**Service Learning Project:**

**Cooke Skills: Special Education School**

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**DEN 2413- Introduction to Dental Public Health**

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**Introduction:**

 “Oral Health Care for Children With Developmental Disabilities” is a clinical report that describes the effect that poor oral health has on children with developmental disabilities as well as the importance of partnerships between the pediatric medical, and dental homes. Children with learning disabilities are a community that often have their oral health under cared for, due to lack of the child’s capabilities, and the reliance of a caregiver. Parents are often consumed with an array of other doctors that visiting the dentist is the least of their concerns, and the lack of dental knowledge known by other doctors adds to the fact that most of these children do not seek preventative care. “In a survey of families of children with special health care needs, 24% reported that their children needed dental care other than preventive care, and 8.9% of respondents reported that they were unable to obtain the needed care” (Kenneth W. Norwood, Jr, MD). The children of Cooke Skills all have different developmental disabilities, and due to this lack of dental care for this population, we wanted to at least informally introduce the dental environment to their world, and show these children that dental health care workers are not scary, that it could even be fun. Furthermore, we also wanted to address basic dental knowledge to these children, and help acclimate them to brushing daily. One of the biggest ways to help this population of children, is making sure that they are eating properly, and removing their plaque biofilm on a daily basis. As a group we will be teaching them about nutrition, and how what you eat can affect your teeth. We are also going to make sure that they can handle brushing to the best of their ability. We hope that when we are done we can make dental health more of a priority in their lives, and we hope to provoke the conversation of the dentist into their homes.

**Assessment:**

Children with developmental disabilities often have an array of limitations, both physically and mentally, and are at a greater risk for developing dental disease then typical developing children. The number one reason being is the frequent use of medications. Some of these medications can cause oral problems, such as hyperplasia or xerostomia, while an array of other medications are high in sugar, causing caries.  Further reasons are because of the dependence of a caregiver for their regular oral hygiene needs that can result in improper clearance of food. Most of these children can also only tolerate soft foods, which can be foods high in carbohydrates and sugars. Furthermore, if these children come from low-income families they are particularly at risk for high dental needs, due to lack of access to care, and if a family is utilizing SNAP (Supplemental Nutrition Assistance Program), most of the food covered under this program do not provide adequate nutrition. As dental hygiene students we are well aware of how that combination of carbs, and sugars can be a feeding ground for biofilm development. That is why it is very important to know the child's nutrition as well as any medications that they may be taking. It is also important for us to be aware of the severity of the child’s condition, and how their oral hygiene is being cared for. If their oral hygiene is taken care of by a caregiver then we must make sure that the caregiver is performing plaque removal effectively, and efficiently. It is important for us as dental hygienists to be aware of this information so that we can created an appropriate treatment plan.  As modern medicine continues to improve, these children are living longer, requiring longer continued oral health care. That is why we need to make sure to both advocate, and educate both these children, and society.

**Planning:**

Our group had several goals for the children of the Cooke Grammar School. The school caters to the special needs population and to do so with the most efficiency they utilize Assessment, Planning, Implementation, and Feedback approach [Cooke Institute]. We were able to use our own process of care in conjunction with portions of their own coaching approach to produce the most effective, one time, program for these children. Our top priority was to
have the students be able to fully comprehend what ideal oral hygiene and nutrition are. To do so we needed to be mindful of all limitations of this particular population. The healthcare goals are relatively the same for special needs children and of normal development, our Dental team needed to understand the effects the groups various disabilities can have on processing dental
education and implementation of what we would teach them.

         According to the assessments of this population, we needed to be aware of the degree of severity of ASD of the group of children we were teaching [Colgate]. We decided that Tell-Show-Do would be the best approach for creating the activities we needed to teach the dental knowledge appropriate for their age range, and intellectual abilities. We wanted to be
able to have a short, interactive, and direct lesson for the children. Children with Autism Spectrum Disorder (ASD), tend to have issues with their attention span. The initial plan was to give a brief simple PowerPoint presentation on the importance of good oral hygiene and eating balanced meals. We then decided that best first activity would be to show the children the “Geena the Giraffe” video from Oral-B, to make sure the information was simple, short, and
stimulating. Even though the children in the class had ASD the reason we decided to show the video despite the group being easily distracted is that during our assessment intake one of our group mates visited the site and knew that the children had no issues with stimulants, and were generally high functioning enough to sit through the video. It is worth noting that at the initial site visit the group of children we were teaching was verbal.

         We needed to continue to keep the children engaged after the video so we prepared a board with the image of a smiling tooth opposite an unhappy tooth, with several small images of healthy snacks and unhealthy snacks for the children to paste onto the board. The idea behind the board was to engage the students and reiterate the lesson of healthy eating from the “Geena
the Giraffe” video, a method we learned from the D-Termined Program [Nancy Lurie Marks]. We decided that after the video we would question the children again about the food choices to really drive home what foods are healthier for them.

         In the last step of our program we decided to break up the class into smaller groups with each group having a teacher's aide present while we had each student demonstrate how he or she brushes his or her teeth on a large mouth model with us first demonstrating. Our goal in this exercise was to focus on one child within the group while continuing to repeat the skills until it became somewhat of second nature for the group. The alternative for each portion of our program consisted of keeping the children as engaged and focused as possible. We did not want to see their disabilities as a hindrance to learning about dental care and nutrition, so we decided that if needed we would have each portion be presented to smaller groups with the help of the teacher's aides. The information had to be taught but as strangers to the children, we recognized that unfamiliarity could be a roadblock. Incorporating the help of the aides in each portion helped the children stay controlled and engaged in our program.

**Implementation:**

Our group objective was to educate the children with special needs at Cooke Grammar School on the basic needs of oral hygiene and nutrition. The location was approved by the project and program directors. As a group, we decided a “tell-show-do” approach would be the best way to deliver our message. We wanted the children to interact with us and have fun while learning the importance of oral hygiene. Since the children in the classroom had a variety of learning disabilities, we wanted to use different types of learning tools to have a better opportunity in communicating with everyone. We also had to keep in mind the time frame we had for all the activities. To create a comfortable and trusting environment, the children learned our names and a sense of the activities they were going to participate in. First we asked a few questions on what they knew about primary and permanent teeth, brushing and cavities. After preparing the children for what they were about to watch, we had presented our first activity, a short film from YouTube called “Geena the Giraffe.” The purpose of the video was to have a visual and audio aid in understanding the importance of brushing teeth and going to the dentist. Having access to the classroom computer and projector, allowed us to play the video for the children.

         In order to keep the children engaged, we wanted to play a game that would demonstrate the healthy and unhealthy habits in nutrition. Using paper, markers, colored pencils, Velcro, and our imaginations, we created a poster board with one happy, shiny tooth and one sad, decayed tooth. To add to the game, we drew and cut out ten various items such as soda cans, candy, a toothbrush and carrots. The target of the game was to identify the item given as a healthy or unhealthy habit, and then to place it on the poster board near the healthy tooth or unhealthy tooth. This poster board activity allowed the children to get up from their seats and to think how each item relates to the health of the tooth. We also discussed how the frequency of sugar could lead to cavities.

         Another object we used to convey the basics of good oral hygiene was a large mouth model from Colgate and a toothbrush. During this activity, we had used the “tell-show-do” method in teaching the children how to properly brush their teeth. We broke the classroom up into smaller groups to have more one-on-one interaction with the children. We used the models to show the 3 surfaces of teeth and how to brush each one using the Fones method of toothbrushing. After demonstrating, each child was given a turn to hold the mouth model and to repeat the proper brushing skills. In order to help the children find their toothbrushing pace, we would have them slowly count to five out loud for each surface and quadrant. In the end, we asked questions based on all the activities throughout the morning to help the children retain the information they learned.

**Evaluation:**

Overall, our goal was to have all of the students participate in all three activities we had planned for the visit. The classroom consisted of 11 students with three personal aides and one teacher. Therefore, we did not feel overwhelmed by the amount of kids and felt we had ample opportunity and support to teach the children about nutrition and brushing.

 The first activity we had planned was to play the Colgate video, Geena the Giraffe. Originally, we wanted to read the students a book about teeth and the importance of brushing. Unfortunately, we soon realized that the book would have been too complicated for this population. The book, although for children, went in depth on what the parts of the tooth consist of, how a cavity is formed, etc. We did not feel it was appropriate for this population and that we would lose their attention. Therefore, we went with a showing of Geena the Giraffe. This video was able to catch the attention of all the students. There were maybe one of two students who started to drift away in thought but the teacher was able to get them to focus back on the video. My group and I asked the students questions about the video and the children were able to recall certain facts such as Geena getting a new “big person” tooth, King Cavity fixing his teeth at the dentist, and so on. Therefore, we would say that the video was a success.

 The second activity we had planned for the students was a short lesson on nutrition with a poster board activity. We reviewed what happened in the Geena the Giraffe video and how King Cavity came to have so many cavities. We discussed what we would consider healthy snacks and unhealthy snacks. Afterwards, we hung up our interactive poster. Here the kids had to stick healthy and unhealthy snacks near a happy/healthy tooth or an unhappy/ cavitated tooth. This gave the students the chance to get up and show to us that they understood what we previously taught them. Only 1 out of the 11 students did not participate. She got a little upset and wanted to stay seated with the adult aid. The children pointed out how much they liked the poster and the pretty pictures.

 The third activity we planned for the school visit was a tell-show-do on how to properly brush your teeth with the Colgate mouth model we received from school. Here we broke up into smaller groups at tables with about 3 students per teammate. We showed them a Fones toothbrushing method starting from the posterior teeth to the anterior teeth. Since this is a population of special needs patients, we decided to give each child a goodie bag with a special 3 headed brush with floss and toothpaste. We wanted to show the kids how easy it is to brush and wanted them to find in enjoyable. The three-headed brushes will make their hygiene lives much simpler especially since a lot of them have dexterity issues. Everyone participated in this hands-on toothbrushing activity but one young girl started crying and was afraid of the mouth. Even though we had one student who did not like the models, we found it to be successful. Going into this project we wanted to try to have all the students participate but if they refused we did not want to force them. In seminar we have spoken about pushing the special needs patients to their limits. We do not want to go past their limits or else we will lose them forever as patients.

 Overall, we believe that our project’s success can be based on and measured by the amount of interaction of the children at the Cooke Institute. Our population was 11 children, all we special needs. To have almost all of them participate in the activities is a success and hopefully they have learned something. It is up to the teachers and aids to reiterate what we have taught them and pass the message along to their caregivers.

**Conclusion:**

The overall experience was great. It was amazing to interact with the children of the Cooke Grammar School for individuals with intellectual disability. They were very welcoming and open to learning about their oral hygiene. Even though our group had no previous experience working with children with disabilities, we welcomed the challenge with open arms, and pushed towards our goal of sharing our knowledge with this group of kids. We found out that many of the children were very knowledgeable about cavities, and about the different foods that are harmful to their teeth. The schools faculty was very helpful and supportive when it came to accomplishing our goal of teaching the kids to comprehend what ideal Oral Hygiene, and Nutrition are. This project enlightens the idea of servicing a community as a patient regardless of your of your income, health status or disability. Promoting dental health is essential and education is the goal of these programs. As future dental hygienist, we all should collaborate to promote dental health, and good nutritional habits to different communities around the city. We all enjoyed working with these kids and hoped that we were able to encourage them to take care of their oral hygiene and the benefits of eating a balanced diet.

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