ISSN: 2581 – 3633
PubMed - National Library of Medicine - ID: 101745081

International Journal of Medical Science and Advanced Clinical Research (IJMACR)

Available Online at:www.ijmacr.com

Volume – 7, Issue – 4, August - 2024, Page No. : 25 – 32

Mothers' Knowledge On Association Between Hygiene and Child's Health

[1]Swathi Premkumar, [2]Jayanthi Mungara, [3]Poornima Vijayakumar, [4]Deebiga Karunakaran, [5]Thota Sai Shravya

[1-5]Department of Pedodontics & Preventive Dentistry, Raga Dental College and Hospital, Chennai

Corresponding Author: Swathi Premkumar, M.D.S, Post Graduate Student, Department of Pedodontics & Preventive Dentistry, Ragas Dental College & Hospital, East Coast Road, Uthandi - 600119.

How to citation this article: Swathi Premkumar, Jayanthi Mungara, Poornima Vijayakumar, Deebiga Karunakaran, Thota Sai Shravya, "Mothers' Knowledge On Association Between Hygiene and Child's Health", IJMACR- August - 2024, Volume – 7, Issue - 4, P. No. 25 – 32.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Background: Maternal oral health is critical for the child's oral health. Many feeding mothers are unaware of the impact of poor oral hygiene on their child's health and the transmission of oral pathogens

Aim: This study aims to assess the knowledge and awareness of feeding mothers regarding the impact of hygiene and oral hygiene maintenance on child's health.

Methods: A survey was conducted with 50 feeding mothers (up to 2 years old children) using a self-administered questionnaire. The data were subjected to descriptive analysis

Results: Among the mothers surveyed, 80% reported regularly cleaning their child's oral cavity. Methods of cleaning included using wet cloth (30%), water (40%), and finger brush (30%). 80% of mothers changed their cleaning methods post-eruption of teeth. Only 20% believed poor maternal oral hygiene predisposed children to dental caries. For cleaning feeding equipment, 80% used boiling, 10% used washing, and 10% used both boiling and drying. 60% had knowledge about teething issues, and 60% reported that their children frequently suffered from diseases, attributing it to cleanliness (60%), general hygiene (10%), and environmental factors (30%)

Conclusion: There is a need for community-based education and awareness programs to improve mothers' knowledge on the association between hygiene and child's health, and to create awareness among caregivers regarding oral disease acquisition.

Keywords: Maternal knowledge, Hygiene, Child's health, Oral hygiene, Awareness

Introduction

Children under the age of 5 years spend most of their time with parents and guardians, especially mothers, during early childhood, even when attending preschools or nurseries. These early years involve "primary socialization" where dietary habits and healthy behaviors

are established as norms in the home, highly influenced by the knowledge and behaviors of parents and elder siblings [1]. Children acquire Mutans streptococci during a discrete period between the age of 19 and 33 months, designated as the 'first window of infectivity', and the source of initial infection mostly is through the mother [2]. Maternal oral health plays a significant role in the overall health of children Poor oral hygiene in mothers can lead to the transmission of harmful oral pathogens to their children, affecting their oral and overall health. However, many feeding mothers are not aware of this association and its implications.

Young children's oral health maintenance and outcomes are influenced by their parents' knowledge and beliefs, which affect oral hygiene and healthy eating habits [3]. The prevention of illness and infectious diseases depends heavily on parents' knowledge and attitude about dental care. These factors may help children have better oral health and develop a favorable attitude toward dentistry [4]. Mothers, considered to be the primary role models, who have health beliefs and attitudes towards oral health care that significantly predict their children's oral health outcomes, highlighting the need to assess and compare mothers' knowledge, attitudes, and practices regarding their children's oral health [5].

Despite the prevalence of early childhood caries (ECC), particularly in socially disadvantaged groups without access to health care systems, parents' beliefs towards children's oral health care are crucial for improving oral health outcomes [6]. ECC remains a significant social health problem in countries like India, where there is no national program for oral health assessment and primary oral health care. Parents play a key role in ensuring the best oral health outcomes for children, with ECC risk factors broadly classified into biological and social categories. Biological risk factors for ECC include genetic predisposition, oral microbiome composition, diet and nutrition, underlying health conditions, and oral hygiene practices. Social risk factors include low parental education, low socioeconomic status, and lack of awareness about dental diseases [7]

Children and parents must work together to maintain proper dental hygiene, since children with bad parental attitudes often have poor oral health [8]. Therefore, it is essential to assess parents' knowledge, attitudes, and practices regarding their children's oral health. This assessment helps health providers understand the reasons for the development of oral diseases in children and the failure to get them treated [9]. This study aims to evaluate the knowledge and awareness of feeding mothers regarding the impact of maintaining adequate general hygiene and oral hygiene on their child's health.

Materials and Method

A survey was conducted among 50 feeding mothers with children up to 2 years old in rural hospitals of Chennai and Pondicherry district. The participants were provided with a self-administered, structured 12-item questionnaire designed to assess their knowledge and practices related to hygiene and oral hygiene. The questionnaire included both close and open-ended questions.

The first section of the questionnaire gathered demographic information such as the name and age of the mother and children. The second section included questions about maintaining general and dental hygiene and the knowledge about the acquisition of oral diseases. These questions aimed to gauge the mothers' understanding of oral hygiene practices and the best ways to protect their children's oral health.

After obtaining consent, the forms were randomly distributed to feeding mothers in rural hospitals. Responses were collected and subjected to descriptive statistical analysis. The data was compiled and entered first entered into Microsoft Excel 2016 and then transferred to SPSS for further analysis. To summarize the data, statistics such as percentage, mean, and standard deviation were computed. The statistical analysis was performed using IBM SPSS Statistics for Windows, version 28.0.1.0.

Results

Demographics: The study population comprised 50 feeding mothers with children aged up to 2 years. The majority of the mothers were aged between 25 and 35 years, with a mean age of 28.7 years.

Regular Cleaning: A significant proportion of mothers (80%, n=40) reported regularly cleaning their child's oral cavity. This practice included wiping the gums before the eruption of teeth and cleaning the emerging teeth afterward. Regular cleaning is essential in preventing the accumulation of harmful bacteria and ensuring good oral hygiene (Fig. 1).

Methods of Cleaning: The materials used for cleaning the child's mouth varied among the mothers as it included children from age of infant to up to 2 years of age, 30% (n=15) used wet cloth, 40% (n=20) used water, and 30% (n=15) used finger brush. This variation in methods indicates a lack of standardized practices among the mothers, with using water and asking child above 1 years old to gargle and spit being the most common method. (Fig. 2).

Pattern of Cleaning Post-Eruption: Following the eruption of teeth, 80% (n=40) of mothers changed their cleaning methods to incorporate toothbrushes and toothpaste suitable for toddlers, while 20% (n=10) continued with the same cleaning methods they used before the teeth erupted. This shift suggests an increased awareness among the majority of mothers about the need for more effective cleaning tools as the child's oral health needs evolve (Fig. 3)

Predisposition to Dental Caries (DC): An underwhelming 20% (n=10) of mothers believed that children born to mothers with poor oral hygiene are predisposed to dental caries. According to this finding, mothers have little understood of how oral diseases may spread from mothers to their children. This awareness is critical as it highlights the recognition of the impact of maternal health on child health. However, the actual practices of maintaining oral hygiene may not always align with this knowledge (Fig. 1).

Feeding Equipment Cleanliness: The methods used for cleaning feeding equipment also varied. The majority of mothers (80%, n=40) preferred boiling the equipment, which is an effective sterilization method. 10% (n=5) of mothers reported washing the equipment with soap and water, and another 10% (n=5) used a combination of boiling and drying. This preference for boiling indicates a high level of awareness about the importance of sterilization to prevent the transmission of pathogens through feeding equipment (Fig. 4).

Knowledge on Teething Issues: Knowledge about teething issues was present in 60% (n=30) of the mothers. These mothers were aware of the symptoms associated with teething, such as irritability, diarrhea and gum discomfort, and knew various remedies to alleviate their child's discomfort. This awareness is crucial as it reduces the fear and proper management of teething-related issues (Fig. 1).

Disease Frequency: When asked about the frequency of diseases in their children, 60% (n=30) of mothers

reported that their child frequently suffered from illnesses. The perceived sources of these illnesses were attributed to cleanliness (60%, n=30), general hygiene (10%, n=5), and environmental factors (30%, n=15). Cleanliness was not properly maintained, and poor general hygiene measures, such as kissing the baby on the mouth and sharing saliva-contaminated utensils, tasting food before giving it to the child were noted. This highlights the need for better education on the importance of comprehensive hygiene practices, not just limited to oral hygiene but extending to overall cleanliness and environmental factors (Fig. 1).

Additional Observations: The survey also revealed that while mothers were generally aware of the importance of general and oral hygiene, there were several areas in which they lacked understanding. For instance, many mothers did not fully understand the transmission mechanisms of dental caries and other oral pathogens. This gap in understanding suggests that current health education programs may not be adequately addressing all relevant aspects of maternal and child health (Fig. 5).

Discussion

Since mothers and guardians spend the majority of their time with children under the age of five, early dietary and hygiene habits are influenced by these relationships. Positive parenting practices result in better dental health outcomes for young children, whose oral health is greatly influenced by their parents' knowledge and attitudes toward dental care. Assessing parents' knowledge, attitudes, and practices is essential for understanding and addressing the development of oral diseases in children. The present study aimed to evaluate the knowledge, attitudes, and practices of feeding mothers regarding maintenance of children's oral and general health. Our findings highlight significant areas of both strength and concern when compared to previous studies.

Our study involved 50 mothers with children aged up to 2 years, primarily aged between 25 and 35 years with a mean age of 28.7 years. This demographic is comparable to the study by Jain et al. (2014), which also involved a young population of mothers, indicating that the age group we studied is representative of similar research contexts [10]. The majority of mothers (80%) in our survey said that they cleaned their child's mouth cavity on a regular basis, a practice essential for preventing harmful bacteria accumulation. This result is more favorable when compared to Suresh et al. (2010), where only 27.1% of mothers had complete knowledge about oral hygiene practices. Our finding suggests a positive trend in regular cleaning practices among mothers [11].

We observed varied cleaning methods among mothers due to variation in age group of children included in the study: 30% of mothers used wet cloth, 40% used water, and 30% used finger brush. This lack of standardized practices is consistent with Shetty et al. (2016), who noted similar variability in oral hygiene practices among mothers [12].

After teeth erupted, eighty percent of mothers adjusted their cleaning regimens to include baby-safe soft bristles finger toothbrushes and toothpaste suitable for infants and toddlers. This result is similar to findings of Gussy et al. (2008) who also reported that 95 % parents believed that they should start brushing when first tooth erupts [13]. contrary to this current results Jain et al. (2014) in his study reported that majority of mothers believed tooth brushing should be commenced after eruption of all primary teeth [10]. This shift indicates increased awareness about effective cleaning tools as children's oral health needs evolve. Gurunathan et al.

(2018) found that 40% of diploma/degree holders regularly checked their child's teeth after brushing, compared to 25% of school-educated mothers, suggesting that higher education levels positively influence oral health practices [14]

An underwhelming only 20% of mothers believed that children born to mothers with poor oral hygiene are predisposed to dental caries. Similar results were also reported by Suresh et al. (2010) majority of mothers had inadequate knowledge about the fact that sharing utensil can transmit S mutans which cause caries in children [11]. This awareness regarding transmission of oral pathogens from mother to children is significantly lower than in the study by Jain et al. (2014), where 60.4% of mothers exhibited poor knowledge about oral health [10]. Contrary results were also observed in the study done by Shetty et al. (2016). In their study the author reported that 70.5 % mothers had adequate knowledge regarding sharing utensils when feeding the baby can transmit bacteria from mother to their children [12]. Our findings indicate that awareness of the impact of maternal health on child health is relatively low, although actual practices may not always align with this knowledge.

The majority of mothers (80%) preferred boiling feeding equipment, an effective sterilization method. The high level of awareness about sterilization methods in our study suggests a positive trend in preventing pathogen transmission through feeding equipment.

Knowledge about teething issues was present in 60% of mothers, who were aware of symptoms such as irritability, diarrhea, and gum discomfort. This awareness is comparable with the study done by Abubakari Wuni et al. (2024) whose result indicated that 79.7% of mothers had good knowledge of teething problems [15].

When compared with frequency of diseases in their children, 60% of mothers reported that their child frequently suffered from illnesses. The perceived sources of these illnesses were attributed to cleanliness (60%), general hygiene (10%), and environmental factors (30%). This finding highlights the need for comprehensive hygiene practices extending beyond basic oral hygiene, consistent with Sakai et al. (2008), who emphasized the need for better public education on caries prevention [16].

Mothers with poor oral hygiene and high levels of cariogenic bacteria raise the risk of infection in their newborns, who may therefore be more susceptible to developing early childhood caries [17]. Maternal oral health is the first line of defense for a child's healthy oral cavity. Additionally, kissing on the mouth, using the same cutlery as the mother, and cleaning the pacifier in the mother's mouth are all risky behaviors to avoid in order to prevent cavities [18].

Although mothers were generally aware of the need of proper general and oral hygiene maintenance, there were clear knowledge gaps in several areas. For example, these mothers did not know how their poor oral hygiene can predispose their children to dental caries early acquisition in their children. This gap suggests that current health education programs may not be adequately addressing all relevant aspects like information regarding vertical transmission of disease, importance of maintaining good oral hygiene of mothers, importance of first dental visit and need for proper oral hygiene measures that needed to be followed for infant and toddlers as soon as first tooth start to erupt. This aligns with findings from previous studies, such as those

by Suresh et al. (2010) and Sakai et al. (2008) which also noted significant knowledge gaps among mothers regarding transmission of oral pathogens from caretakers/ mothers to their children [11, 16].

Conclusion

The study highlights that while mothers have adequate knowledge about general and oral hygiene, their understanding of the association between maternal and infant oral health and the transmission of microorganisms is poor. There is a clear need for community-based education and awareness programs to bridge this knowledge gap and promote better health practices among mothers. Enhancing maternal knowledge on these aspects is crucial for improving child health outcomes and preventing dental and other health issues from an early age.

This research emphasizes how crucial it is to provide breastfeeding mothers expert information in order to enhance the dental health of their kids. Health professionals who first interact with expecting and new moms should provide accurate and pertinent information on baby oral health care, particularly regarding the need of brushing teeth, the development of oral illnesses, and the necessity for regular dental checkups and possibility of vertical and horizontal transmission of oral pathogens .Therefore, the development of long-term programs and dental camps by dentists on oral health promotion and education for expecting mothers should be given top importance.

Overall, the study underscores the importance of targeted educational interventions to improve the knowledge and practices of feeding mothers regarding maintenance of hygiene and oral health. By addressing these gaps, healthcare providers can help foster healthier environments for children and reduce the risk of oral and general health problems.

References

1. Berkowitz RJ. Mutans streptococci: acquisition and transmission. Pediatric dentistry. 2006;28(2):106-9.
2. Caufield P, Cutter G, Dasanayake A. Initial acquisition of mutans streptococci by infants: evidence for a discrete window of infectivity. Journal of dental research. 1993;72(1):37-45.
3. Rajesh G, Prasad K, Mohanty VR, Javali S. Effect of various methods of oral health education on oral health knowledge and oral health status of high school children in Gadag town-A randomized control trial. Journal of Indian Association of Public Health Dentistry. 2008;6(11):22-9.
4. Kamolmatyakul S, Saiong S. Oral health knowledge, attitude and practices of parents attending Prince of Songkla University Dental Hospital. International Journal of Health Promotion and Education. 2007;45(4):111-3.
5. Levin L, Shenkman A. The relationship between dental caries status and oral health attitudes and behavior in young Israeli adults. Journal of dental education. 2004;68(11):1185-91.
6. Berg JH, Slayton RL. Early childhood oral health: Wiley Online Library; 2015.
7. Hallett K, O'rourke P. Social and behavioural determinants of early childhood caries. Australian dental journal. 2003;48(1):27-33.
8. Ashkanani F, Al-Sane M. Knowledge, attitudes and practices of caregivers in relation to oral health of preschool children. Medical Principles and Practice. 2013;22(2):167-72.
9. Della Libera FAdL, Valente AR, Andrade MRTC, Tannure PN, Antonio AG, da Silva Fidalgo TK.

Knowledge and practices of parents and guardians regarding the oral health of children from a shelter and a university in Rio de Janeiro, Brazil. Pesquisa Brasileira em Odontopediatria e Clínica Integrada. 2014;14(4).

10. Jain R, Oswal KC, Chitguppi R. Knowledge, attitude and practices of mothers toward their children's oral health: A questionnaire survey among subpopulation in Mumbai (India). J Dent Res Sci Dev. 2014;1(2):40-5.
11. Suresh B, Ravishankar T, Chaitra T, Mohapatra A, Gupta V. Mother's knowledge about pre-school child's oral health. Journal of indian society of pedodontics and preventive dentistry. 2010;28(4):282-7.
12. Shetty RM, Deoghare A, Rath S, Sarda R, Tamrakar A. Influence of mother′ s oral health care knowledge on oral health status of their preschool child. Saudi Journal of Oral Sciences. 2016;3(1):12-6.
13. Gussy MG, Waters E, Riggs E, Lo SK, Kilpatrick NM. Parental knowledge, beliefs and behaviours for oral health of toddlers residing in rural Victoria. Australian dental journal. 2008;53(1):52-60.
14. Gurunathan D, Moses J, Arunachalam SK. Knowledge, attitude, and practice of mothers regarding oral hygiene of primary school children in Chennai, Tamil Nadu, India. International journal of clinical pediatric dentistry. 2018;11(4):338.
15. Wuni A, Iddrisu M, Angliengmene AA, Salia SM, Chanayireh L, Mohammed IS, et al. Knowledge and management practices of infant teething symptoms among mothers in a tertiary facility in Ghana. The Pan African Medical Journal. 2024;47.
16. Sakai VT, Oliveira TM, Silva TC, Moretti ABS, Geller-Palti D, Biella VA, et al. Knowledge and attitude of parents or caretakers regarding transmissibility os caries disease. Journal of Applied Oral Science. 2008; 16:150-4.
17. Latifi-Xhemajli B, Rexhepi A, Veronneau J, Kutllovci T, Ahmeti D, Bajrami S. Streptococcus Mutans Infections in Infants and Related Maternal and Child Factors. Acta Stomatologica Croatica. 2021;55(3).
18. Della Salute M. Raccomandazioni per la promozione della salute orale in età perinatale. Edizione Available online: http://www salute gov it/imgs/C_17_pubblicazioni_2317_allegato pdf (accessed on 1 July 2020). 2014.

Legend Tables and Figures

Table 1: Questionnaire

General Information	Sn.	Questionnaire
	1	Name
	2	Age
	3	Child name/Age
Socio-Demographic Based	4	Will you clean your child's oral cavity regularly?
	5	With what will you clean your child's mouth?
	6	Knowledge on teething issues?
	7	After eruption of teeth will you change the pattern of cleaning?
	8	What feeding equipment do you use?
General Awareness	9	How do you maintain the cleanliness of equipment?
	10	If not clean, did it influence child's health?
	11	Whether child suffer frequently from diseases like vomiting/diarrhea?
	12	What do you think could be the source of infection in children?
	13	A child born to a mother with poor oral hygiene and predisposed to caries is more likely to develop it too?

Figure 1: Mothers practices and opinions: Key parameters

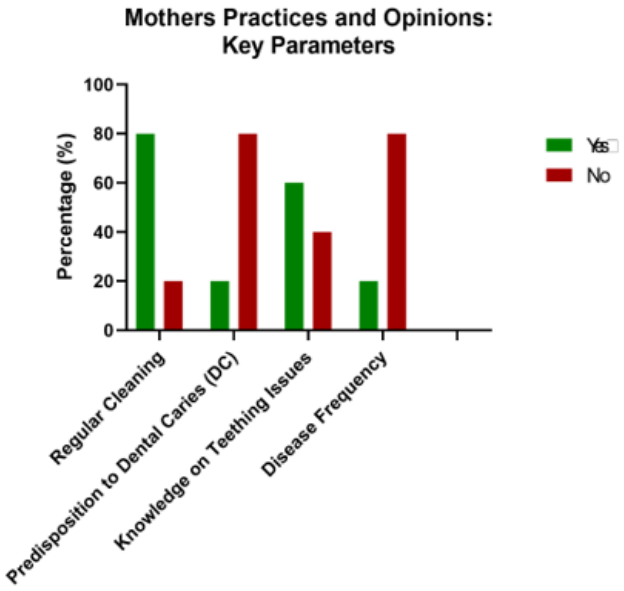

Figure 2: Methods of Cleaning

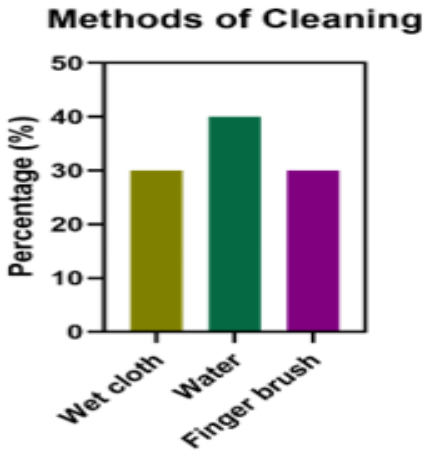

Figure 3: Pattern of Cleaning Post-Eruption

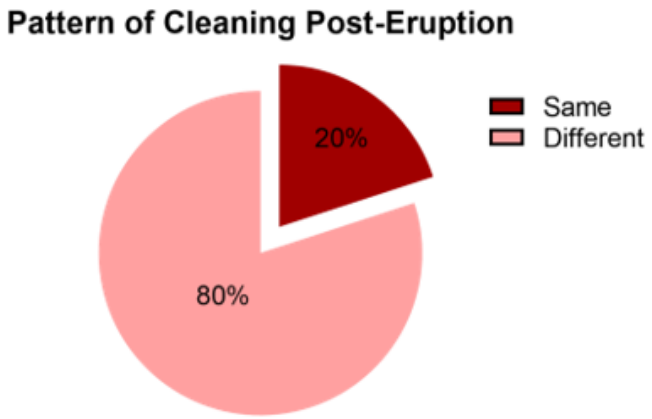

Figure 4: Feeding Equipment Cleanliness

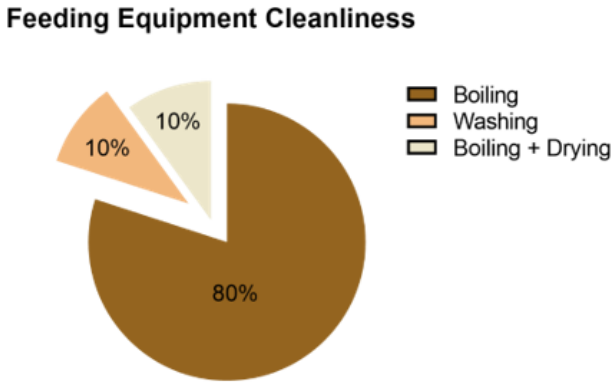

Figure 5: Additional Observations