**Service Learning at**

**FDR High School**

DEN 2413 Evening Group 3

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**Introduction-** Avi

Our project of providing oral health education was planned to target a young cohort. Due to schedule conflicts, we were fortunate to expand our project to include both special needs and regular high school children. We parted into two groups, where each group planned accordingly to be tailored to their targeted audiences. One group addressed children with Down Syndrome, and another group addressed high school adolescents. Our project took place at Franklin Delano Roosevelt High School in Brooklyn, NY.

We were inspired by the “Healthy People Initiatives” program, which began in 1980, designed to prevent oral diseases and provide guidelines for oral health improvements. We believe that prevention of a disease is key in maintaining good oral health and reducing or eliminating oral complications that may arise in the future to aspire to an excellent quality of life. It all begins with exposure to clear and comprehensible information starting at a young age.

In this project, we visited the school to assess our demographics. We needed to evaluate our targeted audience, understand learning levels and/or challenges, and plan our delivery of information best suited for them. Our delivery strategy was to convey information in a variety of methods. Such methods include a powerpoint presentation, demonstration on a 3D model of the oral cavity, and engaging with Q & A at the end of our presentation. In addition, we also wanted to test the knowledge of our audiences by giving a prize to the persons who answered correctly.

In the following, we will describe our assessment, planning, implementation, and evaluation phases of our two cohorts in great detail.

**Assessment-** Danielle

Our project assessments were targeted towards Down Syndrome and healthy high school adolescents. One assessment method that we used was asking each group questions about their existing knowledge on oral hygiene, as well as post presentation questions to see if they understood the material covered.

According to the CDC website, “approximately one in every 700 babies in the United States is born with Down syndrome..” making Down syndrome the most common chromosomal condition (1). In a 2016 oral health study, Down syndrome children proved to have poorer oral hygiene and gingival health than healthy children, having a greater risk of developing Bruxism, as well as greater wear or dental abrasion (2). Down syndrome is a cognitive disability that can impair the host’s comprehension from mild to severe, this can lead both comprehension and dexterity issues. Therefore, oral hygiene instruction must be taught in a simple straightforward way. It is also best to use a variety of teaching methods to deliver the material that is being taught to ensure optimal information retention.

In high school adolescents, oral health is one of the most unmet health care needs. Teen years are a higher risk time for oral piercings, increased sugar intake, nicotine initiation, and orthodontic considerations. Adolescents need a unique approach to motivate them about their oral health issues. This is particularly important because lifelong health habits are created during these formative years, and prevention opportunities for sealants and varnish are only available at this age (4). Some form of nutritional counseling as well as informing them the risks of smoking and drinking to their oral and systemic health can be helpful to adolescents at this time.

**Planning-** Jenny

To begin our program plan, we reached out to one of the teachers who works at Franklin Delano Roosevelt High School in Brooklyn, NY (FDR HS), with our Community Program’s purpose and plan. She kindly helped us talk to the principal to arrange our presentation. After a few days, we got approved. The principal was very interested in our program, and offered us one more ACES (Adverse Childhood Experiences) class, which consisted of children with Down Syndrome. In addition to the original plan that we made for high school adolescents, we modified the plan into another that was specially suited for adolescents with Down Syndrome. Due to our group members’ working schedules being different, we decided to split into two small groups to accomplish our program. There were two trips to FDR HS; Group One had three presenters for the ACES class. Group Two had four presenters for the regular class.

Our program goal was to instruct children with Down Syndrome on brushing techniques and educate high school students about the importance of oral hygiene. We wanted to engage the students and maintain a high compliance level, measured by student participation and ability to repeat learned techniques. We took into consideration that individuals diagnosed with Down Syndrome tend to suffer from dexterity issues. High school students are at the age where they are more independent and preparing to face real-world interactions. Therefore, we emphasized brushing technique instruction for the special needs class. For the regular class, we wanted to be as thorough as possible in covering various aspects of oral health, including health implications, nutritional considerations, and toothbrushing techniques.

**Implementation**- Saudia

Group One’s goals and objectives were met through presentation of a powerpoint to a classroom of 25 ACES students at FDR High School. This presentation included powerpoint slides, youtube video, step by step instructions and a demonstration on a typodont. In addition, a copy of a booklet for special needs caregiver was distributed to the teacher. The teacher stated that she would make copies for the ones who needed it. The students were educated on oral health-the importance to clean teeth, oral disease, nutritional counseling, and when and how to brush their teeth. A toothbrush song video served as a visual aid for students to follow toothbrush sequences. Therefore, they would not miss brushing some areas. Following it, a step-by-step Tell-Show-Do implementation was demonstrated. The information was repeated because we wanted them to have a deeper impression of how to brush their teeth efficiently which was a problem within Down Syndrome children. At the end of presentation, we called volunteers to come up in the front to show us how they brushed on typodonts. We were standing by their sides to watch and help them if they did anything incorrectly.

Group Two’s goals and objectives were met through presentation of a powerpoint to a classroom of about 15-20 high school students at FDR High School. This presentation included powerpoint slides, descriptive pictures, videos and audio, all emphasizing and clarifying the information presented. The students were educated on oral health (the importance of our teeth, the oral disease process of gingivitis, periodontal disease, systemic disease and caries, biofilm and calculus), nutritional counseling, and the importance of good oral hygiene and how to effectively maintain good oral health with toothbrushing and supplemental aids. The pictures served as a visual aid for the students to better understand what was verbally presented, such as a picture showing calculus buildup and the process of biofilm accumulation. Videos and audios were used to show the Bass, Stillman, Charter and Fones methods of toothbrushing along with a physical demonstration, by a presenter, using a typodont and toothbrush. Each group member presented their part of the presentation, tailoring our verbatim to our audience, using easy to understand language and imagery to capture and hold the audience’s attention.

At the end of the presentation, questions from the audience were encouraged to clarify the data presented and address additional concerns. Information about New York City College of Technology Dental Hygiene Clinic was offered to the students and teacher, for anyone needing affordable dental hygiene services. We also asked simple questions to capture our audience retention of the material presented. A toothbrush was handed out as the winning prize to each participant. Implementation of Tell-Show-Do was enforced, as this method has proven to lead to learning retention as people remember 90% of what they see, hear and do (Unit V - Community Program planning - taught by Professor Lam).

**Evaluation**- Ting (The result of the objective)

In order to evaluate the efficacy of the intervention, a scale was used to evaluate 3 objectives: student participation, student interaction, and capability of repeating the taught materials. Each objective was ranked from 1 to 5 with 1 being least likely and 5 being most likely. The scales were rated by the 6 dental hygiene students who participated in this service learning project. The presenters were split into 2 groups, 3 presenters for the special education students, and 4 presenters for the regular highschool students. The audience was aged between 16-18 years old.

As a result (see table 1), special ed students obtained an average score of 4 on participation, 3.33 on interaction, and 3.33 on capability of repeating; regular high school students obtained an average score of 4.5 on participation, 3.75 on interaction, and 4.5 on capability of repeating.

It was observed that both groups of students have the same amplitude in participation; however, the overall performance was better among the regular highschool students than the special ed students. The difference in performance between two groups of students is possibly due to the nature of Down syndrome, the genetic disease that may affect learning abilities. Considering the disadvantage in learning for students with learning disabilities and other potential challenges (i.e. deafness, blindness, mental illness), it is reasonable to consider the following modifications to ensure the quality and efficacy of the interventions: spend more time with the students, and make sure they understand the importance of oral health.

Strength and limitation:

The strength of this intervention is that this is a simple intervention that provides school aged children an opportunity to improve pre- existed oral hygiene status. The presenters do not require a teaching background and may be disseminating the information with low resistance. The limitation of this intervention is the lack of followup of the result. Due to the provided circumstances, we were not able to follow up with the students and reassess their oral hygiene and related knowledge.

|  |  |  |  |
| --- | --- | --- | --- |
| Measurable Objectives | Participation | Interaction | Capability of Repeating |
| Special Ed Class |  |  |  |
| Presenter 1 | 4 | 3 | 2 |
| Presenter 2 | 4 | 3 | 3 |
| Presenter 3 | 4 | 4 | 5 |
| Average | 4 | 3.33 | 3.33 |
| Regular High School Class |  |  |  |
| Presenter 1 | 4 | 3 | 4 |
| Presenter 2 | 4 | 4 | 5 |
| Presenter 3 | 5 | 4 | 5 |
| Presenter 4 | 5 | 4 | 4 |
| Average | 4.5 | 3.75 | 4.5 |

*Table 1*

**Conclusion**-Wen Wen Dong

This Community Education Program based on the “Healthy People Initiative” was aiming to raise awareness of oral health knowledge for young people. The reason we chose high school adolescents as our target population is because oral disease has been a problem in this age group, and the prevalence has significantly increased. More importantly, high school children in whom healthy practices can be inculcated easily and be sustained for long times (5). Our tailored oral health program has directly impinge on targeted populations. The survey from our evaluation emphasized the efficacy of the dental health education that we presented. However, the efficacy of our education program can not be met 100% due to the inability to follow up on the implementation of targeted populations. A follow up and reassess program could be considered.

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