

Kindergarten Teachers' Perceived Role in Pre-School Children's Dental Care – a Qualitative Study

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Abstract

Objectives: This paper reports on kindergarten teachers' perceptions of their role in children's dental care, and their gaps in knowledge and skills in a sample of fee-paying kindergartens in a developing country.

Design: Qualitative face to face depth interviews

Setting: Fee paying kindergartens in an inner city of a developing country

Method: Qualitative face-to-face in-depth interviews up to 60 minutes were undertaken with a purposive sample of 16 teachers, stratified by kindergarten size and fees structure. Salient comments were extracted from verbatim transcripts and sorted into a thematic framework.

Results: Some teachers reported elaborate toothbrushing activities while others felt oral hygiene was the parents' or the dentist's responsibility. Varying degrees of strictness in sugar intake regimes were reported. There was no awareness of dietary guidelines although most agreed with a balanced diet. Lack of dental first aid knowledge was widespread, and some reported harmful measures to stop bleeding caused by a dental injury. Kindergarten teachers' perception of their role was shaded by their sensitivity to the parents' and dentists' responsibility, as well as their lack of confidence in dental care, including dental first aid.

Conclusion: Collaboration between teachers, parents and dentists is recommended in promoting dental care in kindergartens.

Keywords: Kindergartens; Oral health promotion; Oral health education; Pre-school children; Qualitative research

Introduction

Dental caries in young children is a global public health problem [1]. Although its prevalence has declined over the past few decades, the declines have mostly been observed in high-income countries and less so in non-industrialised countries [2]. Variations in its experience exist between countries as well as within populations, leading to calls for further research and strategies to control caries[3]. In some parts of Malaysia, caries prevalence in pre-school children has been reported to be as high 98% [4].

The impact of dental caries on pre-school children is substantial [5]. Left untreated, it can lead to pain, and impaired quality of life, nutritional status and physical development [6]. Children with caries are more likely to weigh less than those without caries [7], or weigh less than their ideal weight[8]. Caries in the deciduous dentition is predictive of caries in the permanent dentition [9], suggesting that health-damaging behaviours practiced in early childhood may continue into adolescence.

It is generally acknowledged that kindergarten teachers have a role to play in caring for pre-school children's teeth[10], but their lack of knowledge and awareness has been widely reported [11,12], especially in the area of first aid for dental injuries [13]. Most research on kindergarten teachers' role and knowledge in relation to children's oral health has often been conducted through questionnaire surveys. To complement knowledge on the prevalence of a lack of awareness, qualitative research asks the question 'why', and 'how' the situation can be changed [14]. The qualitative approach can provide useful insights into the subjective

perceptions of kindergarten teachers on their role in looking after children's teeth, or their concerns related to the dental health [15]. We carried out this qualitative study to explore kindergarten teachers' perceptions of their role in children's dental care, and gaps in knowledge and skills related to dental care.

Materials and Methods

We conducted a qualitative study to explore the subjective experiences of a sample of teachers in kindergartens within a small geographical area of Kuala Lumpur, Malaysia between August 2013 and January 2014. Approval from institutional research ethics committee was obtained. A purposive sampling method [16] was used to recruit 16 teachers to represent kindergartens characterized by their size and fee structure (Table 1). The size of the kindergarten was determined by the estimated number of children attending for half-day whereas the fee structure was determined by the monthly fee for each child. Statistical representativeness was not sought, but a wide range of different perspectives was instead incorporated to ensure that not any one viewpoint, which may possibly be the most common, is presented as if it represents the sole truth about a situation [17].

	Smaller kindergartens	Larger kindergartens
Lower cost kindergartens	4	4
Higher cost kindergartens	4	4

Table 1: Sampling grid for sample recruitment

We identified local kindergartens from the internet, and approached the head teachers through email, telephone and personal visits. JWO and JT carried out all interviews. They explained to potential interviewees that the purpose of the study was to find out what different teachers thought about their roles in looking after young children's teeth. Appointments were made with kindergartens to interview the head teachers, or an appointed representative. Recruitment was pursued until the numbers in the sampling grid were fulfilled. We also used the snowball sampling technique [18] to recruit, in which our respondents were asked to introduce kindergarten teachers who were their friends or previous colleagues. Confidentiality was assured and those who agreed to take part gave their consent. Unstructured depth interviews were carried out. The interviews were carried out individually, taking place at the respective kindergartens or nearby cafes. The interviews, conducted in the Malay, English or Mandarin language, ranged from 30 to 60 minutes, using an interview guide (Table 2).

All interviews were audio-recorded, transcribed and analysed using 'Framework'[19]. All conversations were listened to twice by both interviewers and transcribed into English, followed by systematic sifting, indexing and charting of the transcribed data according to key issues and themes. The transcribed data were recorded in the first column of a spreadsheet with each segment of the data that referred to a particular issue or theme entered into a cell. These were then sifted, and salient comments were extracted and entered into the second column. The salient comments were indexed in the third column according to the thematic framework that had been developed. Next, half the transcriptions were reviewed and indexed independently by a third researcher (AP) experienced in qualitative data analysis. Following this, the three researchers reviewed and discussed the data to refine the thematic framework. The indexed data were then sorted according to the various individual themes. Salient comments from all teachers on each theme were next charted to identify any distinctive patterns or characteristics.

Results

Sixteen female teachers were recruited to the study. The themes generated from the data are reported and participants' quotes are used to illustrate the themes. Each participant is characterized by the size and fee structure of the kindergartens.

Perceptions of roles in promoting toothbrushing and use of fluoride

In most kindergartens, toothbrushing activities with the children were carried out because they were part of the curriculum. However, not

1.	As a teacher, what do you think your role is in taking care of the teeth of the children attending this kindergarten?
2.	For example, do you teach the children how to brush their teeth?
3.	Do you think it is important for you to teach them how to brush?
4.	Do the children here snack a lot? How often they snack when they are here? Do you feel OK about that?
5.	Do you use any guidelines or policy when preparing the children's diet? Where do these guidelines come from? How did you decide to use them?
6.	Do any of the children here have the habit of thumb-sucking and/or drinking from milk-bottles? What do you think about these habits?
7.	Does the kindergarten put on any activities related to looking after children's teeth? How do the children like them? Do you find them helpful? How?
8.	Have there been any accidents involving trauma to the children's teeth? What did you do when they happened? If an accident was to happen, would you know what to do?

Table 2: Topic guide for interviews

all teachers perceived that toothbrushing training was their role. Some felt that this should be left to the dentists or the parents. Among those teachers who perceived a role, those from the smaller kindergartens with higher fees, reported more elaborate toothbrushing activities, for example, 'Morning song every morning. I think it is effective because I can see the kids like to brush their teeth. We show them pictures of all tooth decay. I think the kids have some awareness especially the older ones.' (**Small-Hi**); 'We will ask the children to bring along their toothbrush and toothpaste. Then we have hands on session with them.' (**Small-Hi**); and more commitment, 'They need proper guidance. How to keep their teeth clean and why is it important to keep good oral health. Most parents do not have the time for all these. It starts from the parents. The preschool teachers are the foundation.' (**Small-Hi**).

By contrast, larger kindergartens reported less elaborate activities, 'Only teach them simple brushing technique during moral lessons. Not using real toothbrush.' (**Large-Hi**); or 'We just let them know they have to brush twice a day,' (**Large-Lo**); the barrier to assuming a more active role was that 'There is a lack of time to monitor if they brush in a correct way.' (**Large-Lo**).

Some kindergartens reported receiving visits from private or government dentists to deliver oral health promotion activities and reported that they found these beneficial. One reason was because they thought 'The children can learn in a correct way. If the dentist comes, they will be more into it and it is easier for them to absorb the knowledge.' (**Small-Hi**).

There would appear to be a lack of confidence in the knowledge they had on looking after children's teeth, 'Actually I am not sure whether myself is teaching them the correct technique.' (**Small-Hi**). They reported that the children were more likely to remember the dentist's visit, for example, 'They remember the demo by the dentists and they will try and follow.' (**Small-Hi**) and that they learned more, 'Yes. Learned about the brushing technique and parents will get to know about the oral condition of the children.' (**Small-Lo**). The teachers also felt that the dentist's visit can '...help them (the children) to overcome fear of seeing the dentist in the future.' (**Small-Hi**). Kindergartens that did not receive visits from a dentist expressed their interest in the role of dental professionals in caring for children's teeth in the kindergarten setting, 'I will hire professional team to teach the children about the knowledge of oral health. Teachers have limited knowledge in this aspect. Children can have the chance to ask questions.' (**Large-Lo**).

Some teachers believed that their role was very limited. They perceived their main role as delivering academic knowledge, 'We mainly focus on the academic because there are exams in the kindergarten. Teacher's job is just a bonus.' (**Large-Lo**), and that the responsibility for the children's teeth belonged to their parents, 'Some of them have had teeth because the parents did not take care of the teeth well.' (**Small-Lo**), 'I think it is the parents. The children spend most of their time at home. Teachers do play a part of it.' (**Small-Hi**).

One teacher proposed that cooperation between parents and teachers is essential, 'I think need cooperation between both parties. Even though we emphasize it in the kindergarten, there will be no effects if the parents do not care when they are at home.' (**Small-Hi**), and another suggested that they needed to be made aware of the importance of children's teeth so that they would be more likely to cooperate, 'I did not tell the parents. But I think the parents also know it. Just that they think that they will have another set of teeth sooner or later, so doesn't really concern about it.' (**Small-Lo**).

There was some awareness among the teachers that toothpastes contain fluoride, and the level of fluoride in children's toothpaste is different to adults' toothpaste, for example, 'I am aware that the ingredient inside

children toothpaste is different from adult toothpaste. I learn this knowledge from TV advertisement.' (**Large-Hi**), 'Too much of fluoride is not good. I am aware there are differences in fluoride levels in toothpastes.' (**Small-Hi**), although some thought toothpastes 'Probably got fruits inside it. Adult toothpaste is spicy and children toothpaste is non-spicy.' (**Large-Hi**).

Knowledge and control about sugar and the diet

There would appear to be some knowledge about the role of sugar in relation to dental health, and concern that its intake should be controlled. Some teachers expressed strict regimes in controlling intake of sugars and candies, for example, teachers from smaller kindergarten, 'We are very strict about this. We will confiscate the candies if the children bring. We will not reward the children with candies as well.' (**Small-Lo**), or 'Thin layer of jam only, Milo without sugar, tea with very little amount of sugar, biscuits without cream.' (**Small-Hi**), whereas teachers from a larger kindergarten were less strict, 'They are only allowed to eat during break time. We will not stop them from eating their candies.' (**Large-Lo**). For some teachers, the control of sugar intake was related poor dental health, for example, 'Is bad for teeth. I think once in a while is ok.' (**Large-Lo**), whereas for others, the reasons were 'Because if they take too much of sugar, they will be very hyper.' (**Large-Hi**), or 'This is because we want them to be disciplined.' (**Large-Hi**).

Most kindergartens provided morning snacks and lunch for those attending half-day. All interviewers reported that they were not aware of any dietary guidelines in meals preparation as the menu was either decided by headquarters or the kitchen staff, for example, 'No, we do not follow any dietary guidelines in preparing children's meals. It depends on what the kitchen staff cooks.' (**Small-Hi**), but there would appear to be some knowledge on a 'balanced diet', 'We do not follow any guidelines. We will provide a balanced diet for lunch. Vegetable is a must in the meal.' (**Small-Lo**).

Knowledge about dental injuries and dental first aid

Occurrences of dental injuries while children were at kindergartens were reportedly low, 'Only once. Two of the teeth broke off. We help him to stop the bleeding. Just apply pressure with tissue.' (**Small-Lo**). When asked what they would do in the event of a child sustaining an injury, most teachers were uncertain, for example, 'I will first inform the principal. I am not very sure how to handle this kind of situation. So I will prefer to inform the principal first.' (**Large-Lo**) and, 'Don't want the kid to gargle water because it will increase the bleeding. So we put gauze and ask the kid to bite. Is it right?' (**Small-Hi**). Some actually reported measure that would be harmful, for example, 'I will ask them to gargle until the bleeding stops. I will also inform the parents and the principal.' (**Large-Hi**) or 'I get then to rinse the mouth if bleeding.' (**Large-Hi**).

Discussion

This qualitative study explored kindergarten teachers' perceptions of their roles in children's dental care, and issues pertinent to children's oral health. The key findings were that some teachers reported an active role in toothbrushing activities on a regular basis; others felt that this should be left to the parents or dentists. Some teachers voiced the importance of sugar and diet control in children's dental health, however most were ill-informed about fluoride in toothpaste and first aid management of dental injuries.

There were variations among the teachers' perceptions of their roles in the children's dental care. Teachers in the smaller kindergartens charging higher fees tended to report a more active role compared to those in the larger kindergartens charging higher fees, suggesting a disparity in the dental care that kindergarten children receive from their teachers. The motivation of teachers to take a more active role has been previously

reported [11], however, in the present sample there was a general lack of confidence in 'doing the right thing' when it came to looking after the children's teeth. This highlights a need for raising awareness and skills development for these kindergarten teachers, which has been reported to be effective in enhancing their role in caring for children's teeth [10]. Teachers in this study would appear to welcome input from professional health workers. Some felt that the responsibility for the children's teeth lied with their parents, a finding also previously reported [20], but there was also a sense that not all parents were aware of the importance of their children's teeth and suggested that a way forward would be to ensure cooperation between teachers and parents in this endeavor. Such an approach has been shown to promote teachers' knowledge and attitudes, as well as deliver enhanced dental health outcomes for mothers and children [21].

The finding that sugar and diet control is a concern among teachers has been previously reported [22]. Most teachers in the present study expressed some effort in controlling sugar intake during kindergarten hours, although knowledge of dietary guidelines was lacking. The lack of knowledge of dietary guidelines is surprising, given that the Malaysian Dietary Guidelines were recently published and efforts had been made to promote their use [23]. Kindergarten teachers might be expected to be aware of the guidelines because their training in working with young children. However it appears that more efforts are needed to raise awareness of the guidelines and to develop skills in following them.

The finding that teachers are poorly informed or uncertain about first aid for dental injuries is generally recognized [24,25]. Less commonly reported were incorrect measures taken, such as rinsing with water. Teachers can play an important role in improving the prognosis dental injuries and should receive simple instructions in dental first aid [26]. Although most teachers may have received some form of first aid training, first aid for dental injuries is rarely covered [13]. Various efforts aimed at raising awareness and enhancing knowledge among teachers through lectures, videos and posters [27-29] have been reported to be effective, and should be encouraged.

By using a qualitative approach, a more insightful exploration of dental health issues that concerned kindergarten teachers was achieved. For example, the perceived tension between the teachers' role and parents' responsibility in caring for the children's teeth would not have been elucidated through a quantitative approach. However, the findings should be considered in the context of its limitations. Although the purposive sampling method had enabled the exploration of the views of teachers from different kindergartens according to size and fees, other important sampling criteria such as ethnicity was not taken into account. In a multi-cultural context, the cultural beliefs of the respondents might yield rich information [30]. This study was also conducted in a geographically small urban area, without representation from rural areas, or state-run kindergartens. However, within these limitations, the findings of the present study suggest three key areas for oral health promotion in which kindergarten teachers in the local context may benefit from awareness raising and skills development. These are tooth brushing with fluoride toothpaste, sugar and diet control, and dental first aid.

Conclusions

Kindergarten teachers' perception of their role in children's dental care is shaded by their sensitivity to the parents' and dentists' responsibility. Collaboration between all parties is recommended to promote awareness and skills development in dental health education, especially in first aid for dental injuries.

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