

Level of Knowledge And Attitude Of Mothers Through Health Awareness Programs Towards Nursing Bottle Caries: A Cross Sectional Study At Al-karkh Primary Health Care Sector.

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Abstract

Introduction: Tooth decay in infants and toddlers is often referred to as Nursing Bottle Caries(NBC),and as a comprehensive address, referred to Early Childhood Caries(ECC), Children need strong, healthy teeth to chew their food, speak and have a good-looking smile, also it is important for their general health,The role of mothers in avoiding children with nursing Bottle caries is a large and fundamental ,mothersorientations and knowledge , is essential to reduce the percentage of children with tooth decay, developed countries are concerned with awareness and health education programs as a first step in achieving a healthy and disease-free society.

Objective:the purpose of this study was:

(a) To explore what mothers know about what the meaning of nursing bottle caries (NBC) and its effect on their children and which information they need.

(b)To identify mother's attitude to maintain the health of their children teeth.

(c) To determine the level of health awareness by health programs in the Ministry of Health.

Methods:A cross sectional study was Included(85) mothers whom their children under the age of five and suffering from (NBC)who visit the primary health care centers within the primary health care sectorFor the purpose of following up the regular maternal and child health program, which were 9 centers in Baghdad/ Alkarkh,from February 2017 -April2017, Interviewer-administered questionnaire was used for data collection, the data was analyzed using SPSS software version 11.0.

Results: Knowledge regarding risk and protective factors amongst parents was variable and sometimes at odds with contemporary evidence, the level of knowledge and procedures towards nursing bottle caries is not sufficient to protect the child, because of the poor health education programs that mothers receive at different levels of education.

Conclusions: The results of this study have implications for efforts to prevent dental decay in this very young age group. Ministry of Health, including public health Institutions and its primary health care centers,need support to provide information and promote confidence with regard to basic health information about nursing bottle caries in children teeth and the necessary measures for prevention, including the importance of the presence of fluoride in drinking water and toothpaste, visit the dentist during the first year after the birth of the child, the effect of sugars in breast milk and natural juices. Attention should also be given to the contribution of early contact with females who are newly married in oral health education and promotion programs.

Key words: nursing bottle caries, knowledge, attitude, health awareness.

Introduction

Dental caries is a multifactorial disease that starts with microbiological shifts within the complex biofilm and is affected by salivary flow and composition, exposure to fluoride, consumption of dietary sugars, etc.¹ Caries in infants and young children which referred to (Early childhood caries ECC) has long been

recognized as a clinical syndrome, described by Belterami,² in 1930s as “Les dents noire de tout-petits” which means “black teeth of the very young.” is perhaps the most popular in this perspective for defining the term “nursing bottle mouth”,³ as in

Fig(1).



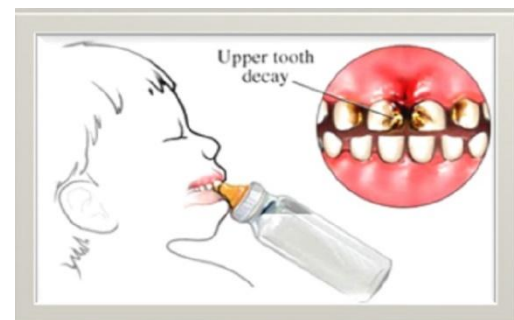
Fig(1) early childhood caries

Subsequently, other terms such as “baby bottle tooth decay”, “nursing bottle syndrome”, “bottle mouth caries”, “nursing caries”, “rampant caries”, “nursing bottle mouth”, “milk bottle syndrome”, “breast milk tooth decay” and “facio-lingual pattern of decay” have also been used to describe this condition⁴.

The prevalence and severity level of caries in children aged under 5-yr-old in several countries are quite high and have showed tendency to increase, and the prevalence of NBC also varies widely with several factors like race, culture, and ethnicity; socioeconomic status, life style, dietary pattern, and oral hygiene practices and also according to the various factors from country to country and from area to area. A review of the literature suggests that in most developed countries the prevalence rate of NBC is between 1 and 12% ,In less developed countries and among the

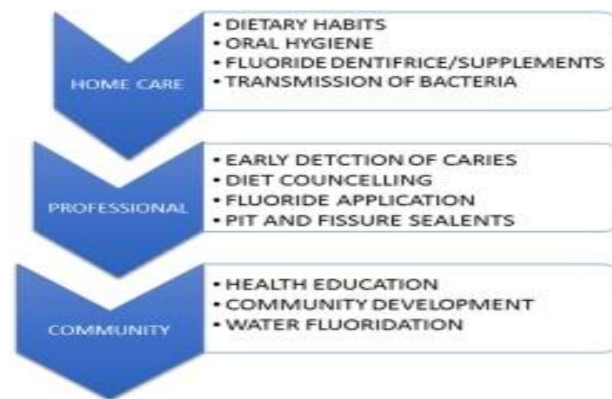
disadvantaged groups in the developed countries, the prevalence has been reported to be as high as 70%, NBC has been found to be more prevalent in low socioeconomic groups⁵.

It is widely accepted that the group of cariogenic microorganisms, streptococcus mutans, is associated with NBC, children with NBC reportedly have elevated oral levels of streptococcus mutans which combine with frequent carbohydrate intake to produce abundant acid that lowers plaque pH for extended periods and demineralizes the child’s teeth⁶, many studies show that Nursing caries is a form of tooth decay that is caused by children sleeping with bottles. This is also called baby bottle or nursing bottle tooth decay, the main cause is when a child goes to bed with a bottle filled with milk or juice--anything except water **Fig(2)**, It usually affects children between the ages of one and two years, Breastfeed infants who fall asleep while breastfeeding are also at risk⁷.



Fig(2) teeth decay due to bottle feeding on bed

In general, dental caries is a preventable disease process, However, when preventive regimens are not applied and the disease goes untreated, extensively decayed teeth of very young children are not easily restored in a dental office, Over 70 years of research have demonstrated the use of fluorides is the most effective means for preventing or arresting caries,⁸ As well as through the health food free of carbohydrates and periodic review of the dentist and cleaning the teeth properly and this requires the knowledge of parents of the risk of exposure the teeth



Fig(3) Strategies for the prevention of early childhood caries at various levels.⁹

The World Health Organization (WHO) Global Oral Health Program has worked hard over therecent years to increase the awareness of oral health worldwide as oral health is important component of general health and quality of life. Meanwhile, oral

METHODS

The study was conducted at the primary health care centers which were 9 centers in al karkh primary health care sector in Baghdad from, February 2017 - April 2017, all the mothers fulfilling the following inclusion criteria participated in the study, the inclusion criteria included; no medical condition in their children and the child's age under age of 5 years, A questionnaire modified from that used by Scroth et al (2007),^{11,12,13} was prepared in Arabic to collect information about mothers's oral health knowledge and actions towards oral

of their children under the age of five years old to the decay, as the initial follow-up of the child starts from parents , also Breast feeding is important for the health of child's teeth, Fig (3) which show that Early childhood caries preventive strategies should begin with prenatal education of expectant parent(s), progress through the perinatal period, and continue with the mother and infant , .

disease is still a major public health problem in high income countries and the burden of oral disease is growing in many low- and middle income countries¹⁰,

health of their preschool children, the statements from 1-2 represents the The role of governmental institutions related to in dissemination of health awareness, the statements from 3-11 represent knowledge of mothers, and from 12-18 represents the attitude, the answers to the statements were to determine their knowledge about the importance of the safety of children teeth under the age of five and their precautionary measures to maintain them.

The questionnaire was pre-tested and appropriate changes were incorporated to

make all the statements comprehensible for the mothers, the mothers had the choice to agree or disagree and I don't know with the statements. In addition to, A total of 85 questionnaires were distributed selected (85)

mothers whom their Educational level status (ELS) as in **table (1)**, completed forms were received back as summarized in **Table (2)**, the data was analyzed using SPSS software version 11.0.:

Table (1) Educational level status (ELS) of mothers

Educational level	Number	Percentage
College	37	0.43
High school	20	0.24
Primary school	17	0.20
Do not read or write	11	0.13

Table(2): Results of the study

	Statements	Agree	Disagree	don't know
1	Public health awareness programs emphasize the seriousness of early childhood caries	12(0.14)	60(0.71)	13(0.15)
2	Community health awareness is important to prevent disease	66(0.78)	10(0.12)	15(0.18)
3	Problems with baby teeth will affect child's permanent teeth	23(0.27)	30(0.35)	32(0.38)
4	Decayed teeth can have effect on child's general health	18(0.21)	23(0.27)	44(0.52)
5	Baby teeth are important for child's general health	20(0.24)	16(0.19)	49(0.57)
6	Mother's diet during pregnancy will affect baby's teeth	29(0.34)	18(0.21)	38(0.45)
7	Frequently giving juice is of no harm to child's teeth	60(0.71)	8(0.1)	17(0.20)
8	Letting baby breast-feed all night is of no harm to baby's teeth	40(0.47)	15(0.18)	30(0.35)
9		56(0.66)	10(0.12)	19(0.22)
10	Putting baby to bed with a bottle in mouth is of no harm to teeth	37(0.44)	18(0.21)	30(0.35)
11	Bottle feeding the child after 12 months of age is harmful for his/her teeth	29(0.34)	14(0.17)	42(0.49)
12	Babies need their mouths cleaned even before eruption of teeth	13(0.15)	27(0.32)	45(0.53)
13	Using fluoridated toothpaste helps to prevent tooth decay	10(0.12)	17(0.20)	58(0.68)
14	Using fluoridated water helps to prevent tooth decay	11(0.13)	14(0.17)	60(0.71)
15	Breast feeding is important for the health of child's teeth	63(0.74)	0(0)	22(0.26)
16	Bottle feeding is the best solution in the case of baby crying	25(0.29)	15(0.18)	45(0.53)
17	Children should see a dentist by their first birthday	14(0.17)	20(0.24)	51(0.59)
18	Children should see a dentist only when they have a dental problem	28(0.33)	14(0.17)	43(0.51)

RESULTS

A total of 85 questionnaires were distributed and 85 completed forms were received back giving a response rate of 100%. The results of the study are summarized in (Table 2). The results of the study showed that of the 85 respondents about one-third (27%) agreed that problems with baby teeth will affect child's permanent teeth, while 35% disagreed and 38% mothers did not have an answer. A minority of the mothers (21%) believed that decayed teeth can have effect on child's general health and 27% disagree, while the majority

40% didn't have an answer, 21% respondents agreed that the decayed teeth can have effect on child's general health, 27% disagreed and 44% had no opinion, 0.24 agreed that baby teeth are important for child's general health while 19% disagreed and the majority had no idea, when mothers asked whether Public health awareness programs emphasize the seriousness of early childhood caries 14% of the mothers agreed and 71% disagreed the remaining 15% had no answer, 78% of 85 mothers agreed that Community health awareness is important to prevent diseases, 34% agreed that mother's diet during

pregnancy will affect baby's teeth, while 21% disagree with the statement and 45% had no opinion, as we are within the statements which represent knowledge level of mothers toward NBC, 66% agree that bottle feeding hurt the child health and 12% disagree with 22% had no idea, 47% agreed that Letting baby breast-feed all night is of no harm to baby's teeth and 18% disagreed and 35% don't know, 44% of the mothers accept with the most important statement: Putting baby to bed with a bottle in mouth is of no harm to teeth, and 21% refuse it while 35% did not have answer, 34% agreed that bottle feeding the child after 12 months of age is harmful for his/her teeth, 17% disagreed the remaining 49% had no idea, with the statements which represent the attitude of mothers toward NBC, we see that 15% agreed that babies need their mouths cleaned even before eruption of teeth, 32% disagreed and 35% don't know, 12% agreed that using fluoridated toothpaste helps to prevent tooth decay, 20% disagreed and 68% of mothers did not have an answer, 71% of mothers had no thought about the statement which say using fluoridated water helps to prevent tooth decay, 74% agreed that breast feeding is important for the health of child's teeth and 11% had no answer, 29% agreed that bottle feeding is the best solution in the case of baby crying, 18% disagreed and 53% don't know, 17% of mothers agreed that children should see a dentist by their first birthday, 24% disagreed, and 59% with no opinion, 33% agreed that children should see a dentist only when they have a dental problem, 17% disagreed, and 51% don't know.

DISCUSSION

Oral disease particularly early childhood caries can be prevented to a great extent if parents are adequately informed and motivated, lack of awareness is one of the

important factors affecting oral health, Poor health knowledge is associated with poorer opinions of health, decreased utilization of services and poorer understanding of verbal and written instructions of self-care,¹⁴ Maternal attitude towards oral health is significantly correlated to the oral health of their children,¹⁵ the assessment of knowledge, attitude among mothers of children under 5 years old can indicate knowledge areas that are lacking and approaches and practices that are flawed, Through the field follow-up of health center records, it was found that 37% of children under the age of five enrolled in MCH (mother and child health program) records suffer from NBC.¹⁶

In the present study the opinion about Problems with baby teeth will affect child's permanent teeth, 27% agree, 35% disagree, 38% don't know, This suggests a lack of knowledge about the relationship between primary and permanent teeth, Lactic teeth are considered as a determinant of the pathway of permanent tooth eruption as well as a major factor in the growth of the jaw, A majority of 52% did not have any view about teeth decay and its effect on child's general health, 18% agree and 30% disagree, so there is a lack of knowledge of the content of the term despite the level of study in the sample research, Oral health affects people physically and psychologically and influences how they grow, enjoy life, look, speak, chew, taste food and socialize, as well as their feelings of social well-being,¹⁷ in study by Acs. Et.al, children of three years of age with nursing caries weighed about 1 kg less than control children, because toothache and infection alter eating and sleeping habits, dietary intake and metabolic processes, Disturbed sleep affects glucocorticoid production¹⁸. 20% agree that baby teeth are important for child's general health, 19% disagree and 57% with no response, As it is clear that

weak knowledge of the importance of teeth children take the largest proportion of answers, 12% agree that public health awareness programs emphasize the seriousness of early childhood caries, %71 disagree and %15 did not know also about the next statement community health awareness is important to prevent disease %78 agree, %12 disagree and 18% did not know, Through the answers on the two statements above it is clear that there was no health awareness for most mothers the study sample by their different levels of study, health ministries and health authorities are responsible for health awareness, and as one of the definitions of health : health is an information process aimed at adopting a healthy and healthy lifestyle, and helping people improve their behavior by influencing their beliefs and attitudes, not only at the individual but also at the community level, health education raising health awareness by providing individuals with information and experiences In order to influence their attitudes, knowledge, health behavior and community, health education is a set of activities aimed at raising health knowledge and instilling healthy behaviors in individuals and communities,¹⁹ regarding the nutrition of the mother during pregnancy and its importance to the teeth of the child, 34% of the supporters of the content of the term, but we still lack good knowledge through the proportion of 21% who did not agree with the statement and 45% who have no opinion, The juices, which are said to be natural and are used by parents along with breast milk in the early years of the baby's life, contain more sugar than soda, meaning that they exceed the global recommendations for the amount of carbohydrates that the child is allowed to eat, The problem is that the baby takes these juices through the bottle, and therefore spends much longer than the older person needs to drink the same quantity with the

cup, so the baby's teeth are exposed to the sugar for a long time and thus become Prone to decay,²⁰ 71% of the mothers, despite the multiple level of education answered in agreement with that the juice does not harm the teeth, which indicates the weakness of knowledge of the components of the juice of sugar and its effect on the teeth of children, 47% of the mothers agreed that breastfeeding the child during the night or during the period of sleep the child does not hurt the teeth of the child and at the same time 35% did not have an answer, although breastfeeding provides the ideal nutrition for infants, and there are a number of health benefits to the breastfed child, including reduced risk for gastrointestinal and respiratory infections, but prolonged, unrestricted and night time breastfeeding, however many studies have been reported to be potential risk factors for the development of ECC, frequent and prolonged contact of enamel with human milk has been shown to result in acidogenic conditions and softening of enamel,²¹ with the statements 9-10-11 as in table (2) The idea of artificial breast feeding for children during sleep is so as not to wake up because of hunger at night, although there is an awareness about synthetic milk damage in general as in statement (9) with which 66% of the mothers agreed, but 44% agreed that using bottle feeding on bed of no hurt to the teeth and 35% don't know , 34% agreed that bottle feeding the child after 12 months of age is harmful for his/her teeth but 49% had no thought and the remaining 16% disagree, this means that there is no knowledge of bottle feeding effect on children's teeth specifically .

With regard to the statements concerning the procedures of mothers to keep the teeth of children and protect them from (NBC), there was no agreement by mothers to clean the child's mouth before the growth of the teeth through the 53% as they answered

(don't know) and 32% who did not agree, cleaning the child's mouth by the mother should begin before the teeth grow as a beginning to maintain the teeth and will continue after the growth of the teeth,²² current drinking water recommendations are 0.6ppm of fluoride to prevent dental caries, It's this concentration that provides a balance of reducing dental caries while minimizing the risk of dental fluorosis,²³ The use of fluoride is not limited to obtaining it from drinking water, but can be used through the toothpaste containing fluoride, children's deciduous teeth be brushed twice per day with a tiny smear of fluoride toothpaste as soon as they erupt,²⁴ A good percentage of mothers 74% agreed that breastfeeding is necessary for child health This concept of health is widely recognized and may have been gained from parents or even colleagues at work, because there is a good health awareness about this subject, Most mothers use bottle feeding as a mean to prevent a child from crying or consider bottle feeding as the best solution for crying. The current study shows that 29% agreed that breastfeeding is the best solution for crying and 53% have no answer. It is a hesitation because they do not have adequate health information, 17% agreed that Children should see a dentist when the first tooth erupts in the mouth while 24% disagree and 59% don't know, According to the American Academy of Pediatric Dentistry (AAPD), children should visit us by their first birthday. It is important that your child's newly-erupted teeth (erupting at 6-12 months of age) receive proper dental care and benefit from proper oral hygiene habits right from the beginning..²⁵ As shown in Table 2 it is clear that 59% of mothers had no information about the importance of the first visit to the dentist while at the same time 24% did not agree with that children should see a dentist by their first birthday, with the last statement which said that

Children should see a dentist only when they have a dental problem, early childhood oral health influences and outcomes are considered pivotal in determining oral health trajectories across the life course, and can impact oral health and disease occurrence in adulthood,²⁶ early childhood caries, the most common chronic childhood disease, preventive dental care for children younger than 2 years by primary care professionals, reduces subsequent need for fillings and other treatments for tooth decay as The American Academy of Pediatrics and the American Academy of Pediatric Dentistry recommend that risk assessment and preventive care should begin with the eruption of the first baby tooth. The main preventive service recommended is the topical application of fluoride varnish every 3 to 6 months,²⁷ In the current study it is clear that 51% had no idea about the importance of visiting the dentist before there is a problem with the teeth of the child with the diversity of the academic level of mothers, Although 33% agreed and 17% disagreed.

CONCLUSION

Through the study above it is clear that the level of awareness and knowledge regarding nursing bottle caries is generally weak for mothers in the field of research with the diversity of their level of academic achievement and have no scientific background on how to take appropriate measures to protect their children from nursing bottle caries.

In general, access to health awareness by citizens in general and mothers through health programs in public radio and television programs, And through the Ministry of Health, where there are no serious steps by the health program managers in the General Organization for

Radio and Television and the sections of the Ministry of Health responsible for health awareness programs and health promotion and school health to raise awareness of citizens in general and mothers in particular about the causes of decay and how to take the necessary measures to prevent it As well as the importance of the presence of fluoride and the resulting use of prevention of decay, One of the main tasks of public health care is fostering responsibility of each person for his or her own health. In order to improve the quality and accessibility of public health care services to each citizen of the country the Ministry of Health drafts legal acts and programs, The main functions of public health care include co-ordination of implementation of municipal public health programs, monitoring trends in health condition changes of the municipal population, support and coordination of public health education and encouragement of the community involvement in solving public health problems.²⁸

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