

ORAL HEALTH EDUCATION FOR HIGH SCHOOLERS

Public Health Service Learning Project

Friday Class Group 4

Winsome Cheung, Paulina Czerwinska, Anita Dema, Stephanie Dirani

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Introduction-

Oral and dental health is a topic that not many children learn about in their school careers. Many high schools offer health education classes, but these focus on nutrition and overall health and wellness, not oral or dental health. According to an article published in BioMedCentral about a clinical study observing oral health education in schools, “School-based oral health education has been found effective in improving oral hygiene, oral health knowledge and behavior.”¹ Results of a recent epidemiological study in Greece, regarding 12 years-old children oral health, demonstrated a 78.2% of average or poor oral hygiene and a 41.5% with gingivitis. The study was part of a government approved clinical trial, which involved assessing children aged 10-14, on their dental plaque, gingivitis, and caries status with clinical examinations. These were then assessed again 18 months later. This study observed the different effects of oral health lectures given by both a dentist and a teacher who followed the same program. Both groups resulted in enhanced oral health knowledge and improved oral health behavior and attitude in comparison to baseline. They also resulted in decreased students having gingivitis.

As dental health care providers, this information tells us that oral health habits begin from a very young age. Oral and dental health knowledge of parents as well as their socioeconomic status also affect the dental health of their children. According to an article published in the International Journal of Dental Hygiene, parent/guardian race/ethnicity and years of education were significantly related to dmft(decayed, missing, and filled teeth) of the child.² Researchers

have since called for a greater attention to the impact of parental influences and education in the etiology of ECC, early childhood caries.

As dental hygienist students being a part of the community, we believe it is important that everybody is taught about dental health in their school education. Once students are taught how to care for their oral health, they will have better dental health in their lifetimes, past childhood and into adulthood.

Assessment-

The target population of this public health service learning project is students in Grades 9-10 of high school, aged 12-14. An assessment method that was used was a questionnaire with several questions asking the students about their dental health knowledge as well as assessing their current dental health status. Upon interviewing the students, it was found that 95% of students were not educated on their dental health by teachers in their school career thus far. It was found that 80% of students have had a cavity in the last year and 75% of students report that their gums bleed when they brush. 80% of students report they only brush their teeth once a day and 90% of students report they do not floss. These students need to be properly educated on their dental and oral health in school as well as on how to prevent gingivitis, periodontitis, and caries. Many students in high school are unaware of the links of nutrition as well as e-cigarette smoking to their oral health status. A proper nutrient rich diet as well as staying away from acidic and cariogenic food are important ways children need to care for their oral health.

The high prevalence of gingivitis found in a recent epidemiological study in 12 year old children in Greece made it imperative to enhance oral health education at an earlier age in order

to improve plaque removal and monitor gingivitis in later years.¹ Oral health education was found effective in improving oral health behavior and attitude. Improvement in gingival health and gingivitis was also seen in the students.¹ This study supports our assessments that many students have poor dental health knowledge which lead to poor dental health status. Being educated during school on oral health and prevention of gingivitis and caries will result in an increase in awareness and a decrease in gingivitis and caries in these students.³ Vaping has grown in popularity in young adults in high school over the recent years. E-cigarettes, Juuls, and similar vaping products contain nicotine and varying amounts of heavy metals and toxic chemicals, which have been linked to cancer, as well as respiratory and heart disease. Smoking also drastically increases your risk for oral cancer, causes more dental plaque, chronic bad breath, and an increased chance of gum disease.⁴ These children need to be educated and made aware of the harmful effects that vaping and e-cigarette smoking has on their oral and dental health.

Planning-

Following the questionnaire of the high school student's oral health, it became clear what the students needed to improve their oral health status. The questionnaire revealed that 95% of students did not receive any oral hygiene instruction in the school's health class. To combat this, we recommend that oral hygiene instruction is included in the curriculum of every high school's health class. It should be at least one lecture, taught by the teacher from a reputable source. The lecture should include teaching a basic understanding of caries, gingivitis, periodontitis, and how to prevent those diseases from occurring. This means implementing good oral hygiene

instructions. The oral hygiene instruction should include the proper way to brush your teeth and how often to brush. It should also emphasize the importance of fluoride preventing caries, such as fluoride in toothpaste and mouthwash. The oral hygiene instruction should also include the proper way to floss, instructing to floss daily, the antimicrobial benefits of a mouthwash, and not forgetting to clean the tongue.

With a good oral health and hygiene instruction, the students will be able to fully understand how to prevent oral diseases from occurring, meaning how they could keep their teeth healthy for as long as possible. It is imperative that the lecture is included in every public high school health class as well as private schools. The goal of the oral health and hygiene lecture is to give students basic oral health knowledge, in order to maintain their own oral health. To measure the effectiveness of the OHI lecture, we will do a follow up questionnaire with the students 6 months after they received the lecture.

The follow up questionnaire will include the same questions as they were asked initially. The questions will ask if they had a new cavity in the past 6 months, if their gums continued to bleed while brushing, if there are any changes in how often they are brushing and flossing, and their usage of fluoride products. In this follow up questionnaire, we will also assess the students' knowledge on the information we have taught them, including the effects of nutrition and vaping on oral and dental health. The goal is to have a minimum of 50% improvement compared to the initial questionnaire. If we reach that goal, we know our oral health and hygiene instruction was effective.

If the oral health and hygiene instruction is not effective, and after the second questionnaire the students' scores did not improve, there is an alternative way to improve the oral health of the students. There are school based fluoride mouth-rinse programs. School-based fluoride mouthrinse programs have been used for many years as a community-based caries prevention strategy. Fluoride mouth rinses containing a concentration of 0.2% sodium fluoride are prescribed for weekly school fluoride rinsing programs.⁵ School fluoride mouthrinse programs can be administered by school personnel trained in mouth rinsing procedures, according to individual state regulations.⁵ This is a great alternative to improve the oral health of high school students, if the oral health and hygiene instruction is not sufficient in doing so.

Implementation-

Our final goal is to have an overall improvement of the student's oral health of a minimum of 50%. We were able to keep a record of the students oral health status before and after we presented to them by providing them with a questionnaire. We asked the questions at the beginning of the lecture, and again after 6 months in order to see how our lecture influenced them. The lecture included written content as well as photos that allowed the students to visualize exactly how different factors affect a person's oral health.

We focused on topics that are relevant to an age group of 12-14 years old. At this age, these students are still impressionable. If they go into a college environment that is surrounded by the social culture of vaping and eating disorders with the tools and knowledge of the damage this culture can cause; we can only hope that it impacts them positively so that they avoid these things as well as spread their knowledge of it. In order to provide them these "tools", we

explained what a hygienist is and does, went over oral hygiene at home using pictures and videos of proper brushing and flossing methods, explained the impact nutrition has on oral health and the caries process as well as health conditions related to nutrition and oral health, and finally we explained the dangers of vaping and how they can affect oral health. We did all this in a classroom setting and presented to the students during their health class. When consulting with their teacher, Ms. Sanchez mentioned that she has discussed smoking and healthy eating with the students as part of her curriculum. If the students hear the information again from an outside source, like us, it will have a greater impact on them because it's not just their teacher telling them about it.

Aside from using the questionnaire as a basis for results, we involved the students in activities to teach proper home care and the effect of caries. The damage of caries isn't always visible clinically. There may be a lesion on the tooth that looks small, but once it's opened and prepped by the dentist, the damage in the dentin may be so much more than seen clinically. In order to show the students how extensive that damage can be we did a small demonstration. In the demonstration, we had two apples and a pencil. We poked one of the apples with the sharpened pencil, and left the other untouched. The apple represents a tooth, the skin is the enamel and the inside is the dentin. We showed the students the "small" hole on the outside before we cut the apple. We cut both apples in half, making sure to get a cross section of the hole made by the pencil. The lead stained the inside of the puncture indicating the way that decay spreads into the dentin. After showing the students the results of this experiment, we heard "oohs and ahhs", as no one really had caries explained to them in this manner.

Overall, the students didn't know much about caries and proper hygiene. We allowed a final 10-15 min for Q&As from the students. At the end we asked if they feel they benefited from this lecture, they all said yes, including the teacher!

Evaluation-

To evaluate the effectiveness of implementing lectures to high school students on dental health, we conducted a follow up survey 6 months after they received the initial lecture. Of all students who participated in the lecture, only 30% reported to have new carious lesions in the past 6 months. The statistics decreased significantly compared to the result of 80% recorded prior to the OHI lecture. An approximate of 60% of the students reported to have less gingival bleeding upon brushing by implementing the modified bass toothbrush method. 50% of the students reported implementing C shaped flossing into their daily oral homecare routine. The response from the survey shows that 75% of the students reported that they changed their way of brushing and flossing. An estimate of 70% of the students reported increased usage of fluoride products such as fluoride mouth rinse and toothpaste.

In this follow-up questionnaire, we also assessed students' knowledge on the effect of nutrition and vaping on oral health. 80% of the students reported implementing a healthier diet in their daily routine by reducing the amount of sweets and acidic food. Statistics from the follow-up survey showed that 55% of the students have reported to cease the use of e-cigarette and vaping. Meanwhile, 65% of the students reported decreased usage on e-cigarette and vaping. 100% of the students reported the implementation of OHI lecture had enhanced their knowledge on caries and proper oral hygiene. Evidently, we succeeded in reaching our goal to improve oral

health after implementing the OHI lecture. As a result, we know oral health education and oral hygiene instructions implemented early in childhood are highly effective in their dental health in adulthood.

Conclusion

One of the dental hygienists' most important roles is to educate. Education begins in childhood and oral and dental health awareness is a vital aspect and influence to dental status following adulthood. Our target population for this service learning project was high schoolers aged 12-14. The result of this survey concluded that there is strong evidence that childrens' knowledge and awareness levels can be improved by receiving proper oral health education during their childhood. To promote oral health, one should have a meticulous oral hygiene routine, a healthy diet, a fluoridated water resource, have an oral examination at regular intervals and avoid the use of tobacco in all forms including vaping and e-cigarettes. We also hope that more of the public can understand the importance of dental health related to overall health and wellness.

Oral and dental health of children is also directly related to the dental health education and awareness that their parents have. As dental hygienist students being a part of the community, we believe it is important that everybody is taught about dental health in their schools. Once students are taught how to care for their oral health, they will have better dental health in their lifetimes, past childhood and into adulthood. Upon evaluation of the results, it was found that our tools were extremely successful in educating children on their dental health as well as improving their dental habits and caries risk and gingivitis status.

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Participation Form

Oral Presentation--

Winsome Cheung--Slides 1-6 (Dental Hygiene introduction).

Paulina Czerwinska--Slides 7-12 (Brushing and Flossing).

Stephanie Dirani--Slides 13-18 (Nutrition).

Anita Dema--Slides 19-24 (Vaping) and Questionnaire.

All students contributed to--Time to answer questions.

Written Report--

Anita Dema--Introduction and Assessment.

Paulina Czerwinska--Planning.

Stephanie Dirani--Implementation.

Winsome Cheung--Evaluation.

All students contributed to--Conclusion.