KNOWLEDGE AND AWARENESS ON ORAL CARE AMONG MOTHERS OF CHILDREN LESS THAN FIVE YEARS OLD- A SURVEY

Running title: Knowledge and awareness on oral care among mothers of children less than five years old- A survey

ABSTRACT:

Introduction: Health-related behaviors are influenced by knowledge and awareness, with oral health being no exception. It is well-known that oral diseases are influenced by social determinants. Children depend on their parents and caretakers for maintenance of their oral health so oral health knowledge of mothers could be associated with the status of their children's oral health.

Aim: The aim of this survey was to evaluate and create awareness on oral care among mothers of children less than 5 years old.

Materials and Methods: An online survey was conducted among mothers of children less than five years old using a questionnaire in google forms. The Questionnaire was framed which mainly targeted awareness on dental attitude, knowledge and practice of mothers regarding their children's oral health. The survey was done in January 2021. The results were obtained and statistically analysed through SPSS software, chi square test was done and represented as pie-chart and bar graphs.

Results: Out of 100 mothers who participated in the study, 66.09% have studied up to primary/high school level and 33.91% have qualified university level. About 54.78% of the participants agreed that the importance of oral health to general health, 28.70% disagreed. The association of mothers' education and their opinion on children's age on brushing their teeth shows that the majority of primary/high school mothers agreed that children should brush their teeth older than 5 years than other participants and it was statistically significant p value=0.04(>0.05))

Conclusion: Mothers who are graduates are more aware of the importance of oral health in children, treatment of dental caries, and brushing technique than mothers who qualified with school education.

Key words: Attitude, Knowledge, Mothers, Oral health, Caries, Novel method, Innovative technique

INTRODUCTION:

The attitude of parents about their children's oral health is a significant factor to consider when trying to develop their children's oral health. In concern with that, Dental caries is one of the most common infectious diseases of the teeth, caused by the bacteria Streptococcus mutans, which is the primary cause of the disease (1). Early Childhood Caries(ECC) is described as the presence of one or more decayed, missing due to caries or filled tooth surfaces in any primary tooth in a child under the age of 71 months (2). ECC is a global epidemic that is also one of the most neglected diseases in the world. It is really common in developing countries like India. In India's urban areas, a prevalence of 44 percent has been reported, while in rural areas, a prevalence of 40.6 percent has been reported (3). ECC has a complicated and multifactorial aetiology which is caused by a combination of four primary factors: the host, the diet, the cariogenic bacteria, and the passage of time. The initiation of disease is influenced by a diet that includes frequent consumption of fermentable carbohydrates, particularly on demand, breast or bottle feeding, and poor oral hygiene, which contributes to the colonisation of cariogenic bacteria(4)

According to study, Deciduous teeth are just as essential as permanent teeth. Mastication, speech production, arch integrity, alveolar bone formation, and aesthetics are all aided by them. The loss of deciduous teeth has a number of effects, including insufficient food consumption, stuttering, space loss, and a child's poor appearance, all of which have psychological consequences. In order to avoid this, providing a detailed understanding of the risk factors linked to the development of ECC is crucial(5). Social factors, in addition to biological factors, play an important role in the onset of this disease. Low parental education and low socioeconomic status are two social risk factors(6)). Even though early childhood caries (ECC) have been extensively researched and preventive programmes implemented in some countries, it is more common among economically vulnerable people who lack access to health care(7). In countries like India, where there is no national programme for oral health evaluation and primary oral health treatment, early childhood caries remains a social health problem. Parents are crucial in ensuring the well-being of young children in order to achieve the best oral health results(8).

To maintain good oral hygiene, both the parent and the child must work together. It is seen that a poor attitude of parents generally reflects poor oral health in children and vice versa. The need to commence prevention at a very young age and that the best chance of reducing further inequalities in health relate to parents and in particular to mothers and children. Parents' perceptions of their children's oral health as being better than their own should not be mistaken for the children's oral health status as being good. Hence, it is essential to assess knowledge, attitude and practices about their children's oral health which will help the mothers to understand the reasons for development of oral diseases in children and failure to get them treated. Our team has extensive knowledge and research experience that has translate into high quality publications(9),(10),(11),(12),(13),(14),(15),(16),(17),(18),(19),(20),(21),(22),(23),(24),(25),(26),

(27),(28). The aim of the study was to assess the knowledge and to create awareness on oral care among mothers of children less than five years old.

MATERIALS AND METHODS:

An online survey was conducted among mothers and the questionnaire pertained to test the awareness towards oral care and assessed through online google forms link. The participants who undertook the survey were mothers whose children were less than five years old. A total of 18 questions which mainly targeted awareness on dental attitude, knowledge, and practice of mothers regarding their children's oral health.The survey was conducted in the month of January 2021 and responses from 100 participants were received and results were analysed using SPSS software and represented as pie charts and bar graphs. The data on categorical variables is shown as the percentage of respondents. The statistical significance of inter-group distribution of categorical variables was tested using the Chi-Square test. In the entire study, the p-values less than 0.05 were considered to be statistically significant and it was analysed through SPSS software.

RESULTS:

Table 1: Questions distributed to the participants with responses

QUESTIONS	OPTIONS	RESPONSES
Mothers education	• Primary/High school • University	• 66.09% • 33.91%
Age group of Mother	• 18-25 years • 26-35 years • Older than 35	• 36.52% • 43.48% • 20%
Do you think oral health is very important to general health?	• Agree • Disagree • Don't know	• 54.78% • 28.70% • 16.52%
At what age should children have their teeth brushed?	• At 3 years • Older than 5 years • Less than 2 years	• 45.22% • 42.61% • 12.17%
Do you know foodstuffs have an impact on child oral health?	• Yes • No • May be	• 50.43% • 33.91% • 15.65%

If yes, Which causes more effect on teeth?	• Sweets(chocolates) • Carbohydrates (chips) • Soft drinks(orange juices)	• 46.09% • 40% • 13.91%
Do you think children should be checked regularly by a dentist?	• Yes, if they have dental problems • Every 3 month • Every 6 month • Every 12 month	• 42.61% • 33.91% • 13.91% • 9.57%
Has your child visited a dentist?	• Yes • No	• 73.04% • 26.96%
If yes, why do you visited a dentist?	• Tooth eruption problems • Tooth ache • Tooth alignment • Tooth decay	• 33.91% • 33.91% • 16.52% • 15.65%
At what age should children brush their teeth?	• Less than 2 year • At 3 years • Older than 5 year	• 12.17% • 45.22% • 42.61%
What do you think is the reason for brushing teeth?	• Prevent decay • Foul breath • Bright teeth	• 53.04% • 31.30% • 15.65%
Do you know breastfeed or bottle feed has an effect on tooth eruption?	• Yes • No	• 66.96% • 33.04%
What do you think, causes of using a pacifier on child oral health?	• changes in the shape of the roof of the mouth • prevent proper growth of the mouth • create problems with tooth alignment. • All	• 46.09% • 30.43% • 7.83% • 15.65%
How do you clean your kids mouth in less than 2 years?	• Water • Wet cloth • Cotton • Baby brush	• 40.87% • 13.04% • 32.17% • 13.91%
Do you check a child's teeth	• Regularly	• 54.78%

after brushing?	• Sometimes • Never	• 32.17% • 13.04%
How much time do you spend brushing teeth?	• Less than 3 min • More than 3 min	• 66.09% • 33.91%
Do you feed your child at midnight or early morning without brushing?	• Yes • no	• 70.43% • 29.57%
If yes, do you know that without brushing teeth, sugar in milk will stay on your teeth and lead to cavities and decay?	• Yes • No	• 69.57% • 30.43%
What do you think are the main sources of dental information?	• Physician • Media • Dental camp education	• 45.22% • 37.39% • 17.39%
Do you know that bacteria and plaque cause dental decay?	• Yes • No • May be	• 53.04% • 31.30% • 15.65%
What do you think are steps in preventing dental disease?	• Brushing teeth regularly • Fluoride toothpaste • Floss • Pit and fissure sealants	• 47.83% • 32.17% • 10.43% • 9.57%

In the study, the questions were asked as in **Table: 1**, in this survey about 100 participants were participated and results were represented in pie-chart and bar graphs. Out of 100 participants, 66.09% of the participants were primary/high school qualified and 33.91% were university qualified. About 43.48% were about 26-35 years of mothers who participated, 36.52% were 18-25 years and 20% were older than 35 years. When questions were asked about the importance of oral health to general health, 54.78% of the participants agreed, 28.70% disagreed and 16.52% of the participants were not aware as shown in figure 1. Nearly 45.22% of the participants answered that children at 3 years of age should brush their teeth, 42.61% said older than 5 years and 12.17% of participants answered less than 2 years old. Majority of participants about 50.43% agreed food stuffs have an impact on child oral health but 33.91% did not agree and 15.65% of the participants were not sure about that. Nearly 40% of the participants reported that carbohydrates cause more effect on teeth, 13.91% reported as soft drinks and 46.09% reported that sweets cause more effect on teeth. When consultation with a dentist was asked, 42.61% of the participants checked regularly by a dentist, 33.91% of the participants checked every 3

months, 13.91% of the participants checked every 6 months and 9.57% checked every 12 months and majority of participants about 73.04% visited the dentist and 26.96% did not visit the dentist. About 15.65% of participants visited the dentist because of tooth decay, 16.52% due to tooth alignment, 33.91% due to tooth eruption problems and 33.91% due to toothache. When questions about the reason for brushing the teeth were asked, 15.65% of participants brush their teeth for brighter teeth, 31.30% of participants due to foul breath, 53.04% answered due to prevention of oral decay.

About the effect of tooth eruption on breastfeeding or bottle feeding, 66.96% agreed it would affect and 33.04% of participants did not agree with that which is shown in figure 2. About 46.09% of participants agreed that using a pacifier on child oral health causes changes in the shape of the roof of the mouth, 30.43% of participants answered to prevent proper growth of the mouth, 7.83% had issues in creating problems with tooth alignment and 15.65% said all the options for causes of using a pacifier on child oral health. Majority of participants about 40.87% used water for cleaning kids' mouths in less than 2 years, 32.17% of them used cotton for cleaning kids mouth, 13.04% used wet cloth for cleaning kids mouth and 13.91% used baby brush for cleaning kids mouth in less than 2 years. About 54.78% of participants regularly checked child's teeth after brushing, 32.17% checked child's teeth after brushing sometimes, 13.04% never checked child's teeth after brushing. About the time spent on brushing teeth, 66.09% of participants took less than 3 minutes for brushing teeth, 33.91% of them took more than 3 minutes for brushing teeth. When asked about feeding a child at midnight or early morning without brushing, 70.43% of participants feed the child, 29.57% of participants do not feed the child without brushing and 69.57% knew that cavities and decay were caused by sugar in milk left on teeth without brushing, 30.43% of participants were not aware of it. When knowledge on the main source of dental information were asked, 45.22% reported physicians were the main source of dental information, 37.39% of them reported as media and 17.39% of them reported as dental camp education. About 53.04% were aware that bacteria and plaque caused dental decay, 31.30% of them were not aware of bacteria and plaque causing dental decay, 15.65% of them were not sure of bacteria and plaque causing dental decay. About steps for preventing dental diseases, 47.83% reported that regularly brushing can prevent dental diseases, 32.17% of them reported that using fluoride toothpaste can prevent dental diseases, 10.43% of them reported using floss can prevent dental diseases, 9.75% of them reported pit and fissure sealants can prevent dental diseases which shown in figure 3. The association of mother education and reason for consulting with a dentist were evaluated, about 30.43% agreed to visit the dentist due to dental problems, 24.35% agreed every 3 month, 6.96% agreed every 6 month and 4.35% every 12 month. Majority of primary/High school mothers agreed that they visited only when they have dental problems, however it is statistically not significant (p value = 0.330(>0.05))which is shown in figure 4. Then, association of mothers' education and children's age on brushing their teeth, which shows about 27.83% answered to brush teeth at 3 years, 33.04% reported as older than 5 years and 5.22% as less than 2 years. Majority of primary/high

school mothers agreed that children should brush their teeth older than 5 years than other participants, however it is statistically significant (p value = 0.04(>0.05)) as shown in figure 5. The association of mothers' education and impact of food stuff on child oral health, 36.52% had agreed that foodstuff has an impact on child oral health, 25.22% did not agree and 4.35% were not sure about it. Majority of primary/high school mothers agreed it has more impact than other participants, however it is statistically significant (Pearson chi-square value: 4.122, df:2, p value = 0.002(>0.05)) which is shown in figure 6.

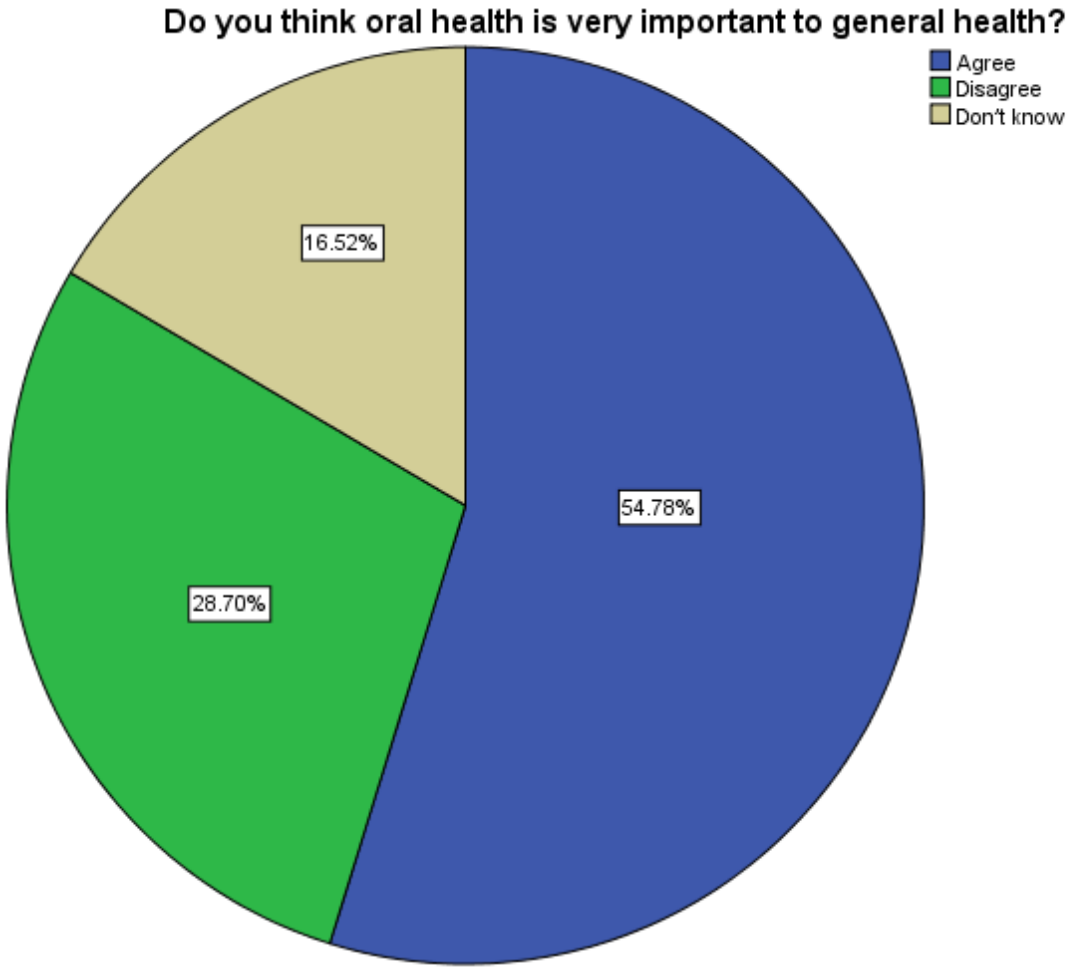

Figure 1: Pie chart represents about importance of oral health to general health, about 54.78% of the participants agreed(blue), 28.70% disagreed(green) and 16.52% of the participants were not aware(beige)

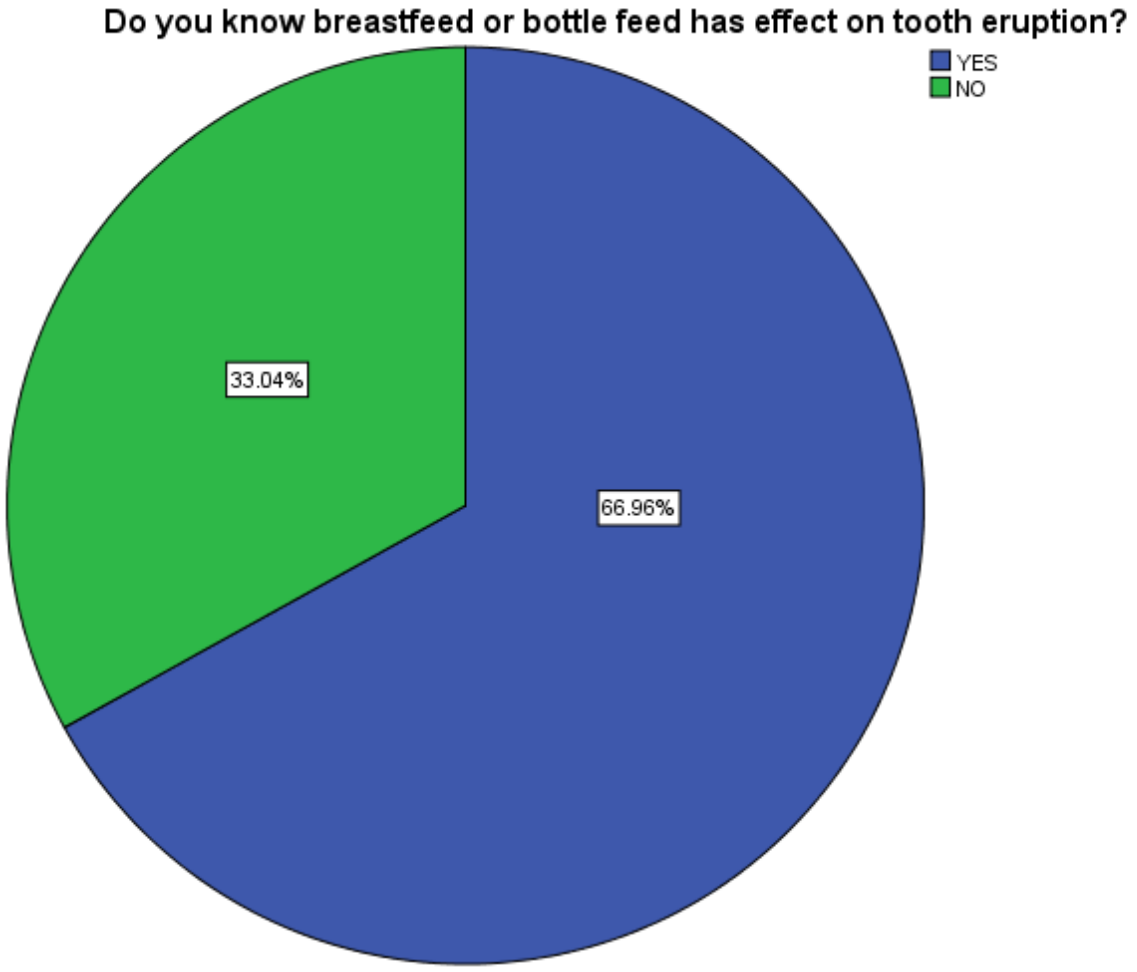

Figure 2: Pie chart represents the effect on tooth eruption on breastfeeding or bottle feeding, 66.96% answered that breastfeeding or bottle feeding has an effect on tooth eruption(blue), 33.04% of participants did not agreed with that(green).

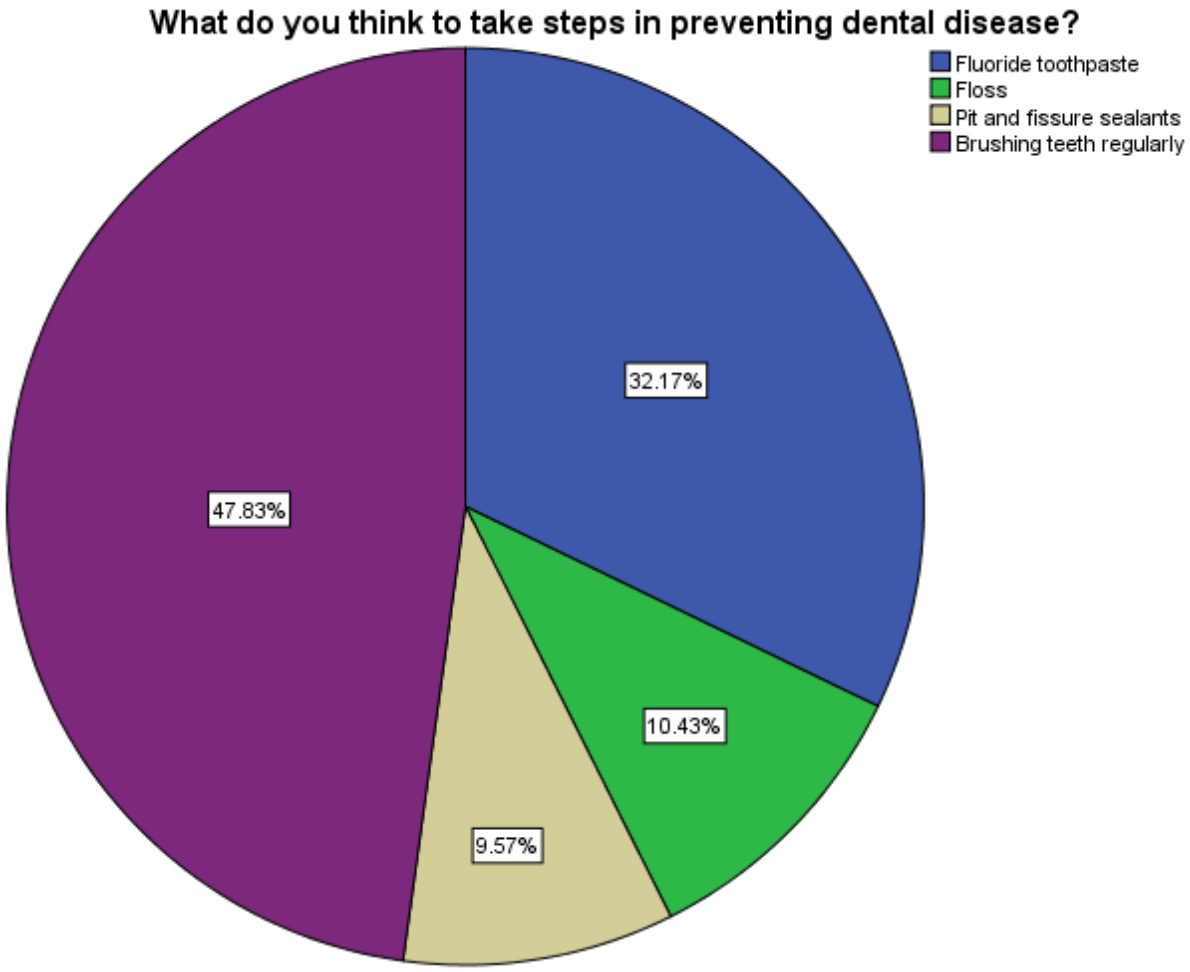

Figure 3: Pie chart depicts steps for preventing dental diseases, about 47.83% reported that regularly brushing can prevent dental diseases(purple), 32.17% of them reported that using fluoride toothpaste can prevent dental diseases(blue), 10.43% of them reported using floss can prevent dental diseases(green), 9.75% of them reported pit and fissure sealants can prevent dental diseases(beige).

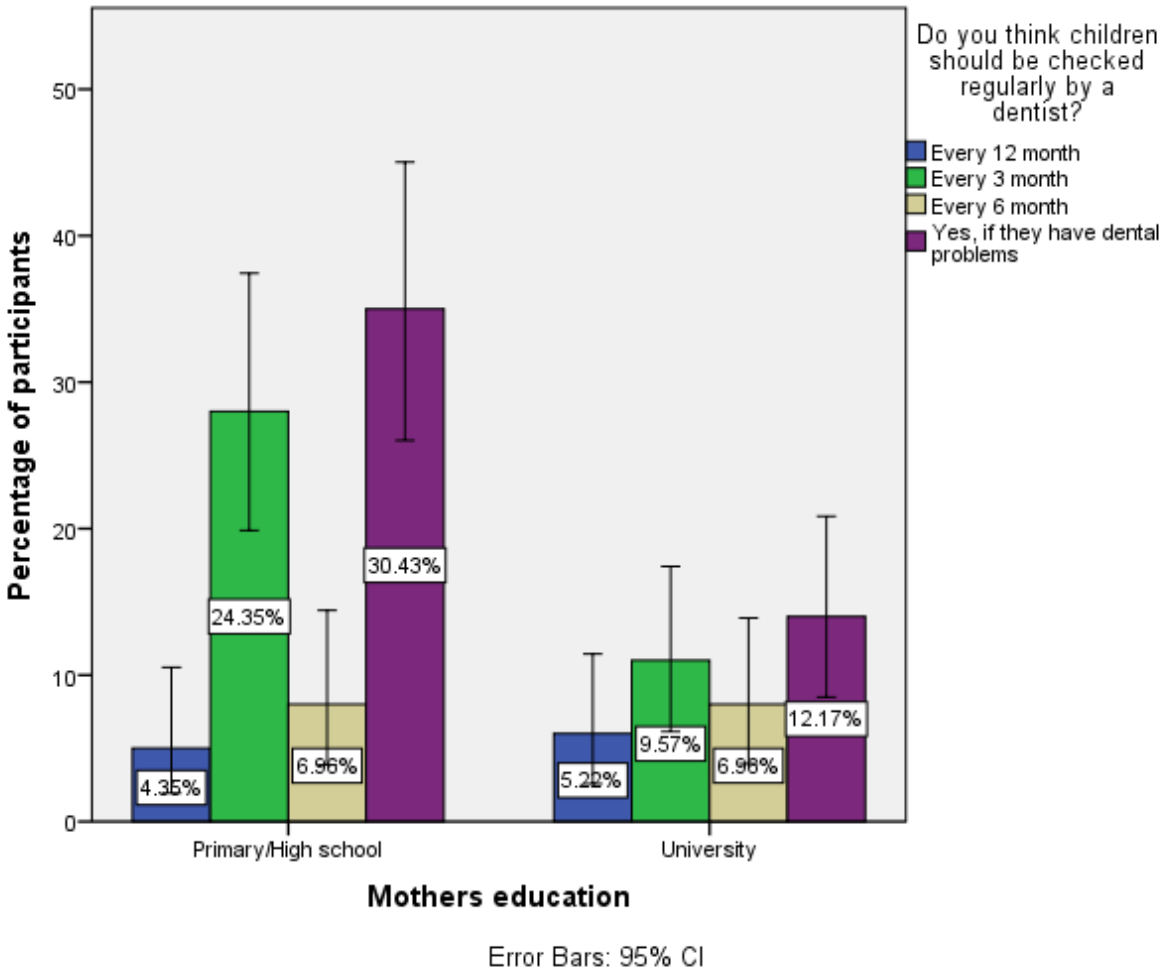

Figure 4: Bar graph representing the association of mothers' education and their opinion on the regular consultation of children by the dentist. X-axis represents the mothers education and Y-axis represents the percentage of participants who agreed of visiting dentist due to dental problems(blue),every 3 month (green), every 6 month(beige) and every 12 month (purple) Majority of primary/High school mothers agreed that they visited only when they have dental problems than all other reasons, however it is statistically not significant (Pearson chi-square value: 2.215 , df:2, p value = 0.330(>0.05))

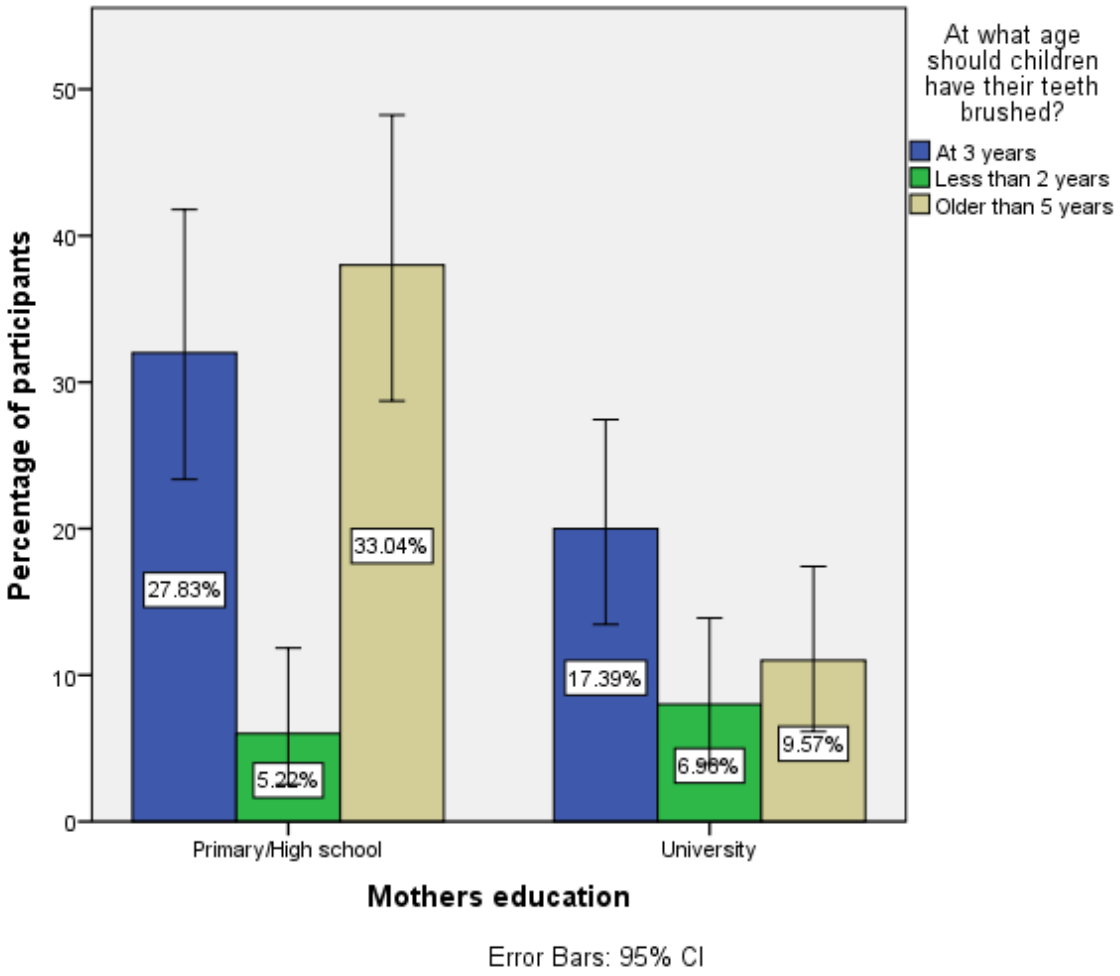

Figure 5: Bar graph representing the association of mothers education and their opinion on children's age on brushing the teeth .X-axis represents the mothers education and Y-axis represents the percentage of participants who answered to brush teeth at 3 years(blue), older than 5 years(green) and less than 2 years(green). Majority of primary/high school mothers agreed that children should brush their teeth older than 5 years than other participants. This difference was statistically significant (Pearson chi-square value: 1.324, df:2, p value = 0.04(>0.05))

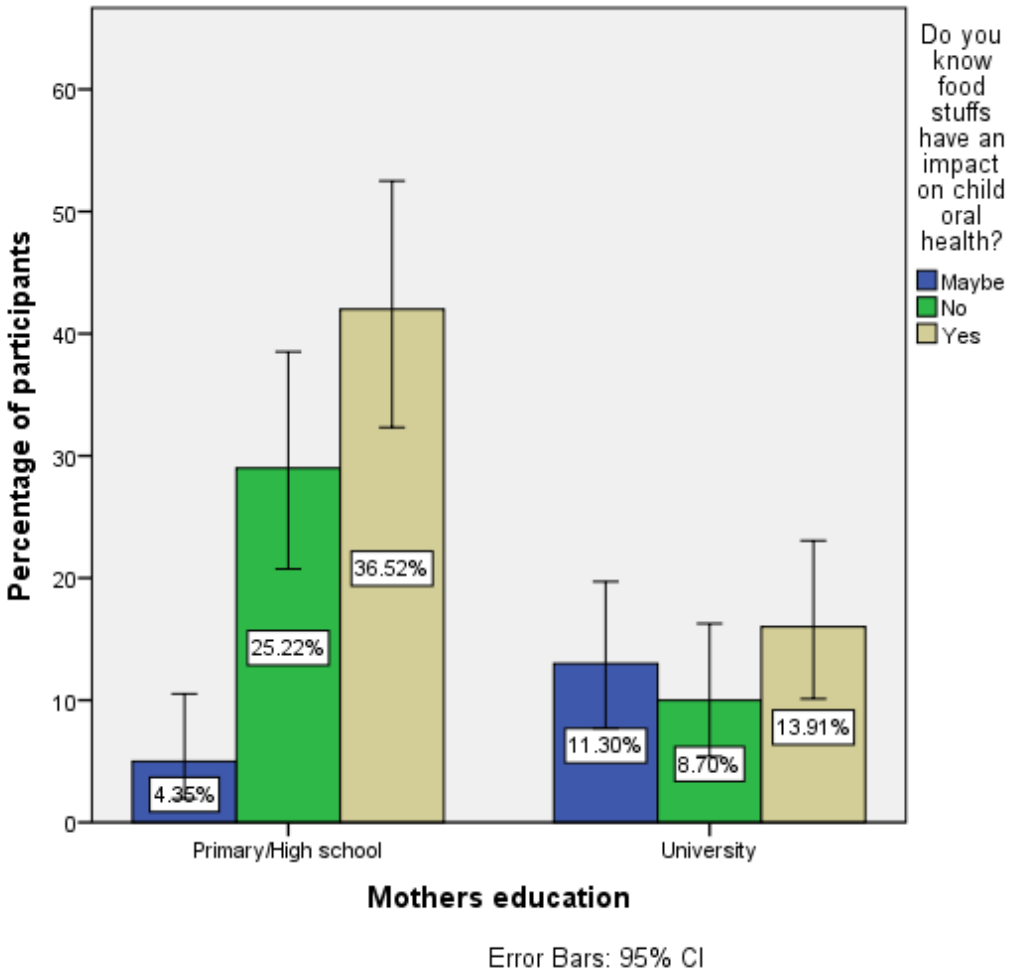

Figure 6: Bar graph representing the association of mothers' education and their opinion on impact on food stuff on child oral health.. X-axis represents the mothers education and Y-axis represents the percentage of participants who agreed that foodstuff has an impact on child oral health(blue), did not agree (blue) and were not sure about it(beige). Majority of primary/high school mothers agreed than males, however it is statistically significant (Pearson chi-square value: 4.122, df:2, p value = 0.001(>0.05))

DISCUSSION :

The study was done to assess the knowledge, attitude, and practice on oral health of children less than five years old among mothers. Parents serve as role models for their children, and the habits formed during childhood, when the child is completely reliant on the mother, are effective in instilling new behaviours in children, such as cleaning their teeth(29). Hence, in order to teach

excellent oral habits in their children, parents must have a strong understanding, good knowledge and attitude about oral health and this positive impact must be translated into effective oral hygiene and nutritional behaviours(30). Parental knowledge about infant oral health was found to be lacking in many studies(30,31),(32). In this present study, it shows that the education of parents plays a vital role regarding the attitude, knowledge, and practice of oral health in their children. A significant difference was seen among the response of high school qualified mothers and university qualified mothers in regard to brushing habits, reason for brushing and food habits and day to day activities which could have influence on oral health. Hence, mothers with university qualifications have good knowledge, attitude, and practice about the oral health of children, which is similar to studies done in Kuwait(2). Though there was no statistically significant difference between the two groups regarding the knowledge of healthy teeth toward general health, the graduate mothers were more concerned about the oral health, which supports these studies(2,6). Toothbrushing is an effective tool in maintaining the oral hygiene and prevention of caries. In the present study, the importance of brushing was underestimated by parents who had only school education when compared with graduates which was correlated with other studies(33),(34) However, most of the mothers felt that brushing helps to have clean teeth and to prevent caries. Hence, the mothers do understand the advantage for brushing, but are not able to appreciate the importance of daily brushing. Most of the mothers agreed that till 5 years, brushing of children needed to be supervised which was also agreed with a study and stated that mothers with higher education felt that it is necessary to teach children toothbrushing and check the teeth after children brushed their teeth. This could motivate the children to do better brushing and to maintain oral hygiene(35). In this study, there was a substantial positive correlation between mother's knowledge and her education($p < 0.05$) which was relevant to the study(36), Mothers with a lesser level of education have less knowledge than mothers with a greater level of education. Similarly, Various questions regarding the oral health knowledge, such as how important healthy teeth are for general health, reasons for brushing teeth, how often should children have dental check-up were asked, 96.0% of mothers who completed school accepted that healthy teeth are important for general health and 4% did not even know how important healthy teeth are for general health. Among the mothers who completed a diploma/degree, 96.8% agreed and 2.1% were unaware that healthy teeth are important for general health(37) which was correlated with this study as shown in figure 3. Similarly, a study shows that Cleaning (48.9%) was the major reason stated by the mothers who completed diploma/ degree, 44.7% suggested that brushing is done for caries prevention and 6.4% said that brushing was done to prevent foul breath which was agreed with our study as shown in figure 4. However, although many parents reported taking their children to the dentist every 6 months, most respondents only take their children to the dentist when a problem arises, which agrees with a study done in Brazil. Similarly, a total of 80% of those who completed school agreed that children should have a regular dental check-up, 10% disagreed with the same, and 10% did not even have knowledge about it(38) And among the mothers who have completed a diploma/degree, 81.9% agreed to it; 12.8 and 5.3% disagreed with Moses(37) which had contrary

opinion with this study as shown in figure 5. Similar studies conducted to assess knowledge of mothers about infant oral health also concluded that most mothers lack basic knowledge regarding maintenance of good oral hygiene and prevention of dental diseases. About 53% mothers don't have basic knowledge about infant oral health and are not aware(39) which agrees with this present study.

CONCLUSION:

From this study it can be concluded that mothers have insufficient awareness regarding infant oral health. Mother's knowledge and awareness are influenced by factors such as mother's education, child's birth order, mother's age at childbirth, and her financial situation. The health care providers/dental surgeons are more focussed on curative treatment. Health care providers or dental surgeons should organise activities such as parental counselling, lectures, mass education at family welfare centres, educational plays and movies, and so on to improve mothers' knowledge and awareness in order to promote good mouth health among the future generation.

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