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Knowledge on Childhood Dental Caries Among Parents of Under Five Children in A Community at Biratnagar, Nepal

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Abstract

Dental caries is a major public health problem globally and is one of the most chronic diseases in children. Children are susceptible to caries as soon as the first teeth appear. Parents are the primary decision-makers in matters of children's healthcare. If the parents are knowledgeable about the child's oral health care then childhood dental caries can be prevented. The objective of this study was to identify the knowledge on childhood dental caries among parents of under five children. A descriptive, cross-sectional study was carried out among parents of under five children in a community of Biratnagar 12. Sample was selected using non probability purposive sampling method and data was collected by face-to-face interview using a self-developed, semi-structured interview guideline. Descriptive statistics i.e. frequency, percentage, mean and standard deviation was used to assess the level of knowledge and inferential statistics i.e chi square was used to find the association between dependent and independent variables. About three-fourth (71%) of the parents were of age group 20-30 years and 88% of them were mothers. Most of the parents (90%) were aware that dental caries can occur in under five children and excessive sugar intake was the most common cause as reported by all of them. Only 40% knew that dental caries is transmissible and

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among them 97.6% responded by sharing of toothbrush. Regarding good brushing habit, most of the parents were aware. Almost all (95%) knew that proper tooth brushing helps to prevent dental caries whereas only 19% were aware about use of fluoridated tooth paste as preventive measures. Meanwhile, only 12% of the parents were aware that first dental visit should be done when first tooth erupts or within 1 year of age More than half (79%) had good knowledge on childhood dental caries but there was no association of knowledge with socio-demographic variables. The study concluded that more than half of the respondents had good knowledge on childhood dental caries and none of the socio-demographic variables were associated with the level of knowledge of parents on dental caries. Despite good knowledge, prevalence of childhood dental caries is high in our society thus reflecting the need to assess the practice of dental care.

Keywords: dental caries, knowledge, parents, under five children

Introduction

Oral health is an integral component of good general health for all groups of the population and plays a major role in the child's life. The first tooth erupts between 6 to 8 months of age. By the time, a child is 2 to 3 years of age, all primary teeth are erupted (Uprety, 2011). The primary teeth play an important role in giving facial fullness and aesthetically pleasant facial shapes. Absence of teeth not only hampers the masticatory activity of the individual, but also affects the facial features to great extent, affecting the concerned person physiologically, emotionally and socially (Begzati et al., 2015).

Poor oral health during childhood is directly associated to poor oral health outcomes in childhood and throughout adulthood, as people remain susceptible to developing dental caries throughout their lives (Kawashita et al., 2011). Several studies have shown that poor diet, poor habits of food intake and inadequate tooth brushing habits during the first 2 years of life is related to tooth decay in children. Caries present in primary teeth further increases the risk of developing caries in permanent teeth (Brossel, 2014).

Globally, it is estimated that 2.4 billion people suffer from caries of permanent teeth and 486 million children suffer from caries of primary teeth {World Health Organization (WHO), 2017; WHO 2018}. Prevalence of early childhood caries (ECC) in India is 49.6% (Ganesh et al., 2019). In developing countries like Nepal, oral diseases are the most common problems due to lack of education and poverty and attempting to maintain good oral health can be challenging as well. The most common dental problem of the Nepalese is dental decay and periodontal diseases (Satyal, 2013).

Children under 5 years are not capable of brushing themselves and lack the manual dexterity and psychological maturity in maintaining oral health. So, here parents play a vital role in preventing dental caries and other oral problems. Parent's awareness regarding oral health care directly affects in prevention of dental caries among children (Sogi et al., 2016; Suresh et al., 2010). Still today, parents are not

fully trained and informed about the management of their child's oral hygiene (Calcagnile et al., 2019). There is a need to focus on parents', school teachers', and care provider's education about early detection, prevention, and treatment aspects of dental caries (Kashetty et al., 2016). Thus, the research was carried out with the objective to assess the knowledge on childhood dental caries among parents of under five children in a community of Biratnagar.

Methods and Materials

Descriptive, cross-sectional study was conducted from June-July, 2019 to assess the knowledge on childhood dental caries among parents of under five children in the community of Biratnagar-12, Province 1. Parents included either father or mother of under five children at their home setting. The minimum sample size was 95 which was calculated using Cochrane's formula at 95% confidence level, with proportion of parents having knowledge being 72.2% (Bakar & Mamat, 2018) and margin of error being 9%. Sample was selected purposively from household having children between 6 to 59 months of age, available during data collection period and willing to participate in the study. Only one parent, either father or mother and who spent most of the time with child was selected from each household.

Self-developed, semi structured interview guideline, developed reviewing various literatures and consulting subject matter experts, was used for face-to-face interview. Questionnaire consisted of 26 items, with 13 multiple choice questions,6 multiple responses items and 7 dichotomous (Yes/ No) questions. Total score of the knowledge items was 42 and level of knowledge was calculated based on median score (score above and equal to the median represents good knowledge whereas score below the median represents poor knowledge).

Pretest was done on 10% of sample size (11 parents) for corrective purpose in similar setting and this population was not included in data analysis. According to the findings of the pretest, some minor modifications was made in the questionnaire.

Ethical principle was maintained throughout the study. Approval for research study was taken from research committee of Biratnagar Nursing Campus. Permission to collect data was taken from concerned authority of ward 12 of Biratnagar municipality. Written informed consent was taken from each respondent after explaining the purpose of the study. Privacy and confidentiality of information of all the respondents was maintained throughout and after the study.

Each alternate house was chosen for data collection and if the house didn't meet the inclusion criteria, researcher moved to next house. During the time of data collection, monitoring was done to prevent contamination of data and informal health teaching was provided to the family members about childhood dental caries and its prevention after the completion of interview. Data was checked for completeness and editing was done on the same day of data collection. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 20.0.

Descriptive statistics i.e., frequency, percentage, mean and standard deviation were used to assess the level of knowledge. Inferential statistics i.e., chi-square test was used to find the association between knowledge on childhood dental caries and selected demographic variables.

Results and Discussion

Among 100 participants, 71% were from age group 20-30 (mean age 28.29 with SD 5.413) and 88% of them were female. Most of the participants (91%) were literate where 69% had completed secondary level of education. About three fourth of them (73%) were homemaker and 43% of the participants belonged to upper lower class.

Table 1: *Knowledge of Parents on Childhood Dental Caries (n=100)*

Variables	Frequency(f)	Percentage (%)
Meaning of dental caries		
Breakdown of teeth due to bacteria	91	91
Inflammation of gum	4	4
Bleeding from the gum	4	4
Causes of dental caries*		
Excessive sugar in diet	100	100
Sticky foodstuff	87	87
Lack of oral hygiene	71	71
Vitamin deficiency	54	54
Prolonged nighttime bottle feeding	53	53
Signs and symptoms of dental caries*		
Toothache	92	92
Black teeth	86	86
Visible holes in teeth	83	83
Swollen gum	75	75
White lines at the surface of the teeth	38	38
First sign of dental caries*		
Toothache	65	65
Black teeth	16	16
Swollen gum	10	10
Visible holes in teeth	6	6
White lines at the surface of the teeth	3	3
Modes of Transmission of Dental Caries (n=42)*		
Sharing same toothbrush	41	97.6
Eating other's leftover	35	83.3

Sharing feeding spoons or utensils	23	54.8
Kissing on child's mouth	20	47.6
Blowing on food	15	15

**Multiple response questions: each response is considered as 100%*

Table 1 depicts the knowledge on childhood dental caries where most of the study participants (91%) stated that dental caries is breakdown of teeth due to bacteria and 90% of them were aware that dental caries can occur in under five children. Regarding the causes of dental caries, most common responses were excessive sugar intake (100%), sticky foodstuffs (87%) and lack of oral hygiene (71%). Similarly, most common signs and symptoms reported were toothache (92%), black teeth (86%) and visible holes in teeth (83%) whereas only 3% of the participants were able to identify the first sign of dental caries which is the presence of white lines at the surface of the teeth.

Forty percentage were aware that dental caries is transmissible and among them 97.6% reported by sharing of toothbrush, 83.3% by eating other's leftover and 54.8% by sharing feeding spoons or utensils.

Table 2: *Knowledge on Maintenance of Child's Oral Hygiene (n=100)*

Variables	**Yes f (%)**	**No f (%)**
Rinse baby's mouth every time after feeding	98(98)	2(2)
Assist child in brushing his/her teeth	97(97)	3(3)
Treat decay in primary teeth	92(92)	8(8)
Fill the decayed primary teeth **(n=92)**	44(47.8)	48(52.2)

Likewise, with regard to knowledge on maintenance of child's oral hygiene, almost all the participants (98%) agreed towards the necessity to rinse baby's mouth every time after feeding.

Table 3: *Parents' Knowledge on Good Brushing Habit for Child (n=100)*

Variables	**Frequency(f)**	**Percentage (%)**
Appropriate age of brushing		
At 6 to 12 months	20	20
At 13 to 18 months	34	34
At 19 to 24 months old	7	7
After 24 months	29	29
At 3 years	10	10
Appropriate time for brushing		
After breakfast and before going to bed	88	88
Morning	8	8
After each feed and at night time	2	2
After breakfast	2	2

Toothpaste should contain fluoride		
Yes	28	28
Don't know	72	72
Role of the fluoride(n=28)		
Prevents tooth decay	22	78.6
Prevents foul odor	3	10.7
Whitening of the teeth	3	10.7
Amount of toothpaste for each brushing		
About the size of pea	51	51
Half length of the bristles	36	36
About the size of a grain	8	8
Full length of the bristles	5	5
Toothbrush should be changed		
Every month	55	55
Every 3-4 month	34	34
Until the bristles break	10	10
Every year	1	1

Table 3 illustrates that only 20% of the participants correctly answered the appropriate age of brushing for children is 6 to 12 months whereas 88% were aware about the appropriate time for brushing i.e. after breakfast and before going to bed and all of them responded soft bristled toothbrush should be used for child. Likewise only 28% of the participants knew that toothpaste contains fluoride and among them only 22% knew the role of fluoride is to prevent tooth decay. Half of the parents knew that amount of toothpaste for each brushing is about the size of pea and only 34% answered correctly that the child's toothbrush should be changed every 3 months.

Table 4: *Knowledge on Preventive Measures of Childhood Dental Caries (n= 100)*

Variables	Frequency (f)	Percentage (%)
Preventive measures*		
Proper tooth brushing	95	95
Restricting sweets	93	93
Regular dental visits	66	66
Use of fluoridated tooth paste	19	19
Appropriate time for first dental visit		
When all the milk teeth erupts	67	67
At 2 years	13	13

When first tooth erupts or within 1 year	12	12
When all the permanent teeth have come	8	8
Periodical dental checkup should be done		
If there is any dental problem	56	56
Every 3 months	20	20
Once a year	13	13
Every 6 months	11	11

**Multiple response questions: each response is considered as 100%*

Table 4 shows almost all (95%) of the participants knew that proper tooth brushing helps to prevent dental caries whereas only 19% were aware about use of fluoridated tooth paste as preventive measures. Meanwhile, only 12% of the parents were aware that first dental visit should be done when first tooth erupts or within 1 year of age. Similarly, only 11% of them answered correctly that periodical dental checkup should be done every 6 months whereas more than half (56%) replied that dental check-up should be done if there is any dental problem.

The overall scored level of knowledge on childhood dental caries was found to be good in 79% of the participants and none of the socio-demographic variables were associated with the level of knowledge of parents on dental caries.

The study finding revealed that mean age of participants was 28.29 which is similar to the findings of the study conducted in Saudi Arabia which showed that the mean age of participants was 30 (Kumar et al., 2018). Likewise, proportion of female participants was 88% which is in accordance to the study by Mani et al. (2012) in Malaysia where 90.2% were female, 70.6% were homemaker and 29.4% used to work outside the home and this supports this study findings where 73% were homemaker and 27% used to work outside the home.

Similarly, in this study 91% of the participants were literate which is similar to the study conducted in India in which 85% of participants were literate. The reason might be due to fact that the study area was situated in the urban area where the literacy status was likely to be higher than the combined rural and urban averages (Reang & Bhattacharjya, 2014). A study conducted in India by Nagarajappa et al. (2013) showed nearly half of the parents (48.5%) believed that caries occurs after 2 years of age whereas in contrary this study revealed that majority of the participants (90%) stated that caries can occur in under five children.

Kumar et al. (2018) stated that 51% of the study population accepted that night time bottle feeding affects child's tooth and the similar finding was revealed by the findings of this study (53%). Similarly, in consistency to the finding of only 3% of the participants were able to state the first sign of dental caries as white lines or spots on the tooth surface study by Kumar et al. (2018) also revealed only 7% were aware about the first sign of dental caries. This may be due the fact that minor changes are usually ignored as they bring no remarkable changes.

In contradictory to only 28% stating toothpaste contains fluoride in this study other literatures revealed 70.8% knew that toothpaste contains fluoride whereas findings regarding knowledge on function of fluoride in preventing tooth decay was consistent (Dikshit et al., 2018). This may be due to difference in setting. Likewise, 42% of the participants believed dental caries can be transmitted from parents to child which is supported by the study conducted in Belagavi city, India where 40.5% were aware about it (Sogi et al., 2016).

The overall level of knowledge on childhood dental caries was found to be good in 79% of the participants which is similar with the findings of the study done in Malaysia, in which 72.2% parent possessed good knowledge (Bakar & Mamat, 2018). Though this study revealed none of the socio-demographic variables to be associated with the level of knowledge of parents on dental caries, many other literatures revealed association of level of knowledge with parent's education (Bakar & Mamat, 2018) and sex of parents (mothers) (Sogi et al., 2016).

Conclusion

The study concluded that more than half of the respondents had good knowledge on childhood dental caries and none of the socio-demographic variables were associated with the level of knowledge of parents on dental caries. Despite good knowledge, prevalence of childhood dental caries is high in our society thus reflecting the need to assess the practice of dental care.

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