



Factors related to oral health maintenance during and after pregnancy in antenatal care (ANC) program

Silvia Prasetyowati*, Isnanto

Department of Dental Health, Dental Therapist Study Program, Poltekkes Kemenkes, Surabaya, Indonesia

Abstract

Background: Pregnancy is a natural and physiological process. During pregnancy, mother will experience several changes, both physical and psychological changes that are quite specific as a reaction to what she feels during pregnancy. Changes that occur during pregnancy are caused by changes in the amount of the hormones estrogen and progesterone which have increased so that it affects the condition in mother. 57% of pregnant women had gingivitis. If a mother suffers from a periodontal infection, when she is pregnant, she will have a greater risk of giving birth to a baby with low birth weight and having a premature birth.

Objective: To determine the factors associated with the maintenance of oral health after and during pregnancy.

Materials and Methods: This research is an analytic observational study. The method of collecting research data was by conducting a survey on oral health maintenance during pregnancy with related factors through a questionnaire. Data analysis was performed by logistic regression analysis.

Results: From all the variables in this research, only behaviour has significant relation with oral health maintenance of pregnant women in the ANC program ($p\text{-value} \leq 0.05$). Behaviour has positive correlation and strong correlation strength (1.633). Pregnant women who have not suitable behaviour towards oral health will have 5 times risk of poor oral health maintenance than pregnant women with suitable behaviour.

Conclusion: Behaviour is a factor that related to oral health maintenance during and after pregnancy in antenatal care program.

Keywords: oral health, pregnancy, antenatal care

Introduction

Pregnancy is a condition in the womb of a woman as a resulted from the meeting of the ovum and spermatozoa. Pregnancy is a natural and physiological process. During pregnancy, mother will experience several changes, both physical and psychological changes that are quite specific as a reaction to what she feels during pregnancy [1].

Changes that occur during pregnancy are caused by changes in the amount of the hormones estrogen and progesterone which have increased so that it affects the condition in mother. Usually in pregnant woman experiences various complaints such as pain, nausea, vomiting, including complaints of toothache and oral problems. The condition of the teeth of pregnant women is especially visible on the gingiva, which is often characterized by enlarged gums that bleed easily due to changes in the hormonal and vascular system along with local irritation factors in the oral cavity [1].

Health is the most important part of human life, physically and spiritually healthy, pregnant women are no exception. Dental and oral health is part of overall health. Results of the research by Yuniastuti and Handayani in 2018 showed that 57% of pregnant women had gingivitis [2]. Research from Pranyadnaputri in 2017 showed that 84% of pregnant women who visited the Klungkung Hospital had severe gingivitis [3]. The caries experience index (DMFT) for pregnant women at the Beauty Clinic Banjaran Bandung was 4.4. The condition of the oral cavity of pregnant women can affect the condition of the baby. If a mother suffers from a periodontal infection, when she is pregnant, she will have a greater risk of giving birth to a baby with low birth weight and having a premature birth. Based on the above background, the purpose of this study was to determine the factors associated with the maintenance of oral health during pregnancy [4].

Materials and Methods

This research is an analytic observational study that measures the variable of oral health maintenance of pregnant women during and after pregnancy in the ANC program with variables of gestational age, knowledge, attitude and behaviour in maintaining oral health. The research design used is cross sectional. The number of samples in this study are 155. This research was conducted in several public health centers in East Java, including: Banyuwangi Health Center, Jember Health Center, Situbondo Health Center, Probolinggo Health Center, Pasuruan Health Center, Malang Health Center, Mojokerto Health Center, Jombang Health Center, Nganjuk

Health Center, Kediri Health Center, Trenggalek Health Center, Tulungagung Health Center, Lamongan Health Center, and Bojonegoro Health Center from May to August 2021.

The method of collecting research data was by conducting a survey on oral health maintenance during pregnancy with related factors through a questionnaire. Data analysis was performed by logistic regression analysis.

Results

Table 1: Characteristic of Respondents

Characteristics	Frequency	Percentage
Age of Mother		
< 20 th	13	8,38%
21 – 30 th	105	67,74%
>31 th	38	24,51%
Total	155	100%
Gestational Age		
1-3 bl	49	31,62%
4- 6 bl	66	42,58%
7- 9 bl	40	25,80%
Total	155	100%
The Number of Pregnancy		
First pregnancy	55	35,48%
Second pregnancy	70	45,16%
Third pregnancy	30	19,8%
Total	155	100%

Based on table 1, it can be seen that the number of respondents aged 21-30 years is more (67.74%), and the highest gestational age is 4-6 months (42.58%) and respondents who experience a second child pregnancy are more (45,16%).

Table 2: Knowledge of Pregnant Women about Oral Health Maintenance during Pregnancy

Knowledge Categories	Frequency	Percentage
Poor	56	36%
Good	99	64%

Table 2 shows that most of the knowledge of pregnant women about maintaining oral health during pregnancy is in the good category (64%).

Table 3: Attitudes of Pregnant Women about Maintenance of Oral Health during Pregnancy

Attitude Categories	Frequency	Percentage
Negative	46	30%
Positive	109	70%

From table 3 it is known that the majority of pregnant women have a positive attitude regarding the maintenance of oral health during pregnancy (70%).

Table 4: Behaviour of Pregnant Women in Maintaining Oral Health during Pregnancy

Behaviour Categories	Frequency	Percentage
Not Suitable	42	27%
Suitable	113	73%

According to table 4 it is known that the majority of pregnant women have a suitable behaviour regarding the maintenance of oral health during pregnancy (73%).

Table 5: Comparison Test Results of Factors Related to Oral Health Maintenance of Pregnant Women in the ANC Program

		Oral Health Maintenance				p-value	OR
		Poor		Good			
		N	%	n	%		
Gestational Age	Young gestational age	19	45,2	57	50,4	0,565	0,812
	Old gestational age	23	54,8	56	49,6		
Knowledge	Poor	14	33,3	42	37,2	0,659	0,845
	Good	28	66,7	71	62,8		
Attitude	Negative	12	28,6	34	30,1	0,845	0,929
	Positive	30	71,4	79	69,9		

Behaviour	Not Suitable	4	9,5	38	33,6	0,003*	0,208
	Suitable	38	90,5	75	66,4		

*p-value \leq 0,005

Based on table 5, it is known that the factor of young gestational age maintaining oral health of pregnant women is more in the good category. Meanwhile, at the old age of pregnancy, oral health maintenance of pregnant women is more in the good category as well.

In the lack and good categories of knowledge have good oral health maintenance of pregnant women. In the attitude factor of pregnant women, both positive and negative, the maintenance of oral health for pregnant women is more in the good category than in the poor category.

Likewise, the behaviour factors followed by pregnant women, both in the not suitable and suitable categories, maintenance of oral health for pregnant women was more in the good category than in the poor category.

Table 6: Result of the Logistics Regression Test on Factors Influencing to Oral Health Maintenance of Pregnant Women in the ANC Program

Variable	Regression Coefficient	P-value	Odds Ratio
Gestational age	0,102	0,785	1.108
Knowledge	-0,186	0,659	0,831
Attitude	-0,59	0,892	0.943
Behaviour	1,633	0,005*	5.119

*p-value \leq 0,005

According to table 6, it is known that behaviour has significant relation with oral health maintenance of pregnant women in the ANC program. Behaviour has positive correlation and strong correlation strength (1.633). Pregnant women who have not suitable behaviour towards oral health will have 5 times risk of poor oral health maintenance than pregnant women with suitable behaviour.

Discussion

Maintenance of good oral health for pregnant women greatly supports the realization of overall pregnancy health, including the health of the fetus. Pregnant women must realize the importance of maintaining oral health during pregnancy for themselves and the fetus they are carrying so that they can avoid oral diseases that can affect pregnancy. During pregnancy, women experience various physiological changes that cause hormonal changes. Increased secretion of this hormone will increase the gingival response to plaque bacteria, so that pregnant women are more susceptible to problems in the oral cavity. Physiological changes have an impact on behavioural changes to maintain dental and oral health, so that pregnant women are more susceptible to dental and oral problems^[5].

Maintenance of oral health that can be done by pregnant women during pregnancy includes gargling immediately after vomiting, brushing teeth, checking and caring for teeth and maintaining oral health by consuming nutritious foods. The results of the study revealed that it is known that most pregnant women do dental checks during pregnancy, brush their teeth, and consume good food for the mother and fetus. However, there are still a large proportion of pregnant women who do not perform dental care during pregnancy and there are pregnant women who do not rinse their mouth after vomiting, making efforts to reduce nausea.

According to Veriza and Riyadi in 2018^[6], knowledge and attitudes of mothers are related to the maintenance of oral health of pregnant women. Based on the results of the study, it is known that most of the knowledge of pregnant women about maintaining oral health during pregnancy is in the good category. Pregnant women already have knowledge about oral health maintenance, including brushing teeth, examination and dental care during pregnancy. Pregnant women are aware of measures to reduce nausea. Knowledge related to good nutrition for teeth and fetus during pregnancy is also widely known by pregnant women^[5, 6].

Attitude is a person's closed reaction to external stimuli that have not been seen in real terms. Attitudes are reflected in statements of liking or disliking, agreeing or disagreeing with a situation. Most pregnant women have a positive attitude regarding the maintenance of oral health during pregnancy. Most pregnant women have a positive attitude towards ways of maintaining oral health during pregnancy. The results of this study are the same as the research conducted by Veriza and Riyadi (2018)^[6] which showed that pregnant women had good knowledge and good attitudes in maintaining oral health^[6]. Likewise, research conducted by Marwiyah and Dahlia in 2018^[7] found that knowledge and attitudes have influence on the behaviour of maintaining oral health in pregnant women^[7].

Factors related to ANC include: knowledge, behaviour, the role of health workers. The behaviour of pregnant women is still influenced by the habits and cultural backgrounds that are passed down from generation to generation where they live will affect pregnant women in maintaining oral health. Based on the results of the study, it is known that pregnant women have a good behaviour in maintaining oral health during pregnancy. Pregnant women perform dental check-ups and dental care during pregnancy in each trimester. The role of good health workers will affect the behaviour of pregnant women in carrying out examinations during their pregnancy. Although knowledge, attitudes, behaviour, and oral health maintenance of pregnant women are quite good, based

on the results of the study, it is known that only cultural factors are related to the maintenance of maternal oral health during pregnancy. This situation may be caused by the Antenatal Care (ANC) program always directs pregnant women to always check the condition of their teeth and mouth during pregnancy check-ups. Although the knowledge and attitudes of pregnant women regarding oral health maintenance is good, it is not enough to become an internal motivation. The behaviour of dental examination and care during pregnancy may arise because of the efforts of health workers as external factors that can motivate pregnant women to visit the dental clinic as part of the integrated ANC program^[8].

Conclusion

The relationship between maintenance of dental and oral health during pregnancy in terms of gestational age, knowledge, attitude and behaviour, there is a relationship only on behaviour factors.

References

1. Hartati Rusmini, Bambang Try Waluyo BT. Analisis Faktor-Faktor Yang Berhubungan Dengan kejadian Gingivitis Pada Ibu Hamil Di Wilayah Kerja Puskesmas Talang Tegal. *Jurnal Ilmiah Kesehatan Keperawatan*, 2011, 7(3).
2. Yuniastuti A, Handayani S. Hubungan Frekuensi Dan Ketepatan Cara Sikat Gigi Dengan Gingivitis Ibu Hamil. *Jurnal Kebidanan STIKES Estu Utomo*, 2018, 10(1).
3. Pradnyanaputri KE, Kusumadewi S, Susanti DNA. Prevalensi Gingivitis Pada Ibu Hamil Berdasarkan Usia Kehamilan, Pekerjaan, Dan Pendidikan Di Rsud Klungkung Tahun 2017. *ODONTO Dental Journa*, 2017, 5(2).
4. Suwargiani AN, Pribadi IMS, Hidayat W, Wardani R, Arufan T, Jasrin Zubaedah C. Pengalaman Karies Dan Kesehatan Periodontal Serta Kebutuhan Perawatan Ibu Hamil. *Jurnal Kedokteran Gigi Universitas Padjajaran*, 2018, 30(1).
5. Hamzah M, Bany ZU, Sunnati. Hubungan Tingkat Pengetahuan Pemeliharaan Kesehatan Gigi dan Mulut dengan Kebersihan Rongga Mulut pada Ibu Hamil di RSUD Meuraxa Banda Aceh. *Journal Caninus Denstistry*, 2016, 1(4).
6. Veriza E, Riyadi S. Hubungan Pengetahuan Dan Sikap Dengan Motivasi Ibu Hamil Tentang Pemeliharaan Kesehatan Gigi Dan Mulut Di Puskesmas Putri Ayu Kota Jambi. *Jurnal Bahan Kesehatan Masyarakat*, 2018, 2(1).
7. Marwiyah N, Dahlia. Faktor-Faktor Yang Mempengaruhi Perilaku Pemeliharaan Kesehatan Gigi Dan Mulut Pada Ibu Hamil Di Poli KIA UPTD Puskesmas Citangkil Kota Cilegon, *Jurnal Kesehatan*, 2018, 7(1).
8. Ira Sabilu Y, Rasma. Pemanfaatan Antenatal Care (Anc) Oleh Ibu Hamil Pada Masyarakat Desa Mokupa Kecamatan Lambandia Kabupaten Kolaka Timur Tahun JIMKESMAS, 2015:1(3):2016.