

Shaping Young Minds;
A Nutritional and Motivational Approach

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Introduction

It is well known that healthy eating habits contribute to overall health but also helps to maintain oral health as well. It is a bidirectional relationship in that obese children are more likely to have dental caries. The type of food that is being consumed will contribute to both dental caries as well as obesity. High sugar, nutrient lacking foods are the biggest culprit (Ravaghi, Rezaee, Pallan and Morris, 2020). In order to avoid these poor health outcomes, instilling healthy eating habits is imperative and the best time to develop these habits is in early childhood. This can be accomplished through proper eating socialization. The children's parents and other authority figures (such as teachers) can lead by example and also provide education in order to help them make healthy food choices independently. (Haines et al., 2019). Incorporating proper eating socialization in the classroom also had the added benefit of having children learn healthy eating along with their peers, further incorporating healthy eating habits into their social circle. The community program we envisioned not only provides practical health education to the children such as reading food labels and learning to maintain oral health through proper home care, but also aims to get them directly involved in the food cultivation process. According to a study conducted by Kim and Park in 2020, children who are given access to a community garden and who were directly involved in the food growing process showed an increase in vegetable consumption as well as a reduction in fear of trying new foods. With this information in mind, we took a combinational approach that involved classroom education, social interaction, and hands-on participation.

Assessment

The target population for this assignment was 4th grade students between the ages of 9 & 10 years old from Public School 177 located in Bensonhurst, Brooklyn. By this age, kids have developed their own opinions on what foods they like and what foods they don't like. However, most of them are not really aware as to why certain foods are good for you or bad for you, or the correlation it has to the oral cavity. During this age, the kids still have a mixed dentition. A lot of parents are under the impression that baby teeth will fall out in due time, therefore, the risk of developing caries or losing these teeth are not of major concern. It is extremely important to maintain a healthy nutritious diet during the mixed dentition as these teeth set the foundation for the permanent teeth and can lead to issues in the development of the permanent teeth if not cared for properly. The assessment was performed through a verbal questionnaire to give us insight into the knowledge the students had regarding nutrition and how it affects their oral cavity as well as insight into their oral home care. It was found that 90% of the students stated that they consume sugary drinks or candy several times a day. An alarming finding was that 40% of the students said they consume fruits or vegetables everyday, while the remaining 60% of students said they consume fruits or vegetables only about twice a week. When it came to their home care it was found that 85% of the students stated that they brushed their teeth independently once a day, usually in the morning. The other 15% stated that with the help of their parents, they brushed their teeth in the morning and before bed. Surprisingly none of the students answered yes when asked if they floss or knew the importance of flossing. In addition to this verbal questionnaire, we took a dive into the nutritional aspect by obtaining a copy of the schools lunch menu. This gave us a better understanding as to what the kids were consuming not only at home but during their school day as well. Most people can agree, adults and kids, that your mind is more open to learning something and you are more engaged when you are doing something that

is hands-on. This gave us the idea to plan some hands-on activities to gain the children's attention and interest to meet our goal.

Planning

Our goal was to ensure this target population of 9-10 year olds gained knowledge on the impact a poor diet can have not only on our body but also our teeth. The measurable goal is to teach the students the importance of healthy eating habits and optimal oral health. Teach them what foods should be consumed in limited quantities and how often we should be brushing to maintain this state of health. We used a questionnaire as our measurable objective and included questions about both their oral hygiene and eating habits.

How often do they consume sugary drinks and candies?

How often do they consume healthy foods like fruits and vegetables?

Do they know how to read nutritional labels? And how do we know if a food is healthy or not based on this label?

Do they know what happens to our body when we eat “junk food”?

Do they prefer to eat the school’s lunch or do they pack their own?

How many times a day do they brush their teeth? How often do they floss?

What happens to our teeth when we don’t brush or floss?

Based on the findings of this assessment we decided to first educate the students about major nutrients in foods and demonstrate proper tooth brushing. Lastly, we plan on coordinating a

few trips with the entire class to a local community garden and develop activities using charts, tables, hands-on and tell-show-do approaches. **Implementation**

To meet the objectives listed above we worked with the teacher at the school and went to the school to start the educational and exciting day. First we contacted the school's cafeteria coordinator to get their lunch menu. Also we asked the students if they eat lunch at school or if their parents pack lunch for them. After obtaining all the information needed, we started the discussion about major nutrients in food. We showed them a picture of the "food pyramid" with four layers, each layer focusing on one of the nutrients. Then we explained what carbohydrates, fats, proteins, and vitamins are. Together with the students we tried to match the food on the picture with four major nutrients. We explained the benefits of eating vitamins and the causal relationship between carbohydrates and caries lesions. The purpose of this exercise was to educate students that specific carbohydrates trigger bacteria in our mouth to create acid which in turn destroys the enamel. The most important aspect of this exercise was to teach them which products are classified as carbohydrates that cause caries lesions. During the discussion, we would stop and ask if they have any questions and we tried to make this exercise as interactive as possible. After completing this exercise we discussed the importance of brushing. We utilized a Tell-Show-Do approach to teach the students proper brushing techniques. We brought several typodonts and gathered in small groups. First we told them what to do, then we demonstrated brushing on typodont and then we asked them to show it brushing.

The next tool we implemented in helping get the children interested in the nutrition aspect of our program is to partner with a local community garden and get them involved in the food growing process. We reserved a plot at the garden and sent home permission slips in order to acquire parental consent to take the children on three trips to the community garden. On the first trip, the children were given tomato, bell pepper, and zucchini seeds to plant and water.

After this activity, a lesson was given on how eating more fruits and vegetables contributes to overall health. On the second trip, the children would be brought back to see the progress of the seeds they planted and to water them. After this second activity, the children are given a lesson on how to read nutritional labels to make better food choices. On the third trip, which would be planned closer to the end of the school year, the children would take this final trip to the garden to harvest their vegetables and the produce would be used in a salad served during lunch on the final day of school. Some of the logistics involved in having this part of the program be successful in having one of the program volunteers visit the garden in between the children's visits to tend to the plot. Another issue to take into consideration is that the plot may not produce enough vegetables to feed all of the children at the final lunch and supplementation with store bought produce may be needed. The point of this particular activity implements the "Tell, Show, Do" philosophy by getting the children directly involved in the food growing process. We also implemented a weekly salad preparation in which some of the children were assigned a fruit or vegetable to bring to class. These were combined into either a fruit or vegetable salad and shared among the class. This not only included a social aspect to healthy eating but also ensured that the children had a serving of fruit or vegetables.

Evaluation

Our group decided to evaluate over a six month period to observe any progress in the students daily diets, OHI and overall understanding of the effect simple carbohydrates have on the oral cavity and the body overall. At our first visit we decided we would gather the students plaque scores, we would have the teachers then record the students plaque score in three months and at the final visit our group will gather the final plaque score and see if the students were able to implement proper OHI.

The class we are observing consist of twenty-five students; 65% of the class initial plaque score was within poor standing and 35% was in fair standing. There was an increase of fair plaque scores by 6% at the three month evaluation. At the six months evaluation, we were surprised to see that fair plaque scores had increased again by 5%. This is a total of 12 students that had fair plaque scores.

Lastly, we gathered some post evaluation information with a follow-up questionnaire. We asked the students the same questions asked at the initial visit. We asked the children to express themselves as best and as truthfully as they could. We wanted the children to know that the purpose for our visit was not to judge but to educate and guide them.

Once the children finished answering their questionnaire, we compared them to their previous answers. Majority of the answers were similar to the original responses, especially pertaining to the nutrition aspect of this experiment. Almost all children knew what foods are good and bad for our bodies, what happens to our body when we eat “junk foods”, but we saw a mild significant change in responses when it came to understanding labels and OHI. 15% of the class was able to give one new understanding of nutritional labels, which was serving size. These children understood that for these many “chips” is equal to these many “calories”. We found this to be an amazing accomplishment. 100% of the class has a correct response to what happens to our teeth when we do not brush or floss, but sadly their understanding is not fully reflected in OHI.

Conclusion

It is our role as dental hygienists to educate people on the importance of good oral hygiene. Our goal was not only to teach the students excellent oral hygiene, but to also educate them on the importance their diet can have on their oral cavity. We hope that through our presentation, the kids- although they are young, will be encouraged to make better food choices which in turn will be beneficial to their oral health. Although other factors play a role in why some people have poor oral health, for example financial reasons, educational background & cultural beliefs, we are hopeful that our presentation has taught them enough to at least improve or maintain their oral health. By teaching the kids the proper way to brush, educating them on nutritional importance and showing them that you can grow your own fresh fruits and vegetables at low cost, we anticipate that we will continue to see improvement on their overall oral care.

References

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