Print ISSN: 2321-6379
Online ISSN: 2321-595X

Original Article

Oral Health Problems in Preschool Children and Parent's Dental Treatment-Seeking Behavior of Their Children in Central Kerala – A Cross-Sectional Study

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Abstract

Introduction: The prevalence of pediatric oral problems is of great interest and its prevention has not received its due importance at the policy level in Kerala. Knowledge about the current pattern of oral problems will be helpful in reducing the burden of oral diseases. In addition, many parents restrict their children's oral health-care visits in emergencies only. By analyzing these indicators and influencing parents' oral health-care-seeking behavior, we can assure regular baby dental visits and can improve oral health care for children.

Purpose: The purpose of this study was to evaluate the pattern of oral health problems in preschool children and parent's dental treatment-seeking behavior of their children in Central Kerala.

Methods: The cross-sectional study consisted of a random sample, formed by pairs of preschool children and their parents. A pre-validated questionnaire was used to record parents' oral health-care-seeking behavior regarding their children's oral health. The study also explored the factors that create barriers for seeking dental care (financial, oral health literacy, parent's previous bad dental experience, lack of time, lack of trained doctors, parent's fear and anxiety, workload of parent, lack of support from family, and lack of child's cooperation).

Conclusion: The most prevalent oral problem among preschool children was dental caries. The majority of parents expressed a negative attitude toward children's dental treatment-seeking visits. Factors such as lack of sufficient knowledge, high cost, lack of time, and parents' workload were the most frequently reported barriers.

Keywords: Barriers for children's oral health-care visits, Parent's dental treatment-seeking behavior, Pattern of oral health problems

INTRODUCTION

The significance of pediatric oral health is well documented, and advocated by professional and academic stakeholders worldwide.[1] Proper care and effective management of children's dental needs plays an important role in any nation's health framework.[2] Early childhood oral health problems are emerging as a significant public health issue in developing countries such as India.[3] Despite significant strides in foundational sciences and practice of clinical dentistry during the past few decades, the burden of early childhood oral problems is increasing in most populations.[3,4] Oral diseases are generally not self-limiting, if left untreated, it can result in pain, infection, functional disability, and ultimately compromise the child's overall well-being and quality of life.[5]

Oral problems commonly seen in preschool children are caries, gingival problems, trauma, and malocclusion,

Access this article online

www.ijss-sn.com

Month of Submission : 07-2024
Month of Peer Review : 08-2024
Month of Acceptance : 09-2024
Month of Publishing : 09-2024

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although this pattern might change according to many factors.[6,7] Knowledge about the current trend of oral problems may help to reduce the burden of oral diseases and disability of children's dental conditions.[8] This, in turn, helps to plan oral health promotion activities such as parental counseling, preventive programs, and implementation of oral health policy decisions.

Health-seeking behavior is described as an action to be taken by an individual to preserve or regain good health and it is determined by the knowledge and attitude of people.[9] Children's oral health and dental hygiene habits are influenced by their parental oral health concepts.[10] Many parents were not taking care of their children's milk teeth due to the concept that milk teeth would soon be replaced by permanent teeth.[11] The majority of parents are unaware of the age of which their children are supposed to have their first dental visit[12] Hence, they restrict their children's oral care visits to emergencies only. A lack of knowledge about the necessity of routine dental checkups, early dental appointments, and professionally recommended follow-up visits can result in a delayed diagnosis of many oral conditions and its complications will have a great impact on children's oral and general health. Many factors of parents such as anxiety, ignorance, past dental experience, and treatment cost can influence their oral health-care-seeking behavior regarding children's oral health.[13] Better oral health can be achieved for children if we analyze these factors and thereby modifying parents' oral health-care-seeking behavior for regular healthy baby dental visits. Hence, the present study was carried out to evaluate the pattern of oral health problems in preschool children and parent's dental treatment-seeking behavior of their children in Central Kerala.

MATERIALS AND METHODS

Study Location

This cross-sectional study was performed for 6-month period (November 2022-May 2023) at a tertiary health-care center in Kottayam, Central Kerala which was located in the southern part of India. This center was accessed by a wide range of children from both rural and urban areas with different sociocultural backgrounds.

Ethical Consideration

Permission to undertake the study was (IEC/M/19/2020/DCK dated October 01, 2020). Written informed consent was obtained from all parents in their preferred language either in local language or English after explaining the purpose and procedure clearly.

Sampling

The study consisted of a random sample, formed by pairs of preschool children and their parents, duly attended at outpatient section. For calculating the sample size, we considered the prevalence of the most common oral problem of preschool children. According to the literature, early childhood caries was the most prevalent problem in Kerala,[14] considering a 5% precision, and 95% confidence interval, the sample size was 370.

Inclusion and Exclusion Criteria

To be eligible for the study, the participants should be below 6 years of age without any systemic disease. Parents of these children, who were able to read, write, and willing to participate in the study was included. Participants who were not natives and not willing to participate were excluded from the study.

Data Collection

On the day of the dental visit, each parent was provided with two records. The first one was for collecting details regarding the child's age, sex, and nature of oral problems. The oral examination of each child was carried out by the principle investigator with an autoclaved mouth mirror and probe in the presence of good natural light as per WHO recommendations and the pattern of oral problem was charted. The principal investigator was trained and calibrated before the commencement of the study to ensure reliability ($k = 0.80$)

The second record comprised a pre-validated questionnaire which was divided into three parts. The first part consists of demographic data of parents, such as age, sex, education level, family income, occupation, number of children, and family type. The second part contains questions regarding parents' oral health-care-seeking behavior. Parents were asked to fill out the questionnaire (either in Malayalam or English). Depending on the score obtained, oral health-care-seeking behavior (positive or negative) was determined. Those who had opted for a neutral attitude were not included in the analysis. The third part of the questionnaire was to evaluate the factors that created barriers for seeking dental care for parents regarding their children's oral health, such as financial, oral health literacy, and parent's previous bad dental experience, lack of time, lack of trained doctors, parent's fear and anxiety, the workload of the parent, lack of support from family, and lack of child's cooperation.

Statistical Analysis

Data obtained were coded, entered in, and analyzed using IBM SPSS version 25. Frequency distributions of various variables were explained by descriptive analysis. The Chi-square test was used to find the association between variables. The level of significance was considered when $P < 0.05$.

RESULTS

A total of 370 children participated in this study. Most of the questionnaires were answered by mothers (62.3%). The age range of children were one to 5 years and the mean age was 2.98 ± 1.21 [Table 1]. Percentages of boys were more (53.2%) than girls (46.8%). Majority of the parents were from the middle classes (upper middle [42.7%], followed by the lower middle [20.0%]). When education status was considered, 46.5% had a graduate or post-graduate level of education followed by pre-degree or plus two (22.4%), high school (16.8%), professional or honors (10.3%) primary school (4.1%). Regarding the number of children in a family, 49.5% of parents had two children and 35.4% had a single child. About 14.6% of parents had three children and only 0.5% of parents reported that they had more than three children. When a pattern of family type was considered, 51.9% had a joint family type and 48.1% reported that they were living a nuclear family life [Table 1].

Table 1: Baseline characteristics of the participants (*n*=370)

Characteristics	Frequency (%)
Sex	
Male	197 (53.2)
Female	173 (46.8)
Family income of parents	
Upper	115 (31.1)
Upper middle	158 (42.7)
Lower middle	74 (20.0)
Lower	23 (6.2)
Education of parents	
Professional or honors	38 (10.3)
Graduate or postgraduate	172 (46.5)
Pre-degree or plus two	83 (22.4)
High school	62 (16.8)
Primary school	15 (4.1)
Occupation of parents	
Legislators, senior officials, and managers	12 (3.2)
Professionals	34 (9.2)
Technicians and associate	32 (8.6)
Clerks	116 (31.4)
Skilled workers and shop and market sales	59 (15.9)
Skilled agricultural and fishery workers	52 (14.1)
Craft and related trade	30 (8.1)
Plant and machine operators and assemblers	24 (6.5)
Elementary occupation	11 (3.0)
Number of children	
One	131 (35.4)
Two	183 (49.5)
Three	54 (14.6)
>3	2 (0.5)
Family type	
Nuclear	178 (48.1)
Family	192 (51.9)

The most common pediatric oral problem in our study was dental caries (52%), followed by mucosal problems (21%), trauma (11%), malocclusion (8%), eruption abnormalities (4%), and others (4%) [Figure 1].

When parents' dental treatment-seeking behavior was analyzed, only 18.4% of parents believed that their child's oral health-care habit depends up on their own personal oral health-care habits. The majority of parents (49.2%) do not believe that poor oral health had negative influence on their child's day-to-day activities and 38.6% of parents were ignorant about the importance of milk teeth. Regarding the age of first dental visit for children, the majority of parents (60%) do not know when they should have their child's first dental visit [Figure 2]. Only very few parents (16%) consider that a child should have the first dental visit within 6 months and 24% reported within 1 year. When regular dental treatment-seeking behavior was considered, 44.3 % of parents expressed a negative attitude and they believe that their child's oral health is not dependent on regular dental visit. Only 23.5 % of parents expressed a positive attitude that early visits can avoid or reduce future problems/complications due to oral diseases. When we analyzed the frequency of previous dental visits, 46% of parents never had a dental visit for their child, 29% visited the dentist before 6 months, and 20% visited within 6 months period [Figure 3]. The majority of parents had a child's dental visit in an emergency and pain was the most common reason for dental visits. Regarding dental treatment-seeking behavior toward the maintenance phase, only 17.6 % of parents showed a positive attitude and they believe that follow-up visit as recommended by the doctor will be beneficial for their child's good oral health.

When factors that create barriers for seeking dental care among parents were explored, the majority of parents (34%) reported that they do not have sufficient knowledge about the seriousness of oral health care. The other reported reasons included the high cost of dental treatments (21%), lack of time (12%), parents workload (9%), unavailability of trained dentist (7%), parents' fear and anxiety (5%), lack of child's cooperation (5%), parents bad past dental experiences (4%), and lack of support from family (3%).

DISCUSSION

The burden of pediatric oral problems has been widely reported with variation in percentages and health professionals may face dilemmas when treating them, often related to their age and stage of development.[15,16]

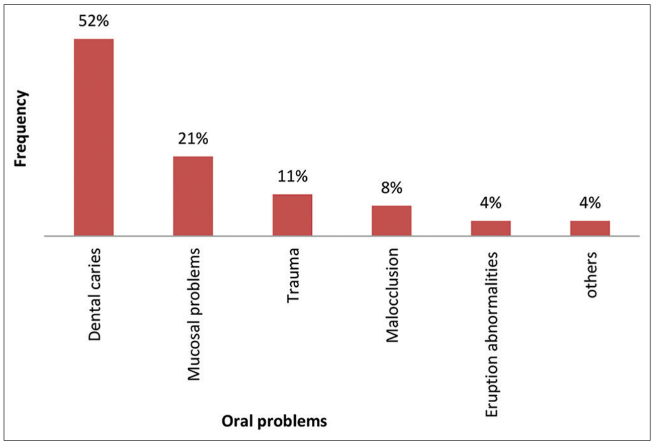

Figure 1: Distribution of oral problems

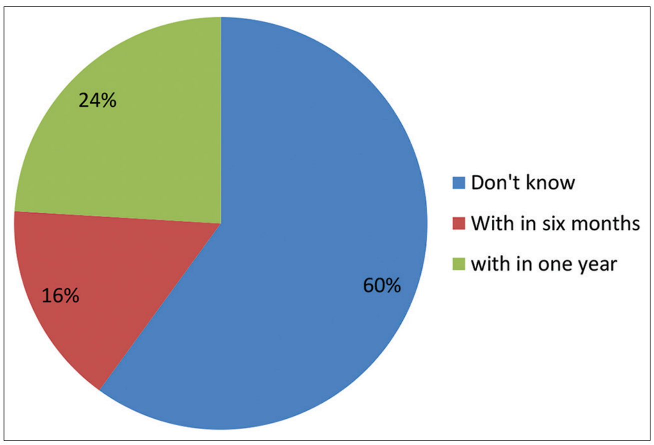

Figure 2: Frequency of first dental visit

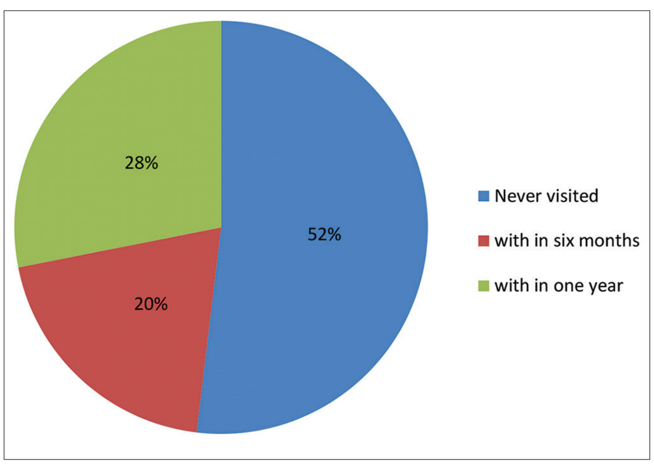

Figure 3: Distribution of previous dental visit

The knowledge about the pattern of oral problems, their prevalence, and associated factors can help to develop targeted interventions for the prevention of subsequent disability. It also promotes healthy lifestyles, thus reducing the risk factors hampering good oral health. In the present study, the majority of children were suffering from dental caries followed by mucosal problems. Traumatic injuries, malocclusions, and eruption abnormalities were also reported. Patterns of oral problems were almost similar in both genders and there was no statistically significant difference in caries prevalence between the two genders. This finding was similar to the study done by Sudha *et al.*,[17] Shetty and Tandon,[18] Jai,[19] and Suchithra *et al.*[20]

On the contrary, few other studies have shown higher caries prevalence in girls.[21,22]

Any plan with the aim of preventing or detecting disease or enhancing oral health and well-being is characterized as health-related behavior.[23] It mainly includes behaviors such as exercise, diet, use of health services, and adherence to medical regimens.[9] Regular home oral care and frequent dental checkups are the best means of saving children's teeth. Early dental visit in a child's life can create a paradigm shift in the viewpoint, from identifying dental care from the therapeutic phase to its preventive and informative phase which ultimately promotes proper future oral health. Dental attendance of children at an early age helps the dentist to identify the initial stages of the disease, the discrepancy in dentofacial growth.,[24] lessens the cost of advanced dental treatment, and reduces school absenteeism associated with oral health morbidity.[25] The purposes of dental visits are not only to detect dental diseases but also to reduce parents' anxiety about oral health problems.[26,27] It also helps to provide an opportunity for parent counseling, diet counseling, and motivate parents toward prevention-oriented interventions.[28] Among preventive oral care behaviors, routine dental visits are considered to be the third most important factor after oral hygiene and dietary practices. Our study findings showed that only a small percentage of parents had a positive attitude toward early and regular dental visit which highlights the importance of oral health-care counseling among parents regarding their children. Although various recommendations regarding the timing of children's first dental visit are available in the public domain,[12,29-31] the presence of visible caries lesions or dental trauma appears to impel most children's first dental visit. The present study reveals that many parents were unaware of the timing and importance of the first dental visit. This is in accordance with reports of Subramaniam and Reghuvaran,[32] Babu *et al.*,[10] and Atulkar *et al.*[33]

Even though, the majority of parents belong to the middle class and are educated up to graduation level, there was a generalized lack of information about their children's oral health care. This is in accordance with a study in Kerala which indicated a lack of oral literacy.[20] It may be due to the fact that parents were not properly motivated to seek periodic preventive dental check-ups and prompt restorative care. Moreover, in our educational system, knowledge about oral health is not included in the present curriculum. As parent has a major influence on their children's oral health behavior, oral health education among parents can create a ripple effect among children which ultimately create optimal oral hygiene. Regarding previous visit, the majority of parents not had dental visit for their child. A similar finding was reported by AlHumaid *et al.*[26] When the reason for previous visit was examined, pain was the most common cause for dental visit which was in accordance with many study reports.[35-37]

The concept of the maintenance phase in dentistry was historically introduced to ensure the longevity of restored oral health and the ultimate success of provided dental care.[38] Following completion of dental treatment, children were typically assigned to maintenance follow-up program based on the complexity of the clinical condition, age, and treatment rendered as well as preventive programs for a more favorable prognosis and early detection of new-onset dental disease. In the present study, the majority of parents had negative attitude toward follow-up visit along with a lack of knowledge about its importance. Frequent missed appointments and its association with increased caries risk have been reported among preschool children by Craig *et al.*[39] and teenagers by West *et al.*,[40] Skaret *et al.*,[41] and Wang and Schioth.[42] It will be appropriate to incorporate digital reminder systems when follow-up visit for children with previous caries experience is advised.

Dental problems other than emergencies in children are frequently not gaining attention because they are perceived as not being serious or life-threatening and due to ignorance of the importance of milk teeth. Children experience difficulties in accessing oral care services because they are dependent on parents/caregivers for their needs.[43] The present study revealed that the majority of parents expressed negative dental treatment behavior attitude regarding their children's oral health. Hence, to improve their attitude, it will be better to understand the factors that create barriers for seeking dental care among parents. The present study showed that parents do not have sufficient knowledge about the seriousness of oral health care of children [Figure 4]. Similar findings was seen in many studies.[10,11,44] They do not have any idea that there is a specific time for the first dental visit and the importance of regular, early preventive, or follow-up dental visits. As initial carious lesions present with subtle clinical signs and mild symptoms, parents will fail to address them. By the time, children become symptomatic, or cavitation is evident, and parents become aware of dental problems, the window of opportunity for prevention may be greatly diminished.45 The high cost of dental treatment is one of the factors as most of the insurance companies do not include dental treatment; hence, parents seek dental help only in emergencies and opt extraction instead of filling.[13,46-48] Many parents reported a lack of time and parents' workload as barriers to dental attendance. A similar finding was seen in the study of Appukuttan *et al.*, while analyzing dental care-seeking behavior and attitude among adults in Southern India, unemployed participants claimed greater dental attendance.[13,49] Parents fear, anxiety, and lack of child's cooperation were also reported as barrier which was similar with many studies.[50-53] There was no significant association between barriers and family income, education, number of children, and family type.

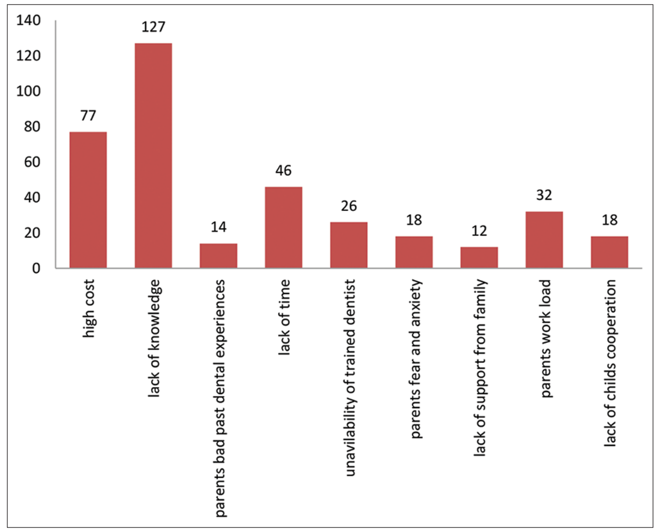

Figure 4: Barriers for dental visit

To quote a few limitations of our study, while exploring the barriers to dental visits and knowledge of oral health, the utilization of combined qualitative-quantitative approaches will help to reflect the real scenario more in-depth. The second one is a lack of a multidimensional analysis to evaluate the influence of various sociobehavioral and cultural factors associated with oral health care. Moreover, each category of dental visit must explore individually in detail to get a better picture.

CONCLUSION

Based on this study results, the following conclusions can be made.

1. The most prevalent oral problem among preschool children is dental caries.
2. Regarding the dental treatment-seeking behavior of parents about their children's oral health, the majority of parents expressed negative attitude toward children's first dental visit, early dental visit, regular dental visit, and follow-up visit.

3. When factors that create barriers for seeking dental care among parents regarding their children were explored, lack of sufficient knowledge about the seriousness of oral health care, high cost of dental treatments, lack of time, and parents workload were the most frequent reported barriers.

RECOMMENDATIONS

- The present study emphasizes the importance of including oral health education programs in the regular curriculum in our educational system.
- Medical professionals and auxiliaries in the health-care system, who interact frequently with expectant and new mothers, must include in the oral health promotion team by providing appropriate and accurate education, guidance, and timely reference which will have a positive influence on oral health practice.
- Tele consultation and dental home concept should be materialized under the supervision of local self-government institution.
- A dental insurance program should be implemented.

ACKNOWLEDGMENTS

I would like to express my deep and sincere gratitude to all the parents and children participated in this study.

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How to cite this article: Jeeva PP, Syriac G, Maneesha R, Ravi AG, Raseena KT. Oral Health Problems in Preschool Children and Parent's Dental Treatment-Seeking Behavior of Their Children in Central Kerala – A Cross-Sectional Study. Int J Sci Stud 2024;12(6):25-31.

Source of Support: Nil, **Conflicts of Interest:** None declared.