# MATERNAL AWARENESS OF CHILDREN'S ORAL HEALTH: A PUBLIC HEALTH DILEMMA

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## ABSTRACT

**BACKGROUND:** Dental caries, a common childhood illness, has long-lasting effects on oral health and overall well-being. It affects millions of children worldwide, with a high prevalence among children aged 6 to 11 years. Mothers play a crucial role in their children's oral health, but many lack adequate knowledge and face barriers to accessing oral healthcare. Understanding the knowledge gap among mothers regarding their children's oral health is essential for targeted interventions. This study aims to assess the knowledge gap among mothers of children aged 1 to 12 years to inform the development of effective programs and reduce the prevalence of dental caries.

**OBJECTIVE:** To assess the knowledge, and practices of mothers regarding the oral health status of their children aged 1 to 12 years

**METHODOLOGY:** This cross-sectional descriptive study was conducted at Rehman College of Dentistry from Jan to July 2022, the sample size was 200 and a non-probability sampling technique was used. Mothers who reported to the outpatient department and were willing to participate were selected. A structured questionnaire was implemented by conducting face-to-face interviews. The responses were recorded using options of agree, disagree, and do not know. Data were analyzed using SPSS Version 24 and presented in the form of frequency and percentage.

**RESULTS:** The majority of mothers 148(74%) knew that sugar consumption is responsible for carries. Tooth brushing 188 (94%) followed by 32(16%) sugar restriction is the best option for dental caries prevention. The majority of mothers were practicing good oral hygiene practices.

**CONCLUSION;** Good knowledge and practices of mothers regarding their child's oral health is a wakeup call for the concerned authorities of various dental colleges, hospitals, and government to implement awareness programs, conduct seminars and free dental camps on a regular basis to further improve the oral health of the children

**KEYWORDS;** knowledge, practice, and oral health

## INTRODUCTION:

Dental caries is a common childhood illness that can have long-lasting effects on oral health and the overall well-being of a child.[1] An unhealthy mouth may limit the ability to eat and sleep and may affect the child's social interaction.[2] It is a significant public health problem that affects millions of children worldwide, with nearly 50% of children between 6 to 11 years experiencing dental caries.[3] In the United States alone, dental caries is the most common chronic disease in children, with approximately 23% of children aged 2 to 5 years and 55% of children aged 6 to 11 years experiencing dental caries.[4] This can lead to painful infections and tooth loss, significantly impacting a child's health and well-being.

Mothers play a crucial role in the oral health of their children as they are often responsible for their children's oral hygiene practices and decisions regarding oral health care. However, studies have shown that many mothers lack adequate knowledge about oral health and may have misconceptions about the causes and prevention of dental caries. Additionally, some mothers may face barriers to accessing oral health care services, further impacting their children's oral health status.

Understanding the knowledge, attitudes, and practices (KAP) of mothers regarding the oral health status of their children aged 1 to 12 years is critical for developing effective oral health education and promotion programs.[5]This study aims to assess the knowledge gap among mothers regarding the oral health status of their children aged 1 to 12 years, in order to identify areas for interventions and improvement. By examining this gap, the study may help in the development of targeted oral health education and promotion programs that can improve children's oral health in this age group and reduce the prevalence of dental caries.

## METHODOLOGY:

This cross-sectional descriptive study was conducted at Rehman College of Dentistry for the period of six months i.e Jan to July 2022, after ethical approval from the institutional ethical review committee. The sampling size was calculated to be 200 using an open Epi sample size calculator and a non-probability sampling

technique was utilized. The questionnaire consisted of 2 parts, part 1 was general demographic information of the study population. The second part was to assess the knowledge, and practices of mothers regarding their child's oral health, it was created from ideas drawn from preceding research[6] and validation from four subject matter experts. After necessary amendments, pilot testing was done. The reliability of the questionnaire was Cronbach's alpha (α=0.9)

Face-to-face interviews were conducted with the mothers who reported to the outpatient department of Rehman College of Dentistry, and were willing to participate were selected. Mothers whose child was undergoing surgical procedures were excluded from the study. They were briefly informed about the topic and verbal consent was taken before the implementation of the questionnaire. The responses were recorded using options of agree, disagree, and do not know. Data were analyzed using SPSS Version 24 and presented in form of frequency and percentage.

## RESULTS

The response rate of our study was 100%. Only ten percent of the mothers were working and 90 percent were housewives. The age range of the kids was between 1 to 12 years of age with an average age of 6-7 years. Fifty-four percent of the kids were females and 46 percent were males. 130 (65%), 69(34.5%), and 1(0.5%) of mothers were using miswak, toothbrush, and gauze to clean their child's teeth respectively.

The majority of mothers 148(74%) knew that sugar consumption is responsible for carries while 37 (18.5%) said that it is due to ill health while 8(4%) and 7(3.5%) reported it due to improper oral hygiene and hereditary as shown in fig 1. Tooth brushing 168 (84%) followed by 32(16%) sugar restriction is the best option for dental caries prevention. See Tables 1 and 2 for knowledge and practices of the mothers regarding the oral health status of their children.

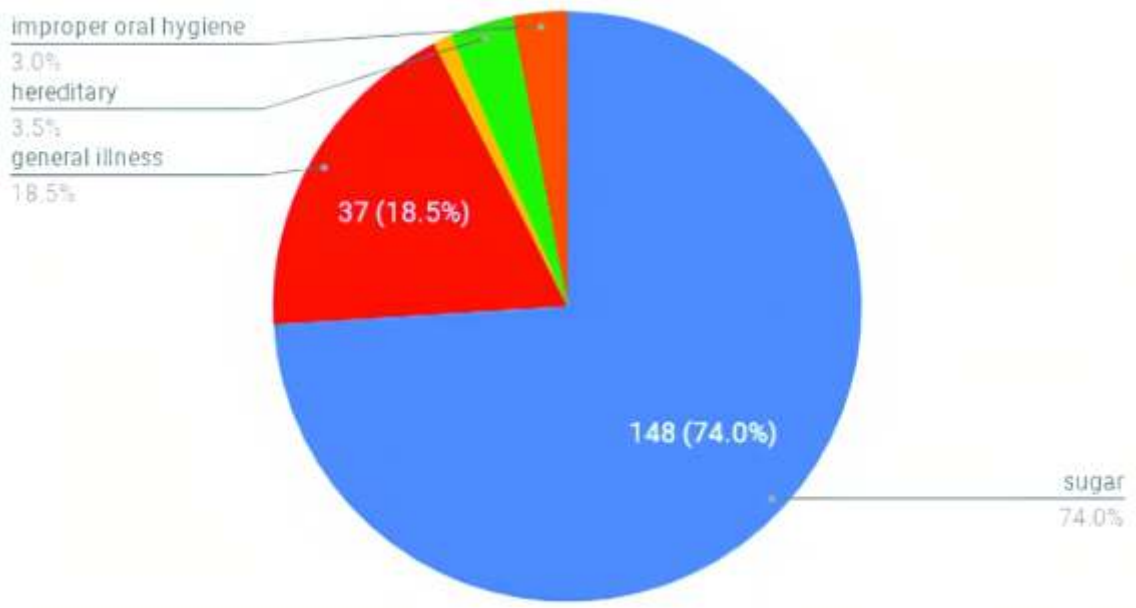


**Fig 1: Causes Dental caries in children aged 1-12 years**

**Table 1: Knowledge of mothers regarding the oral health status of their children aged 1-12 years**

| Statements regarding knowledge of mothers regarding oral health | No. of mothers who agree (%) | No. of mothers who disagreed (%) | No. of mothers who didn't know (%) |
|---|---|---|---|
| Parental guidance for tooth brushing in children under 12 years of age. | 132 (66.0%) | 60 (30.0%) | 8 (4.0%) |
| Cleaning of teeth before placing the baby in bed | 35(17.5%) | 152(76.0%) | 13(6.5%) |
| Prevention of tooth decay and gum problems by brushing | 188(94.0) | 12(6%) | - |
| Exposure to snacks and juices between meals can be harmful to teeth | 87(43.5%) | 32(16.0) | 81(40.5) |
| Increasing the amount of toothpaste helps in the proper cleaning of teeth | 67(33.5%) | 108(54.0%) | 67(33.5%) |
| Flossing and mouthwash for proper maintenance of oral health | 41(20.5%) | 71(35.5%) | 88(44.0%) |
| Regular dental visits help prevents caries | 22(11.0%) | 152 (76.0%) | 26 (13.0%) |
| The use of rubber nibbles/pacifiers for children affects tooth growth | 94(47.0%) | 62 (31.0%) | 44 (22.0%) |
| Prolonged or frequent bottle feed can cause tooth decay | 96(48.0%) | 98(49.0%) | 6 (3.0%) |
| Switching from bottle to sippy cup at 1 year of age | 61(30.5%) | 102(51.0%) | 37(18.5%) |

**Table 2: Practices of mothers regarding the oral health of their children aged 1-12 years**

| Practices of mothers | Everyday | Weekly | sometimes | Never |
|---|---|---|---|---|
| Frequency of brushing own teeth | 118(59.0%) | 82(41.0%) | - | - |
| Frequency of brushing child's teeth | 125(62.5%) | 24(12.0%) | 27(13.5%) | 24(12.0%) |
| How often do you check your child's teeth after cleansing? | 47(23.5%) | 18(9.0%) | 93(46.5%) | 42(21.0%) |
| Frequency of fresh fruit intake | 101(50.5%) | 96(48.0%) | 3(1.5%) | - |
| How often do you give sweets to your child? | 56(28.0%) | 100(50.0%) | 32(16.0%) | 12(6.0%) |
| How often do you give sweetened juice/liquid in a bottle? | 14(7.0%) | 33(16.5%) | 41(20.5%) | 112(56.0%) |
| How often do you give plain water after every feed? | 24(12.0%) | - | 38(19.0%) | 138(69.0%) |
| How often do you talk to your child about oral hygiene maintenance? | - | 19(9.5%) | 137(68.5%) | 44(22.0%) |
| How often do you give pacifiers dipped in sweet liquid? | - | - | 191(95.5%) | 9(4.5%) |
| How often do you take efforts to improve your knowledge? | - | 19 (9.5%) | 54(27.0%) | 127(63.5%) |

## DISCUSSION

94% of the mothers considered tooth brushing to be the best option for preventing dental caries, which is similar to a study conducted on school children in Nicaragua which deduced that tooth brushing was the main oral hygiene measure to prevent dental carries.[7]

The majority of mothers believed that fluoride plays a major role in the prevention of dental caries. This finding is supported by decades of research on the benefits of fluoride in maintaining oral health.[8] While some concerns have been raised about the potential side effects of fluoride, these risks can be minimized through proper use and monitoring. Overall, fluoride remains an important tool in the fight against dental caries.

74% of mothers believed sugar and associated products were the main agents for dental caries, which is well-established as sugar metabolism by bacteria in dental plaque produces acid that can dissolve tooth enamel. The World Health Organization recommends limiting free sugar intake to prevent dental caries, obesity, and type 2 diabetes.[9] Reducing sugar intake and maintaining good oral hygiene through regular brushing, flossing, using fluoride toothpaste, and dental check-ups are crucial in preventing dental caries and promoting oral health.[10]

Mothers generally had positive practices toward their children's oral hygiene, but areas for improvement exist. Many mothers did not recognize the importance of tooth brushing before bedtime and regular dental visits. Additionally, over half of the mothers believed that switching from a bottle to a sippy cup does not affect oral hygiene, although this is not the case. However, most mothers did brush their children's teeth daily, and some prohibited sugar-containing sweets. Nevertheless, some mothers continued the harmful practice of sugar-dipped pacifiers. Thus, there is a need for education and awareness programs to improve mothers' knowledge and practices regarding their children's oral health.[11]

our study reports that the first dental check-up for children in the study population was usually done only when the child experienced pain, which could be due to the high costs of dental care and limited access to qualified dental professionals.[12,13] The study also highlights the role of maternal oral hygiene status and the emphasis placed on oral hygiene for their children, which have been shown to have an impact on the occurrence of dental caries.

Furthermore, the study revealed poor knowledge about the role of fluoride and the preference for using miswak over toothbrushes for oral hygiene maintenance in the study population. These findings could be attributed to religious reasons and the cost of toothbrushing. The study also found that the commencement of tooth brushing for children in the study population was delayed until they start school, which is contrary to the recommended practice of starting brushing when the first tooth erupts.[14-18]

The greatest strength of our study is that this topic is of increased practical relevance as problems in deciduous and mixed dentition can further lead to anomalies in the mixed dentition stage. The limitation was the small sample size due to which generalizability should be done with caution. Also recall bias has to be kept in mind regarding past dental visits, diet, and oral hygiene measures.

## CONCLUSION

Our study shows that mothers generally have good knowledge and practices toward their children's oral hygiene, but there are areas where their knowledge and practices may need improvement. This study can prove to be a beacon of light for mothers to improve their practices while at the same time, it can prove to be a wakeup call for the concerned authorities of various dental colleges, hospitals, and government to implement awareness programs, conduct seminars and free dental camps on a regular basis.

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