
Parturients' Awareness and Perception of Benefits of Breast Feeding in the Prevention of Infant and Childhood Oral and Dental Diseases

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SUMMARY

Background: Breastfed babies have a better chance of improved oral and dental health than their counterparts that were artificially-fed.

Objective: To assess the knowledge and attitude of postnatal mothers on the benefits of breastfeeding in prevention of oral and dental diseases.

Materials and Methods: A cross – sectional descriptive survey of 206 mothers attending the postnatal clinic of the University of Calabar Teaching Hospital, Calabar on the knowledge and attitude of breastfeeding in prevention of oral diseases in infants.

Results: Initiation of breastfeeding was early within 3 days of childbirth in 90.3% of mothers. The lack of awareness or knowledge of specific childhood dental/ oral disorders prevented by breastfeeding by majority (89.3%) of the respondents was statistically significant. Actual willingness to breastfeed baby for longer periods after instruction on specific oral health benefits of breastfeeding was elicited in 180 (87.4%) mothers.

Conclusion: There is a need to improve the knowledge of specific benefits of breastfeeding in prevention of dental diseases. This calls for education of the health professionals beside the dental practitioners who handle the mothers for themselves to be aware.

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INTRODUCTION

Traditional practice supported by scientific research advocates breastfeeding as the superior method of infant feeding.¹ The nutritional, immunological, physiological, psychological, and the general health advantages derived by the infants have been emphasized.^{2, 3} Also documented are the economic advantages and improved health of the mothers resulting in the overall benefit to the family and society.^{4, 5}

A previous study in Calabar showed that breastfeeding had protective effect against worm infestation in the first year of life.⁶ Also other studies in different parts of Nigeria have shown that the prevalence of dental caries and malocclusion which may be partly due to improper

or inadequate breastfeeding practice during infancy is between 6.4-35.5% and 76.0-87.8% respectively.⁷⁻¹¹

Breastfeeding has positive effects on the development and physiological integrity of infant's oral cavity.^{1, 12} Breastfed babies have a better chance of improved oral and dental health than their counterparts that were artificially-fed, thus obviating the need for early dental consultations and treatments in the life of the individual. Several components of human milk protect against the development of dental caries.

Immunoglobulin A and G have the capacity to retard streptococcal growth, and streptococcus mutans is susceptible to the bacterial action of lactoferrin.^{13, 14}

The 2013 Nigeria Demographic and Health Survey (2013 NDHS) showed that 96% of children aged 6-8 months and 91% of children aged 9-11 months are breastfed in Nigeria.¹⁵ The improvement of oral and dental health as a benefit of breastfeeding was not reported in the 2013 NDHS. This study assesses postnatal mothers' awareness and perception of benefits of breastfeeding in prevention of oral and dental diseases among their babies at the University of Calabar Teaching Hospital, Calabar, Nigeria. It is hoped that the result of this study will stimulate mothers and other health professionals in appreciating the oral and dental benefits of breastfeeding, and by so doing improve their responsibilities in this regard.

METHODS

A cross – sectional descriptive survey of 206 mothers attending the postnatal clinic of the University of Calabar Teaching Hospital, Calabar, using interviewer administered questionnaire was conducted in October, 2014. Informed oral consent was sought and obtained from participants before inclusion in the study. After due explanation of the study and necessary clarifications of issues raised, the questionnaires were administered to the mothers surveyed.

The women were assured of confidentiality and that their names will not be published in the report. Information obtained included: socio demographic characteristics; duration of breast feeding and when initiated; use of infant feeding formula; antenatal health talk received on use of breast feeding in prevention of childhood oral disorders; reasons for not fully breast feeding baby; and knowledge of specific disorders prevented by breast feeding.

The results of the study were discussed with the respondents and specific instructions on the benefits of breastfeeding in prevention of oral and dental diseases given. The willingness of respondents to breastfeed for longer period after instruction on specific oral health benefits of breastfeeding was assessed. Stata version 12 statistical software was used for this analysis. Assumed probability of awareness of specific childhood dental/oral disorders prevented by breastfeeding was taken as 50%, and this applies to the individual respondents and to each specific oral disease thought to be prevented by breastfeeding.

Using the interval estimation technique, the difference between those who said yes and those who said no to a specific benefit was considered significant if the 95% binomial exact confidence interval (CI) does not contain the value 1. The p values also corroborate the conclusions with the CI approach.

RESULTS

The socio – demographic characteristics of mothers are shown in Table 1. Initiation of breastfeeding was early within 3 days of childbirth in 90.3% of mothers. Most mothers breastfed for more than 3 months (94.2%).

Table 1 Socio- demographic characteristics of mothers

Age (years)	N	%
<21	26	12.6
22-39	176	85.5
>40	4	1.9
Parity		
1	68	33.0
>2	138	67.0
Educational level		
Graduate	124	60.2
<secondary	82	39.8
Initiation of breastfeeding (days)		
<3	186	90.3
>3	20	9.7
Duration of breastfeeding (months)		
<3	12	5.8
>3	194	94.2
Use of infant formula		
Yes	78	37.9
No	128	62.1
Antenatal health talk received on use of breastfeeding in prevention of childhood oral disorders		
Yes	176	85.4
No	30	14.6

A total of 78 (37.9%) mothers introduced infant milk formula after 3 months of breastfeeding because of resumption of official duties in 45 (57.7%), pursuit of educational goals in 25 (32.0%) and insufficient production of breast milk in 8 (10.3%) cases. Awareness of specific benefits of breast milk in preventing oral disorders is shown in Table 2.

Table 2 Awareness of specific childhood dental/ oral disorders prevented by breastfeeding:

Conditions prevented	Yes n (%)	No n (%)	Probability	p-value	95% binomial CI
Tooth decay	82 (39.8)	124 (60.2)	0.3981	0.004	0.3307; 0.4682
Thrush	38 (18.4)	168 (81.6)	0.1845	<0.001	0.1340; 0.2442
Snoring	36 (17.5)	170 (82.5)	0.1748	<0.001	0.1255; 0.2332
Abnormal jaw development	32 (15.5)	174 (84.5)	0.1553	<0.001	0.1087; 0.2122
Facial deformity	28 (13.6)	178 (86.4)	0.1359	<0.001	0.0923; 0.1902
Atypical swallowing pattern	24 (11.7)	182 (88.3)	0.1165	<0.001	0.0761; 0.1682
Malocclusion	22 (10.7)	184 (89.3)	0.1068	<0.001	0.0682; 0.1572
Sleep apnoea	22 (10.7)	184 (89.3)	0.1068	<0.001	0.0682; 0.1572

The lack of awareness or knowledge of specific childhood dental/oral disorders prevented by

breastfeeding by the respondents was statistically significant. The actual willingness to breastfeed baby for longer periods after instruction on specific oral health benefits of breastfeeding was elicited in 180 (87.4%) mothers.

DISCUSSION

Although it is easy to find accurate information about the proper way to brush and floss, parents often receive conflicting information about breastfeeding and oral health for their newborn babies. This has presented a barrier to continued breastfeeding beyond six months of age, when an infant typically begins to develop normal oral flora (bacteria) with the eruption of primary teeth.¹⁶ The benefits of breastfeeding, both for the child and mother, are numerous.

The benefits to the infant include ideal nutrition, resistance to infectious diseases, enhanced immune system, physical and developmental growth benefits, and reduced risk of chronic diseases and allergy.¹⁷ Given all of these benefits, the United States Breastfeeding Committee (USBC) joins the U.S. Department of Health and Human Services (HHS) in recommending that infants be exclusively breastfed for six months, and continue to breastfeed for the first year of life and as long afterwards as mutually desired by mother and child.¹⁶

Breastfeeding is a well-accepted practice by mothers in the community, where the study was conducted. Socio demographic characteristics of respondents showed that majority were well educated multiparous women below 40 years; with more than 90% initiating breastfeeding within three days of delivery and continued breastfeeding for more than three months. These findings are due to the fact that about 85% of respondents received antenatal health talks on value of breastfeeding during antenatal care period. Introduction of artificial feeds after three months occurred in less than 40% of respondents.

Reasons for introduction of artificial feeds included resumption of career duties and pursuits of educational goals. The results of this study are at variance with the findings in the 2013NDHS, which showed that only 17% of children were exclusively breastfed for 6 months as recommended.¹⁵ Mothers should be encouraged to exclusively breastfeed their babies for at least six months and continue to do so until the first year of life.

One of the obstacles to continued breastfeeding beyond six months, as recommended by the HHS Healthy

People 2010 goals, is the conflicting information about breastfeeding and oral health.

Some dental health experts have stated that early weaning is recommended to promote oral health. This is in conflict with breastfeeding expert recommendations, the statements of the Institute of Medicine and American Academy of Pediatrics, and the health goals of the nation.¹⁸

Consistent message on the oral benefits of breastfeeding should be given to lactating mothers to encourage the healthy practice of breastfeeding. This study showed that the lack of awareness or knowledge of specific childhood dental/ oral disorders prevented by breastfeeding such as tooth decay ($p = 0.004$), snoring ($p = <0.001$) and abnormal jaw development ($p = <0.001$) was statistically significant as those respondents who were not aware was much higher than those who are aware.

It should be noted that breastfed babies have a better chance of improved oral and dental health than their counterparts that were artificially-fed, and this benefit will therefore be jeopardized, which will invariably adversely affect the development and physiological integrity of infant's oral cavity.^{1,12}

It had been long assumed that human milk was naturally protective to the teeth. However, human milk has been associated with similar dental erosion to that of formula and more than that of plain cow milk.¹⁹ In addition, this is also sequel to the issue of rampant caries associated with night breastfeeding whereby mothers leave the breast nipple in the mouth of the infants to comfort them while they sleep, and this feeding method or behaviour if improperly done consistently, and over a long period can itself pose further caries risk to the breastfed child.^{20,21}

This is because in this position, the tongue fills the mouth, holding the breast milk against the surfaces of the teeth, hence prolonging the exposure of the milk to the cariogenic bacteria that are adherent to the surfaces of the teeth which will eventually result in increased risk of dental caries.^{22,23}

Consequently, it has been stated that children who have tooth decay in their infancy tend to have dental caries in their deciduous dentition, and are more likely to develop caries in their permanent teeth which will invariably lead to interference in their development, growth and quality of life.²⁴

Streptococcus mutans and *Lactobacillus* species are considered to be principal indicator organisms of those

bacteria responsible for caries. The vertical colonization/transmission of *S mutans* from mother to infant is well documented.²⁵

Therefore, an early oral health risk assessment and preventive intervention provided by a dentist—beginning ideally at 7 – 9 months of age and no later than one year of age, in all breastfed infants—affords the opportunity to identify high risk patients, optimize the natural oral colonization process, and control multiple risk factors associated with early childhood caries.

Additional oral and dental benefits include reduced risk of malocclusion, collapsed facial forms, snoring and obstructive sleep apnoea.²⁶ The knowledge of these specific benefits was found to be significantly low in each case ($p = <0.001$). Breastfeeding promotes development of correct positioning of the dental arches and therefore a good dental occlusion. Studies indicate that exercising the oral and facial muscles while breastfeeding may decrease up to 50% cases of malocclusion.²⁷

Breastfeeding encourages baby's nasal breathing, helps a better positioning of the tongue, a good development of oral muscles, prevention of atypical deglutition patterns, a correct palate formation and increase salivary flow. The knowledge of these benefits were evaluated in this study and found to be significantly low.²⁶ However, a positive finding in this study was that over 80% of mothers expressed the actual willingness to breastfeed their babies for longer periods after instruction on specific oral and dental health benefits of breastfeeding to their babies.

This study is limited by the result not indicating the level of exclusive breastfeeding. The result did not indicate the actual proportions of exclusively breastfed children. In breastfeeding practice there is total exclusive breastfeeding, partial exclusive breast feeding (where water is often introduced without food formulas) and non-breastfed children. The respondents may not have reported giving alternative feeding but might have introduced water that early.

CONCLUSION

Some studies have not shown protection from dental caries in breastfed infants more than in the bottle fed infants. This is however related to issues of vertical transmission of *S mutans* in breastfed babies. However, studies have shown definite reduction in risk of malocclusion, abnormal jaw development, collapsed facial forms, thrush, atypical swallowing pattern, snoring and obstructive sleep apnoea.

The specific knowledge of these benefits was significantly low among the mothers studied. These information need to be brought to the knowledge of breastfeeding mothers, as an incentive to continue breastfeeding their babies until the first year of life.

Since physicians, nurses, lactation consultants, and other health care professionals are likely to have more opportunity to counsel and educate breast feeding mothers than the dental surgeons, it is important that they are made to know and understand the benefits of breastfeeding as regards oral and dental benefits during infancy and childhood. This calls for education of the health professionals beside the dental practitioners who handle the mothers for themselves to be aware.

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