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Original Research Article

Assessment of awareness among parents about dietary habits and its relation to oral health in children: a cross sectional study

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ABSTRACT

Background: Dental caries is one of the most common infectious diseases which occurs during early childhood and continues to be major public problem. Establishing healthy dietary habits right from a very young age not only improves the oral health but is essential for a child's growth and development. Since parents are the main caregivers and prime regulators of child's dietary intake, they play an important role in shaping child's oral hygiene habits. Hence it is necessary for them to be aware of the right nutrition, right oral hygiene modalities and frequent dental visits for the betterment of child's overall health.
Methods: A cross-sectional survey was conducted among parents of children visiting to Department of Paediatric and Preventive Dentistry KAHER's KLE VK Institute of dental sciences, Belagavi. Subjects were selected according to inclusion criteria. This study was a cross-sectional questionnaire-based study conducted among parents about dietary habits and its relation to oral health in children.
Results: This study shows the statistically significant results with effect among parents about awareness of dietary habits and its relation to oral health in children.
Conclusions: With the results it can be concluded that children who had parents with low knowledge scores were more likely to experience caries and have poor oral hygiene.

Keywords: Awareness, Caries, Children, Dietary habits, Knowledge, Parents

INTRODUCTION

Dental caries is the most prevalent chronic disease affecting humans irrespective of age, sex, race and socioeconomic status. As around 90% of school children and most of the adults have been affected by dental caries, hence it has been considered as the most important global oral health burden.[1] Parents are responsible for their child's oral health care. Preschool children are not capable of brushing themselves and lack the manual dexterity and the psychological maturity to understand the importance of maintaining oral health. With changing lifestyles, a trend of having a single child and increased the cost of living, most of the parents are working with very less time left for performing day-to-day oral health care practices in their child's early years. Especially in preschool children, parental role is the most important aspect of maintaining good oral health.[2]

These days children are likely to maintain their dietary habits into adulthood therefore the understanding of

children's eating habits is very important in terms of children's health.[3]

There are some factors that could influence children's eating habits such as the home food environment, as well as the social environment, contexts where perceptions, knowledge and eating habits are established.

Other than dietary habits, family mealtime becomes the main social context in which children can eat with their parents, who are considered as their main role-models.[4] Sharing meals with children, having breakfast together regularly and encouraging children to have healthy snacks with moderate restrictions have shown positive impacts on children's dietary behaviours.

Even though so many "oral health promotions" programs, awareness campaigns and advertisements on social media platform the prevalence of Early childhood caries is fond to be very high hence this study was conducted to assess the awareness among parents about dietary habits and its relation to oral health in children.

METHODS

Study design

A cross-sectional study was conducted in the outpatient Department of Pediatric and Preventive Dentistry, KLE VK Institute of Dental Sciences, Belagavi, Karnataka.

Ethical clearance was obtained from the Research and Ethical Committee, KLEVK Institute of Dental Sciences. The study was conducted during the month of August 2022 to October 2022.

Inclusion criteria

After taking prior informed consent from the parents who were willing to participate and getting their children treated for dental caries with age group less than 14 years were included in the study.

Exclusion criteria

The participants who do not give their consent and who were not willing to participate and the children with special dexterity were excluded from the study.

Permission was taken from Institution ethical committee to conduct the study and based upon the standard sample size formula applied for previous studies and for the purpose of standardization the sample size considered was 400.

The sample size was calculated using the below formula:

$$n = \frac{z^2 Pq}{d^2}$$

Where; n= 384 (Sample Size), p = 80% (Percentage of perception), q = 20% (Other than perception), d = 5% (Acceptable error), z = 1.96 at 95% confidence (Standard normal variable).

This study was a cross-sectional questionnaire-based study conducted among parents about dietary habits and its relation to oral health in children. The following flow chart summarizes the study.

Selection of subjects

The subjects were selected according to the inclusion and exclusion criteria.

Details of the questionnaire

Experts reviewed the questionnaire to ensure content validity. The questionnaire is attached to Annexure IV The questions were obtained from different published articles and were modified and condensed to 14 items covering the important aspects required. The questionnaire uses 5 points Likert scale (Definitely disagree, disagree, neutral, agree, definitely agree) for being statistically more significant.

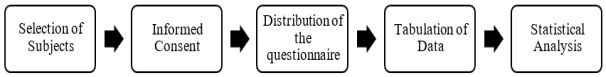

Figure 1: Summary of study.

The questionnaire-based study was conducted among parents about dietary habits and its relation to oral health in children's parents about dietary habits and its relation to oral health in children and Ethical approval was obtained from the institutional review board.

Permission to conduct the study was obtained from the Institutional Review Board and The Head of KLE V.K. Institute of dental Sciences.

A self-administered printed questionnaire was given to the subjects beforehand and volunteered participants were asked to fill the questionnaire according to their convenience.

Informed consent was obtained and the questionnaire were distributed to the subjects after giving instructions. Enough time was given to the participants for completing the forms. Later the forms were collected, and the identity of the participants was not revealed.

The study was explained to the subjects beforehand by the investigator which directly help the participants to fill the forms. If there are any problem that arises during the

filling of questionnaire they will be immediately solved by the investigator during period of the study.

A pilot study was conducted among 20 subjects. In the pilot study, the respondents were asked for feedback on clarity of the questions and whether there was difficulty in answering the question. The participants who participate in the pilot study were included in the final sample and required modification were made in the questionnaire.

Data analysis

The data was analysed and Cronbach' alpha co-efficient was calculated to test the alpha value and reliability. The completed forms were compiled, and the data were entered into MS excel sheet (Microsoft Corp.) and percentages was calculated using IBM SPSS software (version 20.0 Chicago IL, USA). Descriptive statistics was generated for all questions. Frequency distributions and percentages was examined for each answer. To determine the test -retest reliability of the survey questions, 15 subjects were selected, and the questionnaire were administered, and again this was repeated 2 weeks later.

RESULTS

The descriptive statistics based on the socio demographic details of the participants shows that the mean age of children was 2.30, the mean knowledge score was 6.09, the mean DMFT and OHI scores were 5.53 and 1.142 respectively (Table 1).

Table 1: Descriptive statistics from socio demographic details.

Variables	Mean	Std. Deviation
Age of the child	2.30	0.488
Knowledge score	6.09	1.9501111
DMFT	5.53	3.344
OHI	1.1428	0.73797

Table 2: Association between knowledge of parents with DMFT and OHIS of children.

	DMFT score	Very low	Low	Moderate	High	Very high	P value
Knowledge score	Negative/low	7.5	13.2	18.2	23.9	37.1	
	Positive/high	9.8	10.7	25.0	18.8	35.7	0.036*
Knowledge score	**OHIS score**	**Good**		**Fair**		**Poor**	
	Negative/low	66.0		27.7		6.3	0.034*
	Positive/high	65.2		32.1		2.7	

DMFT: decayed, missing and filled teeth; OHIS: oral health information suite.

Table: 3: Relationship between knowledge score of parents with caries experience and oral hygiene status of children.

Predictors	Coefficient	95 CI	Odds ratio	P value
DMFT*				
Very high	0.302	0.544-3.363	1.352	0.516
High	0.506	0.625-4.404	1.659	0.310
Moderate	-0.052	0.360-2.502	0.949	0.916
low	0.473	0.543-4.737	1.604	0.392
Very low	0[b]			
OHIS*				
Poor	0.840	0.572-8.317	2.317	0.214
Fair	-0.163	0.657-10.242	0.850	0.549
Good	0[b]			

*statistically significant; the statistical test used 'multinomial regression'; high knowledge category is taken as the reference variable. DMFT: decayed, missing and filled teeth; OHIS: oral health information suite.

The association between knowledge of parents with DMFT and OHIS of children was assessed. There was a statistically significant association found between the knowledge score of parents and the OHIS scores of children. A similar association was found with the DMFT score as well (Table 2).

The relationship between knowledge score of parents with experience (DMFT) and Oral hygiene status of children (OHIS) was also assessed. The observations made were as follows.

Parents group with low knowledge scores (<50 percentile) had 1.3 times more chances of having children with very high DMFT score, 1.65 times more chances of

having high DMFT score and 1.6 times more chances of having low DMFT score as compared to very low DMFT score. However, the chance of having a moderate DMFT score was found to be 0.1 less as compared to very low DMFT score.

Similarly, parents with low knowledge score were 2.3 times more likely to have children with poor OHIS score and the chance of having a fair OHIS score was 0.2 as compared to good OHIS score (Table 3).

Table 4: Relationship between knowledge score of parents with caries experience and oral hygiene status of children.

Predictors	Coefficient	95 CI	Odds ratio	P value
DMFT*				
Very low	0.266	0.520-3.275	1.305	0.571
Low	-0.136	0.379-2.011	0.873	0.750
Moderate	0.331	715-2.709	1.392	0.330
High	-0.229	0.406-1.558	0.795	0.505
Very high	0[b]			
OHIS*				
Good	0.780	0.572-8.317	2.180	0.254
Fair	0.953	0.657-10.242	2.594	0.174
Poor	0[b]			

*Independent variable for comparison-knowledge score; DMFT: decayed, missing and filled teeth; OHIS: oral health information suite.

DISCUSSION

Dental caries is a preventable disease and if it is noticed at an early stage, children cooperate better and parents save their valuable time and money spent on dental treatments which are also inclusive of the loss of pay for multiple visits for the treatment. Hence, prevention at the root level, i.e., primordial prevention and oral health education of parents is essential.[5,6]

Studies assessing the parents' ability to care for child's oral health reveal that parents do not have enough time, lack of knowledge in brushing, job/employment stress, and last but not the least, due to nuclear families and working parents many parents do not raise their children themselves, and leave them at day-care centres.[7]

Multiple parental factors influence a child's dietary habits and are reciprocally interacting, so they cannot be considered separately. The family environment that surrounds a child's domestic life has an active role in establishing and promoting behaviours that will persist throughout their life.[8]

In this study There was a statistically significant association found between the knowledge score of parents and the OHIS and DMFT scores of children. A similar association was found with the findings of studies conducted by Chawłowska et al, Leghari et al and Elshebani et al.[9-11]

We recommend that parents should be provided with information and guidance on how, as well as what, to feed their children, and these promotion strategies should be particularly aimed at parents' unhealthy eating too so they can improve their diet and so their children will imitate them.

Current evidence suggests that the optimum diet for health is a low-carbohydrate diet, high in non-vegetable fats, high in micronutrients and containing sufficient protein. Such a diet can with a high degree of certainty be reported as preventing dental caries and improving periodontal and general oral health.

This study has few limitations. The results of this study are based on a self-reported questionnaire and not on dental records. Therefore, the results may be subject to bias or reluctance to report inadequate behaviours. The sample included only those parents and children who came in for dental check ups at the college, so a wider number and range of sample size should be employed in order to validate the results at a larger population scale.

CONCLUSION

In this study we observed that children who had parents with low knowledge scores were more likely to experience caries and have poor oral hygiene. Within the limitations of this study, our evidence suggests that the parents' role in oral hygiene and oral health maintenance in the early childhood was very important for the development of adequate oral hygiene habits.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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