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Oral hygiene Knowledge, Attitude and Practices of caregivers of preschool children attending Anganwadi centres in Mysuru Urban, Karnataka.

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Abstract

Background: Children experience dental caries and complications, both in childhood and later. To improve preschool children's oral health, it is important to understand the social value that parents and caregivers ascribe to primary teeth.

Objective: This paper aims to report caregiver oral health and early childhood caries (ECC) knowledge and attitudes toward preschool children attending Anganwadi centres in Mysuru.

Study Design: Cross-sectional study, including an interview with caregivers.

Methods: 377 children and their caregivers served as the sample. Pre-schoolers underwent a comprehensive dental screening while caregivers were interviewed through a questionnaire that explored knowledge and attitudes toward preschool dental health. Caregiver responses were matched with findings from each child's examination.

Results: Oral health knowledge among caregivers was relatively good, although knowledge of the role of

feeding practices on ECC was low. Over 97.1% of children brush their teeth with toothbrushes and toothpaste once a day, and their caregiver assists 55.19%.

Statistical analysis showed that ECC significantly increased with the duration of bottle-feeding. In contrast, it was considerably lower in children who were breastfed for one year than those who were breastfed for more than two years. Conversely, the prevalence of ECC was reported to be relatively high, which showed a gap in oral hygiene and feeding practices.

Conclusion: Caregivers of preschool children had a practical knowledge of oral health. However, although caregivers had a strong knowledge of oral health, they had a poor understanding of the importance of feeding patterns in ECC. Caregivers preferred to leave deciduous carious teeth alone because they fall out anyway, implying a lack of understanding of the importance of deciduous teeth.

Keywords: caregivers, dental caries, early childhood caries, preschool children, oral health, knowledge, attitude, practices.

Introduction

Caries is an acid demineralization of enamel or dentin caused by biofilm (plaque) and mediated by saliva. Acidogenic bacteria that digest carbohydrates in the diet induce enamel demineralization. (1) Tooth adhering biofilms have a pH of 5.0 or below. Lower pH causes a dysbiotic microbiome, leading to increased acidic biofilm proportions and changes in the biofilm matrix's composition. Sugar exposure and prolonged acid production in the oral cavity cause tooth demineralization. Biofilm alone does not cause disease; hence, dental caries is non-communicable (NCD). However, dietary sugar intake is also a deciding factor. (2) (3)

ECC has a complex aetiology. Microbiological, nutritional, and environmental risk factors are linked to ECC development. The interaction of microbes in the oral cavity reacts with carbohydrates present on the tooth surface. Diet and feeding habits play a vital impact on caries development. ECC prevalence has been linked to frequent bottle feeding at night and on-demand breastfeeding. High sugar consumption, poor dental hygiene, a lack of fluoride exposure, and enamel abnormalities are all factors that contribute to the development of ECC. High sugar intake, poor oral hygiene, lack of fluoride exposure in diet or excessive fluoride consumption, and abnormalities in enamel formation are considered significant contributors to developing ECC. Oral health is especially vital for children's oral function maintenance since it is necessary for chewing, speech development, aesthetics and confidence. (4)

Because of the considerable influence of newborn nutrition (feeding habits), the aetiology of ECC at later ages is more challenging. It is more prevalent among vulnerable groups, especially refugees or migrant children, due to their low socioeconomic status, cultural variations, and social marginalization in oral health practices and beliefs. ECC is also linked to other health issues, including local pain, infections, and abscesses, leading to trouble chewing, malnutrition, gastrointestinal disturbances, and sleeping problems.

Sugar consumption, poor oral cleanliness, and low fluoride usage are the key risk factors; however, caregivers' oral health knowledge, attitude, and practices are likely to develop healthy dental habits in children. (5) Despite the abundance of oral health information on television, radio, newspapers, and, more often, the internet, caregivers may still have a poor understanding of oral health, most likely due to limited access to these

resources. A high prevalence of ECC is linked to a lack of education and low family income. Socially deprived groups and indigenous and ethnic minorities have the most significant prevalence of ECC.

These children come from a weaker socioeconomic background and may have poor feeding and eating habits. These children's parents are uninformed about their children's health and have limited access to health facilities and dental care. (6)

As Anganwadis are a part of the Indian public health care system, and Anganwadi workers are the first point of contact for the public with the health system, they can assist in spreading the word about the importance of oral health hygiene & practice. (7)

Educating the poor community about oral health issues and dental caries risk factors is essential. There is a constant demand for knowledge on caries prevalence and severity. Since there are few studies on ECC in children and caregiver perceptions of oral health practices, this study was conducted in Mysore to assess the knowledge, attitude, and oral hygiene practice of caregivers of preschool children attending Anganwadis

Methodology

A cross-sectional study was conducted for six months, i.e., from January 2021 to June 2021, among preschool children attending Anganwadis in the urban field practice areas of JSS Medical College, Mysuru, Karnataka. The sample size was calculated considering the prevalence of ECC of 56.6% (8), the precision of 5%, and confidence interval of 95% and using the formula $n=Z\alpha^{2*}p^{*}q/d^{2}$, is 377

Institutional Ethics committee approval, permission from Anganwadis centres, and consent from the caregivers were obtained before the start of the study. Children were selected based on multistage sampling. JSS Medical college covers three blocks as its field practice area, and two wards were selected by simple random sampling following a total of 5 AWCs chosen for the study. All children from these AWCs between the age of 3 to 6 years old accompanied by their caregivers were included. Caregivers were interviewed through a modified WHO oral health questionnaire with dietary habits and oral hygiene measures for caregivers of children attending Anganwadis.

Results

Table 1: Distribution of caregivers based on their knowledge of the oral health of the children

Knowledge of caregivers		Frequency	Percentage
Perceived causes of caries	Eating too many sugary foods	324	85.90
	Lack of brushing	354	93.90
	Bottle-feeding at night	99	26.3
	Breastfeeding on demand	75	19.9
	Frequent snacking between meals	224	59.4
Preventive measures for caries	Brushing teeth daily	377	100
	Limiting the number of sugary foods	316	83.8
	Brushing with toothpaste	355	94.2
	Reducing snacks eaten in between meals	218	57.8
	Breastfeeding at specific times	81	21.5
	Giving the child bottle of water at night instead of milk	102	27.1

Table 2: Distribution of caregivers based on their attitude towards the children's oral health.

Attitude Variable		Frequency	Percentage
Do you think cleaning teeth help too?	To prevent tooth decay	216	57.3
	To make them whiter	48	12.7
	To freshen the breath	78	20.7
	Don't know	35	9.3
What would you prefer to do if your child has a cavity/hole	Remove the tooth	79	21
	Leave the tooth alone	122	32.4
	Visit a dentist to clean and fill the tooth	69	18.3
	Don't know	107	28.4
Do you think the following statements regarding children's teeth are factual?	Milk teeth do not need to be looked after because they fall off anyway	208	55.2
	Tooth decay is passed on from milk teeth to permanent teeth	105	27.9
	Tooth decay is passed on from mother to child	2	0.5
	Children should visit a dentist regularly every six months	62	16.4

Table 3: Distribution of children oral hygiene practices of children reported by the caregiver

Oral health Practices of Caregivers		Frequency	Percentage
Regular brushing of teeth	Yes	366	97.1
	No	11	2.9
Patterns of brushing teeth	By Caregiver	69	18.85
	Child assisted by a caregiver	202	55.19
	Child brush their teeth	95	25.96
Frequency of brushing	Once a day	301	82.3
	More than once	59	16.1
	Don't know	6	1.6
Material used	Toothbrush	348	91.1
	Toothpowder	18	8.9

Discussion

The level of oral health-related knowledge among caregivers is an essential factor influencing children's oral health habits from the initial age. The dental health behaviours of caregivers may also affect the children. (9) Previous studies have reported a relationship between the caregiver's level of education and ECC in the children. (10) In our study, knowledge of oral health was good. Caregivers agreed that sugar consumption causes caries in most cases (85.9%). Caregivers reported that lack of brushing causes caries (93.9 %) and that snacking between meals causes caries (59.4 %). Other

studies which evaluated oral health knowledge in caregivers showed similar results, a study by Elham Bozorgmehr et al. in Iran, (11) S Dabawala et al. in preschool children in India, (12) Salim AL Sharif et al. (13)

The majority of caregivers were uninformed about the impact of feeding practices on dental caries. Caregivers identified breastfeeding on demand and bottle feeding at night as causes of caries in 19.9% and 26.3% of cases, respectively. Kanika S Dhull et al. in Bhubaneshwar saw similar trends. (14)

Almost most caregivers agree that cleaning teeth with toothpaste twice a day will help prevent caries. Caregivers in our survey reported that limiting sugar consumption (83.8%) and minimizing snacks (57.8%) will help prevent caries. Despite good knowledge of caries prevention, the role of feeding practices was unknown to caregivers. Only 27.1% of respondents recognized that giving a bottle of water to a child at night will reduce caries in youngsters (21.5%). This was in line with a study conducted in Bhubaneshwar by Kanika S Dhull et al. (60), which found that 53% of mothers disagreed that night-time bottle-feeding causes caries in infants and 78.4% disagreed that nocturnal breastfeeding caused caries in children. A gap was observed in caregivers' knowledge regarding the effects of feeding practices on caries prevention. Thus, there is a need to emphasize the education on the role of feeding practices on ECC.

The attitudes of caretakers were analyzed in this study, and nearly half (55.2%) stated that deciduous teeth should not be looked after because they will fall out anyway, which contradicted the findings of Salim Alsharif et al.(15), who stated that caregivers believe that deciduous teeth are essential. As a result, 32.4% of caregivers reported that a carious tooth should be left alone, and 21% preferred it to be extracted and were not keen to preserve the deciduous dentition until exfoliation. This can be due to the lack of awareness of restoration procedures to conserve the teeth.

Careers' awareness of dental visits to restore the decayed tooth was reasonably low (18.3). Only 16.4% of caregivers reported that visiting dentists every six months is necessary. A similar trend was reflected in the study conducted by Kanika S Dhull; 64% of mothers said that dental visits are not needed. (14)

Oral hygiene practices play an essential role in the initiation of caries in children. In our study, 97.1% of children practice regular brushing. Almost 91.9% of children brush their teeth with toothbrushes and toothpaste. However, the frequency of brushing varied. 79.8% brushed their teeth once a day, and 15.6% brushed more than once. Similar findings were observed in a study done by Elham Bozorgmehr et al. in Iran that frequent brushing may prevent dental caries. Despite the widespread practice in this study population, the prevalence of ECC was relatively high, which might be due to ineffective brushing techniques and consumption of food with high sugar. (11)

The assistance of caregivers in brushing children's teeth reflects a lower trend of ECC (35.1%). In comparison, children who brush their teeth without the aid of their caregivers showed a higher presence of ECC (76.8%).

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