

Assessment of Knowledge Regarding Oral Hygiene among Parents of Pre-School Children Attending Pediatric Out Patient Department in Dhulikhel Hospital

Khanal K,¹ Shrestha D,² Ghimire N,³ Younjan R,⁴ Sanjel S¹

¹Department of Community Medicine

²Department of Conservative Dentistry and Endodontics

³Department of Pedodontics and Preventive Dentistry

⁴Department of Nursing

Kathmandu University School of Medical Sciences

Dhulikhel, Kavre, Nepal

Corresponding Author

Kishor Khanal

Department of Community Medicine

Kathmandu University School of Medical Science

Dhulikhel, Kavre, Nepal

E-mail: khanalkishorst@gmail.com

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ABSTRACT

Background

Level of knowledge regarding oral hygiene among the parents of pre-school children plays an important role on maintaining the good oral hygiene of their children. In Nepal, sufficient research has not been carried out on this area.

Objective

Objective of this study is to assess the level of knowledge on oral hygiene of pre-school children's parents attending pediatric outpatient department in Dhulikhel Hospital.

Method

A descriptive study was conducted from November 2012 to January 2013 among one hundred parents of preschool children visiting pediatrics outpatient department of Dhulikhel Hospital. Paper and pencil based semi structured questionnaire was used for collecting data. Questions related to demographic information and knowledge were asked. Thirty questions were used for assessing knowledge level. Knowledge score was calculated by allocating one point for each correct answer and zero point for each wrong answer. Analyzed data were presented in terms of numbers and percentages. Total knowledge scores were categorized based on percentage. Knowledge score was categorized on four group - exclusive intervals - namely-poor (0-40%), moderate (40-60%), good (60-80%) and excellent (80-100%). Mann-Whitney U test and Kruskal-Wallis test were applied to check significance difference and chi-square test was used to check association among different background characteristic.

Result

It was found that 81% had moderate knowledge, 15% had poor knowledge and 4% had good knowledge about oral hygiene. Median knowledge score was found to be 15 with range 10 to 21. Following variables were found to be significant difference on knowledge category: Education status ($p < 0.001$), education level ($p = 0.041$), past experience about oral health problem ($p = 0.008$), Further significant association was found between knowledge category and educational status ($p < 0.001$) and between knowledge category and past experience ($p < 0.001$).

Conclusion

Knowledge regarding oral hygiene was found satisfactory among the parents of preschool children visiting pediatric OPD of Dhulikhel Hospital.

KEY WORDS

Knowledge, oral health, parents, pre-school children

INTRODUCTION

According to World Health Organization, "Oral health is a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss, and other diseases and disorders that affect the oral cavity".¹ Risk factors for oral diseases include unhealthy diet, tobacco use, alcohol use, and poor oral hygiene.¹ Oral health means more than just healthy teeth affecting people physically and psychologically, and how it influences their growth, function, speech, esthetics, and socialize, as well as their feelings of social well-being.² Oral health is important for good health and well-being of individuals which covers a range of health promotion and disease prevention concerns. It is important issue which needs continuing supervision for the health care professional.^{3,4} Good oral health habits in childhood are shaped by parents, especially by mothers.⁴ In the early childhood years, parents are the primary social force influencing child development and parents with higher education have more control on children's health behavior compared to low educated parents.⁵

Children under the age of 5 years generally spend most of their time with parents and guardians. These early years involve "primary socialization" during which the earliest childhood routines and habits are acquired.⁶ During the first three years and pre-school period role of parents is very important on maintaining good oral health of child, because they are the main caregivers of oral health.⁷ This includes eating and drinking habits of child and healthy behavior established as norms in the home and it relies on the knowledge and behavior of parents and elder siblings.⁷ Besides parents role, some other factors such as maternal education, occupation and current knowledge also plays vital role on determining oral health of their children.⁶ Risk factors for oral diseases are broadly classified into biological and social risk factors,⁸ and social risk factors comprise low parental education, low socio-economic status and lack of awareness about dental diseases.⁹

Among different oral health problems, dental caries is one of the major problems in the world and World Health Organization reports 60-90% of schoolchildren worldwide have experienced dental caries, with the disease being most prevalent in Asian and Latin American countries.¹⁰ In India, the prevalence of caries among preschool children was found to be in range of 40-70%.¹¹⁻¹⁴ According to the survey conducted in Nepal, 58% of 5-6 year old school children suffer from dental caries.¹⁵ Dental caries is a serious public health problem in developing countries and it begins early in life which have long term effect on quality of life of the children and family and is associated with bad oral health habits.²

Since Nepali children have low level of oral health awareness and practices as compared to western children,¹⁶ and knowledge of parents have direct role on this.^{3,5} The objective of this study was to assess what parents already know about children's oral health promotion activities

and oral health knowledge and its relationship with socio-demographic characteristic from the sample of parents of preschool children visiting pediatrics OPD of Dhulikhel Hospital.

METHODS

A descriptive study was conducted from November 2012 to January 2013 among parents of preschool children (3-6 years of age) visiting pediatrics OPD of Dhulikhel Hospital. This study has been approved by the Institutional Review Committee, Kathmandu University School of Medical Sciences (IRC/KUSMS). Many parents from rural and urban areas of Kavre and other districts (particularly from Bhaktapur and Sindhupalanchok) visit this hospital with their children for checkup and treatment.

Sample size for this study was determined by using $n = Z^2 pq / d^2$, where $Z = 1.96$, value of p is taken as 0.5, allowable error (d) = 0.2 and n is required sample size. Based on these parameters, the required sample size was 96 and taking 4% as non response total 100 parents were purposively selected and interviewed.

A pretested and paper and pencil based semi structured questionnaire was used for collecting data which consists of following parts: Demographic information, Knowledge regarding general information of oral hygiene, Knowledge regarding oral hygiene of the children, knowledge regarding dietary habit of the children and knowledge regarding role and responsibility of the parents in maintaining oral hygiene of their children. Interview method (face to face) was used to collect data.

Prior to interview, informed consent was taken from the parents and objectives of the study were clearly explained to them and confidentiality of data was assured to them. Parents were excluded if they were unable to understand Nepali language because Nepali language was used during interview. Collected data were entered on MS-Excel and analyzed using SPSS version 20. Socio-demographic and other quantitative data were summarized and presented using numbers and percentage. Knowledge score was calculated by allocating one point for each correct answer and zero point for each wrong answer. Then, calculated total knowledge scores were divided in four categories (exclusive class intervals) based on percentage- poor knowledge (0-40%), moderate knowledge (40-60%), good knowledge (60-80%) and excellent knowledge (80-100%).¹⁰ Further, knowledge score were adjusted and only two categories were formed; parents having poor knowledge (0-40%) and parents having moderate or good knowledge (40-100%). This was done to simplify our analysis. Further, we measured association between demographic characteristics and adjusted knowledge categories using Chi-Square Test. Mann-Whitney U test and Kruskal-Wallis ANOVA were carried out for test of significance of knowledge score among different demographic characteristic. Throughout the study, level of significance was set up 0.05.

Table 1. Knowledge Score on Oral Hygiene among different variables

| Variables | | Minimum Knowledge Score | Maximum Knowledge Score | Median Score | Interquartile Range | P-Value |
|--|---------------------|-------------------------|-------------------------|--------------|---------------------|------------|
| Relation | Father | 10 | 20 | 15 | 3 | 0.969*+ |
| | Mother | 10 | 21 | 15 | 3 | |
| Ethnicity | Brahmin | 11 | 19 | 16 | 4 | 0.115*** |
| | Chhetri | 12 | 20 | 15 | 2 | |
| | Newar | 10 | 21 | 15 | 3 | |
| | Tamang | 10 | 17 | 15 | 5 | |
| | Others | 12 | 15 | 13 | 2 | |
| Occupation | Agriculture | 10 | 18 | 14 | 4 | 0.093*** |
| | Business | 13 | 21 | 16 | 1 | |
| | Service | 10 | 20 | 15 | 3 | |
| | Housewife | 10 | 19 | 15 | 4 | |
| | Others | 11 | 17 | 15 | 4 | |
| Past experience about oral health problems | Yes | 10 | 21 | 16 | 3 | 0.008*** |
| | No | 10 | 17 | 15 | 2 | |
| Educational Status | Literate | 12 | 21 | 16 | 3 | <0.001 *** |
| | Illiterate | 10 | 15 | 13 | 2 | |
| Education Level | Primary | 12 | 17 | 15 | 0.5 | 0.041*** |
| | Lower Secondary | 15 | 18 | 16 | 1 | |
| | Secondary | 15 | 18 | 16 | 1 | |
| | Higher Secondary | 14 | 19 | 16.5 | 4 | |
| | Bachelors and Above | 16 | 19 | 16.5 | 2 | |

* Not significant

** Significant

+ Man-Whitney U test

++ Kruskal –Wallis H

RESULTS

Among 100 parents, 59% were Mother. Most of the parents were from Brahmin community (31%) followed by Newar (28%) and Chhetri (25%). Majority of the parents were from joint family (51%). Sixty-six percentages of parents were literate. Out of 59 mothers, most of them are housewives (34%) and out of 41 fathers most of them have farming profession (15%) followed by business profession (13%).

More than half (58%) of the parents had some experience about oral health problem of their children and out of them 88% had experience about Dental Caries. Peer group and friend circle (51%) is the major source of information about oral hygiene followed by radio/TV (41%). Out of hundred, 32% percent of parents understood that oral hygiene is 'cleanness of teeth, gum and tongue. Fifty six percent of parents said that appropriate age to clean teeth of child is 1-3 years followed by 4-5 years (29%). All of the parents agreed that knowledge regarding oral hygiene is important because it teach them to keep mouth, teeth, and gum clean. Majority of parents were familiar with oral health problems, among the problems, Dental Caries was most familiar oral health problem (91%) among parents

Seventy-Six percent of the respondents said that their kids brush teeth twice a day followed by once a day (14%) and more than two times (10%). Thirty-six percent of parents had heard about fluoride content in toothpaste. Fifteen percent said fluoridated in toothpaste makes the teeth strong. About half of the parents (49%) said that teeth should be brushed 2-3 minutes. When asked about Best

time for brushing teeth 75% said that it is after taking lunch and before going to bed, followed by early morning (16%). Ninety-three percent said that brush should be changed regularly. More than half of the parents (52%) said that brush should be changed every 2-4 months, followed by after six months (28%). More than two third of the parents (70%) said appropriate amount of tooth paste for brushing kids teeth is about the size of a pea followed by 2/3rd size of the brush (22%).

Regarding main causes of oral/ dental problems, majority said that having excessive sweet, ice-cream and chocolate (65%) is the main cause of dental problem followed by not brushing teeth and not cleaning mouth (53%), and eating stale food (5%). Majority of the parents (67%) said that citrus fruits and green leafy vegetables promotes good oral health followed by meat, fish and cereal (33%). All parents said that it is necessary to clean/rinse the child mouth after feeding/having food.

All parents know that it is necessary to educate the child with oral health hygiene and dental education and all agreed that parents should guide their children in maintaining good oral hygiene. Larger proportion of the parents (70%) said correct way of brushing teeth is upward and downward direction followed by straight (23%), circular with inner and outer side (5%) and two percentage don't have any idea. All parents agreed that knowledge on maintenance of good oral hygiene improves oral health of their children. If there is oral health/dental problem, 69% of Parents take their child to dentist and 31% visit general doctor. All parents agreed that children should be taken to dentist or doctor

for checkup but regarding how often there was variation on answer as- if necessary (61%), twice a year (20%) and once a year(19%). All parents said that first dental visit of the child should be at the age of six months (3%), at one year (19%), at the age of two years(4%), at the age of three years(1%), and don't know(73%).

It was found that majority (81%) have moderate knowledge about oral hygiene followed by poor knowledge (15%) and good knowledge (4%). According to the study it was found that 85% of parents have moderate or more than moderate knowledge but not on excellent level, and 15% of parents have poor knowledge regarding oral hygiene. Median knowledge score regarding knowledge about oral hygiene was found to be 15 with range 10 to 21 whereas total knowledge score was 30. Following variables were found to be significant difference on knowledge category: Literacy ($P < 0.001$), education level ($P < 0.05$) and past experience about oral health problem ($P = 0.008$). Further significant association was found between knowledge category and educational status ($p < 0.001$) and between knowledge category and past experience ($p < 0.001$).

DISCUSSION

This is one of the few studies carried out in Nepal to assess the knowledge of pre-school children's parents regarding the oral health. A good understanding of parental knowledge regarding oral health is essential for improving children's oral health. Parents oral health related knowledge are associated with their children's oral health and parental level of education has been shown to be one of the most important determinants for children's oral health in many countries.¹⁷⁻¹⁹

In this study 100 parents were interviewed, out of them majority were mother (59%). In similar study carried out by Chhabra et al. among 620 parents of pre-school children in India majority were mother (81.3%),²⁰ but in the study carried out by Thakare et al. in Gujarat, India majority (67.5%) were father.²¹ This shows that on some society father are more active on taking their child on hospital, while on others mother. Tooth brushing habits, use of fluoridated toothpaste, frequency and duration of tooth-brushing, are the most important factors on oral self-care behaviors. Brushing teeth is the most appropriate and effective oral hygienic habits. Brushing teeth twice daily after meal has been accepted recommendation for prevention of oral diseases and brushing is the most appropriate and effective oral hygiene habit.²²⁻²⁷ In our study 76% of the respondents had knowledge that child teeth should be brushed twice a day which is more higher than the study done by, Qiu et al. in southern china (67.3%),²⁸ Chhabra et al. and Babu in India: 11.8% and 42.62% respectively.^{20,29} In our study 15% of the respondent said that fluoride makes the teeth strong, which is smaller compared to the study done in India on which 30.1% said that fluoride helps to

prevent tooth decay.²⁰ In the current study 98% of the respondent used toothbrush and toothpaste for brushing teeth which is higher than the study done by Chhabra et al. (32%).²⁰ and Pullishery et al. (47%).³⁰ Tooth brushing less than twice a day or frequent sugary snacking or both, are associated with dental caries; frequency of tooth brushing and dental caries are negatively associated, and frequency of sugar consumption and dental caries are positively associated.³¹⁻³³ Regarding the dietary habits, in the present study, 65% of the respondent answered excessive sweets and ice-cream is the main cause of oral problems, which is similar to the study done in India (70.2%).²⁰ For pre-school and young children, sugar intake should not be more than 30 g/person/day.²⁵

According to the studies, prolonged use of bottle milk may develop caries and lose their deciduous teeth early and is called early childhood caries,³⁴ however, baby bottle use and caries risk is not strong, and no concrete recommendations can be made about limiting bottle use, prolonged bottle use or putting child to bed with a bottle to prevent caries.³⁴ Out of 100 respondent, only 29% of the respondent had knowledge that prolonged and frequent bottle feeding affect dental health which is larger than the study done by Chhabra (26.1%) and 93% of the respondent had knowledge that it is not a good practice to put the baby in bed with milk bottle, which is higher than the study carried out in India(29.5%).²⁰

Several independent studies along with American Academy of Pediatric Dentistry have recommended early dental visits for children should ideally be before completion of one year of age or within 6 months of eruption of primary teeth and this is strongly supported by the American Dental Association.³⁵⁻³⁹ In our study it was found that parents knowledge about first dental visit of the child should be before the age of one year (22%) which was higher than the study done by Chhabra et al. (15.2%),²⁰ and Hussein et al. (12.5%).⁴⁰

According to our study distribution of parents according to knowledge score were found as: parents having poor knowledge score (15%), moderate knowledge score (81%), and good knowledge score (4%) but the same distribution was found to be different on research done by Ghajari et al.⁴¹

Significant difference was found between oral hygiene knowledge score and educational status and education level ($p = 0.001$, $p = 0.041$), which is similar to the findings done by Williams et al.⁴², but in our study no significant difference was found between oral hygiene knowledge score and sex of parents ($P = 0.969$) which is different than the findings of research carried out by Jain et al.⁴³ and Nagarajappa et al.⁴⁴

CONCLUSION

Knowledge regarding oral hygiene was found satisfactory among the parents of preschool children visiting pediatric OPD of Dhulikhel Hospital. Parents' education status, education level and past experience on children's oral health problems differs significantly on knowledge category. For comprehensive assessment of this prevailing issue both qualitative and quantitative studies, on a large scale, are essential.

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