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Original Research Article

Knowledge, attitude and practice of oral healthcare among pregnant women in Assiut, Egypt

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ABSTRACT

Background: Pregnancy is an important time in a woman's life with many complex physiological changes that may occur. These changes may negatively affect their oral health. The study aimed to assess oral health knowledge, attitude and reported practices among pregnant women in Assiut Governorate.
Methods: A descriptive cross-sectional study design was used. A structured interview questionnaire was used; included two tools: Tool (I); part (1) personal data, part (2): assessment of knowledge about oral health, part (3): reported practices of oral health and tool (II): included pregnant women attitude toward oral health.
Results: the study revealed that: 79.7% of the interviewed women were aged ≤30 years, 82.5% of them were from rural area. Illiterate women represented 33.2% of the studied group. 85.5% of the pregnant women were housewives. Positive attitude toward oral hygiene was significantly higher among urban, educated, working and primigravidae (p=0.007, 0.03, <0.0001 and 0.04 respectively). Practices of daily cleaning of the teeth was higher among urban than rural residents (79.7% versus 46.8% respectively), university educated (89.3%) than other groups, and working women than housewives (84.9% versus 47.1%)with statistical significant difference while neither age nor number of pregnancies affected daily teeth cleaning.
Conclusions: Being highly educated, working and of urban residence positively affected both the oral hygiene attitude and practices among interviewed pregnant women.

Keywords: Oral health, Pregnant women, Knowledge, Attitude, Practice

INTRODUCTION

Emphasizing on oral health care during pregnancy has been recognized as an important public health issue worldwide. Many researches and guidelines have been published emphasizing improvement of oral health care during pregnancy.[1]

Hormonal changes in pregnancy such as the increased levels of circulating progesterone combined with neglected oral hygiene tend to increase the incidence of oral diseases like gingivitis and periodontitis which are manifested by redness, edema and higher tendency toward bleeding. Moreover, studies continue to reveal the presence of relationship between periodontitis and adverse pregnancy outcomes. In addition to this, it has been shown that mothers with improper oral health care practices may be at a higher risk of infecting their children by passing cariogenic bacteria through poor feeding practices.[2,3]

Periodontitis is a destructive inflammation of the periodontium affecting approximately around 30% of child bearing age women. The process involves

infiltration of the periodontium with toxin producing bacteria, lead to chronic inflammatory process which results in a breakdown of the periodontium making infected pockets resulting in mobility of the teeth.[4,5] Gingivitis is an inflammation of the soft tissues surrounding a tooth or gingiva not causing loss of periodontal attachment. Pregnancy induced gingivitis may occur without changes in plaque levels, which increases significantly from the first to the third trimester.[6,7]

On the light of many researches; it had been revealed that periodontal diseases during pregnancy are associated with adverse complications such as preeclampsia, low birth weight and prolonged newborn hospitalization in the neonatal intensive care unit. Despite these evidences and the known complications of periodontal infections for mothers and their newborns, this important topic has received less than due attention.[8]

Pregnancy by itself is not an obstacle to postpone 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. The ideal time for treatment can be provided throughout pregnancy between the 14th and 20th weeks. Oral health care in pregnancy is often avoided and misunderstood by physicians, dentists and patients.[4,9]

Many of periodontal disease can be prevented and treated. The achievement of optimal oral health in pregnant women has its own benefits, however in the past it has been hindered by myths inclosing the safety of dental care during pregnancy. Many women fail to understand the importance of oral care in pregnancy while others experience barriers to care. Collection of such data could also be a precious tool for policy makers. The existing data indicate moderate to poor knowledge related to oral health and adverse pregnancy outcomes, poor dental attendance and oral health related practices.[10,11]

Pregnancy is characterized by many interrelated physiological changes, which can adversely affect oral health. Oral health screening is not a routine procedure in many antenatal clinics. A few studies have demonstrated that periodontal disease may be associated with adverse pregnancy outcomes, such as premature birth and low birth weight. However, while oral health is now accepted as an important component of general wellbeing of pregnant women in developed countries it remains an underrated component in developing countries.[12]

Prevention of oral and dental problems and their complications during pregnancy is possible through having pregnant women expressing appropriate knowledge, attitude and practices. This study provides a small insight into the current situation of oral and dental healthcare practices among pregnant women and it will also help in raising awareness about the importance of good oral and dental healthcare during pregnancy. The study aimed to assess the knowledge, attitude and practice of oral health during pregnancy in Assiut district, Egypt.

METHODS

Research design

A descriptive cross-sectional study.

Settings of the study

Assiut Women Health hospital contains one antenatal care clinic which receives pregnant women from all areas in Assiut Governorate. Assiut district contains (29) health care units. The present study was conducted at antenatal care clinics from Assiut Women Health Hospital and one rural health care unit (Al-Moteaa) in Assiut District which was selected by simple random sample.

Sample size calculation

Sample size was calculated using EPI info 7, using expected frequency of good knowledge to be 12% as reported by Ibrahim et al., 2016, confidence level 99%, confidence limit 5%, design effect (1) and clusters (1), the calculated sample size was 278. A Total number of 365 pregnant women were included in the current study.

Sample size equation n= [DEFF*Np(1-p)]/ [($d^2/Z^2_{1-\alpha/2}$*(N-1)+p*(1-p)];Where N=population size, P= Hypothesized% frequency of outcome factor in the population, d= Confidence limits as 5%, *DEFF*= Design effect and Z= standard normal deviation (2.58 at 99% confidence interval).

Sampling technique

Two-phases sampling method was used to select participants:

Phase 1

Simple random sampling method (rounded table) was used to select two out of five days per week used for antenatal clinic in the hospital and health care unit while the rural health unit was providing antenatal care services only one day per week.

Phase 2

Systematic sampling method was used to select the respondents on each selected clinic day. A sampling interval of 3 was obtained.

Using proportionate allocation of respondents, from those 365 pregnant women included in the study, 100 were interviewed at Al-Moteaa rural health care unit and 265

were interviewed from that attending outpatient clinic at Assiut Women Health Hospital.

Tools of the study

Interview questionnaire

The details regarding personal data, knowledge, attitude and reported practices were obtained by using interview questionnaire, which was designed by the researchers after reviewing the related literature; it contains two tools; tool (I) was structured into three parts:

Part (1): It included pregnant women's personal data such as: name; age; educational status; no. of pregnancies; parity...etc. Part (2): It included questions regarding knowledge about oral health such as: causes of dental care; causes of gum diseases; symptoms of gum diseases and food that protect teeth and gums. Part (3): It included questions regarding oral hygiene practices as reported by the pregnant women such as; daily cleaning of the teeth timing of teeth cleaning.

Tool (II): It included oral health care Likert attitude scale which consisted of 12 statements was used to measure pregnant women's attitudes toward oral health

The responses to the 12 statements were based on a three-point Likert Scale (agree, uncertain and disagree). Items were scored (3, 2 and 1) respectively; the score was reversed for negative statements. Total score was calculated which ranged from 12-36, the higher the score, the better the attitude toward oral health

Validity of the tool (II)

Contents of the tool were evaluated by three experts from Community Health Nursing Department, Faculty of Nursing, Assiut University and Gynecological and Obstetrics Medicine Department, Faculty of Medicine, Assiut University; according to their directions and modifications, corrections in the sheet's contents were done.

Study period

Data was collected during the period from January to June 2017.

Ethical considerations

Research proposal was approved from ethical committee in the Faculty of Nursing, Assiut University. There was no risk for study subjects from conducting the research. The study was following common ethical principles in clinical research. Oral consent obtained from the pregnant women who were willing to participate in the study after explaining the nature and purpose of the study. Confidentiality and anonymity was assured. Study subjects had the right to refuse to participate or withdraw from the study without any rationale at any time and study subjects' privacy was considered during data collection.

Statistical analysis

All data processes (entry, cleaning and recoding) were done using Data the Statistical Package for Social Science (SPSS Inc., Chicago, IL, USA) version 20.

Statistical analysis on data was done using:

- Univariate descriptive analysis: frequency and percentage for qualitative variables, mean ± SD for quantitative variables.
- Bivariate analysis using:
  - Pearson's X^2 test was used to test the difference between frequencies of qualitative data.
  - Student t test /one-way ANOVA was used to compare the mean different groups.
- Statistical significance was considered when $p<0.05$ in all tests.

RESULTS

Table 1 reveals that most of the interviewed pregnant women (79.7%) aged ≤30 years with a mean age 26.6±5.5 year. Rural residents represented 82.5% of the study group and 33.2% were illiterate. Most of the pregnant women (85.5%) were housewives. Only 7.7% of them got pregnant for more than 3 times. Table 2 shows that regarding knowledge about causes of dental/gum problems, bad dental hygiene, eating much sweets and pregnancy hormones were mentioned by 52.3%, 34.8% and 8.8% respectively while 41.6% didn't know about causes. As regards symptoms of dental/gum diseases, pain was the most commonly mentioned symptom (63.0%). In referral to foods that protect against dental/gum diseases, 53.7% reported that they know regarding the types of foods. Of those, 47.5%, 36.7%, 6.1% mentioned vitamin D, C and A rich foods respectively. As regards the importance of teeth cleaning, just less than half of women (47.4%) did not know about the importance of teeth cleaning and the same percent were not aware by the suitable time for dental follow up during pregnancy.

Figure 1 shows the sources of knowledge as mentioned by the pregnant women; media represented the highest percent (65.3%) followed by physicians (53.1%), dentists (29.0%) and family member (17.20%). Table 3 shows that agreement of the females about true statements related to oral health ranged from 65.2% to 96.7% while disagreement with false believes ranged from 15.3% to 56.2%. Table 4 shows that the mean score of attitude toward oral health was significantly higher among urban residents, university educated, working women and primigravidae.

Table 1: Personal characteristics of the interviewed pregnant women.

Criteria	No. (n=365)	%
Age group (years)		
≤30	291	79.7
>30	74	20.3
Mean±SD	26.6±5.5	
Residence:		
- Rural	301	82.5
- Urban	64	17.5
Educational level:		
-Illiterate	121	33.2
-Basic education	63	17.3
-Secondary education	125	34.2
-University education	56	15.3
Occupation:		
-Housewife	312	85.5
-Employee	53	14.5
No. of pregnancies:		
-Primigravida	98	26.8
-2-3 pregnancies	239	65.5
-More than 3 pregnancies	28	7.7

Table 2: Knowledge about oral health among pregnant women.

Items	No. (N=365)	%
(#) **Causes of dental caries / gum diseases:**		
- Don't know	152	41.6
- Bad dental hygiene	191	52.3
- Eating much sweets	127	34.8
- Pregnancy hormones	32	8.8
- Smoking	31	8.5
- Some diseases (e.g. DM)	15	4.1
(#) **Symptoms of gum diseases:**		
- Pain	230	63.0
- Difficult mastication	103	28.2
- Bleeding gums	92	25.2
- Bad mouth odor	57	15.6
- Gum swelling	50	13.7
- Redness in the gum	42	11.5
Food protect against dental and gums diseases:	(No.= 365)	
- Yes	196	53.7
- No	44	12.1
- Don't know	125	34.2
Types of food that protect teeth/gums:	(No.= 196)	
- Vitamin D rich foods (egg, fish)	93	47.5
- Vitamin C rich foods (citrus fruits)	72	36.7
- Vitamin A rich food (carrots, mango)	12	6.1
- Don't know	19	9.7
(#)**Importance of teeth cleaning:**	(No.= 365)	
- Don't know	173	47.4
- Just to have a clean tooth	173	47.4
- Prevent dental cares	150	41.1
- Good odor of the mouth	125	34.3
- Prevent gum diseases	31	8.5

Items	No. (N=365)	%
Most suitable time for dental follow up during pregnancy:	(No.= 365)	
- I don't know	173	47.3
- In early pregnancy	65	17.8
- In mid-pregnancy	52	14.2
- In late pregnancy	75	20.5

(#)More than one answer was allowed

Table 3: Oral health care Likert attitude scale among the pregnant women.

Statements	Agree (%)	Equivocal (%)	Not agree (%)
True believes			
- Regular dental checkup is important even if there wasn't any dental problem.	238 (65.2)	3 (0.8)	124 (34.0)
- Tooth brushing is important for the milky teeth after its appearance.	250 (68.5)	19 (5.2)	96 (26.3)
- Think that dental problems can lead to other health problems.	325 (89.0)	9 (2.5)	31 (8.5)
- Think that it is important to keep the child mouth healthy and clean.	353 (96.7)	3 (0.8)	9 (2.5)
- Regular dental checkup is important for the milky teeth.	239 (65.5)	9 (2.5)	117 (32.1)
False believes			
- Think that the fetus is responsible for teeth loss during pregnancy as he/she absorbs calcium from his mother.	277 (75.9)	20 (5.5)	68 (18.6)
- No relation between oral & dental health of the mother and the child health during and after delivery.	223 (61.1)	41 (11.2)	191 (52.3)
- It is necessary to extract any painful tooth.	163 (44.7)	11 (3.0)	191 (52.3)
- Taking fruits & vegetables has no role in the dental and oral health.	116 (31.8)	44 (12.1)	205 (56.2)
- No need for management of cavities or caries of the child milky teeth if they are not painful.	224 (61.4)	14 (3.8)	127 (34.8)
- It is possible to lose teeth because of pregnancy.	298 (81.6)	11 (3.0)	56 (15.3)
- It is unsafe for the pregnant women to visit the dentist even for regular checkup.	232 (63.6)	20 (5.5)	113 (31.0)
True believes			
- Regular dental checkup is important even if there wasn't any dental problem.	238 (65.2)	3 (0.8)	124 (34.0)
- Tooth brushing is important for the milky teeth after its appearance.	250 (68.5)	19 (5.2)	96 (26.3)
- Think that dental problems can lead to other health problems.	325 (89.0)	9 (2.5)	31 (8.5)
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- It is unsafe for the pregnant women to visit the dentist even for regular checkup.	232 (63.6)	20 (5.5)	113 (31.0)

Table 4: Mean score of attitude of pregnant women toward oral health according to personal characteristics.

Variable	Attitude score	Statistical test	P value
Age group (years)			
- ≤30	24.9±3.9	T= 1.1	0.3
- >30	25.4±4.1		
Residence			
- Rural	24.7±3.9	2.7	0.007
- Urban	26.2±3.8		
Educational level			
- Illiterate	24.6±3.8	F= 3.2	0.03*
- Basic education	25.1±3.9		
- Secondary education	24.7±4.0		
- University education	26.4±4.0		
Occupation			
- Housewife	24.7±3.9	T= 3.5	<0.0001
- Employee	26.7±4.0		
No. of pregnancies			
- Primigravida	25.8±4.0	3.2	0.04*
- 2-3 pregnancies	24.7±3.9		
- More than 3 pregnancies	24.9±3.9		

*Significance was between university education, primigravidae and the other groups as revealed by t test between each two groups.

Table 5: Reported oral health related practices among pregnant women.

Variable	No.	%
Daily cleaning of the teeth	N=365	
- Yes	192	52.6
- No	173	47.4
Visiting the dentist during the last 6 months	N= 365	
- Yes	92	25.2
- No	273	74.8
Causes of the visit	N= 92	
- Painful teeth	49	53.3
- Tooth extraction	18	19.6
- Routine visit	9	9.8
- Dental cares	8	8.7
- Painful gums	8	8.7
Visiting the dentist during the current pregnancy	N = 365	
- Yes	36	9.9
- No	329	90.1
(#) Causes for not going to the dentists during pregnancy	N= 329	
- Dental checkup is not important during pregnancy	248	68.0
- Feeling lazy to go	81	24.6
- High cost	78	23.7
- Far distance	41	12.5
- Feeling fear &irritable	31	9.4

Table 5 shows that more than half of the pregnant women (52.6%) were cleaning their teeth daily. About one quarter (25.2%) of the women visited the dentist during the last 6 months. Of those, only 9.8% of the visits were for routine checkup. Moreover, only 9.9% of the pregnant women visited their dentist during the current pregnancy. More than two thirds of those who didn't visited the dentist (68.0%) considered routine dental checkup is not important during pregnancy.

Figure 2 shows that more than half of the women (51.6%) who practiced teeth cleaning were doing that in the morning while near two fifth of them were cleaning teeth before sleep. Figure 3 shows that the vast majority of women (85.9%) were using tooth brush for teeth cleaning and about one quarter (24.0%) were using mouth wash.

Table 6: Reported teeth daily cleaning practices among the interviewed pregnant women according to their personal characteristics.

Criteria	Daily cleaning of the teeth				X^2	P value
	Yes		No.			
	No. (192)	% (52.6%)	No. (173)	% (47.4%)		
Age group						
- ≤ 30 years	155	53.3%	136	46.7%	0.3	0.6
- > 30 years	37	50.0%	37	50.0%		
Residence						
- Rural	141	46.8%	160	53.2%	22.8	<0.00001*
- Urban	51	79.7%	13	20.3%		
Educational level						
- Illiterate	43	35.5%	78	64.5%	44.4	<0.00001*
- Basic education	33	52.4%	30	47.6%		
- Secondary education	66	52.8%	59	47.2%		
- University education	50	89.3%	6	10.7%		
Occupation						
- Housewife	147	47.1%	165	52.9%	26	<0.00001*
- Employee	45	84.9%	8	15.1%		
No. of pregnancies						
- Primigravida	55	56.1%	43	43.9%	3.7	0.16
- 2-3 pregnancies	127	53.1%	112	46.9%		
- More than 3 pregnancies	10	35.7%	18	64.3%		

* Statistical significant difference

Table 7: No. of teeth cleaning per day among pregnant women according to personal characteristics of pregnant women, Assiut Governorate.

Criteria	No. of teeth cleaning per day (No= 192)						X^2	P value
	Once/day		Twice/day		More than twice			
	No. (81)	% (42.2)	No. (76)	% (39.6)	No. (35)	% (18.2)		
Age groups								
- ≤ 30 years	66	42.6	61	39.4	28	18.1	0.05	0.9
- > 30 years	15	40.5	15	40.5	7	18.9		
Residence								
- Urban	13	25.5	21	41.2	17	33.3	13.3	0.001*
- Rural	68	48.2	55	39.0	18	12.8		
Educational level:								
- Illiterate	23	53.5	16	37.2	4	9.3		
- Basic education	10	30.3	15	45.5	8	24.2		
- Secondary education	30	45.5	24	36.4	12	18.2	6.6	0.4
- University education	18	36.0	21	42.0	11	22.0		
Occupation:								
- Housewife	68	46.3	57	38.8	22	15.0	6.2	0.04*
- Employee	13	28.9	19	42.2	13	28.9		
No. of pregnancies:								
- Primigravida	26	47.3	18	32.7	11	20.0		
- 2-3 pregnancies	53	41.7	52	40.9	22	17.3	3.5	0.5
- More than 3 pregnancies	2	20.0	6	60.0	2	20.0		

* Statistical significant difference.

Table 8: Relationship between number of pregnancies and self-assessment of oral health during the current pregnancy among pregnant women.

Criteria	No. of pregnancies						X^2	P- value
	Primigravida		2-3 pregnancies		More than 3 pregnancies			
Self-assessment of dental health	**No.**	**%**	**No.**	**%**	**No.**	**%**		
- Good	67	68.4	113	47.3	14	50.0	12.5	0.002*
- Bad	31	31.6	126	52.7	14	50.0		
Self-assessment of gum health								
- Good	67	77.6	143	59.8	18	64.3	9.6	0.008*
- Bad	22	22.4	96	40.2	10	35.7		
Presence of unhealthy gum changes during the current pregnancy								
- Yes	24	24.5	101	42.3	10	35.7	9.4	0.009*
- No	74	75.5	138	57.7	18	64.3		

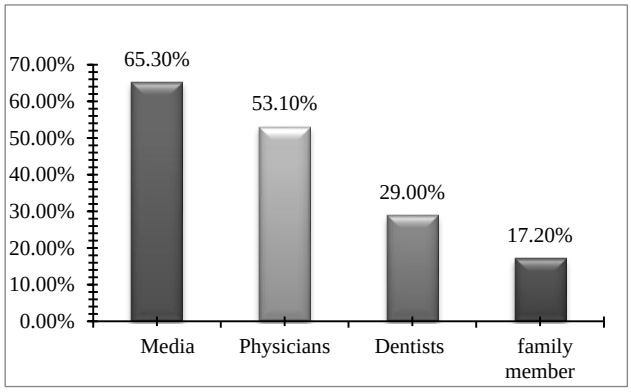

Figure 1: Sources of knowledge about dental health care among pregnant women.

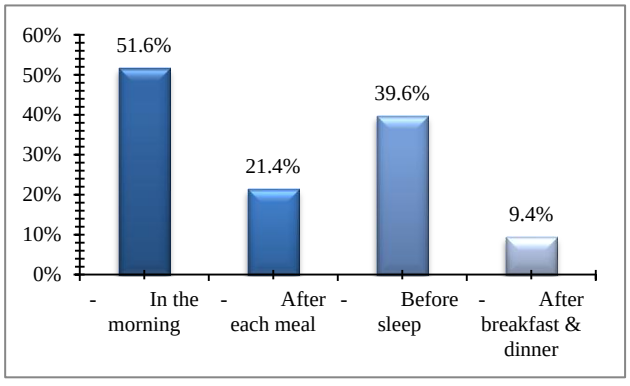

Figure 2: Times of teeth cleaning as mentioned by pregnant women.

Table 6 reports practices of daily cleaning of the teeth showed statistical significant difference regarding residence (79.7% among urban versus 46.8% among rural areas), education (higher among university educated women) and occupation (84.9% among employed women versus 47.1% among housewives). Neither age nor number of pregnancies showed any statistical significant difference regarding reported practices of daily teeth cleaning. Table 7 shows that cleaning teeth more than twice/day was significantly higher among urban residents 33.3% versus 12.8% for rural residents and among employed women 28.9% versus 15.0% for housewives. Neither age, educational level nor number of pregnancies showed statistical significant difference regarding the number of teeth cleaning per day. Table 8: shows that primigravidae reported better self-assessment of their own dental and gum health (68.4% and 77.6% respectively) than the other group. On the other hand, primigravidae reported the least percentage (24.5%) of unhealthy gum changes during the current pregnancy with statistical significant difference.

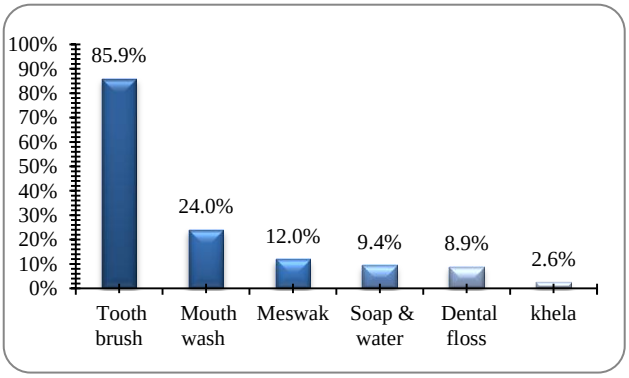

Figure 3: Tools of cleaning teeth as mentioned by pregnant women.

DISCUSSION

In referral to personal characteristics of the participated pregnant women, about four fifths of them were aged ≤30 years. This finding is conformed to Gupta et al., 2015 who reported that four fifth of the pregnant women were aged 20-29 years old.[13] Moreover, Amit et al reported that majority of the pregnant women were between 20–30 years old, while Ramamurthy and Irfana, 2016 reported that three fifth of the studied women were in the age group 18-25 years old.[5,7] Regarding place of residence, more than four fifths of the participated pregnant women were from rural area. On the contrary, Amit et al reported

that the majority of the studied pregnant women were belonged to urban area.[5]

Regarding to the level of education; about one third of the pregnant women in the present study had secondary education (34.2%) and another one third (33.2%) were illiterate. Gupta et al recorded that less than half of pregnant women had secondary education.[13] While Ramamurthy and Irfana reported that three thirds of the pregnant women had university education.[7] On the other hand; Amit et al disclosed that less than two third of the participated women were illiterate.[5] Moreover; Shabbir et al observed that more than half of pregnant women had primary education.[14]

Regarding employment status, the majority of pregnant women in the present study were housewives; this finding is going well together with Gupta et al who reported that the majority and three thirds respectively of the pregnant women were unemployed.[13] Also, Ibrahim et al reported that the vast majority of the women were housewives.[4]

Regarding knowledge of the pregnant women about oral health; more than two fifths of them didn't know causes of dental caries/gum diseases, and about one third mentioned that eating much sweets/sugar is the cause. Our findings are much less than those disclosed by Ibrahim et al and Amit et al who reported that most women understood that consuming too much sweet is the main cause of tooth decay.[4,5] Also, Shabbir et al recorded that slightly more than three quarter of the pregnant women perceived that sugar/sweet foods are the main cause of dental caries.[14]

The results of the present study cleared that less than half of the pregnant women didn't know the most suitable time for visiting the dentist during pregnancy. This can be explained by that most of the pregnant women didn't pay attention to their oral health beside they didn't prefer dentist visiting during pregnancy. The present study showed that mass media was the main source of knowledge about dental health care. This is conformed to Ibrahim et al and Karimi Afshar et al who explored that television and radio were the main knowledge source.[4,15]

Regarding importance of teeth cleaning, about two fifths of the participated women mentioned prevention of tooth decay while about one third mentioned good mouth odor as the cause for teeth cleaning. Ibrahim et al recorded that the majority of the women answered that tooth brushing prevents tooth decay, gum diseases and a bad smell.[4]

Regarding pregnant women attitude toward dental health care, less than two thirds of them agreed that regular dental checkup is important even if there weren't any dental health problems. This was in the same line with Amit et al who reported that less than two thirds of the interviewed pregnant women considered oral health should be a priority. Boggess et al reported that only less than one third of the pregnant women agreed on importance of visiting the dentist.[5,16]

On the other hand, more than 60% of the pregnant women in the present study agreed that it is unsafe for the pregnant women to visit the dentist even for regular checkup. Less frequent finding was reported by George et al who mentioned that more than one quarter of the women felt that dental treatment should be avoided during pregnancy unless it is an emergency.[17]

This result wasn't in the same line with Amit et al who reported that the majority of pregnant women agreed that women should have a dental checkup during pregnancy.[5] Also, Shabbir et al found that less than three quarters of pregnant women disagreed on that dental visit are unnecessary during pregnancy.[14] As well as, Agrawal et al who reported that less than half of the pregnant women agreed that oral and dental treatment should not be avoided during pregnancy.[18]

In the present study; the majority of the pregnant women agreed that it is possible to lose teeth because of pregnancy. This is not in congruent with Shabbir et al who reported thatthe majority of women disagreed on that pregnancy predisposes to tooth loss.[14] Also, Boggess et al reported that less than half of women strongly disagreed on that they can lose a tooth just because pregnancy.[16]

Results of the present study disclosed that more than half of the pregnant women were cleaning their teeth daily. More than half of these women were cleaning their teeth in the morning. This finding agreed with Amit et al who recorded that more than half of the participated women cleaned their teeth only once daily.[5] Also, Afshar et al reported that less than half of pregnant women cleaned their teeth once daily.[15] Moreover; Shabbir et al recorded that less than two thirds of the pregnant women cleaned their teeth once daily while Nogueira et al recorded that the vast majority of the pregnant women brushed their teeth every day.[14,19] On the other hand; Chawla et al reported that only less than one tenth of the pregnant women brushed their teeth twice a day.[12]

Findings of the current study showed that slightly more than one quarter of the pregnant women visited the dentist during the last six months; more than one half of them were suffered from painful teeth. This agreed with Afshar et al who reported that more than one quarter of the pregnant women visited dentist during the last six months; more than one third of them went for tooth extraction.[15] Also, George et al reported that only less than half of the participated women seen a dentist in the last 12 months.[17] Moreover, only less than one tenth (9.8%) of those visits to the dentist were for regular checkup. The same finding was reported by Amit et al[5] and Chawla et al observed that only more than one tenth visited a dentist every 6 month.[12]

In the present study; the majority of the pregnant women didn't visit the dental clinic during pregnancy as a periodical checkup. This could be due to lack of knowledge about the importance of oral health in pregnancy and also lack of encouragement from their obstetric provider. In the same line; Nogueira et al observed that about four fifths of the participated women did not attend dental clinic during pregnancy.[19] In referral to cause of not visiting dentist during pregnancy; more than two thirds of the pregnant women (68.0%) answered that dental checkup is not important during pregnancy. This may be due to that most of pregnant women keep on antenatal appointment to check fetus health status and they are not aware about the negative effect of bad oral health on their fetal health.

The current results disclosed that there was a significant relationship between practices of teeth cleaning daily and women's educational level, occupation and residence. This agreed with Afshar et al who reported that there is a significant relationship between oral health behavior and educational level.[15] Moreover, Amin and Shetty noticed that there was an association between occupation & education and dental hygiene.[20]

Low educational level and unawareness lead to improper oral hygiene practices. Regarding occupation, social relations and meeting with people may increase the positive attitude toward oral health and having fresh breath, moreover, working status is also correlated to higher education and awareness.

In the current study results revealed that there was a significant relationship between number of pregnancies and self-assessment of dental health, self-assessment of gum health and presence of unhealthy gum changes during the current pregnancy. In a study carried out by Rakchanok et al found that pregnant women were more likely to have dental caries and gingivitis compared to non-pregnant women.[21] Three-quarter of pregnant women had dental caries. Moreover, it was found that most of pregnant women had gingivitis in comparison to less than three quarters among non-pregnant women. Also, Ibrahim et al recorded that more than one fifth of the pregnant women felt that their current oral health was poor.[4]

In conclusion, based on the result of the current study, it can be concluded that both positive attitude and practices of oral hygiene were significantly associated with urban residence, higher education and women employment. More over primigravidae had significantly higher attitude than multigravidae while women's age didn't affect neither attitude nor practices of oral hygiene.

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