International Journal of Allied Medical Sciences and Clinical Research (IJAMSCR)

ISSN:2347-6567

IJAMSCR |Volume 7 | Issue 2 | Apr - Jun – 2019
www.ijamscr.com

Research article *Medical research*

Effectiveness of extension method of teeth brushing demonstration to decrease dental plaque index for pregnant women in Denpasar city health center 2017

Ni Wayan Arini[1], Sagung Agung Putri Dwiastuti[1], Ni Nyoman Dewi Supariani[1]

[1]*Lecturer of the Dental Nursing Department, Health Polytechnic, Ministry of Health, Denpasar*
***Corresponding Author**: **Ni Wayan Arini**
Email id: anik_arini81@yahoo.com

ABSTRACT

The Household Health Survey (Survey) of the Department of Health stated that among the Complained diseases and not Complained diseases, the prevalence of oral disease was highest among 60% of the population (Said, et al., 2009). Caries and periodontal diseases are the most dental diseases in society. Pregnancy leads to physiological changes in all body systems including the endocrine system, which is affected by estrogen and progesterone hormones. The increasing occurrence of this hormone causes changes in the mouth and turn-up of responses in the soft tissues of the mouth toward local irritation. Local irritation is a secondary factor in inflammation during pregnancy. The local infections commonly experienced by pregnant women are gingivitis (Machfoedz and Zein, 2005). Increased blood flow to the gingival tissue, may lead to an increase in the excessive inflammatory response to plaque build-up. The purpose of this research is to know the effectiveness of oral and dental health education with a demonstration of tooth brushing way to Decrease plaque index in pregnant women at health centers and health centers II West Denpasar Denpasar IV South.

The type of research is experimental Quase used with pre- and post-test design with a control group. This study uses a minimum of a sample, sampling with accidental sampling technique. The sample was determined by accidental sampling with the sample size for each treatment group and control group of 30 people. The collected data were then statistically Analyzed with descriptive test and comparability test with Wilcoxon test to know the effectiveness of brushing demonstration difference method in the treatment group and control group.

The result of the Wilcoxon test Showed a significant demonstration of brushing demonstration methods to Decrease the dental plaque index in pregnant women with $p = 0.002$ or $p < 0.05$.

So it can be concluded that the effective brushing demonstration counseling method to reduce the index of dental plaque in pregnant women. To provide counseling methods of brushing demonstration during the first examination of pregnancy

Keywords: Counseling, Plaque, Pregnant Mother

INTRODUCTION

Household Health Survey (Survey) MOH stated, among disease complained and complained, the prevalence of the oral disease is the highest covering 60% of the population (Said et al., 2009). Dental and oral health is an investment for a lifetime. Its role is quite large in preparing a food substance before the absorption of nutrients in the digestive tract, as well as psychological and social function (Situmorang, 2008). Dental diseases that affect many people are caries and periodontal disease [1].

Pregnant women are one of the people who are susceptible to oral disease, in addition to preschoolers. Pregnancy causes physiological changes in all systems of the body including the endocrine system, which is influenced by the hormones estrogen and progesterone. An increase in this hormone can lead to changes in the mouth and the emergence of a response to the soft tissues of the mouth of local irritation. Local irritation is secondary to inflammatory factors during pregnancy. Local infection that is often experienced by pregnant women is disease gingivtis (Machfoedz and Zein, 2005)[2-5].

Increased blood flow to the gingival tissues, can cause an increase in an excessive inflammatory response to the buildup of plaque. This situation can lead to pregnancy gingivitis and usually occurs in the second and third trimester of pregnancy, an increase in the eighth month and decreased after going through the ninth month, this situation is characterized by the state of gingiva are swollen, red and bleed easily, this often occurs in the molar region, is found in the posterior region and interproximal and highest in anterior region (Susanti, 2003).

Machfoedz and Zein (2005), said the results showed that the majority of pregnant women who do not understand oral health, were lazy maintain the cleanliness of teeth during pregnancy, in addition to lazy stated also that the mothers during pregnancy have brushing irregular[6].

Based on data from the Health Research (Riskesdas, 2013) in the province of Bali, the prevalence of oral and dental problems reaching (25.1%) were largely sufferers are women, more Riskesdas data reported average - an average of 32 women in Bali experienced a history of canker sores. Research conducted by Jefoat (in Ernawati, 2008) showed that pregnant women who experience disease gingivitis, have an increased risk of the premature birth of infants with a low birth weight of 4.45 to 7.07 times higher than mothers with healthy gingiva. Gingivitis is an oral and dental problem that is often experienced by pregnant women 5% -10% experience swelling of the gums. Results Wardani study (2012) showed that the level of oral hygiene of pregnant women in the 1st trimester of pregnancy most of the criteria being that is 52.8%, the second trimester at 56,5%, third trimester 69,2%.

METHOD

The research was conducted in maternity health centers and health centers II West Denpasar Denpasar IV South in July to August 2017, starting with data collection, data processing, and presentation. The research is quasi-experimental. This study design using pre and post-test design with a control group. Sampling as many as 60 people, with the technique of sampling with accidental sampling, were divided into groups of 30 people for the control group and 30 for the treatment group.

The study was conducted from July to August 2017. This research is the primary data. Data collected using direct examination by looking at the plaque in pregnant women.

The instrument used in this study are as follows

Diagnostic tools, consisting of glass mouth, sonde, tweezers, nierbeken, toothbrushes, masks, gloves, white towel, and dental models. as well as material that is 70% alcohol, cotton, disclosing and card status.

In this research, data processing using SPSS for Windows version 16.0.Analysts data were statistically with descriptive test and comparability test using the Wilcoxon test (Sujarweni, 2014)

RESULTS AND DISCUSSION

General description

PHC IV South Denpasar is one of the health centers in an urban village located at the exact PedunganMoyo Island Road No. 63A Pedungan, District of South Denpasar, Bali[7].

Maternity Buru Island located on the street No. 38 Denpasar which is Puskesmas II West Denpasar located on the street G. Soputan Gang Health

Center No. 3 Denpasar Denpasar District West Village Pemecutankelod

Result

The study, of 60 respondents conducted by direct examination of the respondents obtained the following data:

Univariate data analysis

The frequency distribution of plaque before and after tooth brushing demonstrations extension method in pregnant women are presented in Table 1 below:

Table 1: Plaque Frequency Distribution Before and After Extension Methods Brushing Demonstration Against Dental Plaque Index Decrease in Pregnancy The Health Center Denpasar 2007

Test	Criteria Plaque							
	Well		moderate		Bad		Total	
	n	%	n	%	n	%	n	%
pre Controls	9	30	16	53.3	5	16.7	30	100
Post Control	13	43.3	15	50	2	6.7	30	100
pre-treatment	8	26.7	19	63.3	3	10	30	100
Post-treatment	16	53.3	14	46.7	0	0	30	100

Table 1 shows that in the pre-control group as much as 30% of respondents have a plaque with good criteria value, the control post an increase in the number as much as 43.3% of respondents have a plaque with the value criteria. Similarly, the pre-treatment group as much as 26.7% of respondents have a plaque with the criteria of good value, and the post-treatment after the extension granted 53.3% of respondents have a plaque with the value criteria[8-11].

The average value of the plaque before and after tooth brushing demonstrations extension method in pregnant women are presented in Table 3 below:

Table 2: Distribution of Average Value Plaque Before and After Illumination Brushing Methods Demonstration Against Decline Dental Plaque Index in Pregnancy The Health Center Denpasar 2017

No.	respondents	Average	Criteria
1	Pre Controls	2.4	moderate
2	Post Control	1.9	moderate
3	pre-treatment	2.2	moderate
4	Post-treatment	1.6	Well

Table 2 shows that in the control group both pre and post control criterion values obtained with moderate plaque. In the treatment group, the pre-treatment values obtained were a plaque with the criteria and the post-treatment of plaque values obtained with good criteria

Data Analysis Bivariate

Results Wilcoxon Signed Ranks Test to determine the effectiveness of Extension Methods Demonstration Against Decline Brushing Dental Plaque Index in Pregnant Women in Health Center Denpasar year, 2017, is presented in Table 4 below:

Table 3: Effectiveness Demonstration Extension Methods Brushing Decline Against Dental Plaque Index in Pregnancy The Health Center Denpasar 2017

Test	Mean Rank	Sum Of Rank	Z	Sig (p) (2-tailed)
Post-Control Pre Control	5:00	15:00	-1706	0088
Post Treatment - Pre Treatment	7:00	7:00	-3051	0002

Table 3 shows that the Z value calculated for the control group = -1706, so the value Z output is greater than the value of the Z table (table Z = -1.645) with p = 0.044 or P <0.05. For the treatment

group, the value of Z count = -3051 so the value Z output is greater than the value of the Z table (table Z = -1645) with p = 0.002 or P <0.05. So in other words counseling methods effective tooth brushing demonstrations to bring down the value of plaque in pregnant women.

DISCUSSION

The result of the control group respondents showed that in the first plaque examination showed poor grades plaque on criterion 5 people (16.7%), with the criteria being 16 (53.3%), good criterion 9 (30%), respondents were not given extension (not given treatment). A week later performed a re-examination, respondents with a plaque on the results of the plaque with bad criterion 2 (6.7%), the criteria were 15 people (50%), both criteria 13 (43.3%). The average plaque values of pregnant women before treatment was 2.4 including the criteria for being and in this group did not get counseling, a week later, checked back the plaque and the results obtained were 1.9 including the criteria for being. That is, although respondents in the control group did not receive counseling, after the second inspection,

The results of research in the treatment group before being given counseling about the method of tooth brushing demonstration showed the value of bad plaque on criterion 3 (10%), the criteria were 19 people (63.3%), good criterion 8 (26.7%). After being given counseling, a week later the respondents checked back the plaque, showed the value of plaque on the criteria were 14 (46.7%) and on both criteria 16 (53.3%) the plaque. The average value of the plaque in the pre-treatment equal to 2.2, including the criteria and the post-treatment was after the respondent obtain counseling plaque value obtained was 1.6 includes both criteria. This means that there is an impairment of plaque on the respondent be given counseling after the tooth brushing demonstration method.

Results Wilcoxon test to determine the effectiveness of extension methods demonstration toothbrushing after the respondent obtain counseling in the treatment group and the control group who did not receive counseling showed that both significant but in the control group p = 0.044, while the treatment group p = 0.002, so extension methods of tooth brushing demonstration effective to reduce dental plaque index in pregnant women. The advantage of the extension method is the use of targeted demonstrations in extension materials will be more memorable in-depth to get an understanding/understanding better and perfect, especially when participants can actively participate in the demonstration. Plaque can not be cleaned with just rinse your mouth, spray water or air, but plaque can only be cleaned by mechanical means. Until now the most effective mechanical means to clean the plaque is by brushing (Farani and Sudarso, 2008). It is known that the actions of brushing the teeth the right way and at the right time will reduce the amount of plaque on the tooth surfaces and prevents the accumulation of plaque (Princess et al, 2010).

Supra-gingival plaques more quickly formed during sleep, then when no food is chewed, and at mealtime. This occurs because the mechanical action of food and saliva flow during mastication difficult causes plaque to form (Jackie and Natamiharja, 2005).

The dominant type of bacteria in dental plaque is a type of streptococcus, whereas other types of bacteria were found to vary, so does the amount. Streptococci have certain traits in the process of dental caries, which ferment various types of carbohydrates into acids resulting in a decrease in pH, form and store polysaccharide intracellular (levan) of various types of carbohydrates that can be broken back by bacteria when carbohydrates are less so produce acid continuously, forming extracellular polysaccharide (dextran) which resulted in the properties of the adhesive and cohesive plaque on the tooth surfaces, as well as the use of glycoprotein and saliva on the tooth surface.

Some types of carbohydrate eg sucrose and glucose can be fermented by bacteria form acids that cause plaque pH will drop to below 5 within 1-3 minutes. A decrease in pH repeatedly within a certain time will cause demineralization of the surface of the vulnerable and caries too process begins. The more often acidic conditions below pH of 5.5 occurred in the plaque, caries faster to form and grow (Yanti and Natamiharja, 2005).

Periodontal disease is an infectious disease initiated by bacterial plaque that accumulates in causing inflammation of the gingiva. Plaque located near the gingiva of the teeth, the process will take place starting from marginal and lead to

periodontal diseases (gingivitis marginal, marginal periodontitis, even to the periodontal abscess). Plaque at the gingival margin, if not removed carefully will undergo calcification and become hard (Princess et al, 2009).

Detection late in the process of formation and inflammation-causing periodontal pockets, the tooth often already rocking and handling more difficult. (Princess et al, 2009)

CONCLUSIONS AND SUGGESTIONS

Conclusion

Based on the results of research and discussion, can be summed up as follows In the control group of respondents who did not get counseling to control pre obtained an average value of 2.4 and a plaque at the control post obtained an average value of 1.9 plaque equally including the criteria for being,

In the treatment group respondents, before getting counseling showed the average value of the plaque at 2.2 with the criteria being, after getting counseling tooth brushing demonstration method obtained an average value of 1.6 plaque with both criteria.

The results obtained in the treatment group, with p = 0.002 or p <0.05

Suggestion

Based on the results of research and discussion of this research, it can be suggested that:

1. To the dental health workers in health centers, to provide counseling method tooth brusher demonstration on a pregnant woman during the first examination of pregnancy.
2. To the pregnant women, to diligently brushing at least twice a day, the morning after breakfast and at night before sleeping and eating less sugary foods and attached, multiply eat vegetables and fruits are fibrous and watery. Dental health officer to control every six months.

REFERENCES

[1]. Ernawati, N. 2008. Overview Gingivitis On Pregnant Women in PuskesmasSawan I Buleleng, Essay, tp. Denpasar.

[2]. Farani W, Sudarso ISR. Effect of difference brushing with horizontal and vertical methods of the reduction of plaque in children Female Age 12 Years. Dentika Dental Journal; 2 (13), 2008, 108-111,

[3]. Machfoedz, I. and Zein AY. Dental and Oral Health Keeping Children and Pregnant Women. Yogyakarta: Fitramaya 2005.

[4]. MH daughter, Herijulianti E, N. Studies Nurjannah hard tissue disease prevention and tissues supporting the teeth. Jakarta: EGC 59-60, 2009, 112-120

[5]. Riskesdas. Principles of Basic Health Research Results of Bali Province. Jakarta: Agency for Health Research and Development Ministry of Health of Indonesia 2013.

[6]. Said F, Rahmawati I, Hadayati S. Overview of the mouth and dental hygiene brushing knowledge of public school students in grade IV and V HapinginBatang Alai District of North Hulu Sungai Tengah. Bulletin Research Hospital Dr. Soetomo September; 3 (11), 2009, 148-150

[7]. Situmorang N. Status and behavior of dental and oral health maintenance schoolchildren in 8 sub-districts in the city of Medan. Dentika Dental Journal 2(3), 2008, 115-9.

[8]. Sujarweni, VW 2014. SPSS For Research. Yogyakarta: New Library Press

[9]. Susanti, EF. Effect of Pregnancy on Dental and Oral Health Care as well as the necessary modification. Mahasaraswati Journal of Dentistry, 1, 2003. Denpasar.

[10]. Wardhani, DF. Relations with the oral cavity Cleanliness Level Status in Pregnancy gingiva in Puskesmas Source Sari subdistrictSumbersariJember.Skripsi district. Part Periodonsia Dentistry University of 2012, Jember

[11]. Yanti GN, Natamiharja L. The selection and use of a toothbrush on high school students in the city of Medan. Faculty of Dentistry, University of North Sumatra. Dentika Dental Journal; 1(10), 2005, 28-32.

How to cite this article: Ni Wayan Arini, Sagung Agung Putri Dwiastuti, Ni Nyoman Dewi Supariani. Effectiveness of extension method of teeth brushing demonstration to decrease dental plaque index for pregnant women in Denpasar city health center 2017. Int J of Allied Med Sci and Clin Res 2019; 7(2): 592-596.

Source of Support: Nil. **Conflict of Interest:** None declared.