

**Educating Elementary School Students in  
Caries Prevention and Proper Nutrition at  
St. Brigid-St. Frances Cabrini Catholic  
Academy**

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**Introduction (Ivy Lin):**

Dental caries, also referred to in layman's terms as tooth decay or cavity, can affect one's overall oral health if not identified and treated early. Caries can develop as soon as the first primary tooth erupts and can occur again throughout the lifetime of the tooth. It is a significant health problem for people of all ages, but "the extent of the problem is higher among very young children (Daguci L, 2016)". The prevalence of caries in children are high due to a high sugar diet, poor oral hygiene, and incidence of dental caries at a young age. Caries in the primary dentition "represent a good indicator of the risk of caries in permanent dentition. Thus, studies have been conducted that show the close connection between early childhood caries and the prevalence of proximal caries in permanent teeth (Daguci L, 2016)".

Forming a good oral hygiene and a good understanding of the caries process and prevention at a young age will help instill beneficial oral self care and combat the rising number of children with caries in their temporary dentition. Programs that educate elementary school students would be a great first step in prevention. For our site, we chose to go to St. Brigid-St. Frances Cabrini Catholic Academy to speak and present to elementary school students about caries prevention and nutrition. Our goal is to evaluate how much they already know about caries and oral hygiene, then educate them with proper information, and further reinforce great oral hygiene routines.

**Assessment (Wendy Ma):**

For this service learning field project, our target population includes elementary school students between the ages of 6 and 7. The population size is a group of 21 students, consisting of 10 girls and 11 boys. They are currently in the first grade level with limited knowledge about

oral health care due to many factors. A majority of the students learn oral health care behaviors from their parents and/or guardians without proper education from an outside institution or program.

We conducted our assessment by interviewing the school's principal, Ms. Soria, and the students' teacher, Ms. Chen. From the interview, we were able to collect data about the students and their oral health condition. According to Ms. Soria, they currently do not have any oral health care programs designed for their students, but she hopes to have that implemented in the future. Also, for the current school year, Ms. Chen did not prepare a lesson plan on oral health education for her students and she does not plan to have one. Furthermore, there are no evidence that the school requires students to submit a dental visit evaluation form prior to enrollment, which means that there are no documentation of the students' current dental condition. Nevertheless, research indicates that "2.4 billion people are affected by caries, while untreated caries interests 621 million children, representing the 10th most prevalent condition worldwide" (Vozza I, 2019). This shows the prevalence of childhood caries and hence, these students are at a very high risk of having existing caries or developing it in the future if proper oral care is not introduced. This specifically applies to elementary school students because they are at an age where they are able to make their own food choices and snack habits which can influence the status of their oral health considerably.

In addition, the socioeconomic statuses of these students are mainly in the lower working class, which further increases their risk level due to limited access to resources needed to maintain good oral health. According to Kim et.al, children's "attitude, belief and behavior towards oral health are very much affected by their parents' socioeconomic factors and oral health behaviors" (Kim and Kim, 2019). With all of these data, we were very convinced that our

public health services would greatly benefit both the school and the students given the lack of proper oral health education outside of the household. Moreover, it is especially imperative to promote proper oral hygiene care and caries prevention methods to elementary school aged children since “dental health knowledge obtained during the elementary school days forms the foundation of life-long dental health management” and thus, “dental health programs for elementary school students are significant for public health science” (Kim and Kim, 2019). Therefore, by ensuring that these children obtain proper oral health knowledge at an early age, they will be able to maintain these healthy beliefs and behaviors as they continue into their adulthood. Overall, this would contribute to a decrease in the incidence of oral health diseases in children and adults as part of a public health effort.

**Planning (Carolina Fritman):**

After identifying our target population, we realized that the students were lacking in dental health education, which allowed us to plan an ultimate goal for them. We plan on educating the students at St. Brigid-St. Frances Cabrini Catholic Academy about the importance of good oral hygiene and a healthy balanced diet to prevent tooth decay. Our goal is to educate the students on different food in order to help them make better decisions. Also, we want them to identify the benefits of a balanced diet and the long term effects in the oral cavity caused by having an unbalanced diet of food high in sugar. Most importantly, we want students to learn how to take care of their teeth properly and how to brush properly. We want to emphasize the importance of brushing their teeth on a daily basis for the recommended amount of time with the ultimate goal of minimizing tooth decay and preventing treatment.

Our main objective with this intervention is to allow young children to start identifying and differentiating between healthy and unhealthy foods containing high amounts of sugar; hence, the consequences on their teeth when regularly consuming sugary food. It is imperative to not only educate young children on a healthy diet but also to drive them on the process of a good and manageable oral care with the final objective of preventing future problems, such as teeth decay, oral infections or diseases. In addition, we anticipate about 85% of our target group to be able to identify and differentiate between healthy and unhealthy foods by the end of our presentation. We understand that a lot of the information that we are presenting might be new to a lot of the students and so we recognize that there might be some students who would require further intervention.

Having now identified our goals and objectives that we plan on having with the students of St. Brigid-St. Frances Cabrini Catholic Academy, our plan is as follows. We will start with a couple of questions to identify how much the students know about dental care. We created a PowerPoint presentation that includes details about teeth decay, what causes it, how to prevent it, but most importantly, how to take care of their teeth while maintaining a balanced diet and good oral hygiene. The plan is to have a very interactive presentation where we are going to engage the students to make sure they are paying attention, and they understand what is being taught. As part of the presentation, we are implementing a game where students will be asked to differentiate which are healthy and unhealthy food and to place them in the correct category. Additionally, we will be showing the students two educational videos on how to take care of their teeth. Towards the end of the presentation, the students will be split into groups of 4-5 with each presenter, and they will implement the learning style of “Tell-Show-Do” Fone’s circular brushing method, which allows the students to have a better retention of proper brushing habits.

**Implementation (Janeth Canola):**

Our methodology was based on first choosing the appropriate terms for children between the ages of 6 and 7. We converted scientific terms into common words so that the students can understand the relationship of one thing to another during the presentation. We explained to the children why having a balanced diet is key to preventing oral cavities, similarly reinforcing to the school the importance of providing healthy meals to students. Additionally, we taught the children how having better oral hygiene will help decrease the risk of getting cavities. It is commonly known that children are visual learners, therefore, we decided to create a PowerPoint presentation with simple terms explaining what is a cavity, how people get cavities and how to know when you have a cavity. Also, we included images about healthy food and cariogenic food so they were able to distinguish and make proper healthy food choices. During the presentation, we asked who has been to the dentist before and how many times a day do we need to brush?. These questions were created to build the children's trust and to overcome the fear of the dentist that often is created by the parents. Furthermore, the children played an interactive game using good and bad plastic toy food to categorize which ones they considered to be healthy and unhealthy. Based on that game, we established a basic understanding of how well the children learned about oral hygiene according to our presentation as compared to their prior knowledge at home.

On the other hand, we not only wanted to provide educational information to the children; we also demonstrated to the children how they should be brushing their teeth, how many times a day and the type of toothpaste and toothbrush they need to use. This was originally created so that each child understands that they should brush in the morning after breakfast and

at night before going to sleep. They were also told about the type of toothpaste they should use and why it is so important to use fluoride to protect against cavities. We reinforced the appropriate time to brush and especially not forgetting to brush the teeth in the back since they are the most common teeth to be forgotten when brushing. With the presentation and activities, we hope that each child will also share what they have learned to their families so they can all adapt these new oral hygiene habits. To conclude, each child was given a bag with a toothbrush, toothpaste and a dental coloring book with crayons as a gift of appreciation and to make them feel that what they really learned will be very beneficial for them.

### **Evaluation (Cynthia Yun):**

To evaluate if our presentation was effective in helping the children learn the importance of tooth brushing, if they gained knowledge about cavities and if they learned to differentiate between nutritious and unhealthy food, we prepared a brief before & after survey and interactive activities. The first survey comes from the introductory questionnaires, where we can learn how much the students know about oral hygiene. The students seemed to be shy at first but slowly warmed to our questions. When we tested their knowledge on nutritious food and unhealthy food with a game, some students were very eager to show us that they knew the correct answers. The after survey came at the end when we concluded our presentation and asked the class what they remembered about each topic. Most of the students were able to answer without a problem.

The surveys and interactive activities allowed us to collect data on the number of children who successfully identified and chose the healthier alternative food, remembered how many times you are supposed to brush daily and for how long, and who knew how to brush correctly. Previously we predicted that with our short clips and interactive activities, there will be about



85% of the class who will be able to retain the information. However, the expected outcome was better than we originally hypothesized, with 90% of the class being able to answer the after survey and they were able to demonstrate the proper toothbrush technique. This shows that our presentation and activities were very effective in keeping the children's attention and in educating them about proper oral hygiene care. Also, the cooperation between the principal and teacher allowed us to get a better understanding of the children. We provided the outline of our presentation to the principal and teacher and received their approval. Our presentation proved to be successful and we were able to accomplish what we have initially planned.

**Conclusion (Everyone):**

Oral hygiene and good nutrition education should be taught from childhood. Dental cavities can be prevented when healthy nutritional habits and proper dental hygiene are carried out. When we teach children these wonderful ways to keep our body and teeth healthy, they will learn to immediately register and understand why we have to follow these types of behaviors. We are what we eat, therefore, as health care providers, we play an essential role in teaching children of all ages to improve their oral hygiene routines and to learn how to make healthy choices when it comes to eating. Overall, this service learning project was very successful and the children were very engaged throughout the process. We are very hopeful that our presentation had a lasting impact on the children and are very happy to have had this opportunity to educate and present to them. It was a wonderful experience for everyone involved including the principal, teacher, children and the presenters.

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