Mamá self-care

By: Nashyra Zheng

Maria Portacio

Rebecca Encarnacion

Cindy Lu

Sandra Cruz

Nadzeya Znavets

City University of New York, New York City College of Technology

Content **Pages**

Introduction

Pregnancy is a fascinating time for mothers and families. Pregnancy comes with a set of checklists that mothers would generally like to follow as they prepare for the arrival of their little ones. For this program, we would like to introduce one crucial thing that should be added to that checklist, and that is the mother's oral hygiene care. In hopes to optimize prenatal care for both the mother and fetus.

During pregnancy, the body goes through extreme measures to provide an environment for the growing fetus. These measures can contribute to an increased risk of gingival disease, including pregnancy-induced immunologic alterations, increase levels of estrogen and progesterone hormones, extreme tissue response to dental biofilm, irritants like calculus, and an increase in the oral microbiome(1), which ultimately can exacerbate the immune system's reaction to the bacteria in the oral cavity(2). These factors may contribute to reversible and irreversible gum disease, which progression of such disease can be avoided by implementing good at-home oral hygiene instructions. Not to mention, all these changes and the high risk of oral disease can affect the developing fetus, from a preterm or a low-birth-weight baby.

Our main goal is to bring awareness to these soon-to-be mothers of dental risks. To provide visual aids, alongside hands-on instructions, in order to promote good oral hygiene. There was a study done in Saudi Arabia showing that the majority of women (41.03%) did not get their dental checkups done during pregnancy even after many of them (28.68%) had developed reddened and swollen gums. The cause of pregnancy gingivitis was not known to 32.66% of pregnant women(2). We would like to provide a service to those who are not able to see the dentist due to any circumstance during their pregnancy to partake in maintaining good oral care by utilizing at-home oral care and for those who can seek dental care anytime during their pregnancy.

Assessment

For this project, the key target population is pregnant women. Some pregnant women have a misconception that their oral health worsens because the baby depletes them of calcium and other nutrients. However, the literature shows that good oral care is imperative for gaining optimal oral care (2). Our focus group is 18 pregnant women at Carriage House Birth located at 105 Grand St, Brooklyn, NY 11249. Our objective is to improve their OH score by teaching them how to brush and floss. As oral health care providers, it is vital to help these women understand the importance of having an excellent oral home care routine. Introducing them to good brushing techniques and the correct way to floss, can help reduce the progression of gingivitis during pregnancy.

Some assessment methods implemented to gather initial data about our group population and their current oral health knowledge were an OH questionnaire, gingival description focused on the size and color, and OHI Plaque Index. In addition, we interviewed the women to understand what they know about oral health. We asked the women how many times a day they brushed their teeth; the majority responded 2x/day. However, only a few flossed at least 1x/day; most answered that they flossed when they felt something in between their teeth. The visual gingival assessment indicated that all women had signs of gingivitis. 83% had the presence of localized inflammation and redness while 17% showed signs of generalized inflammation and redness.

Next, we collected the plaque score (using the Plaque Index) of each woman. In a class of 18 women, about 4/18 of the women had a PI score between 1.0-1.9 (fair), and 14/18 had a PI score that fell between 2.0-3.0 (poor). Finally, we asked the women to demonstrate how they brush and floss their teeth in order to assess their initial knowledge before teaching them the correct method.

Planning

Pregnant women are prone to have gingivitis, being “the most common dental problem affecting 60-70%” (3) of the group’s population. And, if not managed with proper oral home care, can lead to a more severe form of gingivitis or even periodontitis. As stated initially, our focused group is 18 pregnant women at Carriage House Birth. The specific goals we plan to achieve are to increase the group’s awareness of oral changes during pregnancy and improve their oral hygiene at home.

After providing the women with brushing and flossing instructions using the tell-show-do method, the participants will have time to practice. The objective is that 83% (15/18) of women will demonstrate the modified Bass brushing technique following the step-by-step instructions in the pamphlet with no errors and 60% (9/18) of women will demonstrate the flossing technique step-by-step using the pamphlet without error at the end of the session. During the re-evaluation in 2 weeks, 61% (10/18) of women will be in the Good or Excellent category of the plaque score index after using a disclosing tablet.

Another method we will use is to train the trainer. The instructors in the location will be listening in for the presentation and participating in the oral hygiene demonstrations. This way the instructors are made aware of oral changes in pregnant women. They will be able to encourage the women to continue their oral hygiene routine at home. We will also be providing the instructor with extra copies of the pamphlets which they can distribute to the family of the women present.

Implementation

First, we will introduce ourselves as Dental Hygiene students and give a brief explanation about the course of our program. We will emphasize that there are significant changes in the oral cavity during pregnancy and the importance of implementing a consistent home care regimen. After our introduction, we will be handing out a questionnaire to each participant. The questionnaire will give us insight into how knowledgeable each person is about pregnancy gingivitis as well as information about their current oral home care. After collecting back the questionnaire, we will continue with a PowerPoint presentation. The presentation will consist of statistics and information about the risks of developing pregnancy gingivitis. Some information that will be included is that pregnancy can lead to inflammation of the gums caused by changes in the hormone levels (2). We will also stress the correlation between pregnancy gingivitis and adverse effects on the unborn baby (4). We hope that the soon-to-be mothers will take into consideration that their oral health may also affect their children. We believe that this may be a motivating factor for pregnant women to improve their oral health for themselves and their children.

After the presentation, we will be assessing gingival health and oral hygiene at home. First, we will break into groups of 3 pregnant women and 1 student hygienist. We will note down the initial gingival description for each participant in a notebook. Next, we will pour 10 drops of disclosing solution into a cup for each participant. Then each group of student hygienists will calculate the initial plaque index for each participant. After the plaque index, we will use a handheld mirror and flashlight to show each individual the areas of plaque that were disclosed. This will also help the participants see areas to focus on for oral hygiene instructions.

Next, we will move on to a demonstration of toothbrushing methods. First, we will ask each participant to show us the method of brushing that they currently use at home. We anticipate that most of the women will be using back and forth motions and generally ineffective methods. Then each student hygienist will demonstrate to their group the modified Bass method with a soft manual toothbrush as well as the electric toothbrushing method on a typodont. After this, we will work with each participant individually to show them the modified Bass method in their mouth and make any corrections if necessary. After each individual is able to properly demonstrate the correct technique, we will move on to flossing. The "c" curve flossing technique will be demonstrated on a typodont first before we work with each individual in their oral cavity. When each group has shown satisfactory technique and understanding, we will end the program by giving out a goodie bag of a soft manual toothbrush and string floss. We will also be handing out pamphlets that contain information about plaque, gingivitis, and periodontitis. It will also contain step-by-step instructions on the modified Bass TB method and "c" curve flossing technique for the participants to refer back to for the duration of the 2-week program. After the class is dismissed, we will discuss with the instructor to encourage consistent oral home care and remind the women of the importance of oral hygiene during pregnancy whenever a class is being held.

Evaluation

In order to evaluate the effectiveness of the "Mamá self-care project" first we analyzed the information collected from the questionnaire:

1. What is your oral hygiene routine on a regular day? And, how frequently (one/two/three times a day)? Brush (Manual or Electric toothbrush)| Floss | Rinse | None

2. When was your last dental visit? Are you planning to have a cleaning while pregnant? YES | NO

3. Since you found out that you are pregnant, have you noticed any changes in your mouth (inflamed gums, bleeding, dry mouth, bad breath, others)? (Explain if yes)

4. Before you were pregnant, you were told at some point that you had gingivitis or periodontitis? (Explain if yes)

These questions gave us a based line on the oral care that the women were up to until that day. 16/18 reported that they brushed their teeth 2 times a day. However, 13/18 reported that they don't use floss at all.

Step 2: Visual gingival assessment of size and color

In the second part, each clinician was focused on 3 patients, with a disposable mouth mirror and adequate light, as well as taking into account their answers to questions #3 and #4, we observed moderate inflammation and redness in 80% of the women, from which 35% stated that the gingival inflammation started since they were aware that they were pregnant.

In step 3: The participants were given disclosing tablets to chew and roll over the entire surfaces of their teeth with their tongues, and with the disposable mirrors we looked at the surfaces that helped us to determine their PI score; 55% of the women had a PI score that ranged from 2.0-3.0 (Poor). All the clinician reported that after the patient was informed of the means of this score and observed the amount of pink color on their teeth, 2/3 showed more interest to learn the personalized OHI that were being given to them based on their PI score.

Two weeks later we met with the same group of women, to evaluate if they implemented the OHI in their daily routine and to evaluate the improvement in their PI. For which we used the following questions.

1. Following what you learned in our program, what does your oral hygiene routine look like now? (circle all that apply) Brush | Floss | Rinse | None. And, how frequently (one/two/three times a day)? Brush (Manual or Electric toothbrush)| Floss | Rinse | None
2. Have you, since our last program, visited or made an appointment with your local/family-dentist and/or hygienist? YES | NO

At this time 18/18 reported brushing their teeth 2 times a day, and 8/18 reported that they introduced the use of floss to their daily OH. After the patients demonstrated the technique of modified Bass 77% of them did it correctly, and the floss method was perfectly demonstrated by 45% of the women. Also, the PI was very improved compared with 55% in the poor range PI score, on the previous measurements, we saw that now 20% of women were into the category of poor plaque score index. Also, 5/18 of the women went to their dental office after our first visit to get a cleaning. These results confirm that our presentation was very effective in terms of the goals we sought to establish.

Our objective was to teach pregnant women about how oral health can be affected during their pregnancy and how important it is to take care of it. While our focus was on oral hygiene home care eating habits, in particular, sugar intake, should also be addressed. As an overall evaluation, our program has accomplished its goal of bringing awareness of oral health and implementing positive oral habits in our pregnant population.

Conclusion

Pregnancy causes several changes to the woman's body, such as water retention, nausea, constipation, increase in vasculature, hormonal fluctuations, and weight gain. Unfortunately, the majority of pregnant women are unaware of the oral health changes that are also the result of the

pregnancy. There is sufficient evidence to suggest that good oral hygiene during gestation enhances the oral and systemic health of a mother and a fetus.

Within the limitations of this project, we can conclude that the majority of women developed gingivitis during pregnancy. The reasons behind it are hormonal fluctuation, unawareness, and poor oral hygiene. Women were eager to learn proper ways of brushing and flossing and expand their knowledge of the relationships between the oral health of the mother and the child.

We educated women on the importance of good oral hygiene at the earliest stages of pregnancy. It is achievable through the collaborative work of all health care members. Referral by the obstetrician to the dentist or dental hygienist for prophylaxis or scaling and root planing at the beginning of the pregnancy is essential. We also discussed the importance of nutritional counseling on the proper diet for a mother and growing fetus to further prevent the development of gingivitis and caries.

Overall, the development and implementation of the project "Mamá self-care" was a success. It was a pleasure to present and educate these women in order to improve their oral health and the health of their children. As future dental hygienists, we should invest our time and effort to work for the well-being of the community, as nothing is more rewarding than a healthy smile.

References

1. Boyd LD, Mallonee LF, Wyche CJ. *Wilkins' Clinical Practice of the Dental Hygienist*. Burlington, MA: Jones & Bartlett Learning; 2021.
2. Togoo RA, Al-Almai B, Al-Hamdi F, Huaylah SH, Althobati M, Alqarni S. Knowledge of pregnant women about pregnancy gingivitis and children oral health. *Eur J Dent.* 2019;13(02):261-270. DOI:10.1055/s-0039-1693236
3. Saadaoui M, Singh P, Khodor SA. Oral microbiome and pregnancy: A bidirectional relationship. *J Reprod Immunol.* 2021;145:103293. doi:10.1016/j.jri.2021.103293
4. Meqa K, Dragidella F, Disha M, Sllamniki-Dalipi Z. The association between periodontal disease and preterm low birthweight in Kosovo. *Acta Stomatol Croat.* 2017;51(1):33-40. DOI:10.15644/asc51/1/4