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The Oral Health Knowledge and Self-care Practices of Pregnant Women in Saudi Arabia

Salma Moawed[1], Amany S. Badawy[2,3,*], Samar Alotaibi[3], Maha Alrowily[4]

[1]Department of Maternity & Child health Nursing, College of Nursing, King Saud University, KSA
[2]Maternal and Newborn Health Nursing, College of Nursing, Zagazig University, Egypt
[3]Maternal and Newborn Health Nursing, College of Nursing King Saud University, KSA
[4]Maternity and Gyn. Nursing, College of Nursing, King Saud University, KSA
*Corresponding author: dramanys@hotmail.com

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Abstract **Background.** Pregnancy is a unique time in a woman's life and is characterized by complex physiological changes. These changes can adversely affect oral health. Oral health is a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, periodontal (gum) disease, tooth decay and tooth loss, and other diseases, and disorders that affect the oral cavity. Risk factors for oral diseases include unhealthy diet, tobacco use, harmful alcohol use, and poor oral hygiene (WHO). Multiple studies have shown an association between periodontal infection and adverse pregnancy outcomes, such as premature delivery and low birth weight. **Aim of this study** assess women's knowledge towards oral and dental health during pregnancy and to examine their self-care practices in relation to oral and dental health. **Methodology** The research will be conducted at randomly governmental primary health care centers and schools in Riyadh (Dawadmi region). A Quantitative Descriptive cross-sectional study was carried out. two-hundred Saudi pregnant women selected randomly. Women who gave informed consent were asked to complete a self-administered questionnaire and return it to the researcher A Structured questionnaire will be developed consisted of three parts, Demographic characteristics part, level of women`s Knowledge regarding oral health part & Self-care practice regard oral health care. **Results, Conclusion & Recommendation**. Age of participant women's between 28 – 38 years (43.2%). Most of the participants had number of pregnancies between 4-6 (38.5 %). Regarding the level of knowledge about oral health, this study showed that 45% of mother had poor knowledge, and there is a significant relationship between the level of practice and the educational, professional status and attendance to antenatal clinic, which was started by 65% of the sample on time, however, they did not visit the dentist. This study recommends that the implementation of oral health programs in prenatal services is essential to delivery of dental care and decreasing the potential oral problems among pregnant women, as well as conducting careful screening of oral risks, and assisting women in obtaining regular dental care.

Keywords*: oral health, knowledge, self-care practice, pregnant women*

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1. Introduction

Oral health is a state of being free from a chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss, and other diseases and disorders that affect the oral cavity. Risk factors for oral diseases include unhealthy diet, tobacco use, harmful alcohol use, and poor oral hygiene [1] Women need to be aware of the importance of oral health care during and after pregnancy for themselves as well as their children. Early education programs aimed at pregnant women can help to prevent oral diseases in both mother and infant. Dental professionals can play an important role in assuring the well-being of women during their pregnancies by promoting and maintaining their oral health [1,2].

Studies have confirmed the safety and effectiveness of providing oral health care during pregnancy. Pregnancy by itself is not a reason to defer routine dental care and necessary treatment for oral health problems. Diagnosis and treatment, including dental X-rays, can be undertaken safely during the first trimester of pregnancy. Treatment can be provided throughout pregnancy; however, the time period between the 14th and 20th week is considered ideal**.** [3].

Periodontal diseases produce a wide range of clinical signs and symptoms such as tooth loss, altered appearance, pain, bleeding, bad breath and impaired quality of life [4,5,6]. Loss of posterior occluding supports has been associated with impaired chewing efficiency and inadequate nutrition [7] which may result in the loss of important

nutrients due to over preparation of food in order it easier to eat. Inadequate nutrition during pregnancy may lead to poor fetal growth and possibly interfere with kidney development which in turn leads to raised blood pressure in adulthood. Other changes associated with pregnancy include chloasma, facial telangiectasia, sialorrhea, tooth surface loss usually related to vomiting when severe (hyperemesis gravidarum), increased mobility of teeth and oral aphthate [8,9,10].

Morning sickness is a common problem which is encountered by women, early in their pregnancies. The gastric acids which are present in the emesis, erode the enamel on the inner surface of the teeth, most commonly the front teeth [11]. This is a concern only in the cases with frequent vomiting, for example, in bulimics and in patients with hyperemesis gravidum. Erosion of the enamel can easily be controlled by advising the patients to rinse their mouths thoroughly after vomiting, with a solution that contains sodium bicarbonate. Sodium bicarbonate neutralizes the acids and it prevents the damage which is caused by the residue which remains on the teeth. Erosion of the teeth which are on the lingual and palatal surfaces of the incisors was mentioned in a case report, but as per our knowledge, there is no clinical study which is available to support this finding [12,13,14].

Checking the salivary estrogen level has been suggested as a screening test to detect the risk potential for preterm labor. The recent studies have suggested a link between periodontal disease and preterm low birth weight. The periodontal disease seemed to be independent of good oral hygiene and a periodontal treatment [15,16].

The opinions of nursing practitioners and certified nurse midwives on oral health care for pregnant women were also sought by the North Carolina research group. Among 219 nurses, 86% reported referring patients for dental health screening; many showed equivocal information regarding the more favorable prenatal trimester to initiate dental treatment but admitted the need to collaborate with dental professionals to reduce risks during pregnancy [4].

1.1. Aim of the Study

Assess women's knowledge towards oral and dental health during pregnancy and to examine their self-care practices in relation to oral and dental health.

1.2. Research Questions

1. How knowledgeable are Saudi pregnant women about oral health care?
2. What are the oral hygiene habits and practices of Saudi pregnant women in Riyadh?

1.3. Study Methodology

1.3.1. Research Design

A Quantitative descriptive cross-sectional study was carried out.

1.3.2. Setting

The research was conducted at randomly selected governmental primary health care centers and schools in Riyadh and Dawadmi region.

1.3.3. Sampling

Sample type:
Multi stage random sample.
Sample Size:
200 pregnant women
Sample Criteria:
Inclusion criteria:
1. Saudi women.
2. All pregnancy periods.

Exclusion criteria:
1. Mothers with diabetic.
2. Non- Saudi

1.4. Tools of Data Collection

A Structured questionnaire will be developed by the researcher to collect data after the review of literature. It consists of 3 parts: **Part One** will cover the demographic characteristics such as: age, marital status, number of children, level of education, parent level of education, Ideal number of children desired **Part two** will cover the: level of women`s Knowledge regarding oral health knowledge close-ended questions. **Part three** will cover the Self-care practice regard oral health care.

1.5. Testing instrument

a. **Pilot study:** will be carried out on 7 participants to evaluate the validity of the tool, which will be used in this study for data collecting and accordingly necessary modification will be done. The participants who will be tested as pilot study will be excluded from the study sample.
b. **Expert Evaluation:** content validity of the questionnaire will be tested through review by 5 experts from the same field in order to prove the relevancy of questionnaire statement to the study objectives.

2. Results

Table 1. Distribution of the Saudi pregnant women according to their socio-demographic characteristic (n=200)

Parameter	Frequency	Percent %
Age		
17-27	36	18.1
28-38	86	43.2
39-49	77	38.7
Educational level		
primary-secondary	6	3.0
intermediate	15	7.5
secondary	49	24.6
academic	129	64.8
Professional status		
Employee	142	71.7
housewife	56	28.3
Income status		
less than 5000 SR	36	18.3
5000 to 10000 SR	83	42.1
10000 and more SR	78	39.6
The number of family members		
1-3	22	11.3
4-7	117	60.3
8-10	43	22.2
11-15	12	6.2

Table 1 shows the socio-demographic characteristics of the participants. Most participants, 86 (43.2%), were aged between 28-38 years old participant and most of them from university-level education were 64.8%. About 71.7 of participants were employed the participants were asked to rate their family income was less than 5000, from 5000-10000, from 10000 and more about (42.1) their family income from 5000 to 10000, (39.6) considered their income from 10000 and more, (18.3) considered their income less than 5000. Majority of participant s (60.3) have number of family from 4-7, (22.2) of participant have number of family from 8 -10.

Table 2. Distribution of the Saudi pregnant women according to their obstetrical history: (n=200)

Parameter	Frequency	Percent %
Number of pregnancies		
1-3	71	36.4
4-6	75	38.5
7-9	36	18.5
10-13	13	6.7
numbers of deliveries		
1-3	78	39.8
4-6	83	42.3
7-9	25	12.8
10-13	10	5.1
number of abortion		
Once	51	47.2
Twice	15	13.9
three times	10	9.3
Others	32	29.6
The number of living children		
1-3	74	40.2
4-6	79	42.9
7-9	23	12.5
10-13	8	4.3
do you go for antenatal care clinic		
Yes	174	88.8
No	22	11.2
The month go to care for pregnancy		
first 3 months of pregnancy	114	61.6
mid 3 months of pregnancy	33	17.8
last 3 months of pregnancy	38	20.5

Table 2 shows the obstetrics characteristics of the participants. Most of participants had number of pregnancies between 4-6 they were 75 (38.5). About (42.3) considered their number of deliveries from 4 to 6, the majority of participants, (47.2) had once previous abortion, (40.2) considered the number of living children from 1- 3 whilst (42.9) the number of their children from 4 to 6). Most of the participants, 174 (88.8%), were go to antenatal care clinic and the month they go to the antenatal care in the first 3 months of pregnancy they were 114 (61.6).

Table 3 show the chronic disease and past surgical history of participants A majority of participants (83.3) were didn't complained from chronic diseases whilst (16.7) participants complained from chronic diseases, about (50.0) were complained from hypertension, (10.0) were complained from Gingivitis (5.0) were complained from Asthma. The Majority of the participants, (63.1) answered with a "no" about past surgical history, (52.3) of participants have cesarean sections.

Table 3. Distribution of the Saudi pregnant women according to their chronic disease and past surgical history (n=200)

Parameter	Frequency	Percent %
Do you suffer from chronic diseases		
• Yes	33	16.7
• No	165	83.3
if yes, indicate the disease		
• Asthma	1	5.0
• Colon	1	5.0
• Gingivitis	2	10.0
• Hypertension	10	50.0
• Hypertension and hypothyroidism	1	5.0
• Hypothyroidism	4	20.0
• Sinusitis	1	5.0
Have you ever did surgery		
• Yes	73	36.9
• No	125	63.1
if yes specify		
• Adenoids	1	1.5
• Appendix	5	7.7
• Caesarean section	34	52.3
• Caesarean section and Gallstones	2	3.1
• Dilation and curettage	5	7.7
• Gallstones	9	13.8
• Heart surgery	1	1.5
• Hernia	4	6.2
• Myopia	1	1.5
• Sebaceous cyst	3	4.6

Table 4. Distribution of the Saudi pregnant women according to their general knowledge about oral health (n=200)

Question (knowledge)	Yes		No		I don't know	
	No	%	No	%	No	%
1-pregnant women are faced with a new situation from all areas; health, psychological and hormonal which affects the health of the mouth and teeth	150	75.8	21	10.6	27	13.6
2-the importance of oral and dental care begins before pregnancy to reduce dental problems during pregnancy	155	77.9	15	7.5	29	14.6
3-Gum disease in pregnant women more than non-pregnant women	136	68.0	23	11.5	41	20.5
4-change in the hormones during pregnancy have negative effect on the gum	120	60.0	27	13.5	53	26.5
5-Vomiting with nausea in the first months contain acids damage the outer layer of the teeth	85	42.5	30	15.0	85	42.5
6-pregnant women can visit the dentist for treatment and advice if necessary	161	80.9	14	7.0	24	12.1
7-pregnant diet affects baby's teeth are healthy since are baby teeth beginning the fourth month	115	59.9	10	5.2	67	34.9
8-calcium deficiency during pregnancy causes necrosis in teeth	155	77.9	7	3.5	37	18.6
9-during your pregnancy you experienced caries and periodontitis	84	42.4	114	57.6	0	0.0
10-do you have children who have dental problems	78	40.0	117	60.0	0	0.0

Table 5. Distribution of the Saudi pregnant women according to their general Self-care practice about oral health (n= 200)

Question (Self-Care Practice)	Yes		No		I don't know	
	No	%	No	%	No	%
1-Brushing teeth after vomiting directly harmful to teeth	49	24.5	87	43.5	64	32.0
2-Suck some candy to reduce nausea associated with pregnancy during the first months causing dental caries and gingivitis	88	44.9	42	21.4	66	33.7
3-do you have a toothbrush at home to clean teeth	194	97.0	6	3.0	0	0.0
4-do you have a mistake at home to clean teeth	123	61.8	76	38.2	0	0.0
5-clean teeth daily brushing and toothpaste from important things to pregnant	167	83.5	16	8.0	17	8.5
6-flossing is important for maintaining oral hygiene and dental health	136	68.3	19	9.5	44	22.1
7-pregnant women can use mouth wash for mouth and health and protection from lime	122	61.3	20	10.1	57	28.6
8-Eat a balanced diet of bread, cereals, fruit and vegetables, meat, fish and milk and the milk was important for strengthening and protecting the teeth from decay	170	85.4	10	5.0	19	9.5
9-frequent snacks containing carbohydrates and sugars increase the likelihood of tooth decay	145	72.5	31	15.5	24	12.0
10-do you use herbal medicines to cure the problem of your teeth during pregnancy	24	12.1	174	87.9	0	0.0
11-Have you ever gone to dental clinic during pregnancy	69	34.8	129	65.2	0	0.0
12-is dental fillings during pregnancy	43	21.8	154	78.2	0	0.0
13-is remove -one of the teeth during pregnancy	18	9.2	178	90.8	0	0.0

Table 4 summarizes the participant's response to the degree of knowledge for pregnant women category which includes ten items. The first item was 75.8 % whom have knowledge and 24.8% whom have not knowledge. The second item was 77.9% whom have knowledge and 22.1% whom have not knowledge. The third item was 68 % whom have knowledge and 32 % whom have not knowledge. The fourth item was 60 % whom have knowledge and 40 % whom have not knowledge. The fifth item was 42.5 % whom have knowledge and 57.5 % whom have not knowledge. The sixth item was 80.9 % whom have knowledge and 19.1 % whom have not knowledge. The seventh item was 59.9 % whom have knowledge and 40.1 % whom have not knowledge. The eighth item was 77.9 % whom have knowledge and 22.1% whom have not knowledge. The ninth item was 42.4 % whom have knowledge and 57.6 % whom have not knowledge. The tenth item was 40 % whom have knowledge and 60 % whom have not knowledge.

This table summarizes the participant's response of degree of Practice for pregnant women category which includes ten items. The first item was 24.5 % whom have known and doing this Practice and 75.5% whom have not known and didn't doing. The second item was 44.9% whom have Practice and 55.1% whom have not Practice. The third item was 97 % whom have Practice and 3% whom have not Practice. The fourth item was 61.8 % whom have Practice and 38.2% whom have not Practice. The fifth item was 83.5 % whom have Practice and 16.5% whom have not Practice. The sixth item was 68.3 % whom have Practice and 31.7 % whom have not Practice. The seventh item was 61.3 % whom have Practice and 38.7 % whom have not Practice. The eighth item was 85.4 % whom have Practice and 14.6 % whom have not Practice. The ninth item was 72.5 % whom have Practice and 27.5% whom have not Practice. The tenth item was 12.1% whom have Practice and 87.9 % whom have not Practice. The eleventh item was 34.8 % whom have Practice and 65.2 % whom have not Practice. The twelfth item was 21.8 % whom have Practice and 78.2 % whom have not Practice. The thirteenth item was 9.2 % whom have Practice and 90.8 % whom have not Practice (Table 5).

Presents table shows the association between sociodemographic data and knowledge of pregnant women. A chi-square test was used to test the association of pregnant women knowledge with age and educational level A statistical significant was observed (x^2= 0.072, 0.021) respectively. No significant was observed between Professional status and degree of knowledge of pregnant women ($x^2 = 0.515, p = 0.773$). Also, no significant between level of knowledge and family income status ($x^2 = 5.448, p = 0.244$) (Table 6).

Regarding the association between obstetric history and degree of knowledge of pregnant women. A chi-square test was used. A statistically significant was observed between level of knowledge and go to antenatal care clinic ($x^2 = 5.185, p = 0.075$) on the other hand no significant was observed between level of knowledge and numbers of pregnancies, Numbers of deliveries, number of abortion & The number of living children (Table 7).

Table 8 represent the association between socio-demographic data and degree of self-care Practice of pregnant women. A chi-square test used, no significantly was observed between age, family income and number of family (X^2= 0.456, 0.257 & 0.298) respectively. The variable of educational level ($x^2 = 15.5, p = 0.017$) was significantly associated with level of self-care Practice of pregnant women. A statistical significantly was observed between Professional status and degree of self-care Practice of pregnant women. ($x^2 = 6.11, p = 0.047$)

Presents Table 9 represent the association between Number of pregnancies and degree of self-care Practice of pregnant women. Not significant observed between The of Number of pregnancies and number of deliveries ($x^2 = 10.42, p = 0.108$) ($x^2 = 7.195, p = 0.303$) respectively. A chi-square test was used to test was used to test the association of pregnant women self-care Practice level

with antenatal care clinic. The variable of antenatal care clinic ($x^2 = 16.47, p = 0.00$) was significantly associated with level of Practice of pregnant women. A significant statistical was observed in the association between the months go to care for pregnancy and degree of self-care Practice of pregnant women. ($x^2 = 14.815, p = 0.005$).

Table 6. Relationship between level of knowledge and Socio-demographic data

Items	level of knowledge			Total	X^2	*P*
	Excellent	very good	Poor			
Age (years)						
• 17-27	4	15	17	36	8.609	0.072
• 28-38	6	49	31	86		
• 39-49	5	28	44	77		
Total	15	92	92	199		
Educational Level						
• primary-secondary	1	0	5	6	14.916	0.021*
• intermediate	0	3	12	15		
• Secondary	2	25	22	49		
• Academic	12	64	53	129		
Total	15	92	92	199		
Professional status						
• Employee	11	68	63	142	0.515	0.773
• Housewife	4	24	28	56		
Total	15	92	91	198		
income status						
• less than 5000	1	15	20	36	5.448	0.244
• 5000 to 10000	10	37	36	83		
• 10000 and more	4	40	34	78		
Total	15	92	90	197		
The number of family members						
• 1-3	3	7	12	22	8.388	0.211
• 4-7	10	59	48	117		
• 8-10	2	21	20	43		
• 11-15	0	3	9	12		
Total	15	90	89	194		

*Significant level at 0.05.

Table 7. Relationship between Level of knowledge and obstetrical history

items	level of knowledge			Total	X^2	P
	Excellent	very good	Poor			
Number of pregnancies						
1-3	7	33	31	71	**8.115**	**0.23**
4-6	5	41	29	75		
7-9	3	15	18	36		
10-13	0	3	10	13		
Total	**15**	**92**	**88**	**195**		
Numbers of deliveries						
1-3	7	38	33	78	**4.779**	**0.572**
4-6	7	41	35	83		
7-9	1	10	14	25		
10-13	0	3	7	10		
Total	**15**	**92**	**89**	**196**		
The number of living children						
1-3	7	36	31	74	**5.083**	**0.533**
4-6	7	41	31	79		
7-9	1	10	12	23		
10-13	0	2	6	8		
Total	**15**	**89**	**80**	**184**		
Number of abortion						
once	1	23	27	51	**3.919**	**0.688**
twice	1	8	6	15		
three times	0	4	6	10		
others	3	13	16	32		
Total	**5**	**48**	**55**	**108**		
Do you go for antenatal care clinic						
Yes	14	86	74	174	**5.185**	**0.075**
No	1	6	15	22		
Total	**15**	**92**	**89**	**196**		
The month go to care for pregnancy						
in the first 3 months of pregnancy	10	61	43	114	**5.317**	**0.256**
in the mid 3 months of pregnancy	1	13	19	33		
in the last 3 months of pregnancy	3	16	19	38		
Total	**14**	**90**	**81**	**185**		

Table 8. Relationship between level of Self-care Practice and Socio-demographic Data of pregnant women

Items	Level of self-care Practice			Total	X^2	P
	Excellent	very good	Poor			
Age (years)						
17-27	3	19	14	36	**3.641**	**0.456**
28-38	12	52	22	86		
39-49	6	45	26	77		
Total	**21**	**116**	**62**	**199**		
Educational level						
primary-secondary	1	5	0	6	**15.5**	**0.017***
intermediate	0	6	9	15		
secondary	3	25	21	49		
University	17	80	32	129		
Total	21	116	62	199		
Professional status						
Employee	19	84	39	142	**6.11**	**0.047***
Housewife	2	31	23	56		
Total	21	115	62	198		
Income status						
less than 5000 SR	1	19	16	36	**5.314**	**0.257**
5000 to 10000 SR	10	48	25	83		
10000 and more SR	10	47	21	78		
Total	**21**	**114**	**62**	**197**		
The number of family members						
1-3	2	12	8	22	**7.257**	**0.298**
4-7	14	68	35	117		
8-10	4	30	9	43		
11-15	1	4	7	12		
Total	**21**	**114**	**59**	**194**		

*Significant level at 0.05.

Table 9. Relationship between Level of Self-care Practice and obstetrical history

Items	level of Practice			Total	X^2	P
	Excellent	very good	Poor			
Number of pregnancies						
• 1-3	6	44	21	71	**10.42**	**0.108**
• 4-6	13	39	23	75		
• 7-9	0	25	11	36		
• 10-13	1	6	6	13		
Total	**20**	**114**	**61**	**195**		
Numbers of deliveries						
• 1-3	8	48	22	78	**7.19**	**0.303**
• 4-6	12	44	27	83		
• 7-9	0	18	7	25		
• 10-13	1	4	5	10		
Total	**21**	**114**	**61**	**196**		
The number of living children						
• 1-3	7	46	21	74	**9.59**	**0.143**
• 4-6	11	42	26	79		
• 7-9	1	18	4	23		
• 10-13	1	2	5	8		
Total	**20**	**108**	**56**	**184**		
Number of abortion						
• Once	8	26	17	51	**6.53**	**0.366**
• Twice	3	6	6	15		
• three times	0	7	3	10		
• others	1	19	12	32		
Total	**12**	**58**	**38**	**108**		
Do you go for antenatal care clinic						
• Yes	20	109	45	174	**16.47**	**0.001****
• No	1	6	15	22		
Total	21	115	60	196		
The month go to care for pregnancy						
• in the first 3 months of pregnancy	16	76	22	114	**14.81**	**0.005****
• in the mid 3 months of pregnancy	3	16	14	33		
• in the last 3 months of pregnancy	2	18	18	38		
Total	**21**	**110**	**54**	**185**		

*Significant level 0.05 ** High significant level 0.001.

Table 10. Correlation between level of Knowledge and level of Self-care practice

		Self-care Practice						Total		Spearman Correlation	*P*
		Excellent		very good		Poor					
		No	%	No	%	No	%	No	%		
knowledge	Excellent	3	1.5	12	6.0	0	0.0	15	7.5	0.414	0.001*
	very good	14	7.0	64	32.0	15	7.5	93	46.5		
	Poor	4	2.0	41	20.5	47	23.5	92	46.0		
Total		**21**	**10.5**	**117**	**58.5**	**62**	**31.0**	**200**	**100.0**		

* High significant level 0.001.

There is highly significant correlation (Spearman Correlation =0.414, p-value=0.001). They are strong. Positive correlation between knowledge and practice (Table 10)

3. Discussion

Good oral health during pregnancy can not only improve the health of the pregnant mother but also potentially the health of the child. The present study aims to assess the knowledge and Self-care practice toward oral health during pregnancy among Saudi women.

The majority of women in this study between 28-38 years old with university degree educational level About 38.5% of the sample pregnant for 4-6 months and those people need more health education about calcium and vitamin D deficiency and this reflects that the Saudi women like to pregnant for several time, as a maternal nurse must put more attention for these women.

Related to the degree of knowledge about oral health this study shows about 45% of participants have poor knowledge in state of income state very good and the mother attends in early prenatal care, still this of women high risk group. Study of [16], found that 43% of women surveyed reported having heard about the possible connection between health in pregnancy and oral health and 39% thought that tooth and gum problems could affect outcomes of pregnancy.

On other study have shown periodontal disease to be significant risk factor for pregnancy outcomes as preterm low birth weight [19,25,26]. In other study mothers were not certain about this relationship, therapy indicating that pregnant women require education on oral health maintenance and the link between oral health of the mother and overall health of the newborn (Turkish Women's self-reported knowledge and behavior towards oral health during pregnancy).

Another finding of this analysis, about (75.5) didn't know about the harmful of brushing the teeth directly after vomiting. The majority of the pregnant women in this study (97 %) they have toothbrush and about (61.8) they have mistaken. The finding of the present study was (31.7) they didn't use flossing on oral health practice However, there were a few questions on basic oral health that Saudi women missed as the majority of women did not know what plaque was and that the best time to floss is before brushing. This indicates that women were not aware of certain oral health practices that may help reduce periodontal disease, a finding that is also supported by previous studies. This shows that in three different populations, women's oral health knowledge, although adequate in most areas, can use some improvement. This is important information that dentists should know as it may have implications on the information they give women. Furthermore, these women will soon be mothers, who will influence their children's oral health. Although this study was not focused on children's oral health, this issue is one that future research can further explore [4,8,17,18].

According to study among Turkish women's toward oral health during pregnancy, many women do not seek dental care during their pregnancy, and those who do often confront unwillingness by dentists to provide care [19,20,21].

In this study, some of the important knowledge found to be poor among the pregnant women, Like Vomiting with nausea in the first months contain acids damage the outer layer of the teeth while (57.5%) they didn't know. Nausea and vomiting during pregnancy cause extensive erosion of the tooth surface leading to deteriorating oral health status which has been associated with adverse pregnancy outcomes such as pre-term births, development of pre-eclampsia and delivery of a "small-for-gestational-age" infant. It is imperative however; that management of nausea and vomiting should involve measures targeted at reducing the effects of the hydrochloric acid content of gastric juice on the teeth as well as improve oral hygiene practices to prevent poor oral health [22,23,24].

In the present study there was a significant relationship between the level of self-care practice about oral health during pregnancy and level of knowledge, the majority of women did not know what plaque was and that the best time to floss is before brushing. This indicates that women were not aware of certain oral health practices that may help reduce periodontal disease, a finding that is also supported by previous studies [27,28]. This represent that three different populations, women's oral health knowledge, although adequate in most areas, can use some improvement. This is important information that dentists should know as it may have implications on the information they give women. Furthermore, these women will soon be mothers, who will influence their children's oral health. Although this study was not focused on children's oral health, this issue is one that future research can further explore [1,29,30] Saudi women's knowledge was lacking in certain important areas of oral health Self-care practices specific to pregnancy. For example, most women did not know that pregnancy a reason of why Saudi women were not aware of these pregnancy-specific oral health practices. By not attending dental check-ups, they may be missing out on receiving pertinent information from their dentists. Previous studies have also found that women tend to decrease or stop attending dental

check-ups during their pregnancy. Thus, it is important for dentists and health care practitioners to recognize that even women with dental insurance and regular dental check-up attendance before pregnancy may still need to be encouraged to continue during pregnancy [8,32,33,34].

Previous studies have shown periodontal disease to be a significant risk factor for pregnancy outcomes such as pre –term low birth weight .In the present study, mothers were not certain about this relationship, thereby indicating that pregnant women require education on oral health maintenance and link between oral health of the mother and overall health of the new born [35,36].

According to the association of women's health, Obstetric and neonatal nurses American Academy of Pediatric Dentistry [37], stated most of the mothers do not go for dental care during pregnancy, In addition, only 34% of Medicaid – insured pregnant women see a dentist, whereas 55% of pregnant women with private insurance carriers do. The finding of the present study indicated about (65.2) of pregnant women didn't go to dental clinic during their pregnancy.

The oral health guidelines encourage dentists to provide regular dental care for pregnant women and recommends that prenatal practices initiate oral health programs at time of prenatal visit. They also stress the importance of active communication between dental, prenatal and paediatric care providers for purposes of better risk assessment, referral and intervention [14,38,39,40].

4. Conclusions and Recommendations

Saudi pregnant women, despite having knowledge that adverse pregnancy events related to oral health, didn't seek oral care during pregnancy. We can less likely to have dental problems during pregnancy if you already have good oral hygiene habits. Prenatal care offers one of the best time for addressing oral health in Saudi pregnant women, with each prenatal visit are scheduled. And the visit focus on, oral health care, treatment and education.

5. Recommendations

Developing health education programme should be built in to antenatal care unit, primary health care and hospital. Conduct careful screening of oral risks, and assist women in obtaining regular dental care are essential elements of oral health in prenatal programs.

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