Knowledge, attitude and practice of oral health promoting factors among caretakers of children attending day-care centers in Kubang Kerian, Malaysia: A preliminary study

Abstract

Background and Aim: The role of caretakers at day-care centers has become more imperative in promoting oral health care in children since many new mothers opt to work outside their homes, leaving their children at day-care centers. The aim of this study is to assess the knowledge, attitude and practice of oral health promoting factors among secondary caretakers of children attending day-care centers. Settings and Design: This was a cross-sectional exploratory study conducted among secondary caretakers in Kubang Kerian, Malaysia. Materials and Methods: Thirty-four caretakers fulfilling the inclusion and exclusion criteria participated in the study. The data were collected using a self-administered questionnaire addressing various aspects of knowledge, attitude and practice of oral health in children. Analysis was done using SPSS version 12.0. Results: The knowledge of factors causing dental caries was found to be good among majority of the caretakers, but the concepts of transmissibility of caries and effect of hidden sugars were not evident. Seventy one percent did not know that frequent bottle feeding could cause tooth decay. Attitudes seemed to be governed by the cultural practices of the region rather than the knowledge obtained. The knowledge was not translated to practice adequately. Giving sweetened liquid in bottles was practiced by 53% of the caretakers. Conclusion: Implementation of nursery-based oral health promotion programs for secondary caretakers is needed to counteract early childhood caries.

Key words

Attitude, caretakers, early childhood caries, infant oral health, knowledge, oral health promotion, practice

DOI: 10.4103/0970-4388.66741

Introduction

Oral health is an important aspect of general health in infants and children and impacts the quality of life and health outcomes. Although dental caries' levels have declined and stabilized the world over, the problem of early childhood caries (ECC) has remained persistent in many areas of the world affecting certain segments of society, especially the socially deprived, who remain at high-risk to this disease. The factors associated with ECC include low income families, cultural differences, child temperament, fewer dental visits, lower educational level of the mother, low levels of oral health knowledge among mothers, inadequate oral hygiene and a highly cariogenic diet in these children. Majority of the studies have focused on parent/primary caretaker’s attitudes and beliefs which put the child at risk for ECC. Fewer studies have been done to determine schoolteacher's oral health knowledge and his/her behavior toward children. Most studies concerning ECC do not cater to the...
culture, environment and individual-level factors within a system with its own societal and environmental characteristics. More attention needs to be focused on family dynamics and behavior in solving the problem of ECC.

Mothers are undoubtedly the primary source of early education in children with regard to a good oral health. However, in the 21st century, the numbers of mothers employed outside their homes continue to rise, perhaps in an attempt to increase the quality of life. As a result, young children spend a considerable amount of time in day-care centers. In day-care centers, the caretakers’ role is similar to that of school teachers and may be even more important because they are involved in children’s daily diet, general hygiene and oral health care. Despite this, no study to the best of our knowledge has focused on determining the role of such caretakers in promoting oral health among children.

This pilot study was undertaken to assess the knowledge, attitude and practice of oral health promoting factors in infants and young children among caretakers at day-care centers.

Materials and Methods

This cross-sectional study involved caretakers working in all the day-care centers in Kubang Kerian, Malaysia. From a total of 11 day-care centers employing 40 individuals, 34 consented to participate in the study. Consent was obtained from the proprietor of each nursery after explaining the nature of research. All the caretakers who fulfilled the inclusion criteria were approached. Inclusion criteria for the caretakers were (1) they should be aged 18 years or above, (2) those who took care of normal/healthy children and (3) those who were employed as caretakers for more than 3 months. Since all the subjects fulfilled the inclusion criteria, none were excluded. Informed consent was then obtained from every caretaker who participated in the study.

The caretakers were required to answer a close-ended self-administered questionnaire. Sociodemographic details taken from the caretakers included (1) daily working hours as caretakers, (2) employment duration and (3) whether this occupation was their first choice. The questionnaire addressed the knowledge, attitude and practice of oral health promoting factors among infants and young children, designed jointly by the research group with the expert opinion of a pediatric dentist and community dental health specialist. It had 29 items, 10 each in the knowledge and practice components and 9 in the attitude component, and took about 20 minutes to complete. The scoring for attitude and practice was based on 5- and 4- point Likert scale, respectively, while the scoring for knowledge included true/false/don’t know responses. All aspects of oral health promoting factors in children including oral hygiene, diet and fluoride were addressed.

Data were entered and analyzed using SPSS 12.01. The ethical clearance was obtained from the Human Ethics Committee of Universiti Sains Malaysia.

Results

The demographic characteristics of the caretakers are shown in Table 1. Children under their care were aged between 1 and 5 years. Each caretaker was responsible for 2 to 19 children, depending on the day-care center. The mean duration of their services was 9.9 h/day, which was determined by the parents’ working hours. Most of the caretakers had secondary school education, with only three individuals having any form of tertiary education. A majority (52.9%) had more than 1 year of experience as a caretaker, but a quarter had less than 1 year experience.

Table 2 shows the knowledge of the caretakers. Most of them had good knowledge of a child’s tooth eruption stages, role of fluoride and tooth brushing in caries development. About 32% knew that caries can affect
infants below 2 years old and about 38% of caretakers knew the right time for using fluoride toothpaste for tooth cleaning. Only 24% knew that fillings in baby teeth were necessary.

Table 3 shows the caretaker’s attitude toward infant oral health. Five respondents agreed that tooth decay is caused by bacteria transmitted by sharing utensils, while 56 and 71% thought that nighttime and frequent bottle feeding/breast feeding did not cause tooth decay, respectively. About 18% strongly agreed that swallowing of toothpaste can be harmful to a child’s health.

Table 4 shows the responses to oral health practices. About 17.6% of the caretakers agreed to having bitten food into small pieces before giving it to the children. About 85% acknowledged giving sweet food to the child and 53% to giving sweetened liquid in bottle.

Discussion

Knowledgeable and efficacious caregivers can play an important role in caries prevention.\textsuperscript{52} Child care centres serve a significant number of young children and deserve attention as potential venues for early preventive and corrective oral interventions.\textsuperscript{50}

Worldwide, the numbers of mothers working outside their homes continue to increase; 70–80% in Poland\textsuperscript{19} and 45–55% in Malaysia. These women have to balance the responsibilities of the family and workplace. Working parents of children in nuclear families have mainly two options, to leave the child at home with a family member/hired help or to leave the child at a nursery or day-care center, which caters to children as young as 3 months. Parents opt to leave children at such centers for the majority of the day, during the working hours of the parent. Most nurseries are small, private organizations, located at residential areas, which may or may not be registered with the local department of community welfare. Hence, these organizations may not have the ideal requirements and reach the standards of an ideal nursery. The parents have limited control of activities in the nursery, and there may be inadequate knowledge and standardization of procedures regarding child caring among caretakers in such centers.

The caretakers in this study were all Malay females, which reflect the ethnic group comprising the majority in the state of Kelantan, Malaysia. Thirty five percent did not opt for infant caretaking as their first job option, which suggests that a lack of preferred job opportunities may have prompted them to take up this profession temporarily which in turn can result in decreased quality of care.
Mani, et al.: KAP among caretakers in Kubang Kerian, Malaysia

Only 42 and 39% of mothers knew that dental caries is caused by sugar in Wuhan, Republic of China, and Romania, respectively, and relatively few mothers knew the effect of sugary drinks like tea, coffee and milk.\[27,28\] Elsewhere, 78% knew that sugary foods and drinks should be limited to meal-times, but only 7% could select the four foods and drinks that supply children with the bulk of their added sugar intake.\[34\]

In this study, most of the caretakers (97%) knew that sugary food can cause tooth decay, but on the contrary, majority (59%) indulged in giving sweetened liquid in the bottle and 85.3% gave sweet food to the children. Seventy one percent and 56% of them also disagreed that dental caries is caused by frequent/prolonged feeding and nighttime feeding, respectively. This might be because they were not aware of the hidden sugars in the milk, or that giving the children bottle or breast feed immediately prior to bedtime and when the child woke up in the night was a common cultural practice of the region. Additionally, weaning from the bottle was also done quite late; only 3% of the caretakers practiced the right time to start giving semisolid food for a child at the nursery and most of them (64.7%) started feeding semisolid food for a child at the nursery at the age of 1 year, thus increasing the risk factors for caries.

The foundation of adult oral health is laid during the formative preschool years, during which a child's dental caries pattern and caries risk are established.\[35\] Good oral hygiene in the early years of life is associated with decreased caries experience in the individual in later life.\[36,37\] Time constraints in the schedule of parents working outside the home may put children at a disadvantage in learning satisfactory oral habits at home, whereas secondary caretakers can play a major role in inculcating good oral habits in these children.

A study in Poland reported that 54% of mothers regularly assist their child with tooth brushing and the proportion is greatest among mothers with higher education.\[15\] On the other hand, statistically significant difference between decayed, missing and filled teeth (dmft) index and self brushing, parental brushing or tooth brushing with parental assistance, was not found in another study.\[18\] In this study, 91.2% of the caretakers knew that cleaning a baby's mouth after each feeding should begin even before the teeth erupt and 97.1% were aware that brushing is important for oral health. Half of the subjects in this study agreed that effective cleaning of teeth cannot be achieved by the child him/herself, yet 53% of the caretakers ‘seldom’ or ‘never’ brushed the teeth of the children or assisted them. An excellent way to instill oral hygiene habits in these children is to conduct a regular exercise of tooth brushing everyday in the day-care center with the assistance of the caretakers.

Basic habits like drinking plain water and rinsing the
mouth with water after every feed can also be instilled in children at a young age. In this study, only 42% reported encouraging drinking plain water after every feed at all times.

About 62% of the caretakers in this study agreed that it was not necessary to do fillings in deciduous teeth, with similar results reported from a study in Poland where two-thirds of the mothers agreed that care of deciduous dentition was unnecessary.\(^{21,22}\) In contrast, a study in England concluded that 74% of mothers thought that dental decay in milk teeth was very important, but only about 47% wanted carious teeth filled, while 15% wanted them to be left and 28% wanted them extracted.\(^{23,24}\) In a multicultural community in USA, half the participants believed that children should see a dentist between 2 and 4 years of age.\(^{25,26}\) A majority (79.4%) in this study did mouth examination in the children but 58.8% did not believe that children should see a dentist before 2 years of age. For this reason, caretakers should be trained to identify carious deciduous teeth and highlight to parents the importance of its preservation and visiting a dentist at the earliest.

The role of bacteria in the etiology of caries was acknowledged by 33 and 35% of Romanian and Chinese mothers, respectively.\(^{27,28}\) In this study, only 15% agreed that tooth decay was caused by bacteria that were transmitted by sharing feeding utensils (e.g., spoon). Moreover, about 18% caretakers reported biting the food into small pieces before giving it to the children at the nursery. Hence, this implicates that oral health education should address concepts of transmissibility of oral bacteria.

Despite having good levels of knowledge of the causes of dental caries, the caretakers appeared to be unable to apply the knowledge in everyday practice. Good levels of knowledge is probably due to the wide exposure to oral health education and promotion among Malaysians through school dental service, antenatal clinics and other avenues, carried out by the Ministry of Health. The school dental service in Malaysia provides oral health promotion, preventive and curative activities using the school dental clinic, mobile dental chair and mobile teams, with the aim of rendering school children orally fit before they leave school. The poor practices may be due to the cultural practices observed in the region, which remains unchanged in spite of the knowledge obtained, which was also noted by Matilla et al.\(^{28,29}\) A similar finding was noted in Serdang, Malaysia, where the knowledge and attitude of parents toward oral health was not reflected in the oral health of their children.\(^{30,31}\)

This being a pilot study, conducted in one locality, conclusions cannot be applied to the population, thus requiring studies with larger samples. However, the preliminary findings indicate that the attitudes and practices of caretakers need improvement and the community would benefit if the caretakers undergo frequent compulsory standardized training pertaining to child rearing, which includes oral health promoting factors. The administrators of day-care centers should support and encourage such training among caretakers to enhance the quality of care. It would also be interesting to compare the caries status of children placed in such day-care centers with those under the care of mothers, to find out if placing children in day-care is a risk factor for ECC.

In conclusion, most caretakers had good knowledge, but the same did not reflect in their attitude and practice. It is worthwhile to attempt regular oral health promotion education programs, with stress on dietary practices and other preventive measures among caretakers of child care centers.

Acknowledgement

Participants of the study and Dr. Lin Naing are thanked for their help and support.

References


Source of Support: Nil, Conflict of Interest: Nil