**Are You Brushing properly?**

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**Introduction:**

To brush or not to brush? Of course, everyone will say " To brush!" but do you know that even this simple action requires knowledge of technique. Yes, there are multiple tooth brushing techniques that exist for effective control of oral plaque. The plaque is an accumulation (visible) of bacteria that stays on the surface for a prolonged time. According to researchers there are about 700 species in our mouth that exist on a daily basis. Microbes (bacteria’s) secrete highly adhesive heteropolysaccharides, which enables them to attach to the pellicle. The result is a soft, porous coating. Bacteria, food debris, leukocytes, protein molecules and dead epithelial cells are deposited on its surface. The thickness of plaque progressively increases, it gradually changes and can turn into stone.

Soft dental deposits contain many bacteria that constantly release aggressive metabolic and decay products. These enzymes help dissolve calcium. The process of demineralization of the organic part of the enamel begins. This is how superficial caries develop, in the absence of timely treatment, it turns into deep caries, and then into pulpitis, requiring the removal of the nerve. Especially dangerous is plaque localized under the gum. It causes periodontitis, an inflammation of the tissues surrounding the tooth. The tooth begins to loosen, if left untreated, there is a high risk of losing it. Also, dental deposits are the cause of persistent bad breath. The smell persists after using toothpaste and dental floss, it is especially noticeable in the morning. This makes it difficult for the patient to communicate with others.

Comprehensive regular oral hygiene is the best prevention of plaque and calculus formation. A toothbrush is a simple and affordable way to mechanically remove plaque before it turns into stone. As many studies have shown, not everyone knows enough how to properly clean the surface of the tooth. Several methods of brushing teeth have been developed and one of the leading methods of teeth is " Modified Bass” technique. To confirm the effectiveness of this method the student category was selected as the category of experimental subjects.

**Assessment:**

The target population that we choose for our service-learning project are college students in the restorative dentistry department. These college students have moderate to very poor oral hygiene. Many have developed gingivitis and a buildup of plaque can be observed. Multiple cavities and staining of the teeth are also common. The importance of oral etiquette is underestimated by college students. While many students have also voiced the lack of proper oral hygiene etiquette in their lifetime. Would they have better oral hygiene now if they had been taught the right ways when they were younger? Many college students ponder upon this question. Therefore, knowledge of preventative practices is one of the most necessary aspects of good oral health.

 One assessment method we used to evaluate college students on proper tooth brushing technique is a direct observation. We inquired about the tools the group used and the length of time it took them to thoroughly brush their mouths. Based on their feedback we introduced to them the proper brushing technique known as the Modified Bass Technique. Which involved assessing factors such as the angle of the toothbrush, the duration of brushing, and the areas of the mouth that are being effectively cleaned. This allowed us to provide feedback on areas that need improvement and offer suggestions for better brushing technique. This type of assessment method allows for immediate feedback and provides an opportunity for students to receive instruction on proper tooth brushing technique. Flossing, rinsing and regular checkups are important in maintaining oral health. However, the best prevention starts at brushing, not only how many times one brushes in a day but also the proper technique is being used.

**Planning:**

Once we finalized our target audience and identified the need for this knowledge to be imparted to this specific group. It was essential to plan objectives accordingly because these students had a basic knowledge of tooth anatomy. College students lack oral hygiene due to a busy timetable, and matters worsen further due to their unhealthy snack patterns.

  Ironically, when we started this presentation the majority of the students were eating snacks directly out of the vending machine. When we asked these students if they would brush their teeth after their lunch or after reaching home, they negated the idea by putting the burden on their tight schedules. However, when we asked them if they were sure that their method of toothbrushing was even appropriate to fight for them the whole day. Most of the students were very positive that their hard bristle toothbrushes with the charcoal toothpaste topped with utmost force is the best part of their morning routine. Our goal was to teach these busy and burdened students an appropriate method of toothbrushing.

Once our goal was finalized, a measurable objective was needed, which could be achievable, specific and realistic. Our objective was that after finishing this presentation, at least 95% of the students will be able to demonstrate to us the appropriate Modified Bass method of toothbrushing. To get our baseline data, we asked them questions like “how many of you had heard about the Modified Bass method (45 degrees) of toothbrushing?” Only 33% of the students said that they have heard of this method? Out of this 33% only 10% said that they tried this method. This objective was further affirmed by some students who volunteered to try the disclosing solution and then removing it with their toothbrushing method.

**Implementation:**

Implementation After conducting our assessments and planning our goal, which is to educate our target population (restorative dentistry students) on how to effectively remove the plaque/biofilm that accumulate daily on the surfaces of their teeth, which will harm their gums, teeth as well as their alveolar bone. We set up our supplies and chairs as if we are in our clinic. Then, we asked the students for two volunteers to join us as our patients, so we can disclose them and educate them and the rest of the audience on how to effectively remove the stained bacterial layer from their teeth with the appropriate techniques. At first none of the students wanted to join us, they were all nervous and maybe embraced of how much stain they might have. As clinicians we assured them that most people accumulate plaque daily and all that matters is how correctly and efficient they are able to remove it. Finally, we got to convince one female and one male student to be our patients. Then, two of our dental hygiene students started explaining the disclosing process with a Tell Show DO technique. When the female participant rinsed, the stained plaque was visible on all her facial surfaces and the hygienist informed her and the audience that this specific patient needs to brush her teeth to mechanically remove the plaque. The hygiene student also explained and demonstrated the Modified Bass tooth brushing technique to the patient and the audience. On the other hand, the after the male patient was disclosed, all his staining was interproximal. Therefore, the hygienist recommended that he needs to floss and demonstrated the Spool flossing technique that effectively removes the biofilm from the interproximal areas and under the gum line. We also got the audience’s feedback on the performed procedure and answered all their questions regarding the brushing and flossing techniques. Lastly, most of the students confessed that they have been brushing and flossing, but not the correct way, and they thanked us for showing them the proper ways to maintain healthy gums, teeth, and jawbone.

**Evaluation:**

As Dental Hygienists, one of our main goals is to achieve effective oral hygiene education to the public and our patients. As a college student, many scholars are busy, snacking numerous amounts of food daily and often spend less than two minutes brushing their teeth, cleaning their tongue, using an oral rinse and flossing. For our Service-Learning Project, we decided that we would present our assignment to the Jaws Club of NYC College of Technology, as this club is composed of students who are enrolled in the Associates for Restorative Dentistry. These students are knowledgeable about dental materials and dental technologies to design and manufacture dental prostheses. But how many of these students understand the importance of removing biofilm and plaque daily? We decided to test their knowledge on how efficient their oral homecare strategy is and question what steps to take to improve their routine. We incorporated the use of a typodont, mirror, two toothbrushes, cotton rolls and plaque indicator liquid to showcase the amount of biofilm that can be left behind after poor oral care.

After our introduction, we asked the group what tools they used and approximately how long they cleaned their mouths. We gave a brief explanation of what biofilm and plaque is and how they negatively affect your oral health if levels are not maintained.  With the typodont and toothbrush, we showed the group the recommended technique for brushing, the modified bass method. A volunteer then demonstrated the modified bass technique on themselves with a separate clean toothbrush. We then used cotton rolls to disclose their maxillary incisors and a plaque score was created for the individual.  The individual demonstrated the recommended brushing method to remove all the tinted plaque, expectorated into the sink and was disclosed a second time. We then compared the results of the first plaque score, to the second plaque score to determine if any progress had been made in lowering the  amount of biofilm left behind.

We had high expectations, that the plaque would cover two-third of the enamel on the first disclosure. Given the prior knowledge of the Jaws Club members, we believed that the plaque score would diminish to 0 and show no visible plaque along the gingival margin or facial and incisal edges of the maxillary incisors after the second disclosing session. The pink disclosing liquid was the main component in testing the effectiveness of our oral hygiene education. If the disclosing solution was seen anywhere else besides the interproximal areas, that would indicate our objective was a failure. However, if all disclosing solutions were removed from the tooth, excluding the interproximal area, that indicated our goal was a success. Remnants of plaque were expected interproximal as it can be difficult for the nylon bristles to access the area. We advised the students that angulating the toothbrush at a 45-degree angle can help, but incorporating flossing is most beneficial when your teeth are close together. Demonstrating the c-shaped floss method was helpful in further showing how to remove plaque from all surfaces of the teeth.

**Conclusion**:

In conclusion, We were able to offer an oral health education program to a group of young students as part of this service learning project, which was a pleasant experience because they are in a time of life where good mouth hygiene is crucial. In that we were able to complete the precise aims and objectives that had been specified prior to the program's execution, our presentation, "Effective Tooth Brushing Technique," was a general success. We performed our hygienist duties as educators and raised awareness among the teachers and students in the department of restorative dentistry. We also disseminated information through the pamphlets we made for the students to take home to their families.This will enable the educational process to continue at home and significantly influence their approach to oral health.

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