	13	19
4	21	15	36	13	26	39
5	32	28	60	45	27	72
Total	73	57	130	64	66	130

Table 2. Demographic Data

	NC Mean±SD	NNC Mean±SD
Patient's age (in years)	4.3±0.16	4.6±0.09
Bottle discontinuation (in months)	37±1.6	34±2.0
dmft	12±0.3	3±0.4
dmfs	33±1.6	7±1.1
Father's age (in years)	38±0.5	39±0.7
Mother's age (in years)	34±0.5	35±0.7
Time when parents realized the caries (in years)	3.5±0.10	3.6±0.17

investigating differences in NC among other racial and ethnic groups demonstrate conflicting results with some studies suggesting that whites have higher caries than Hispanics and Micronesians^{30,32} whereas others suggest that whites have lower caries levels.^{2,18}

Socioeconomic status and its effect on NC has also been investigated. A common characteristic of the majority of these studies is the fact that the sample usually comes from a low socioeconomic background.^{24, 32, 33} Therefore, it is not always possible to generalize the results from these studies. A study conducted by Tang et al.¹⁸ evaluated the socioeconomic status of a general population measured by income and education. The results showed a strong inverse relationship between the socioeconomic status and the dmfs score of the patients.

Besides the socioeconomic and nursing factors, there are also biological factors involved in the initiation and progression of NC. There is strong evidence that the main bacteria involved in other types of coronal caries is *S. mutans* and *S. sobrinus*.^{34,35} The same types of bacteria have been isolated from children with NC.^{22,23,36-39} Caries-free children are primarily infected by one type of streptococci, whereas in children with NC more than one clonal type can be detected.³⁶ This finding may be associated with the higher frequency of sugar consumption of these children. It also seems that the age at which the streptococci first infect the infant influences his/her susceptibility to caries, in that the earlier the colonization occurs, the higher the caries risk.^{37, 40-41}

Risk models have been developed to predict caries in the primary dentition or caries in preschool children. Tinanoff and coworkers^{2,11,33} used microbial tests, along with other risk factors associated with bottle use, and they predicted caries two years later with a sensitivity of 0.81 and a specificity of 0.95. Other prediction models incorporated more variables, such as *S. mutans*, diet, fluoride, and oral hygiene, and reported sensi-

tivity ranging from 0.80 to 0.86 and specificity from 0.69 to 0.78. Social class and ethnicity were also found to be very important in other multivariate models for caries prediction in primary dentition.^{28,42}

The aim of this study is to examine the feeding practices of Greek children with and without nursing caries along with their demographic and nursing characteristics. In addition, this study will evaluate what dentists and pediatricians tell parents when they examine children with nursing caries.

Methods

Included in the study were 260 children from an urban area with no fluoride in the water supply. The age of the patients was between three and five years, and they were divided into two groups of 130 patients each. One was the "nursing caries" (NC) group and the other was the "non nursing caries" group (NNC). The first 130 patients who visited a private pediatric clinic and met the criteria of having at least two anterior maxillary teeth affected were classified into the NC group. The control group (NNC) included 130 children, who presented no more than one maxillary anterior carious tooth. Anterior tooth caries was considered to be caries located in the maxillary central and lateral incisors and the mesial surfaces of

Table 3. dmfs Values

dmfs	NC	NNC
0	0%	58%
1	0%	2%
2	1%	2%
3-5	1%	5%
6-10	4%	8%
>10	94%	25%

Table 4. dmft Values

dmft	NC	NNC
0	0%	58%
1	0%	3%
2	2%	1%
3	1%	1%
4-6	4%	12%
7-10	25%	22%
>10	68%	3%

Table 5. Use of Nursing Bottle at Night

	NC	NNC
>1h before sleep	5%*	7%*
<1h before sleep	18%	41%
Discarded bottle after sleep	40%	35%
Use bottle during sleep	31%	1%

Table 6. Contents of the Bottle

	NC	NNC
Milk only	52%*	65%*
Milk with sugar or honey	44%	31%
Water or tea with sugar or honey	2%	0%
Juice	2%	4%

Table 7. Age When the Child Stopped Sleeping With the Bottle

Age	NC	NNC
12-18 months	9%*	20%*
19-24 months	15%	12%
25-36 months	28%	25%
37-48 months	24%	17%
>48 months	24%	26%
Mean age	37±2	34±2

*% of total group.

the canines. The children were classified into the appropriate group based on the existence of certain type of caries and not based on whether they had any particular nursing or pacifier habit.

All patients received a thorough dental examination and radiographs were taken as deemed necessary. The parents were also interviewed, and a dentist completed a questionnaire including information on:

1. Demographic data on the patients and their families;
2. the nursing habit and its manner of doing (how, when, and why it is used);
3. oral hygiene habits and fluoride consumption;
4. the attitude and the knowledge of the parents concerning the habit;
5. the time when treatment was sought;
6. the recommendations that general practitioners and pediatricians made when they examined the children or when they were asked about the dental problem of the child.

The same pediatric dentist examined all patients, whereas another dentist was responsible for conducting the interview with the parent. The clinical examination was conducted on a dental unit using mirror, explorer, and dental light. All patients had no dental treatment prior to the examination.

In the study, only healthy patients, without any serious illness or other condition affecting the teeth were included. Therefore, children with enamel hypoplastic defects, cleft lip or palate, or any serious medical illnesses (liver or kidney dysfunction, diabetes etc.) were excluded from the study. Based on the questionnaires, there were seven children who had their teeth brushed before they went to bed, four of whom also used a fluoride supplement, while only one child used fluoride supplements without brushing the teeth. These eight children were excluded from the study, as they did not comprise an adequate sub-sample.

The data were statistically analyzed using the χ^2 -test with a 95% level of significance.

Results

The distribution of patients according to age and the presence of the nursing habit for males and females are presented in Table 1. Table 2 shows the mean values and standard deviation of both groups in regard to the age of the patients, the age when the nursing habit was stopped, the dmfs and dmft values, the age of the parents and the age when the parents realized the caries. There was no difference in regard to these parameters between the two groups. On the other hand, a clinically significant difference was found for the dmft and dmfs values since children with nursing caries had much higher dmft and dmfs indices (dmfs 33±2 and 7±1 and dmft 12±0.3 and 3±0.4 for NC and NNC respectively). One of the most striking findings of this study was the fact that even though 58% of the children in the NNC group had the nursing habit, and, more specifically 53% of them exercised the habit for more than two years, surprisingly they did not present any sign of caries. On the other hand, 33% of the children from the NNC group had high dmfs value (dmfs≥6), whereas almost all the children from the NC group (98%) showed dmfs≥6, thus demonstrating a more serious caries attack (Tables 3 and 4).

Table 5 presents the effect of the pattern of nursing bottle use at night on nursing caries. Children discarding the nursing bottle before bedtime suffered significantly less nursing caries than children falling asleep with the bottle ($\chi^2=23.32$, $df=1$). The content of the bottle was another consideration of the study (Table 6). However, there were no significant differences between the two groups in regard to the various contents of the nursing bottle ($\chi^2=7.58$, $df=3$).

Another factor that may influence the initiation of the caries is the duration of the habit. Therefore, the time when the children stopped the habit was evaluated (37±2 months for the NC group and 34±2 months for the NNC group) but no statistically significant difference was found ($\chi^2=9.12$, $df=4$) between the two groups (Table 7).

The rank of the child in the family was also assessed in both groups. The only child in the family, the first-born, and the second child were all found to have the same possibility of presenting NC. It was also observed that 31% of the children from the NC group had a sibling with nursing caries.

Table 8 shows the association of nursing caries with breastfeeding during the first months of life. Children who breastfed for more than 40 days presented statistically significantly less nursing caries ($\chi^2=15.89$, $df=1$) than the children not breastfed at all or breastfed for less than 40 days.

Table 8. Breastfeeding During the First Months of Life

Duration of breastfeeding	NC	NNC
< 40 days	67%*	42%
> 40 days	33%	58%

Table 9. Reasons Why Parents Allowed the Nursing Habit

Reason	NC	NNC
Child does not drink enough milk	35%*	38%*
Acceptable habit	35%	35%
Helps the child sleep	23%	10%
Imitates younger sibling	3%	2%

Table 10. Distribution of Different Types of Nursing Habits

Type of nursing habit	NC	NNC
Nursing bottle	80%*	83%
Dummy with sugar or honey	4%	0%
Breastfeeding	2%	0%
Nursing bottle + dummy with sugar or honey	12%	1%
Breastfeeding + nursing bottle	2%	1%
No nursing habit	0%	15%

Table 11. Provider of Information to the Parents on Nursing Caries

	NC	NNC
Pediatrician	15%*	26%
Dentist (Pediatric Dentist)	69% (30%)	73% (29%)
Pediatrician/Dentist	16%	1%

* % of total group.

Table 9 indicates the common reasons that lead parents to begin or to allow the continuation of the habit. These indicate the urge of the parents to feed the children milk, the feeling that this habit is a rather normal behavior, and that this habit helped the child to sleep. These reasons were similar for parents of both NC and NNC groups. It is interesting to note that 23% of the parents knew that this habit might damage their children's teeth, yet they continued the habit.

The different types of nursing habits are presented in Table 10. The vast majority of the children (>80%) used the nursing bottle exclusively. There were very few cases where the nursing bottle was used with a pacifier dipped in sugar or honey, or in fewer cases, with breastfeeding at will during the night.

The parents were also asked what specialist they visited when they noticed the problem (Table 11). The majority of the parents referred to dentists (69% and 73% of the NC and the NNC group, respectively) and only about 30% of either group consulted a pediatric dentist. By comparison, only 15% and 26% of the NC and the NNC parents visited pediatricians. Evaluating this question further for the NC group, the parents were asked to present the advice that the specialist gave them in regard to the cause of the caries and how they should deal with it. It was found that 57% of the pediatricians and 49% of the dentists did not give any information about the effect that the habit may have on the child's health. The majority of the dentists (57%) and 41% of the pediatricians referred the patient to a pediatric dentist. It was also found that 6% of the pediatricians and 1% of the dentists advised the patient to continue the habit.

Discussion

The age of the patients in this study was chosen to range up to year five (60 months), since there is evidence that children in Greece use the bottle for prolonged time.⁴³ In a Greek child population, Vadiakas et al.⁴³ reported that among four-year olds, half of the children were bottle fed at least one meal for more than 36 months, while the respective figure for five-year olds was 44%. Similar figures were found in this study in regard to the bottle feeding habit.

The results from this study showed that the nursing bottle was used almost to the same degree (80% of the NC and 83% of the NNC group) in both groups of children, regardless of their having developed nursing caries or not. This finding is in accordance with other studies. Johnsen¹² found that 45% of the caries-free children had the nursing bottle removed after they fell asleep, and Schwartz et al.⁸ reported that 63% of the children given the bottle at night remained without caries. Moreover, Derkson and Ponti¹⁴ examined 241 children, nine months to 71 months old, and found that 58% of the children that used the bottle at every nap and at night presented with caries, whereas 40% of the children—exercising the same habit—did not present any sign of caries. A similar finding was also reported in one U.S. Head Start study.¹¹ O'Sullivan and Tinanoff¹¹ found that 86% of the children with carious maxillary anterior incisors were reported to have taken the bottle to bed, yet it was also found that 69% of the children without carious anterior teeth reportedly took a bottle to bed. This finding clearly suggests that the existence of the nursing bottle habit does not necessarily lead to the development of nursing caries, but that possibly the habit needs to be practiced under specific conditions in order to initiate and/or promote caries. Schwartz et al.⁸ also reported that one of the most important factors associated with the development of the nursing caries was the manner in which the nursing bottle was used at night. The data of this study suggest that children who fall asleep with the nursing bottle have a significantly greater chance of developing nursing caries than children discarding the bottle before they fall asleep. This observation is in agreement with findings of other studies.^{12,8,44} In 1988, Ripa¹ proposed a mechanism for the initiation, development, and pattern of the clinical appearance of the nursing caries. While the child is awake, salivary secretion and swallowing allow for clearance of the fermentable carbohydrates. However, as the child grows drowsier, the salivary flow and swallowing rate are decreased, allowing the

liquid carbohydrate to remain in the mouth and pool around the teeth, thus initiating the caries process.

The mean age of discontinuation of the habit was observed to be the 33rd month for the NNC group and the 37th month for the NC group. This finding is in agreement with other studies reporting that children with NC stop the nursing habit four to seven months later than children without caries.⁴⁵⁻⁴⁷ On the other hand, Serwint¹⁰ did not find any differences in the percentage of children with and without nursing caries using the bottle at 18 months of age. Other studies^{8,15,48} also reported no difference in the average age of weaning between children with and without anterior caries or even longer weaning age for the children without anterior caries.¹⁴ These contradictory results may be due to the multifactorial nature of NC or due to the retrospective nature of the information leading to inaccurate data on the weaning age, manner of baby-bottle use, bottle content, bottle use during the day, and other diet habits. In this study, the time that the parents reported discontinuation of the bottle coincided with the time when they discovered the existence of dental caries. The age indicated in this study is greater than reports from other studies, where the parents realized the problem around the age of two.^{44,49}

The finding that milk was the most common content of the bottle is consistent with the findings of other studies.^{8,44,50} In the literature, there is enough evidence that lactose, which is contained in bovine and human milk, has cariogenic potential and can initiate the caries process. It can enhance the oral implantation of cariogenic bacteria⁵¹⁻⁵³ and increase the acid production in dental plaque after frequent use.⁵⁴ There is further evidence that nursing caries may also be associated with prolonged breastfeeding.^{38,44,55,56} On the other hand, there are studies supporting that milk has a very low cariogenic potential. In a study on desalivated animals, cow's milk was the only substance in contact with the teeth, and the level of caries observed was negligible.¹⁶ Moreover, in a study where the cariogenicity of infant formulas was evaluated, 2% milk presented 0.05 relative cariogenicity with sucrose solution considered as 1.⁵⁷ In each of these studies, even though it was shown that milk has a very low cariogenic potential, in all instances caries was initiated even by using only milk. It is possible, then, that milk can be responsible for the initiation of nursing caries even if it is used without sweeteners—especially when it is combined with a nursing habit. Furthermore, it must also be considered that most of the time milk is the vehicle for more cariogenic substances in a child's diet. It is very common practice for the parents to combine milk or milk formulas with sugar, not to mention that some milk formulas contain sucrose as an ingredient.⁵⁷ In this study, the content of the bottle was not differentiated whether it was infant formula or milk, and both contents are reported as milk. This occurred because lay people use the term "milk" when referring to infant formula. Therefore, it was very difficult to be certain if parents could really differentiate between the two and accurately report the correct content of the bottle.

The evaluation of the dmfs and dmft values suggest that 58% of the NNC group children are caries free even though 85% use the bottle, in particular 41% of them discard the bottle less than an hour before they go to bed and 36% after they fall asleep. It is obvious that, even though a considerable number of children misuse the baby bottle, they do not develop any caries at all. This observation suggests that the existence of the

bottle feeding habit does not necessarily mean that a child will develop nursing caries. This finding probably is attributed to the multifactorial nature of the disease and to the difference in caries resistance of each individual. In most cases, nursing caries probably coexists with a reduced caries resistance of the child. This reduced caries resistance may lead to increased caries activity regardless of the habit, especially if a preventive program is not implemented for these children. Evidently, the existence of the nursing habit attenuates the caries activity and promotes the initiation of the disease at an earlier age. On the contrary, children with increased caries resistance will not develop caries or they will experience low caries activity even if they have the nursing habit. This suggestion is consistent with studies that found increased likelihood that a child with NC will develop posterior caries in the future.⁵⁸⁻⁶⁰ In fact, Johnsen et al.⁵⁸ reported that children with previous diagnosis of NC and who were receiving ongoing dental care were more susceptible (threefold) to proximal lesions in primary teeth than children who were initially caries free. This figure may be even greater among children not in a preventive program. Moreover, O'Sullivan and Tinanoff⁶⁰ concluded that dental caries presentation in three to four year-old children can identify those children and tooth surfaces that will be at the greatest risk for future caries development.

Of the NC group, 42% of the children presented caries in activity with the majority of these children (33%) having high dmfs value (dmfs \geq 6). It is important to note that these children have high caries level and a great percentage of them exercise a nursing habit, but they do not manifest the classical caries pattern of NC in the anterior teeth. Nevertheless, they probably fall in the same category of reduced caries resistance. Therefore, it is very possible that the habit has influenced the extent of the caries attack to a similar manner as in the NC group, contributing along with all the other factors involved in caries initiation and progression. Even though these children have very similar characteristics with children with nursing caries in regard to the nursing habits or the extent of the caries attack, they do not present anterior lesions and therefore they do not fall into the "classical" nursing caries group. This clinical pattern may be misleading for the dentists and it is possible that they will not associate these cases with the nursing habit. Perhaps the dentists should look for the presence of a nursing habit not only when the classical pattern of caries is present but also every time a child presents caries activity, especially at an early age.

The data from this study indicate that breastfeeding may play a preventive role in nursing caries when it is used properly. It was found that children who breastfed for over 40 days had significantly less possibility of developing nursing caries. This cut-off point of 40 days was chosen since it is a very important day for the child's life based on the culture and religion of Greece. The 40th day of life is the first day that both mother and child may leave the house for the first time and in many cases the mother returns to work and usually stops the breastfeeding. Since it is such an important day, many child activities are related to that day. Similar results were reported by Johnsen.¹² In this study, 1,263 children, aged one to four years, were examined and it was found that caries prevalence increased more in the bottle-fed groups than in the breastfed group or in the group of children who received mixed breast and bottle feeding. However, in another study⁶¹ it was reported

that the duration of breastfeeding did not change the caries prevalence or salivary levels of *mutans* streptococci in five-year-old children. The sample of this study included only 144 children. These children were in a well-controlled preventive program, which involved fluoride tablets recommended from the age of six months, and annual preventive and restorative examinations. In addition, the caries activity of this population was very low ($dmft=2.2\pm 5$). Moreover, out of the 144 children, only seven children were very caries active ($dmfs>10$). That the authors did not find any effect of breastfeeding on caries activity may be attributed to the fact that this population practically developed no caries at all. Moreover, it must be taken into account that the effect of breastfeeding may not be so easily countable in populations with such a low caries activity, or the effect of a comprehensive prevention program may have a much greater effect on caries development than breastfeeding.

In the literature there is evidence that the *S. mutans* genotypes colonizing infants originate almost exclusively from their mother.^{62,63} On the other hand, mammary glands represent part of the mucosal immune system involved in the humoral and cellular immune functions.⁶⁴ These taken into account, breast milk may contain inhibiting factors (immunoglobulins, antibodies, etc.) specific for the particular genotypes of *S. mutans* harboring a child's mouth. Indication of such an association was reported by Eggert and Gurner in 1984,⁶⁵ where it was found that colostrum, breast milk, or both, from 16 healthy women contained agglutinating antibodies for all normal streptococcal inhabitants of the human oral cavity (*S. mutans*, *S. sanguis*, *S. mitis*, and *S. salivarius*). Furthermore, it was found that a proportion of antibodies in colostrum and early milk is specific for each of the different oral streptococci. Therefore, breastfeeding may provide the child with some type of immunization against *S. mutans*, thus preventing the initiation of the caries process.

Based on the results of this study it seems that the experience of the first child does not change the attitude of the parents in regard to the nursing habit, a finding consistent with other studies as well.^{11,12} O'Sullivan and Tinanoff¹¹ reported that approximately 90% of the parents whose children were found to have maxillary anterior caries knew that allowing their children to take a bottle to bed would harm the child's teeth. It was found that in one out of three families with two children, both had nursing caries. If we take into account that 23% of the parents in this study knew that the habit may cause problems to their children's teeth and in spite of this knowledge they allowed the habit, we can conclude that simply informing parents about nursing habits and their potential hazards may not be sufficient. It appears that the dental profession, apart from informing the public on nursing caries, must find means of early identification of children at risk, and thus apply and reinforce preventive programs for these children.

In this paper, an attempt was made to evaluate the source of information for the public concerning the initiation and the treatment of nursing caries. Most of the parents in both groups initially contacted the dentist (69% of the NC and 73% of the NNC group), not the pediatrician, for professional advice. It is surprising that, although parents during the first years of their child's life are in close contact with the pediatrician, when faced with a problem like nursing caries, they predominantly visit a dentist. It was a discouraging finding, however, that 57% of

the pediatricians and 49% of the dentists did not provide the proper guidance and information on how to solve the problem. Unfortunately, 7% of the pediatricians advised the parents to continue the habit, presumably because they did not associate the caries with the nursing habits. It is apparent that even among pediatricians and dentists, at times there is not enough understanding of the close association between nursing habits and nursing caries. More information should be provided to dentists, pediatricians and caregivers regarding nursing caries and the variables essential for its prevention.

Conclusions

1. The nursing habit of the feeding bottle is not the only factor determining the development of nursing caries.
2. Falling asleep with the bottle seems to be the most determinant factor associated with the development of nursing caries.
3. Breastfeeding of the child for more than 40 days may act preventively and inhibit the development of nursing caries in children.
4. The discontinuation of the habit occurs around the age of three for both the NC and NNC groups, while the parents typically seek treatment approximately six months later.
5. A considerable number of pediatricians and dentists, despite being asked by the parents about the nursing caries, fail to give the appropriate information and guidance for appropriate treatment.

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