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Perceptions of mothers of preschool children towards oral health services - a qualitative study

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Abstract

Background Poor oral health, especially dental caries in early childhood is a major public health concern. Parental oral health knowledge, behavior, and perceptions are important elements in determining the child's oral health status. The aim of the study was to investigate the perceptions of mothers of preschool children in Qatar towards their children's oral health and their experiences with oral health services provided to children.

Methods The study is based on qualitative methods using focus groups. Purposive sampling was used to recruit mothers of preschool children at two kindergartens in the city of Doha, Qatar. The focus group consisted of a series of open-ended questions about the oral health of children and the opinion of mothers towards the current oral health services provided in the country. An inductive thematic content analysis at the statement level approach was used to analyze the qualitative data.

Results Twelve mothers between the ages of 20 and 41 years old from two kindergartens participated in two separate focus groups. The average number of children per mother was 5 with 45 months being the mean age of children. Several themes emerged from analyzing the data retrieved from the discussion with mothers. For oral health knowledge, mothers demonstrated a different level of oral health knowledge, from good to poor. As for experiences with health services, recognized the value of oral health services in Qatar but expressed difficulties in access to oral health services for their children with almost all having had some negative experiences. Regarding the anticipated role of mothers in the oral health of their children, mothers were very positive about their potential role in supporting their children's oral health. The mothers also gave recommendations to improve oral health services for young children.

Conclusion Mothers showed positive attitudes towards the oral health of their children and they recognized the importance of a good oral health care system.

Keywords Preschool children, Child oral health, Mother's perception, Oral health knowledge, Barriers to oral health promotion

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Introduction

Poor oral health, especially dental caries, in early childhood is a major public health concern [1–3]. The role of family and community are well established as key determinants of children's oral health [4]. Children tend to learn oral health behaviors from their parents, as parents and caregivers are responsible for the care and perception of children's oral health, especially among preschool children [5, 6],. Parents can play an important role in the care of children's oral health, through assisting their children to maintain good oral hygiene and in providing healthy, and balanced nutrition. The oral health of children can also be influenced by genetics and more importantly by environmental factors [7–9]. Therefore, parental oral health knowledge, behavior, and perceptions are important elements in determining the child's oral health status [7, 8, 10]. A Qatari study investigating the oral health of preschool children indicated widespread neglect of the oral health of preschool children with an 89% prevalence of early childhood caries (ECC) [11]. Children's caries experience has been related to parental behaviors including those not directly related to caries such as smoking [12].

The knowledge and attitudes are positively associated with the status of the children's oral health and children are more likely to be affected by early childhood caries if their parents have poor dental health [13]. A study investigated the knowledge of mothers of preschool children about oral health in Qatar and reported good knowledge of the participants about oral health care. Nevertheless, the study reported that 36% of the children went to bed with a bottle, and 42% of the children snacked frequently and the preferred snacks were mostly cariogenic [14]. These findings indicate that mothers were unable to translate their knowledge into health practices [10, 14].

Previous studies on parental attitudes toward the oral health of their children have involved western populations. Given the distinct cultural and socio-economic environment in the state of Qatar, there is a need to gain an in-depth understanding of the possible factors that influence parental attitudes towards the oral health of their preschool children.

The aim of the study was to investigate the perceptions of mothers of preschool children in Qatar towards their children's oral health and their experiences with oral health services provided to children. The research questions for the study were phrased as follows: What are the experiences of mothers of Preschool children regarding oral health services in Qatar?

Methods

Ethical approval

Ethics approval was obtained from the Human Ethics Research Committee at the University of Melbourne (Ref. No.1034161) and the Medical Research Centre at Hamad Medical Corporation (HMC), Qatar (Ref. No.10097). Informed consent was obtained from all participants in the study.

Study design

This paper is part of a larger research project that adopted a mixed methods approach and various aspects were published elsewhere [11, 14–17]. In this paper, we report the qualitative research methodology using focus group interviews of mothers of kindergarten children who participated in the clinical study part of this study [11, 14–17]. The key steps of the research methodology are depicted in Fig. 1.

Setting

The research was conducted at two kindergartens in Doha, Qatar. One focus group was scheduled at each site through mutual agreement between the researcher and the participants. The focus groups were conducted during working hours and a quiet room was pre-booked at each site to ensure the comfort and privacy of the participants.

Research team

The research team included experienced researchers in Dentistry. AOA is a senior Dental Public Health Consultant and Associate Professor and has substantial experience in qualitative research. KA is a Professor in Dental Education and Oral Surgery and has extensive experience in qualitative research and has supervised over 25 qualitative research projects. RA is an experienced Professor of Dental Public Health with experience in mixed methods research. HMG is a senior dentist working in the management of Primary Health Care Centers in Qatar. LA is an Assistant Professor in Prosthodontics with experience in mixed-methods research. The research team was supported by a research assistant who accompanied the principal investigator during the focus groups and took written notes. None of the authors had any conflict of interest with this research project.

Participants and sampling technique

The qualitative research design used focus group interviews with mothers of preschool children in the city of Doha, Qatar from two kindergartens. The sample was homogenous, and participants were recruited using a purposive sampling technique. Also known as judgmental or selective sampling, this is a non-random sampling method were recruited based on the following eligibility criteria:

- Women with at least one child attending the participating kindergartens in Doha Qatar.

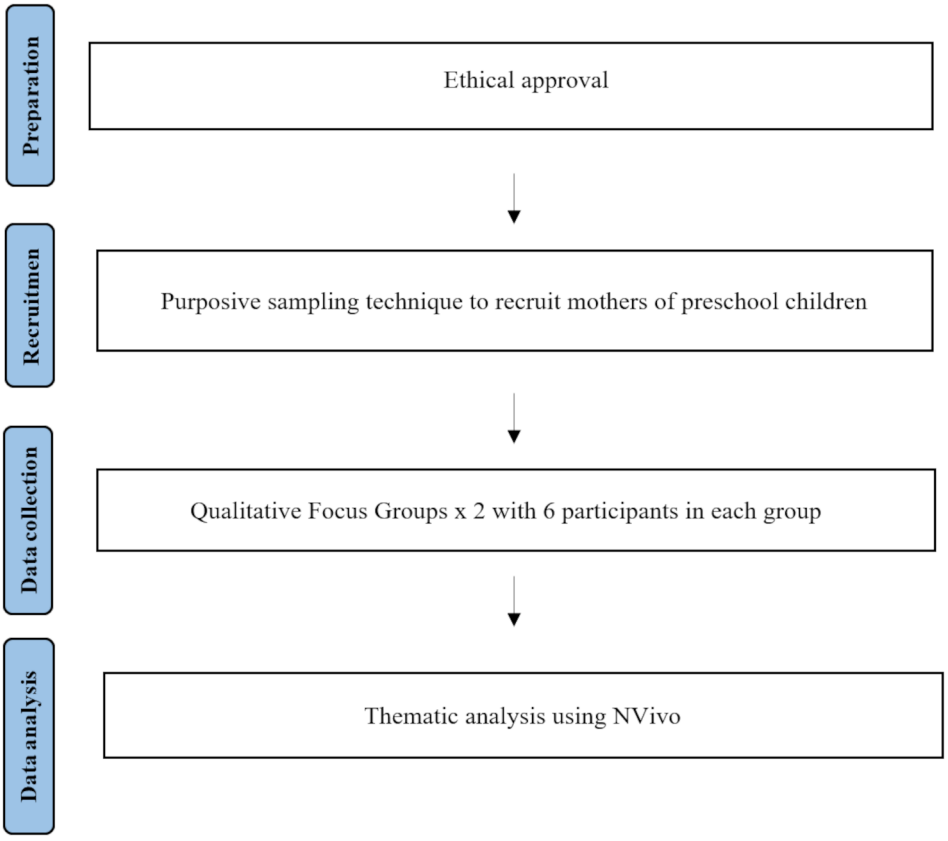

Fig. 1 Flow chart of research methodology

- Women who had participated in the clinical and questionnaire-based components of this research project.

The subjects were made aware that participation was voluntary and written and oral information regarding the study was provided. The recruitment process was designed to be inclusive, ensuring that all eligible mothers had the opportunity to take part. However, as participation was entirely voluntary, the final sample was dependent on the willingness and interest of the mothers who provided informed consent.

Data collection

The target participants were invited to participate in the study through nurses based at local kindergartens who also acted as gatekeepers. The research invites were distributed to the mothers by the nurses and included participant information explaining the scope and purpose of the study. A topic guide was developed for the focus groups and included questions based on the perceptions and personal experiences of mothers of preschool children in Qatar regarding their children's oral health and the accessibility and quality of oral health services available for children in Qatar. The topic guide was updated after the initial reading of the transcript of the first focus group to delve deeper into the issues identified by the participants.

The focus groups were conducted in a quiet room and moderated by the principal investigator. All focus groups were conducted in Arabic and recorded using an audio device with the consent of the participants. A mirroring technique was used to guide the course of the focus groups and the participants were given full freedom to express their experiences and views and interaction amongst the participants was encouraged. The audio recording was done to ensure the accuracy of the transcription. In addition, hand notes were also taken by a member of the research team.

Data analysis

All participants were assigned pseudonyms to protect their identity during data transcription. The transcripts were translated into English by an independent professional and cross-checked by the bilingual members of the research team to identify and rectify any inaccuracies. The updated transcripts were used for subsequent data analysis. The recordings and transcripts were stored on a password-protected computer and participants were de-identified to ensure confidentiality and anonymity of

Table 1 Demographics of mothers who participated in the focus groups

Attributes	Number
Number of participants:	
– Focus group 1	7
– Focus group 2	5
Maternal Age	
– 20–30 years old	5
– 31–40 years old	5
– 41 years or more	2
Average number of children per mother	5
Range of number of children per mother	2–9

the participants. The transcripts were read several times by the principal researcher AOA to gain a sense of the data and plan the data analysis. For the preliminary data analysis, a poster was used to plot the emerging themes and codes supported by quotes from the transcript, written on color-coded sticky labels. However, when the data collection was completed this approach proved non-practical. Hence qualitative data analysis software was used namely, NVivo 12 (QSR International Pty Ltd). The software was mainly used for data filing and organizing. The analysis was done by reading the transcripts several times to extract meanings, codes, themes, and patterns using thematic analysis with an inductive approach. This analysis was aimed at situating oral health within the narratives of the participants based on their understanding, experiences, and expectations.

Systematic reading through the entire data set, sentence by sentence, was carried out for an initial coding of the data. Each element of the transcripts was categorized to reflect the views of the participants. Initial coding of the data identified 45 nodes, which involved grouping similar and repetitive ideas expressed by participants. Repetitive reading of the transcripts, and listening to the audio recordings and the accompanying notes helped to categorize the nodes into broader codes Further analysis helped to establish linkages between nodes, which facilitated the synthesis of tree nodes from free nodes and ultimately helped shape the themes. The tree nodes were developed within the NVivo software and effectively linked coded categories of data and helped map connections within the data. Thematic analysis was used to identify broad areas, which captured the views and experiences of the participants. The tree nodes with a parent node were used to identify the branches (free nodes) that were contributing to a given theme. Segments of verbatim quotes from different participants were incorporated as coded text to support different themes.

Member checking was done with two independent researchers to verify the accuracy of the category system. Consensus on themes amongst the research team required minor modifications to coding following deliberations with the research team.

Results

A total of 12 mothers from two kindergartens participated in the study. A separate focus group was organized for each kindergarten and each focus group lasted approximately ninety minutes. All participants were local Qatari women selected from a larger group who completed a related questionnaire, the results of which were published elsewhere [14]. Table 1 summarizes the demographics of the participants.

In general, the participating mothers were very enthusiastic and interacted well during the discussions. They expressed their feelings freely about the oral health services provided to preschool children. They shared their difficulties in finding a dentist who could treat their child well without waiting many months to see a specialist. The narratives of the participants were based on the mothers' real-life experiences.

Key themes

Several themes emerged from analyzing the rich data collected during the focus groups. The key themes are summarized below supported by contextual verbatim quotes by the participants.

Theme 1 Oral health knowledge

All participating mothers (100%) shared their knowledge of oral health but demonstrated different levels of oral health awareness, ranging from good to poor.

The meaning of "healthy mouth and teeth" The mothers showed a good understanding of the meaning of a healthy mouth and teeth. The following quotes highlight mothers' knowledge about the impact of oral diseases, dental caries, tooth pain, and the importance of primary teeth:

> *"The non-existence of teeth decay means healthy mouth and teeth".*
> *"Our suffering of tooth decay is the toothache encountered by our children".*
> *"If there is any problem with the baby teeth, it will affect the adult ones too".*
> *"No tooth decay, no pain and a beautiful smile".*
> *"The most important thing is to protect the baby's teeth, but my husband likes bringing candies for our children".*

Causes of tooth decay It was evident that there was a range of knowledge about the causes of tooth decay in children. In the following quotes, mothers mentioned the harmful effect of sweets consumption and the importance of tooth brushing and breastfeeding:

"Negligence, excessive eating of candies and the absence of tooth brushing habit".
"The lack of tooth brushing, and the child behavior [uncooperative] is not helpful".
"Breastfeeding is the reason for tooth decay".
"No, mother's milk does not cause tooth decay, alternative milks do".
The school canteen sells sweets, which aggravate the level of the existing problem.

Dental care: tooth brushing and dentist visit There was unanimity in the group that brushing should commence early. However, mothers had different views of when to take their child to the dentist:

"... [brushing should start] from the first appearance of teeth".
"... [go to the dentist] when there is a problem".
"... [go to the dentist] at the age of two years".

Theme 2 Experiences with health services

All participating mothers (100%) had very strong opinions about the accessibility of health services for oral health care of their children. Almost every mother had some negative experiences with health facilities.

Choice of medical facility for children dental problems Mothers' accessed various health facilities to seek dental care for their children. Some mothers mentioned that they prefer private clinics because of some challenges related to accessing governmental oral healthcare services as demonstrated in the following quotes:

"Private clinic, because there are difficulties in getting treatment at the dental hospital or health centers".
"Private clinics are better than health centers, but the anesthesia process [injection] scares me".
"Appointments at the dental hospital involve a long waiting time, which forces us to go for private providers".

Mothers had many experiences to draw from, when discussing primary care health centers. The discussion was mainly around challenges regarding getting dental appointments:

"I have been given appointment after two months [at the dental hospital] and when I went for the appointment on time, I found that the dentist was not there, and they told me they will call. Until now, five months passed, and no one called".
"We are going routinely to the dental hospital, but we are not getting appointment, so we were forced to go to private sector and of course it is very expensive".
"I'm suffering much from the waiting list and I can't go to [expensive] private [clinics] but sometimes I found myself forced to use my household budget to pay for private dental care".

Anticipated role of mothers in the oral health their children A vast majority of the participating mothers (90%) were very positive about their potential role in supporting their children's oral health:

"Encourage our children to have healthy food".
In all Schools the canteen should have healthy food such as vegetables, fruits and milks instead of currently offering fast food. There should be more care to these canteens and also to have someone from parents' group to monitor them for unhealthy food.

Theme 3 Recommendations to improve the oral health services

Nearly two-thirds of the participating others had constructive recommendations to improve the current health system in terms of oral health care for young children. Mothers gave suggestions around health care system:

"We want to have an organized system, timely appointments and to develop the existing system by developing the staff, since the required facilities already exist, only the performance needs to be improved; also, we need to have periodic dental check-ups in schools".
"The appointment system in the dental hospital should be improved and there should be more attention paid to families. Currently when requesting an appointment, they simply say "go back and we will call you" but no one call again".

Moreover, mothers expressed their opinion about healthcare resources:

Why not increase the number of dentists and number of clinics? There should be dedicated dentists for dealing with dental emergencies.

Nearly 40% of mothers gave constructive feedback about services:

"There should be more dental clinics, especially for children and getting appointment to see dentist should be quicker and easier".

"We will be in need of very specialized centres [for oral health care of preschool children]". "Speeding up the child treatment is very important".
"Developing the vaccination system to include the teeth checks".
"There should be dental check-ups at the vaccination clinic, since there is the start of the medical care".
"Not enough time allocated for the patient, dentist [dentist] spend very short time with patient and request to come back for simple things [treatment]".

Discussion

Qatar is a rich country with a strong economy based on gas exports and a low population, generally an affluent society. There is a strong family structure with a well-protected environment for children. Health services are organized in primary and secondary care settings with free of cost access to medical and dental services for citizens. Over the past decade, primary health services doubled in size including dentistry. ECC is one of the most prevalent chronic childhood diseases affecting large numbers of children globally [1, 3, 18]. The caries prevalence in Qatari preschool children is very high, 89% in 4–5 year year-olds [11]. While the mothers have a good understanding of oral health, it is not reflected in preventive care at home as indicated in a local survey [11, 16]. Similarly, the United Kingdom has a high caries rate in children and long waiting times (up to 2 years now) to access NHS dentists, high figures for pediatric extractions under GA [18]. This is contrasted to the much more effective prevention strategies in Scandinavian countries which Qatar can learn from, which necessitate more organized programs and effective use of social media for public messaging in Qatar.

The results of this study demonstrated that mothers care about the oral health of their children and reflect a mature comprehension of oral health needs. This study utilized a purposive sampling technique, also known as judgment sampling, which is the most common sampling technique for qualitative research [19]. The participating mothers showed enthusiasm about the oral health of their children which contrasted with the opinions of health professionals about them which was reported elsewhere [6, 14, 16, 17, 20].

In terms of knowledge, the discussion focused on three aspects: the meaning of a healthy mouth and teeth, the causes of tooth decay, and the provision of dental care. Mothers had reasonable knowledge about the meaning of healthy teeth and the causes of tooth decay. Some had some incorrect knowledge related to prolonged breastfeeding and the perception of it as harmless for the primary teeth. However, their knowledge of the causes of tooth decay focused on the lack of proper oral hygiene, which was similar to the findings of other qualitative investigations [21]. Despite mothers knowing the importance of commencing tooth brushing at an early age; they were not sure about the timing of the first dental check-up. Mothers had diverse views about the timing of taking their child to the dentist. Some thought that having a dental problem is an indication for a dental visit while others thought that the age of two is appropriate for a dental check-up. Other studies reported that mothers believed that daily tooth brushing has a crucial role in reducing oral disease, but showed similar trends in terms of mothers not knowing key elements of the recommended hygiene practices for preschool-aged children such as the time to start brushing children's teeth [9, 21–23]. In this study, mothers showed good knowledge about the role of sugar consumption as a key risk factor for developing dental caries. This result is in line with other studies that reported that mothers were able to link dental diseases and diet [4, 23]. Mothers reflected on their negative experiences with the oral health care providers ranging from the primary health centers to the tertiary health services and the private clinics. Among these negative experiences was the difficulty of getting an appointment to see a dentist; even if an appointment was obtained, the general dentist in most cases was unable to deal with the preschool child appropriately. Another issue raised by the mothers was the negative manner of the staff towards their children in the health facilities. This discouraged mothers from attending the health center clinic. This observation is in agreement with the literature as the attitudes of health office staff towards clients impacted their willingness to attend the health service [17]. A Brazilian study indicated that dental provider's office staff attitude was one of the barriers that prevented pregnant women from accessing dental care [6]. Moreover, mothers felt that the number of available dentists for treating children was not enough to cater to the needs of the people who are seeking care [9, 17, 21, 22, 24].

In the current study, mothers also reported negative experiences with the tertiary oral health services these negative experiences mainly focused on the long waiting time and isolated instances of inconsideration such as canceling appointments after a long wait. Almost all mothers mentioned their struggle with the extensively long waiting time to get their children seen by a specialist for complete mouth rehabilitation in the tertiary care facility under general anesthesia. This is in agreement with previous studies that reported waiting times were long. It is necessary to take measures to reduce delays and improve access to oral health care for this special population [18, 20, 25–27]. This reflects a gap in the provided specialized oral health services in comparison to service demand.

Limitations

There are some limitations of the current study which need to be acknowledged. Firstly, the sample involved participants from only two kindergartens. The inclusion of participants from multiple centers would have provided a better representation of the study population. Although the qualitative focus groups included only twelve participants, data analysis revealed recurring responses and shared experiences, suggesting that data saturation was achieved. In qualitative research, sample sizes are typically smaller than those in quantitative studies, as the primary aim is to gain a deeper understanding of participants' perspectives and experiences rather than to achieve broad generalizability. The richness of the data collected in this study aligns with this approach, as key themes emerged consistently across participants. However, it is acknowledged that recruiting additional participants and involving more kindergarten centres could have potentially introduced additional perspectives. Notwithstanding these limitations, the this is a maiden study in Qatar and the results highlight how mothers perceive their children's oral health and identify several barriers to active participation of mothers in developing oral health programs. Future studies should aim to recruit a more representative sample to strengthen the findings of the study.

Conclusion

The participants of this study showed positive attitudes towards the oral health of their children and they recognized the importance of a good oral health care system. They felt that the current system needs improvement and they expressed dissatisfaction with services at all levels of the health system including primary, tertiary, and private health care. This research provided a promising start to engaging mothers in oral health promotion programs and served as the first step to understanding mothers' oral health perceptions and exploring factors that influence children's oral health. Future research is needed to translate those factors into public oral health plans focusing on mothers' behaviors being the main caregivers for preschool children in Qatar.

Author contributions

1 - Dr Asmaa Othman Alkhtib, Principal investigator, contributed to conceptualization, data capture, writing– original draft, reviewed and edited the manuscript. 2 - Dr Hasaan Mohamed Gasim, contributed to data capture, writing– original draft, reviewed and edited the manuscript. 3 - Dr Kamran Ali, contributed to review and edited the manuscript. 4 - Randa Fathi Ali Abidia contributed to review and edited the manuscript. 5 - Dr Lamyia Anweigi, Corresponding author contributed updated the references, ensure the manuscript fulfils the journal's guidelines. processed of the manuscript submission. All authors reviewed the manuscript.

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Data availability

No datasets were generated or analysed during the current study.

Declarations

Institutional review board statement

This study is a low risk as there was no clinical intervention nor was there sensitive.
Information obtained from participants. Participation in this study was voluntary and no pressure was put on individuals to join the study.

Ethics approval and consent to participate

Ethics approval was obtained from the Human Ethics Research Committee at the University of Melbourne (#1034161) and the Medical Research Centre at Hamad Medical Corporation in Qatar (# 10097).
We confirm that all methods were performed in accordance with the relevant guidelines and regulations (Declaration of Helsinki).

Informed consent

Informed and voluntary consent of participants was obtained after information was provided to participants about the purpose, methods, demands, risks, inconveniences, discomforts, and possible outcomes of the research. This information was provided in a written Plain Language Statement. We confirm that all methods were performed in accordance with the relevant guidelines and regulations (Declaration of Helsinki).

Consent for publication

Not applicable.

Conflict of interest

The authors declare no conflict of interest.

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