

Prevalence of Early Children Caries in Libya

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Abstract

This study was carried-out to identify the dental problems that face children in early age. It further aims to find out the causes and how to reduce these dental problems. The research information was collected by a questionnaire that addressed to the participant, 150 parents who have children with teeth decay. The results of the questionnaire are presented in figures (chapter 5). The Results reveal the causes of early dental caries. The results of the data gathered through the questionnaire showed little agreement. The result showed that most of the participants don't think or consider the dental health of their children as an important priority, also they do not supervise their children when they clean their teeth whether they are cleaning it on the right way or not and some of them they don't clean their teeth at all. Another reason that causes tooth decay in children is that the parents they do not monitor children's nutrition, as they eat many foods that harm the health of their teeth. On the other hand, the result showed that parents don't take their children to the dentist unless of emergency cases which leads to a delay in discovering any dental damage if it exists, and this also leads to a delay in its treatment too.

Keywords: Early children caries, cavity, tooth decay.

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1. Introduction

When tooth structure gets destroyed, it is known as tooth decay. One of the hardest parts of a tooth is its enamel. Cavities, or holes in the teeth, can form because of tooth decay [1]. In their 2007 edition of the Medical Dictionary for Health Consumers, the terminology "caries" is described as a destructive process resulting in cavitation of the tooth. A high quality of life depends on one's dental health, which is a component of an individual's general health [2]. Individuals must maintain optimal oral health to ensure the ability to communicate, eat, taste flavors, smile, and live free from pain or discomfort [3]. In certain countries, the prevalence of dental caries in children aged three to five exceeds 90%, making it among the most common preventable diseases globally. Dietary "fermentable carbohydrates," especially free-sugars, are the primary causative factor in this behavior-modified biofilm-mediated disease [20]. The complex causes of caries necessitate taking environmental, genetic as well as risk behavior factors into account [21]. Dental caries is nearly five times more common than asthma along with seven times more common than hay fever when compared to other frequent diseases [4]. Children, and especially young children, are susceptible to oral and dental infections, according to the American Academy of Pediatrics. Early detection and treatment of dental caries in primary teeth can prevent and even reverse the disease. However, if neglected,

the condition can progress to painful symptoms, bacteremia, abnormal growth and development, missing teeth too soon, speech disorders, higher treatment costs, diminished self-esteem, and poor outcomes for the teeth that will eventually replace them [5]. One type of tooth decay that can develop in children's teeth is called early childhood caries (ECC). ECC is a very common disease that affects children all over the world. A child's primary teeth that have one or more decayed, missing, or filled tooth surfaces within a child who is 71 months old or younger is considered ECC according to the 2005 definition provided by the American Academy of Pediatric Dentistry (AAPD) [6]. When carbohydrate-containing foods, such as sugars and starches, remain on the teeth, this condition can develop. Milk, soda, raisins, sweets, cake, fruit juices, grains, bread, and cereals all fall into this category. Common oral bacteria convert these foods into acids [5]. Plaque is a sticky film that forms on teeth when bacteria, food, acid, as well as saliva come mixed. Bacterial acids gradually dissolve tooth enamel, resulting in cavities [6,7]. Dental caries can develop as early as six months following a child's primary tooth erupts, and nearly 20% of children between the ages of two and five have untreated decay in at least one primary tooth [8]. Preschool is an important period for the development of unhealthy dental habits, caries patterns, as well as risk factors. It is the perfect moment to step in and start a positive trend that can last a lifetime [9]. Since primary tooth caries is the best indicator

of future permanent tooth caries, preventing dental caries in children and adolescents should be the primary concern for dental care providers [10]. However, untreated ECC can lead to children needing avoidable emergency hospitalization for procedures related to caries, such as the extraction of infected teeth under general anesthesia, that can have a bad psychological effect on the family along with the child [19]. Children from low-income families and minority groups are at an especially elevated risk for dental caries, which has been referred to as a "pandemic" disease due to the large number of untreated carious cavities that cause pain, discomfort, as well as functional restriction [11]. This research aims to identify the dental problems that face children in early age. It further aims to find out the causes of it and suggest ways to eliminate and find ways to solve it and protect children's teeth.

2. Research Methods

2.1. Research design

The research design is considered as a comprehensive plan set to find an answer to the research questions and reach conclusions. The research information was collected by a questionnaire that addressed to the participant' parents who children with a teeth decay. The questionnaire was filled in by a number of parents in Tripoli.

The aim of this study was to find a number of problems; therefore, a quantitative method would suit this research. One quantitative tool was chosen: a questionnaire. Excel 2010 is used for analysis.

3. Result and Discussion

The results of the questionnaire are presented in the following figures. The results reveal the causes of early dental caries. The distribution of children's ages is from 1 year to 9 years, 35% of them is between 1-3years, 30% is between 3-5 years, 20% of the children is between 5-7 years, and 15% is between 7-9 years old (Figure 1). This section discusses the two questions that guided this research. These questions concern the identification of the reasons of early dental caries.

Q1- Why do infants and children get tooth decay?

Bacteria and other microbes are the root causes of tooth decay. When carbohydrate-containing foods, such as sugars and starches, remain on the teeth, this condition can develop. Milk, soda, raisins, sweets, cake, fruit juices, grains, bread, and cereals all fall into this category. Common oral bacteria convert these foods into acids. Plaque is a sticky film that forms on teeth when bacteria, food, acid, as well as saliva mix together. Bacterial acids gradually dissolve tooth enamel, resulting in cavities. Bacteria in the mouths of all children. Therefore, tooth decay can affect any child. However, your child's risk for cavities could be increased by factors such as a diet rich in sugars and starches, intake of water with little or no fluoride, inadequate oral hygiene, abnormally low saliva production, and high levels of the bacteria which trigger them. There is common way that teeth develop decay and cavities such as white spots begin to form on the teeth in areas affected. These spots mean that the enamel is starting to break down. They may lead to early sensitivity in the teeth, an early cavity appears on the tooth. It has a light brown color, and the cavity becomes deeper. It turns a darker shade of brown to black. But decay may be a bit different for each child.

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The symptoms of tooth decay and cavities vary from child to child. Sometimes cavities don't show any symptoms. Until the dentist notices it, a child may be unaware that they have one. Nevertheless, the child might experience localized pain and heightened sensitivity to specific foods and drinks, including sugary foods and extremes of temperature.

3.1. Mistakes parents make that lead to tooth decay

Delaying a visit to the dentist may lead to an increased risk of tooth decay and delaying early detection of decay in children. Lack of care of milk teeth is also a main reason of tooth decay in children. Another mistake is when the parents are allowing their children to eat a lot of sweets and drink soft drinks, this is one of the most important and common causes that leads to tooth decay in children. Another mistake that parents make is allowing the use of toothpastes that do not contain fluoride also causes early cavities in children. Allow the child to use the brush to brush his teeth alone is another mistake that parents can make. A child cannot brush his own teeth until he is eight years old, one of the parents must brush the surfaces of all his teeth. Considering tooth decay is not a big problem, if the decay that appears at an early age is not addressed, it leads to poor pronunciation, insomnia and even a decline in academic performance at school due to the lack of respect that the child may be exposed to from his colleagues. All the mistakes that have been mentioned above are reasons lead to early dental caries.

Q2-How can we prevent or reduce the problem of the tooth decay?

Many children suffer from the problem of caries in the front teeth, and complete erosion of some of them, but some parents do not consider this as a problem. They think that these teeth are milky and will fall out to be replaced by permanent teeth, and therefore there is no need to spend time and effort in treating them, as long as It will be replaced someday. Most dentists warn of the danger of this misconception prevailing, which has negative current and future effects. The current effects are the child's loss of appetite and his inability to eat some of the nutrients needed to build the body, due to toothache. Future effect are related to the permanent teeth that families rely on to save their children, as the presence of milk teeth helps to preserve the distances between the teeth until the permanent ones appear, and then the infection of decay that may lead to their extraction, which affects this function. Problems with children's oral health, namely dental caries, persist on an international basis, particularly among indigenous populations. The chance of lowering the disease burden through dietary and oral hygiene behavior changes, as well as other interventions like the administration of high-concentration fluoride varnish, is available to those at risk when they are identified early, particularly in children. This can lead to lifelong improvements in oral health [21]. If the parents followed the following tips, it may help to prevent and reduce the dental caries in their children.

1-The child's diet should be balanced, because it is devoid of useful elements that contain calcium, phosphorus and iron, which makes him vulnerable to the problem.

2-Reducing the rates of eating sweets and chocolate frequently between meals. Also reducing the amount of the food that contain carbohydrates such as rice, pasta and potatoes.

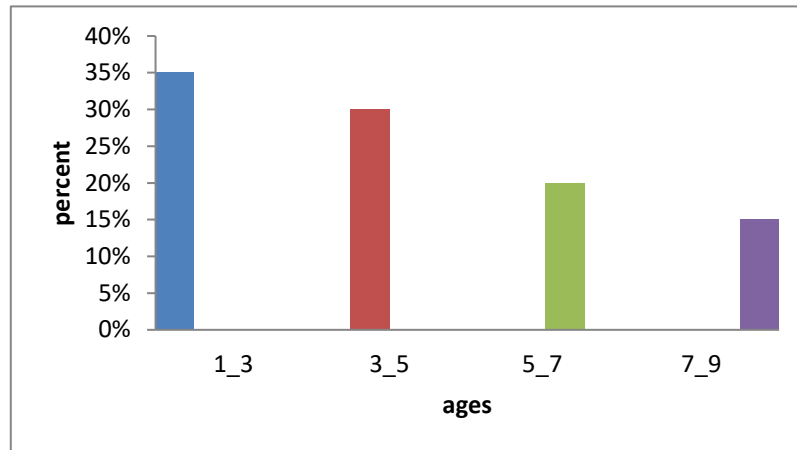


Figure 1: children's age

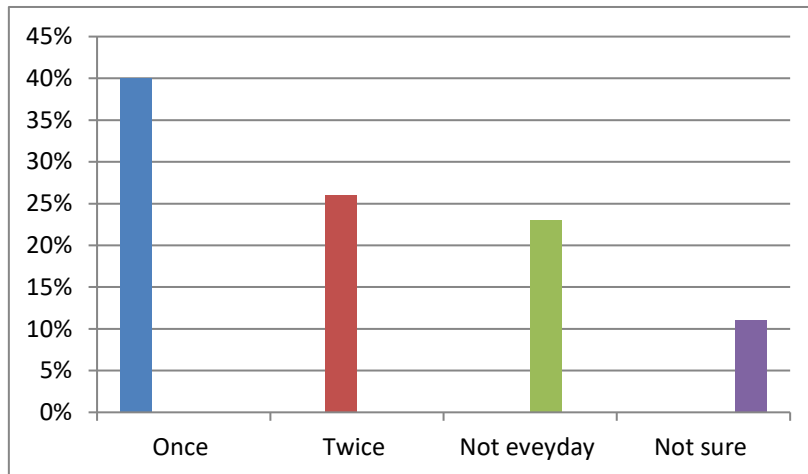


Figure 2 : Number of times children often brush their teeth.

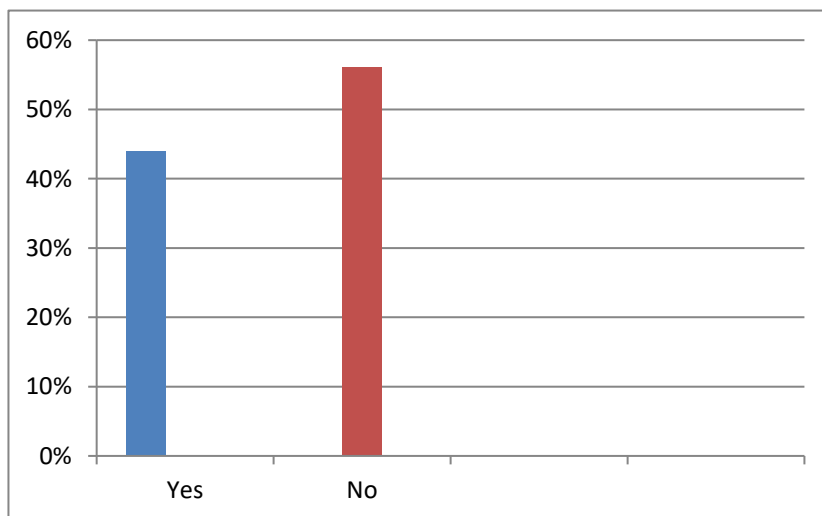


Figure 3: Supervising the teeth cleaning of the children daily.

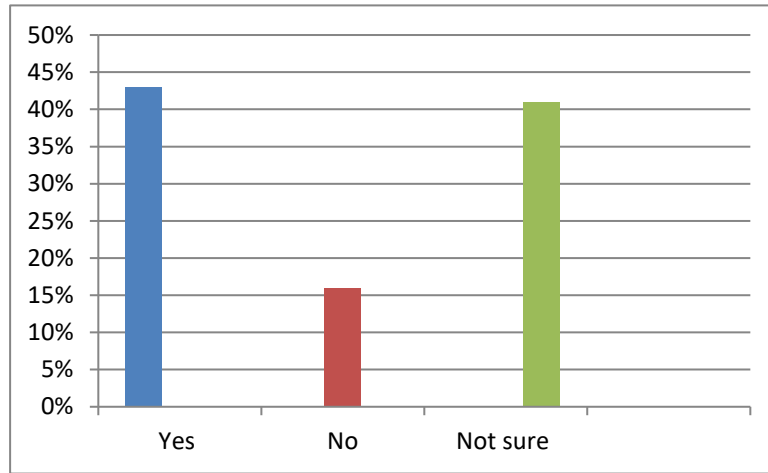


Figure 4: children using fluoride toothpaste

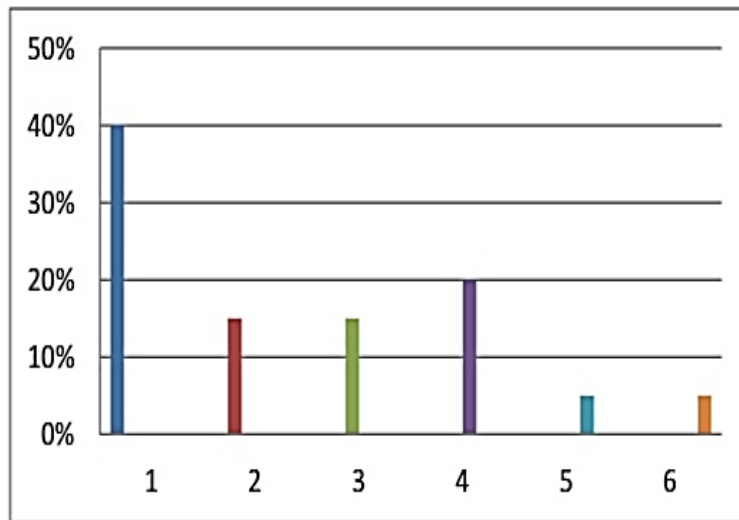


Figure 5. the purpose of using fluoride toothpaste

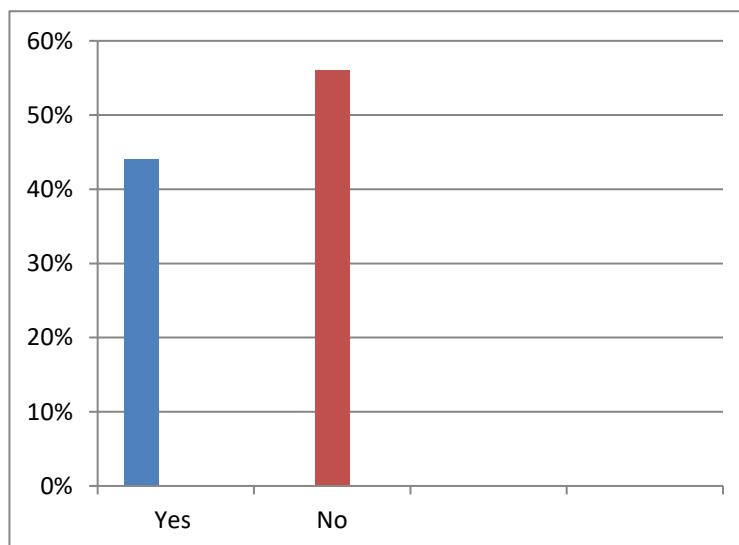


Figure 6: making appointment with the dentist for children toothache.

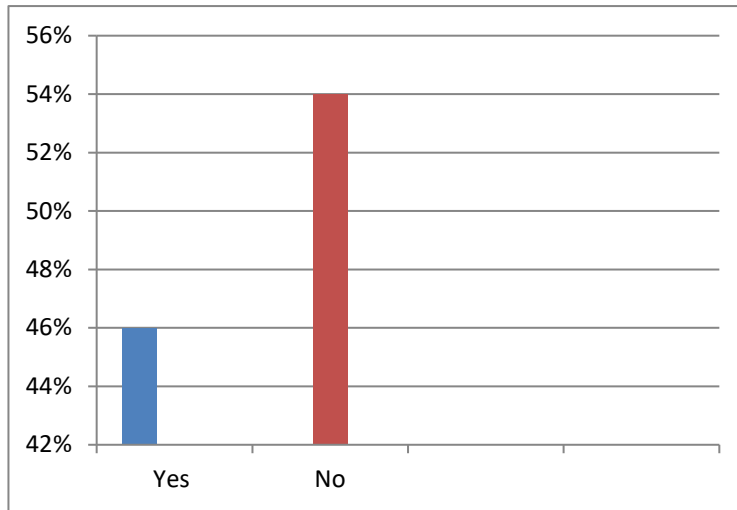


Figure 7: Receiving antibiotics as a treatment for dental emergency.

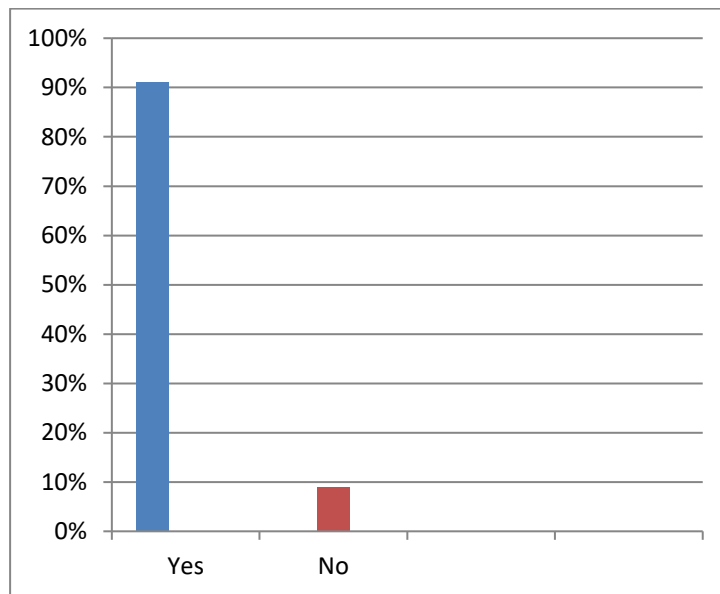


Figure 8: Getting worry about being exposed to tooth decay due to children not brushing their teeth regularly.

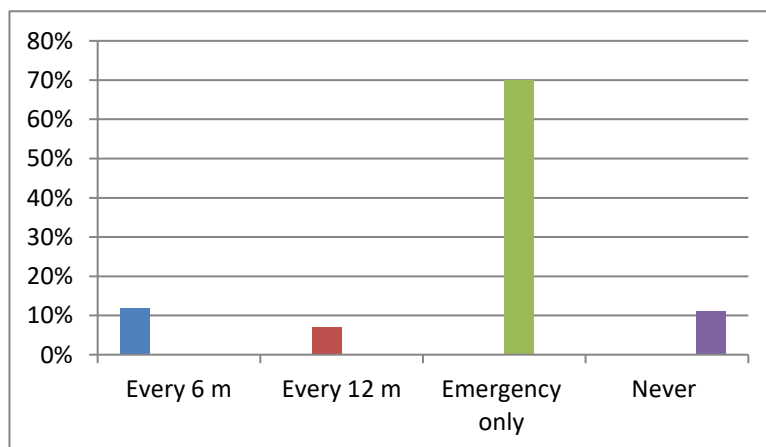


Figure 9: taking children to dentist for check-ups.

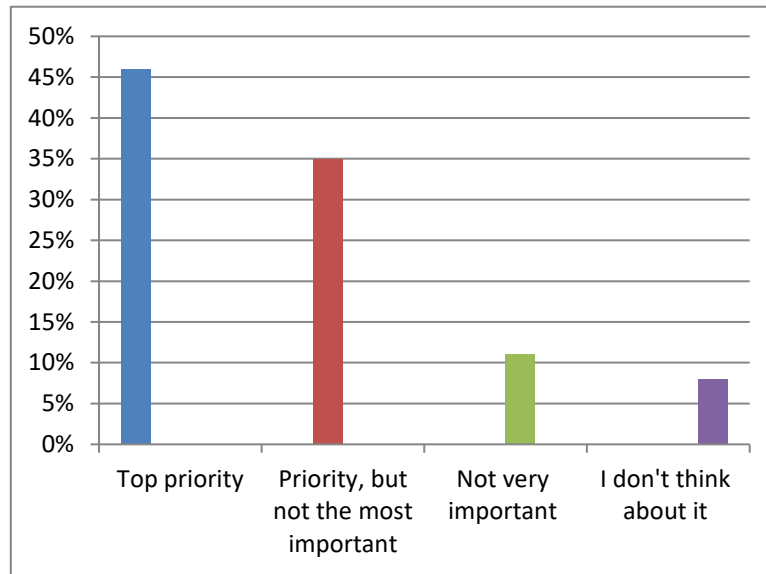


Figure 10: Importance of children dental health.

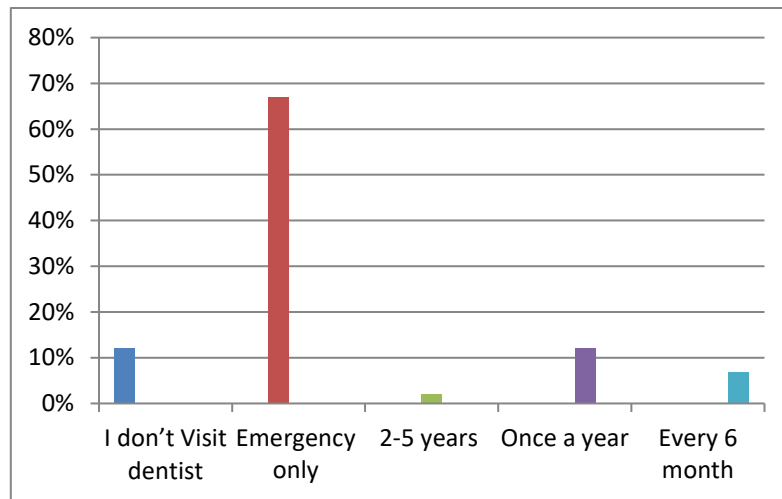


Figure 11: visiting dentist regularly.

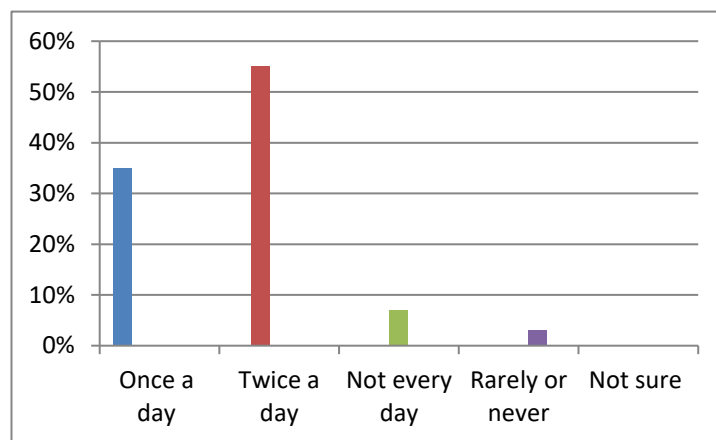


Figure 12: number of times of brushing the teeth.

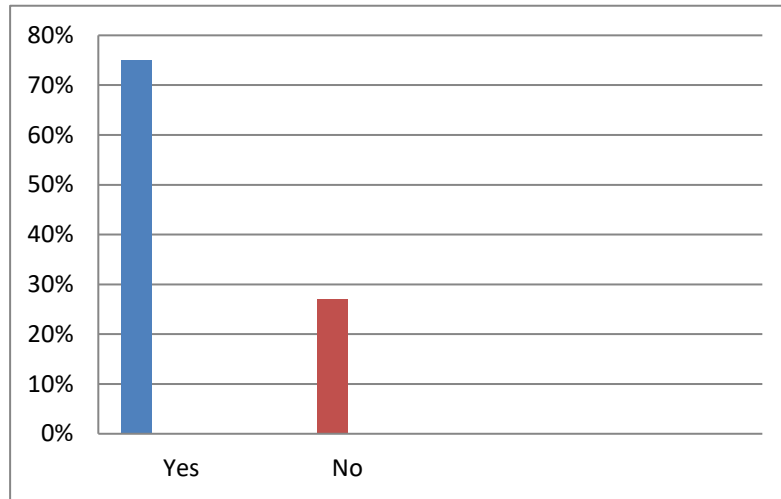


Figure 13: Role of schools in teaching children about dental health.

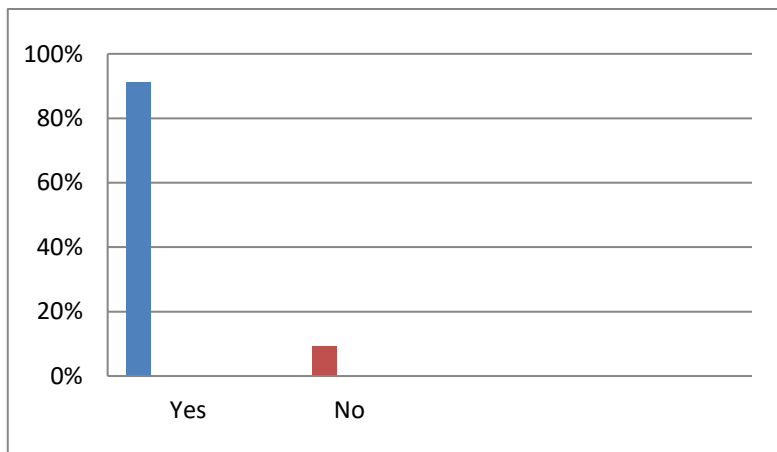


Figure 14: Include dental cleaning in schools as a mandatory part of the health education curriculum.

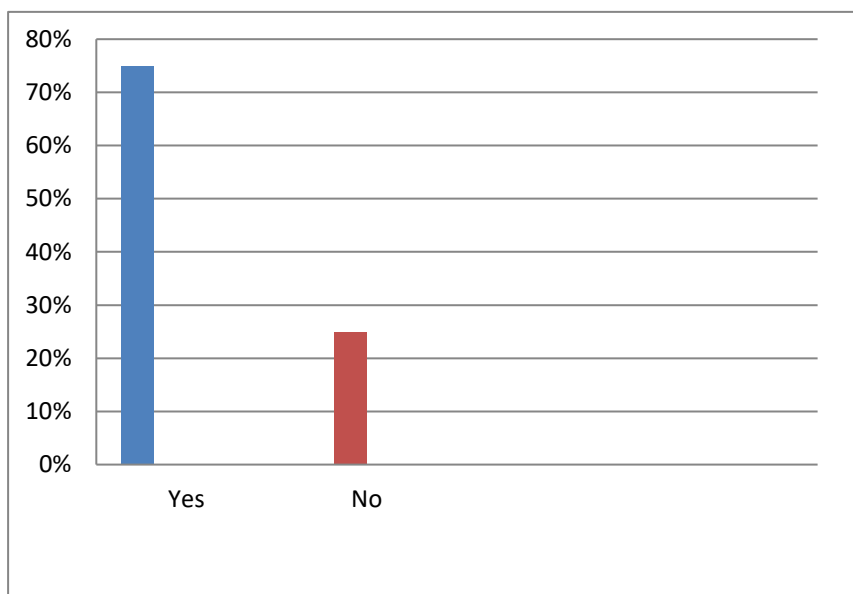


Figure 15: Parents suffering from tooth decay.

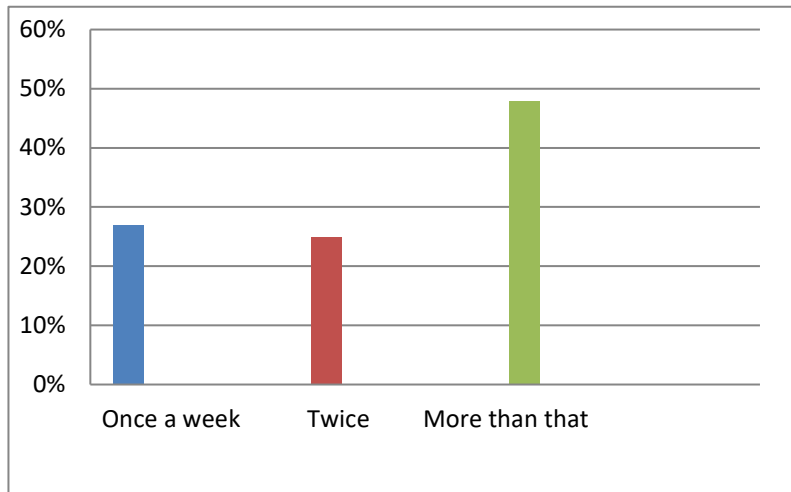


Figure 16: Allowing children to eat sugar and drinking soft drinks.

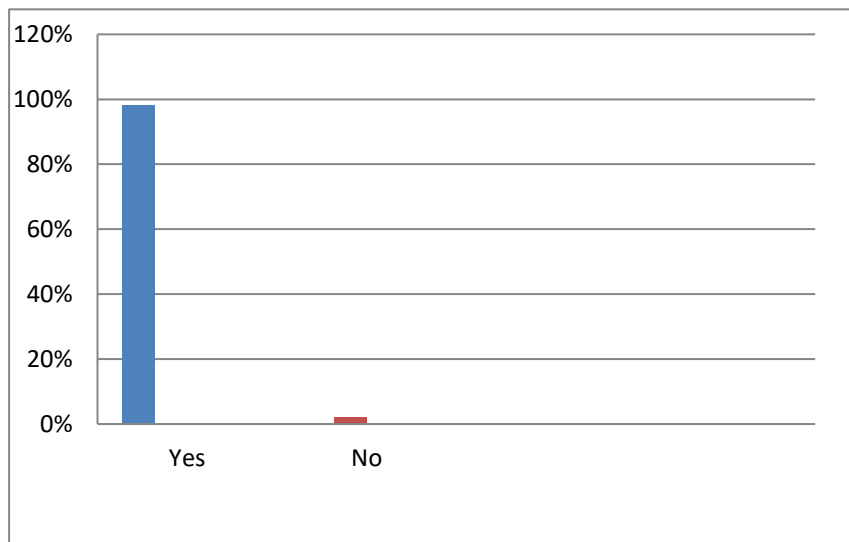


Figure 17: Eating fruits and vegetables drinking milk and water is good for dental health

3-The need to ensure that the general structure of the child's body is strong, and to take care of brushing the teeth twice a day and not to leave food crumbs between the teeth.

2. How often do your children brush their teeth?

Nearly 40% of parents whose children brush their teeth only once a day, 26% twice a day, 23% who don't brush their teeth each day, and the last 11% are not certain about it (Figure 2).

3. Do you supervise the cleaning of your children's teeth daily?

As shown in figure (3), 44% of parents supervise children when they clean their teeth every day, and the 56% of parents do not.

4. Does your child use fluoride toothpaste?

In the Figure (4) reveals that 43 % of parents have children who use fluoride toothpaste, 16% who don't, and 41% who are not sure about it.

5. Do you understand the main purpose of using fluoride toothpaste?

40% of the participant think that the fluoride tooth paste prevent cavities,15% think that it taste nice,15% think that it makes teeth look better,20% of them think that it Maintains healthy gums, 5% think that it makes the breath more pure, and5% they don't know about it (Figure 5).

6. Has your child ever made an emergency appointment with the dentist?

Figure (6) presents that 44% of parents had an appointment with the dentist for their children toothache, but 56 % of parents did not.

7. If one of your children was treated for a dental emergency, did they receive Antibiotics?

Figure (7) shows that 46% of the parents have children that received antibiotic as a treatment, and 54% of the parents are not.

8. Are you worried that your children may be exposed to tooth decay due to not brushing their teeth regularly?

Figure (8) shows that 91 % of parents are getting worried that their children be exposed to tooth decay due to not brushing their teeth regularly , but 9 % of parents are not.

9. How often do you take your children to the dentist for check-ups?

Figure (9) presents that 12% of the parents are taking their children for check-ups every 6 months, 7% of the parents are taking them every 12 month, 70% of the parents are taking them in emergency cases only, and the 11% of them are never taking them for the check-ups.

10. How important is your child's dental health?

Figure (10) shows that 46% of the parents consider their children dental health is a top priority, 35% of them consider it a priority, but not the most important, 11% of them considering it as not very important, and the 8% they don't think about it at all.

11. Do you visit dentist regularly?

Figure (11) shows that 12% of parents don't visit dentists, 67% visit dentist in emergencies only, 2% of the parents are visiting dentists every 2-5 years, 12% are visiting them once a year, and 7% are visiting the dentist once every 6 months.

12. How many time do you often brush your teeth?

Figure (12) shows that 35% of parents brush their teeth one time a day, 55% of the parents brush their teeth twice a day, 7% of parents not brushing their teeth every day, 3% are rarely brushing their teeth, and none of them are not sure.

13. Do you think schools have a role in teaching children about dental health?

Figure (13) shows that 73% of parents think that schools play a role in teaching children about dental health, and 27% of them are not.

14. Should schools include dental cleaning as a mandatory part of the health education curriculum?

Figure (14) shows 91% agree that schools should include the dental cleaning as mandatory part of the health education curriculum, and 9% of the parents they don't.

15. Was one of the parents suffering from tooth decay?

Figure (15) shows that 75% of the parents suffered from tooth decay, and 25% did not.

16. Do you allow your children to eat sugary and soft drinks?

Figure (16) shows that 27% of parents allow their children to eat sugar once a week, 25% of them allow their children for two times a week, and 48% of them more than that.

17. Do you think that fruit and vegetables is good for dental health?

Figure (17) shows that 98% of parents think that eating vegetables and drinking milk is good for dental health, and 2% think that it's not.

3.1. Limitations of the study

This study is limited in investigating the cause of early dental caries, so the subjects targeted are parents that have children with dental caries. The researcher faced some difficulties during the distribution of the questionnaires, as some of the parents targeted for the sample did not hand over the questionnaires after filling them out.

4. Conclusions

A major concern in public health, ECC represents an infectious disease that affects young children and lasts for a long time. It has the potential to impact a child's health, learning, as well as quality of life. The results of this study demonstrated that parents' and caregiver views and beliefs regarding dental care and hygiene, as well as the family's socioeconomic status, are the most important factors in the development of ECC. Young children from low-income families are more likely to have ECC because of a number of risk factors. To effectively prevent and manage ECC, we need techniques that take into account the physiological causes of illness as well as the social, psychological, financial, along with environmental factors that contribute to it, which are collectively referred to as social determinants of health (SDH). The health of a child is influenced by the parents' level of health literacy.

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