

## ***Perception of mothers about dental caries of their children in Erbil city, Iraq: A qualitative study***

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### **Abstract**

**Background & objectives:** Mother's health education is an important factor and has a significant effect on child tooth decay. This study aimed to identify perception of mother about dental caries of their children in Erbil city, Iraq.

**Methods:** A qualitative study involving interviewing 29 women was conducted in Erbil, Iraq, from December 2021 to June 2022. Required data were gathered by conducting in-depth semi-structured interviews with participants. The interviews were recorded and transcribed verbatim. The scripts were analyzed using the six methodological activities of Van Manen (1990), and the themes were extracted.

**Results:** Most mothers said that their child's teeth are rotten because of eating sweets and not brushing their teeth. The majority of mothers did not know the type of teeth and symptoms of tooth decay in their children. Most of them thought that the milk tooth falls out by itself and is replaced by another tooth. Many suggestions have been made to improve dental health of the children like putting oral health program in the curriculum of the schools, education programs for the mother.

**Conclusions:** Most of the mothers do not have information about teeth decay. They took their child to dentist, when their child restless due to tooth pain. Mothers suggested that, ministry of health and education should work together to increase dental health education of children and mothers.

**Key words:** Dental caries, Mother's experience, Health education, Erbil city, Iraq

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### **Introduction**

Oral health education is the science that promote knowledge and attitude toward healthy oral condition. Dental caries is non-communicable oral disease, according to WHO approximately 60-90% of school children are suffering from dental caries world-wide. The process of caries formation begins as a result of

converting sugar in to the acid which takes place by bacteria on the surface of the teeth. The demineralisation of tooth surface occurs by acid. Over a period of time cavity formation happens followed by pain and finally loss of tooth. By promote health education of mother can decrease prevalence of dental caries. The most effective factor of dental caries is intake of dietary sugar, so decreasing intake of sugar directly related to decrease dental caries. In the other hand proper brushing and flossing of teeth are essential for having health teeth<sup>(1)</sup>.

Dental health education is very important for having a healthy tooth and a healthier life so in the developing country, the World Health Organization gives value to oral health care program therefore, attaches great importance to oral health awareness, and in all its activities, the organization's work includes prevention by dental health educating, educating about the dental hygiene and how to prevent dental caries, and restorative dental care<sup>(2,3)</sup>. This study aimed to explore perception of mothers about dental caries of their children.

## **Methods**

**Study design and setting:** A qualitative method was employed to carry out the present study. It was conducted in Erbil, Iraq, from December 2021 to June 2022.

**Participants:** The study sample consisted of 29 women having children with dental caries. The participants recruited through purposive sampling method.

**Data collection:** Required data were collected through 29 in-depth semi-structured interviews that were carried out in public and private dental clinics in Erbil city. The in-depth semi-structured discussion method provided real-life data through discussions with the women. This method offers room for more in-depth exploration during data collection. Each interview lasted around 45 minutes—topic guide questions were used in the semi-structured interview ( Table 1). Participants were asked to talk freely on issues raised and questions asked during the interview. The interviews were tape-recorded and transcribed verbatim. Then, the transcripts were analyzed into different themes. The researchers continued the interviews until the conceptual saturation was reached, which resulted in no further new categories and themes from interview no. 27. Still, the researchers continued the focus for up to 29 to get more assured<sup>(4)</sup>.

Table 1. Interview questions

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1. What are causes of dental caries in children?
  2. How do you notice your child' dental caries?
  3. How do you manage dental caries of your child?
  4. In your opinion, how we can improve dental health of our children?

**Data analysis:** The transcripts of the interviews were analyzed through the six methodological activities of Van Manen (1990)<sup>(5)</sup> (See Table 1).

**Table 1. Six methodological activities in Van Manen’s method**

#	Van Manen’s Methodical Activities	The Researchers’ Activities
1	Turning to the nature of lived experience	Experience of mothers having child with dental caries and how they live and deal with this issue
2	Investigating experience as we live it	Women with one or more children with dental caries were chosen as the participants.
3	Reflecting on the essential themes which characterize the phenomenon	Thematic analysis was employed.
4	Describing the phenomenon through the art of writing and rewriting	A phenomenological text was created through writing and rewriting techniques.
5	Maintaining a strong and oriented relation to phenomenon	The themes were discussed in relation to the phenomena.
6	Balancing the research context by considering parts and whole	The transcripts and the extracted themes were compared and studied closely.

By comparing the translated transcripts with the recorded interviews, their accuracy was checked. The transcripts were broken down into words, phrases, and sentences by applying holistic, detailed, and selective approaches, and the themes reflecting the mother’s lived experiences were extracted. To thoroughly understand the participants’ lived experience, the transcripts were reread and scrutinized several times.

**Trustworthiness:** Trustworthiness is the level of adequacy or soundness in qualitative studies<sup>(6)</sup>. Ensuring a qualitative study's trustworthiness involves important steps such as describing data analysis and justifying the reliability of the gathered data<sup>(7)</sup>. Ensuring the trustworthiness in this study involved considering the field experts' comments, creating a good relationship and obtaining the mother's trust, using suitable time and place for the interviews, and reading the transcripts several times. Moreover, the researchers' long-term experience helped ensure their reliability.

**Ethical consideration:** This study approved by the ethical committee of the College of Health Sciences , Hawler Medical University.

## Result

Out of 29 Mothers, fifteen of them ( 51.7%) were in the age group ( 30-39). Sixteen of them (55.1%) had college and post graduate qualifications and majority of them ( 75.8%) were urban residence( Table 3).

**Table 3. Sociodemographic characteristics of the participants.**

<b>Variables</b>	<b>Groups</b>	<b>No.</b>	<b>%</b>
Age group	20-29	8	27.5%
	30-39	15	51.7%
	40-49	6	20.6%
Educational level	Illiterate	6	20.6%
	Primary school	5	17.2%
	Secondary school	2	6.8%
	College and higher education	16	55.1%
Residence	Urban	22	75.8%
	Sub-urban	4	13.7%
	Rural	3	10.3%
Total		29	100%

### **Causes of dental caries**

Many causes of dental caries mentioned by the participants like eating sweet and cheeps, not brushing, drinking milk and genetic factor. Examples of quotations:

“My child eats chocolate and biscuits, chips, so his teeth may be damaged due to eating them”. (p. 13).

“ My child was drinking milk at night by help of bottle-feeding glass suddenly his teeth started to decay. I was surprised when I took him to the dentist and the dentist told me that drinking milk without toothbrush makes tooth decay”. (p. 1).

“My child is small, he can't brush his teeth by himself, he just puts the toothbrush inside his teeth. Because of the decay of his teeth, he cannot eat, he only eats cakes and sweets, then his toothache starts (p. 6).

“All my children have tooth decay, so it may be because of our genetic factor” (p. 5).

“I believe tooth decay is due to genetic factor, my child's teeth has caries because all of my family member has dental caries”. (p. 25).

### **Mother practice about prevention and control of their child's dental caries**

There are many obstacles regarding prevention and control of the child's dental caries by their mothers like misunderstanding of mothers about time of fall out of primary teeth, lack of information about types of the teeth, lack of mother's knowledge about symptoms of dental caries, socioeconomic status of the parents and fear of the child from the dentist. Examples of quotations:

“My child is very small and his teeth are milk and they fall out by themselves, so there is no need to spend money to repair the teeth that fall out (p. 8).

“Actually I didn't know anything about teeth. And I noticed that his teeth were discolored, it started with black spots in the first stage. Later my child felt pain and as soon as I felt pain I took my child to the dentist”. (p. 6)

“People used to say that all children's teeth fall out and the permanent tooth fills their place, but now the doctor says that the permanent tooth is decayed. (p. 29)

“I didn't know my child had tooth decay until he couldn't sleep because of the pain. I didn't take him to the dentist before because he had no symptoms”. (p. 1).

“I didn't take my child to private dental clinics because we don't have the financial ability to repair my child's teeth, and it takes more than six months to a year to repair the child's teeth in public clinics. My child is in severe pain but i can't do anything for him”. (p. 2).

“I cannot control my child because he doesn't allow dentist work for him, I took him before”. (p.18)

### **Mothers' suggestion regarding improving dental health**

Many suggestions have been made by the participants like including dental hygiene program in the school curriculum, raising the of oral and dental awareness in the society, increasing the motivation of the mother to take care of their child's teeth, and increasing numbers of the dental health clinics. Example of quotations:

“The school dental hygiene department in the school should take more serious measures because children spend more time in school”. (p. 16).

‘The government should have a more serious program for oral and dental health education in the society because people pay less attention to the health of their teeth and their children’. (p. 8).

‘The government should work on the awareness of children to keep their teeth clean and visit the dentist. The Ministry of Health should advertise for children to prevent fear of the dentist’. (p. 18)

‘The Ministry of Education should provide toothpaste and toothbrushes to students and force parents to take their children to the dentist every 6 months’. (p. 23)

‘The mother has the duty to teach her children how to brush their teeth and to control the nature of her child's nutrition by encouraging them not to eat cold and sweet foods’. (p. 11).

‘There are only two public health centers for children in Erbil, Xanzad and Hawler dental center. This number is insufficient and both centers have only 6 dental chairs for pediatric dental treatments’. (p. 26).

## **Discussion**

Tooth decay is a common disease in the world, it has an impact on the daily live of parents and childern. The main impact of tooth decay are psychological and physical effects on children in addition it has directly effects children's education<sup>(6)</sup>.

Majority of the participants said the type of food that their child eats is the cause of their child's tooth decay and most of the mothers said eating and drinking sweet make dentl caries. This finding similar with findings of other studies<sup>(1)</sup>. So increasing the awareness of mothers about dental brush is effective factor for encourage childern dental brush. Dental health education of parents toward attitude and action and change value has positive effect on child dental caries control<sup>(8)</sup>.

Regarding oral and dental hygiene, mothers know that the tooth brush is an effective factor in preventing tooth decay. Most participants said that not brushing their teeth was directly related to their children's tooth decay. Brushing with the correct technique decrease the oral caries of preschool children by reducing the pulque on the surface of the tooth<sup>(3)</sup>.

Few mothers believed that genetic factors related to their children's tooth decay. But So far, no research has proven that tooth decay is herediatory. Genetic factors are relatively less important determinants of caries risk than shared environmental factors<sup>(9)</sup>.

Participants mentioned reasons like eating chips, drinking milk, not brushing teeth .Lestari and Layla mentioned in their study that drinking milk while sleeping using breastmilk or bottle as a common cause of dental caries<sup>(10)</sup>.

In this study, majority of mothers lack information about dental caries formation. Lack of mother information about stage of caries and its sign makes misunderstanding toward dental caries treatments. They thought because her child did not feel pain, so her child does not have caries. In contrast to our result, a study reported that mothers at their population study had enough knowledge about the importance of primary teeth<sup>(11)</sup>.

In this study, mothers were not take their child to the dentist on time because most of them did not know the symptoms of tooth decay due to lack of information about teeth decay, and thought that until their childern did not have a toothache, they do not have decay, similar with our finding also another study revealed that few mother aware about first sign and stage of tooth caries<sup>(12)</sup>.

In comparable to our results, Nasser et al in 2022 reported that educational level of parents has no effect on the children dental caries but economic status of parents has directly proportional to children dental caries<sup>(13)</sup>.

In this study only 1% of mothers have knowledge about the age of the primary teeth eruption which is helpful for preventing caries of permanent teeth, in contrast to our finding, Nasser et al (2022) found that 57% of mother in their study have knowledge about sign of dental caries<sup>(13)</sup>.

In this study most of the mothers do not accept the filling of their children's decayed teeth because they think that all milk teeth will soon fall out and be replaced by permanent teeth, so filling them is not necessary. In comparable to our result Eseliva et al (2022) reported in their study, 64.86% parents of their survey believed that preservation of infected deciduous teeth is not necessary<sup>(14)</sup>.

In this study, many participants suggested that the school dental hygiene program should be part of the school curriculum, and teachers should be familiar about oral and dental hygiene. In consistent with our results, Heydarzadeh et al in 2021 mentioned in their study that the package of educational intervention for teachers in oral health-promoting schools improved the level of knowledge of the teachers<sup>(15)</sup>. Majority of mothers said by increasing the level of oral health education in children and mothers, the community oral health education could be improved. Our result is also consistent with the results of research done by Ngatemi in which they found a positive effect of dental health education in changing in values, attitudes and actions of parents to maintain their children's oral health by giving them hand book<sup>(6)</sup>.

Findings of this study confirmed the positive effect of learning through mobile applications on increasing the students' knowledge, attitude and performance regarding dental-oral health education<sup>(16)</sup>. Ngatami, 2020 also showed importance of dental health to mothers by showing them a series of PowerPoint slides, he also emphasized the causes of tooth decay, and also informed them about the importance of primary teeth<sup>(6)</sup>. By implementing a series of educational programs at home, this lead to raise the level of oral and dental hygiene of the child and the mother, which led to a change in the child's behavior and finally the children accepted brushing their teeth<sup>(2)</sup>. Combined training can increase knowledge, change attitudes, and improve the adoption of dental caries preventive behaviors that affect oral and dental health of students<sup>(17)</sup>.

## **Conclusions**



Most of the mothers do not have information about teeth decay. They took their child to dentist, when their child restless due to tooth pain. Mothers suggested that, ministry of health and education should work together to increase dental health education of children and mothers.

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