



HEALTHY TEETH FOR HEALTHY KIDS



Introduction to Public Health

DEN 2413- Professor Lam

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INTRODUCTION

Establishing the best oral hygiene routine for children is the key to having healthy teeth with healthy smiles. As kids grow up, their oral hygiene habits should also grow with them and here is where dental health care providers and parents have an important role to do. Caries is not only one of the most prevalent health problems facing children and adolescents in the United States, but is the most widespread chronic disease worldwide and constitutes a major global public health challenge. According to the American Academy of Pediatrics, children with cavities in primary teeth are at great risk to have caries in their permanent teeth. Poor oral health can have detrimental consequences on physical and psychological well being not only in children but in people of all ages.

Dental caries are the most chronic children's disease in the United States. According to the 2016 National Survey of Children's Health Early childhood states that caries affects 23% of preschool-aged children and 18% of children aged 5 through 18 years who have untreated caries. Many people believe that since this tooth decay is occurring on the primary dentition, also known as "baby teeth", it is not a problem and does not cause any harm. However, tooth decay that occurs on the primary dentition not only increases the risk of developing caries in the permanent dentition but can also lead to infection, pain to the child and misalignment of the permanent dentition. In other words, leaving caries untreated can negatively affect children's quality of life and impair academic performance. Preventive oral health care, early detection, and management of caries are critical to improving the oral health of children and adolescents overall.

Tooth decay is the most common childhood disease, but it affects people of all ages throughout their lifetime. It is considered a multifactorial disease, which is caused by bacterial biofilm and the acidic byproduct of sugary foods. The interaction with the tooth surface over time

will cause a breakdown of tooth enamel. Therefore, besides regular toothbrushing, a child's diet also plays an important role in their overall dental health status. As it is well known, tooth decay is principally caused by sugar consumption but can be prevented by reducing sugar intake as well as appropriate fluoride and prevention by applying sealants. In general, starting good oral hygiene habits at a young age is very important; it will help prevent childhood caries as well as set a good foundation for good oral hygiene habits in the future.

ASSESSMENT

Our group focus was children in the 2nd and 3rd grade, between the ages of 7 yrs to 9 years old. At this age, children have mixed dentition including their 1st molar. Also, children should have seen a dental health care provider to monitor the growth of developing teeth and for parents to receive dental hygiene guidance. Unfortunately, there are many parents that due to different circumstances may not bring their child for regular dental examinations unless there are any symptoms of pain or a broken tooth. However, several studies and many dental journals have proven that bringing children to the dentist at a young age, and to the regular check-ups helps to form a trust relationship between patient and clinician. According to CDC “Children who have poor oral health often miss more school and receive lower grades than children who don’t.”(4) Apart from this, it will also set a good foundation for the future when it comes to oral health and helps decrease caries risk. For this reason, our group has decided to assess the children’s knowledge of their oral hygiene.

With this in mind, we are looking to affirm that children understand the importance of creating good habits. We intend to create a fun, safe learning space for the children to ask questions and

become more comfortable and knowledgeable when it comes to their oral hygiene and caries prevention strategies so that they can share this information with their parents and guardians at home.

PLANNING

Schools provide an ideal setting to deliver oral hygiene education. Studies have shown that the school-based approach is more efficient in delivering preventive services than a community-based approach (1). Hence, “Healthy teeth for healthy kids” is a school-based program that provides preventive oral health education for Elementary school children who are at a stage of forming their own health habits, which makes it an ideal opportunity to install healthy lifelong practices.

Specifically, the program focuses on the population of 3rd and 4th-grade students from the Ascension School in New York City, between the ages of 8 and 9, participants of an instructive and interactive presentation consisting of videos, oral expositions and one to one demonstrations designed to provide education and awareness regarding the importance of dental hygiene, oral disease process and preventive measures as well as nutritional advice for elementary schoolers. Activities to measure the participant’s level of comprehension and awareness of the presented material are performed at the end of the visit.

The main goal of this program is to increase awareness in the participant population regarding the importance of self-oral hygiene habits, the dental caries process, nutrition and effects of acidic food in oral health as well as the importance of dental sealants.

Specific objectives of the “Healthy teeth, healthy Kids” are:

- Help children appreciate the importance of a healthy mouth. During the visit, the presenters will explain the dental caries process and the role of bacteria and biofilm in oral disease. The exponents will demonstrate proper tooth brushing and, through videos and other visual aids, will explain the significance of rinsing after meals and proper oral hygiene behaviors in general.
- To increase oral health awareness in the participants and encourage the observance of healthy practices such as proper diet as well as to be able to differentiate nutritious food from unhealthy meals /snacks. Presenters will discuss the negative impact of frequent consumption of fermentable carbohydrates, sugary diet and acidic food/drinks in oral and health in general.
- Increase self-reported knowledge regarding oral health.
- Help participants understand the importance of oral health preventative measures such as fluoride applications and sealants as well as timely dental visits.

Upon completion of the planned activities, 80% of children participants will correctly demonstrate the proper way to brush using a typodont. 85% of the children will be able to distinguish healthy foods from unhealthy/cariogenic foods and 75% will be able to respond correctly to a set of questions at the end of the activity regarding proper oral health habits.

An alternative to the planned activities is to provide the proposed information to the 3rd and 4th-grade teachers. By instructing teachers and allowing them to forward the information to their students, a much bigger population can be reached, and the message can be distributed more efficiently to a larger portion of the community.

IMPLEMENTATION

_____ When we first arrived at the Ascension School on the day of our presentation, we were greeted by the very friendly staff and principal of the school. The presentation was organized to be given to the 3rd and 4th graders of the school. We first began by introducing ourselves and what we would be teaching them that day. Since this was a group of older kids, we were able to organize a slide show presentation including the different subjects necessary for this community of children to learn the importance of good oral hygiene and its benefits.

At the beginning of our slide show presentation, we included a video to give the kids the baseline information regarding microorganisms living in our mouths and what we can do to prevent these from causing oral decay. The topics included acids, fluoride, sealants, brushing techniques, and basic diet concepts. We each took a topic and further broke it down. The main idea we wanted to teach the kids was that bacteria live and reproduce in our mouth and our oral hygiene habits greatly affect whether or not that bacteria will harm our teeth. This was important so they could get a better idea and motivation to prevent them from multiplying in their mouths.

Acids were discussed by showing the kids a diagram of how bacteria use the sugars that we eat as food to produce harmful acids. Sugars can be readily metabolized by many bacteria involved in dental biofilm formation, generating acid byproducts that can lead to demineralization of the tooth structure (5). Pictures of carious lesions were shown and the children were shocked to see the dark areas on other children's teeth. We made sure to explain how sugary and starchy foods can change the pH in our mouth causing it to become more acidic. This acidic environment is ideal for these bacteria to thrive and reproduce. With these facts, we transitioned into brushing and gave them information on how the bacteria that remain undisturbed will result in cavities. We each broke off into smaller groups and using typodonts

and oversized toothbrushes, we were able to individually teach the children proper brushing techniques and allowed them to try for themselves.

We also reviewed the importance of fluoride in our drinking water. We explained that the fluoride in our New York City drinking water helps make our teeth more resistant to the acidity produced by bacteria. Along with fluoride, we discussed the beneficial aspects of sealants on molar teeth. We showed the kids pictures of how sealants reached areas that toothbrushes could not. They were intrigued at how the sealants were almost the same color as their own teeth. We explained how easily sealants were applied and how the process was pain-free.

We discussed diet with the kids by showing them examples of healthy foods and ideas for healthy snacking. We also showed them examples of sugary foods that bacteria loved. To make our presentation more interactive with the children, we set up a group activity for the kids with the use of voting paddles. Each paddle had a green side with a healthy tooth and a red side with a crying tooth. They would each get to vote with their paddles on whether the food we showed them was healthy or unhealthy. The kids had a great time voting and we were able to gauge how much they had retained from the presentation. Towards the end, we left time open for questions and they had many. They were very interested in avoiding cavities and displayed a clear understanding of what brushing and healthy eating habits were the most beneficial for their pearly whites.

EVALUATION

Evaluation of the above selected interventions is critical for future reference and to help further improve the Healthy Teeth for Healthy Kids program. Based on the objectives previously presented, our main goal was to increase awareness in the participant population regarding the importance of self-oral hygiene habits, the dental caries process, nutrition and effects of acidic

food in oral health as well as the importance of dental sealants. So far we have increased awareness with this one-time program presentation, but some improvements can be made.

The form of evaluation used in our presentation was based on verbal and visual interactions with the class. We developed an individual Q&A system with every objective as well as a fun group activity based on nutrition which helped us presenters determine if by the ending of the presentation the children were able to know how to make healthier nutritional choices. While voting and choosing healthier alternatives, all students made the best choice and they shared their reasoning; hence our method of determining effectiveness was proven.

Healthy Teeth for Healthy Kids program did, in fact, set out to accomplish what we originally set out to do. All of the students were attentive, enthusiastic, and cooperative in our program's lecture. Consequently, our success was proven by the children's knowledgeable feedback. Our success was also due to how freely the kids were able to ask questions as well as respond with confidence when being asked a question. Recommended future improvements would be to have an actual physical paper questionnaire that the students can fill out before and after the program's lecture to see how much knowledge they already had about the subject previously and how much new knowledge was gained in one presentation. Further recommendation for improvement would be to have a followed up continuous presentation, at least annually, to better ensure that our objectives were retained.

CONCLUSION

We enjoyed our experience at Ascension school. The kids were interested in the topic and stayed interacted throughout the presentation. We were able to explain the basics of oral hygiene, pH, diet and professional preventative measures such as sealants and fluoride treatment,

in an appropriate language for children. After each point, we answered all of their questions to make sure the kids fully understood the topic.

Healthy Teeth for Healthy Kids program met our goal to increase awareness and emphasize the importance of self-oral hygiene habits, the dental caries process, nutrition and effects of acidic food in oral health as well as the importance of dental sealants and fluoride in the 3rd and 4th graders at Ascension school. We also met our secondary goal to provide this information to the 3rd and 4th-grade teachers so they can continue to pass the information to future school children.

After completion of our program, 100% of the children were able to distinguish healthy foods from unhealthy/cariogenic foods. Over 90% were able to demonstrate the proper tooth brushing technique using a typodont and over 75% were able to answer correctly a set of questions given at the end of the presentation.

Overall, we had a great time at Ascension school. Our program was a good learning experience not only for the school children and their teachers but also for us. This experience helped us to understand what it was like to work with children which will help us in the future.

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