

Pregnant Women Knowledge Regard Oral Health Care

*Eman Reda Mohamed, Nadia Mohamed Fahmy, Sahar Moussa Soliman

Maternity & Gynecological Nursing Department Faculty of Nursing Ain Shams University. * Faculty of Nursing - Alex University.

Abstract

This study was aimed to assess pregnant women knowledge regarding the oral health care. Study setting: The study was conducted at ante natal outpatient clinic At Ain Shams University Maternity Hospital. Study design: A descriptive study design was used. subjects and method : The study was conducted among pregnant women were attended at antenatal outpatient clinic At Ain Shams University Hospital 265. Study simple: Purposive sample. Study Tools: Self – administered structured questionnaire sheet, was developed to collect data. Result: There were three quarters of study sample of pregnant women had unsatisfactory knowledge about oral health care during pregnancy. Conclusion: the current study concluded that most of the study sample had unsatisfactory knowledge regard oral health care during their pregnancy period. Recommendations: Emphasize the importance of oral health care during pregnancy to prevent the oral health problems for both mothers and their infants.

Key words: Pregnancy, Oral health disease, Oral health care.

Introduction

Pregnancy is a state of physiological condition that brings about various changes in the oral cavity along with other physiological changes taking place throughout the female body (*Patil et al., 2013*). The role of high levels of circulating estrogen is well established and associated with high prevalence of gingivitis and gingival hyperplasia. Progesterone in the serum is also seen to be associated with melasma, presenting a bilateral pigmentation or brown patches in the mid face region (*Hemalatha et al., 2013*).

The well-being of a pregnant woman and that of her fetus are integrally related and may be affected by the woman's oral health. Dental care during pregnancy is often delayed because of fear on the part of the woman, the health care provider, or the dentist, but poor maternal oral health can have significant consequences for the

pregnancy and pregnancy outcomes. Evidence shows that dental care, including radiographs, local anesthesia, and oral pain medication, is safe throughout pregnancy (*Hummel et al., 2015*). All pregnant women should have dental consultations to evaluate their own oral health and to reduce the risk of their offspring developing caries (*American Academy of Pediatric Dentistry, 2016*).

Dental treatment for tooth decay can be performed throughout pregnancy, but the ideal time is in the second trimester of pregnancy (14–28 weeks). During the second trimester the gravid uterus is still small enough not to cause much pressure on the vena cava while a woman reclines in a dentist chair. Pregnant women can be reassured that dental care during pregnancy is safe. If a pregnant woman has not seen a dentist in the last 6 months, she should be referred. Delay in treatment could result in significant risk to the woman and the fetus. Preterm birth, low birth weight, and poor glucose control have been linked with

Pregnant Women Knowledge Regard Oral Health Care

periodontal infection during pregnancy (*Bansal and Kumar, 2013*). In addition, periodontal disease during pregnancy has been associated with development of preeclampsia (*Varshney and Gautam, 2014*).

Approximately 40% of pregnant women have some form of periodontal disease (*Srinivas and Parry, 2012*). Periodontitis has been shown to contribute to premature birth, thus increasing the risk for low birth weight, and preeclampsia. Pregnant women with periodontitis have bacteria that may cause systemic inflammation leading to preterm labor. Studies have not yet shown that treatment of periodontal disease during pregnancy will improve outcomes; however, they do show that dental treatment of periodontal disease during pregnancy is safe. Women should be seen by a dentist early in the pregnancy to prevent or correct any oral health conditions (*Thomas, et al., 2013*).

During pregnancy, gingival alterations occur as the gums become highly vascularized, hyperplastic, and edematous, yet only 63% of women visit a dentist during pregnancy (*Manchir, 2016*). Bleeding gums, mediated by elevated estrogen, are often associated with pregnancy. Nonetheless, bleeding gums are often a sign of periodontal disease and should not be ignored. During pregnancy, it is estimated that 40% of women have some form of periodontal disease (*Srinivas and Parry, 2012*).

Pregnancy is a time of growth. Pyogenic granuloma, or pregnancy tumor, is a benign inflammatory lesion that is the most commonly found lesion in the oral cavity. Influenced by the hormones of pregnancy, pyogenic granuloma can be found on the gingiva, tongue, lips, or buccal mucosa but most commonly appears on the labial aspect of the anterior maxillary region. Pyogenic granuloma, if present, is usually noticed during the second month of pregnancy, reaching maximum growth at 8 months. Removal of a pregnancy tumor is recommended only when the tumor interferes with mastication or causes pain. Pyogenic granuloma usually resolves and disappears

by 12 weeks postpartum. It is imperative that care providers are aware of this condition that can occur in 10% of pregnancies (*Sun et al., 2014*).

Significance of the study

The critical role which pregnant women play in shaping the oral care habits adopted by their children made pregnant women a very important target group for oral health intervention. In Sudan there are currently no oral health programmes targeting pregnant with a view to improving their children, there are no clear national guidelines and strategies regarding oral health during pregnancy. In Khartoum State. in addition, hormonal changes during pregnancy together with other determinants of health affect their oral health, many studies demonstrating a positive relationship between oral diseases and preterm birth, low birth weight or both (*Abdelseed, 2012*).

No data base or statistics in the information center of ministry of health, maternal and child health administration in Egypt about oral health care programme provides as apart of antenatal care or oral diseases recorded during antenatal care visits for pregnant women during pregnancy.

So, the researcher suggested the present study to view real situation in Egypt as on of developing country has many challenges regarding oral health status of the pregnant women and has no statistics regard it.

Aim of the Study

This study aims the pregnant women knowledge regarding the oral health care.

Research Hypothesis:

Pregnant women have deficit knowledge regard oral health care during pregnancy.

Subject and Methods

This was attained through:

- **Assessing** the pregnant women knowledge regarding the oral health care.

Subject and Methods for this study were portrayed under four main designs as follows:

- 1- Technical Design.
- 2- Administrative Design.
- 3- Operational Design.
- 4- Statistical Design.

1- Technical Design :

The technical design used for the study involved the following items; research design, setting of the study, sample of the study, Criteria of Sampling Size and tools for data collection.

Research design:

A descriptive study design was used.

Setting:

The study was conducted at ante natal outpatient clinic At Ain Shams University Maternity Hospital.

Subject:

Type of Sample: Purposive sample.

Sample Size: 265 from pregnant women were attended at antenatal outpatient clinic At Ain Shams University Hospital attends in year 2014.

Criteria of Sampling Size:

- 1- Pregnant women
- 2- Primi Gravida

- 3- Free from any problems or medical complications.

Technique:

Sample size was calculated using EpiInfo® version 6.0, setting the type-1 error (α) at 0.05 and the power ($1-\beta$) at 0.80, Confidence Interval 95%, calculation according to these values to find such a difference produced a minimal sample size of 265 cases.

Tools of Data Collection

Two types of tool were used for data collection and conduction of the study. These consisted of pregnant women's structured interviewing Arabic questionnaire, likert scale to assess attitude.

Tool 1: An interviewing questionnaire sheet:

It was designed by the researcher after reviewing the related current and previous literature to collect data that cover the aim of the study.

It is divided into three parts and consisted of 25 questions of which are open and close- ended questions, as well as: some questions were multiple questions

Part I: This part was designed to assess the study pregnant women's general characteristics of personal identification and demographic data e.g., age of women, place of residence, educational level and occupation if present (No.1 to 4 question).

Part II: This part Included pregnant women's gynecological history and current antenatal history such as gynecological investigation done preconception, gynecological health problems, gynecological surgery, fetal age, health problems during current pregnancy, and antenatal care follow up regularly (No.5 to 11 questions).

Pregnant Women Knowledge Regard Oral Health Care

Part III: Designated to assess pregnant women's knowledge regard oral health care which composed of 14 closed ended questions (No.12 to 25 questions) firstly 7 closed ended questions about oral health problems during pregnancy such as the importance of oral care, causes of oral diseases, its types, pregnant women are high risk to periodontal disease as a result of what, The main causes of bad odor of breath, its symptom associated with some general diseases such as what, and the complications of oral health problems during pregnancy.

Secondly 8 questions about oral health care and follow up during pregnancy such as the number of times that the teeth should be washed daily during pregnancy, the pregnant woman should visit a dentist, the reason of not visiting a dental clinic during pregnancy, the contraindications of visiting the pregnant woman to the dentist, the safety period in which dental treatment can be performed for pregnant women, the correct behaviors which followed in case of dental pain, the necessary foods to maintain the mouth and teeth healthy during pregnancy, and the food should be avoided

❖ Scoring system for knowledge

The score ranged from zero to one, for non selected (incorrect knowledge) ="(0)" and for selected items (correct knowledge) take "(1)". The total score for all items related to knowledge was 64 point and categorized into two levels as followings <50% (0: <31 marks)is considered unsatisfactory and > 50 % (32: 48 marks) is considered satisfactory knowledge.

Validity and reliability

Content and face validity were performed by 3 professors of expertise, they were professors of maternity and gynecological, faculty of nursing, all experts were affiliated to Ain Shams University, Egypt who reviewed the tools for content accuracy. The developed tools were tested for reliability on a sample of 27 subjects. The reliability test of translated version was established by using the Cronbach alpha and

Pearson correlation which showed good internal consistency construct validity.

Cronbach alpha for Knowledge

Items	No. of case	No. of variable	Alpha Cronbach
Knownled	265	14	0.845

Ethical Considerations

The aim of the study was explained to each pregnant woman before applying the tools to gain her confidence and trust. An oral consent was obtained from each woman to participate in the study, after ensuring that data collected will be treated confidentially. The study does not entail any harmful effects on participating pregnant women or their fetus. All participants' women were informed that they have the right to withdraw from the study at any time without having a rational.

2- Administrative Design

An official approval was obtained from the maternal and gynecological nursing department counsels & the Scientific Research Ethical Committee that were approval by the faculty of nursing, Ain Shams University Counsel. Also a letter containing the title and aim of study was directed to the director of Ain Shams Maternity University Hospital to obtain his approval for data collection.

3- Operational Design

The operational design included The preparatory phase, pilot study, and fieldwork.

Preparatory Phase

A review of literature was done regarding current and past available literature, covering the various aspects of the problem, using text books, articles, magazines and internet sites through research gate. This was necessary for the investigator to get aquatinted with, and oriented about aspects of the research problems, as well as to assist in development of data collection tools.

Pilot study

A pilot study was done on (27) pregnant women which represent 10% out of total sample size of sample and they excluded from the main study sample. Its aim was to evaluate the simplicity, clarity, validity and reliability of the tool. It also helped in the estimation of the time needed to fill in the forms.

Field work

Official permission was obtained to perform the study. Data were collected 3 day / week starting from 10 am to 1 pm. -All attended women fulfilling study criteria were included. All women were kept on outpatient follow up visits fulfilling study. All participants were informed about purpose of the study. Oral consent was obtained from each participant. At the beginning of interview the researcher started to introduce herself, briefly explained the aim of the study to pregnant women to gain their confidence and trust to convince them to participate in the study. Interview was conducted in groups. The interviewing Arabic questionnaire sheet within (10-15 minutes) to assess pregnant women general characteristics, past history, present pregnancy and knowledge regarding oral health care. Likert scale was used

within (10-15 minutes). Each pregnant woman opinionative was completed within (15-20) minutes. The researcher repeated the previous steps until finished predetermined numbers of total study sample (265) pregnant women.

4-Statistical design

The collected data was coded, organized, analyzed and tabulated using computer presentation of data into tables and graphs will be carried out according to the types of variables.

Data was analyzed using the Statistical Package for Social Science (SPSS) version 19. Qualitative data was presented as number and percent. Relations between different qualitative variables were tested using Chi-square test (X^2). Probability (p-value) >0.05 was considered insignificant < 0.05 was considered significant and < 0.001 was considered highly significant.

Limitation of the study

- There was not found place to collect the women.
- Over crowded place.
- Over nosiy place.

Pregnant Women Knowledge Regard Oral Health Care

Results:

Table (1): Distribution of study subject of pregnant women according to socio-demographic characteristic (n= 265).

Socio-demographic characteristic	No	%
Age		
< 20 years	20	7.5
20 to <30 years	226	85.3
30 to < 40 years	19	7.2
Mean age = 24.8 years SD = 3.3 years Minimum= 15 Maximum= 35		
Residence		
Urban	155	58.5
Rural	110	41.5
Mother's Educational level		
Read and write	44	16.6
Primary education	32	12.1
Secondary education	115	43.4
Highly education	74	27.9
Mother's Occupation		
Working	44	16.6
Does not work	221	83.4

Table (1): shows that, 85.3% of study sample of pregnant women their age ranged between 20 to <30 years with mean= 24.8 years and SD = 3.3 years and 41.5 of them lived in rural area as 16.6% of them could read and write while 43,4% of them were secondary educational level and 83.4% of them didn't work.

Figure (1): Distribution of study sample of pregnant women according to their total knowledge about oral health care (n= 265).

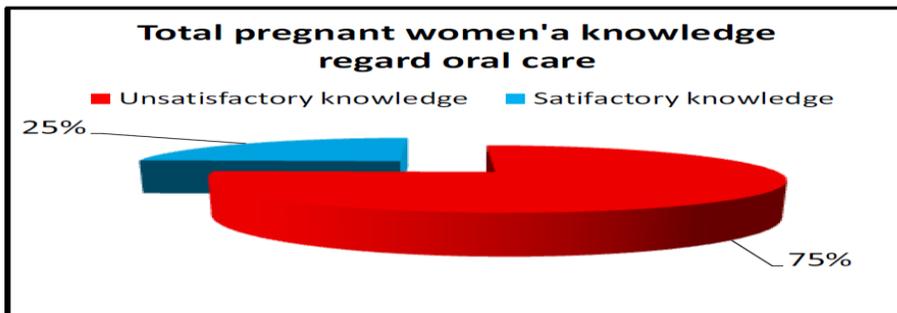


Figure (1): illustrates that. There were 75% of study sample of pregnant women had unsatisfactory knowledge about oral health care during pregnancy.

Table (2): The relation between pregnant women’s total knowledge about oral health care and their socio-demographic characteristic (n= 265).

item	Unsatisfactory knowledge (200)		Satisfactory knowledge (65)		Chi-Square X ² P value
	No	%	No	%	
Socio-demographic characteristic					
Age					
< 20 years	15	5.7	5	1.9	X ² =.040 P= 0.980 NS
20 to <30 years	171	64.5	55	20.8	
30 to < 40 years	14	5.3	5	1.9	
Residence					
Urban	118	44.5	37	14.0	X ² =.087 P= 0.768 NS
Rural	82	30.9	28	10.6	
Mother’s Educational level					
Read and write	30	11.3	14	5.3	X ² =4.835 P=0.184 NS
Primary education	22	8.3	10	3.8	
Secondary education	86	32.5	29	10.9	
Highly education	62	23.4	12	4.5	
Mother’s Occupation					
Working	34	12.8	10	3.8	X ² =.092 P= 0.761 NS
Does not work	166	62.6	55	20.8	

Table (2): clarifies that, there were insignificant statistical relations between pregnant women’s total knowledge regard oral health care and their age, residence, mother’s educational level, and mother’s Occupation with X² 040, 087, 4.835, and 0..092 respectively with P value >0.5 for all of them.

Discussion:

Pregnant women are more susceptible to periodontal disease because of female reproductive hormonal influences. A few studies have demonstrated that periodontal disease may be associated with adverse pregnancy outcomes, such as premature birth and low birth weight. Prevention of oral and dental problems and their complications during pregnancy is possible through having pregnant women

expressing appropriate knowledge, and practice (Lopez, et al., 2015).

Pregnant women should be careful to look for Doctor of Dental Surgery

(DDS) during pregnancy, not only for treatment of the problems presented by them, but to get information about the oral health of their child (Geisinger et al., 2013).

Concerning to the socio-demographic characteristic of study sample of pregnant women the current study clarified that more than three quarters of the studied pregnant women their age ranged between 20 to <30 years with mean= 24.8 years and SD = 3.3 years and nearly two quarters of them lived in rural area as the rest of them could read and write, while more than two fifth of them were primary educational level in addition most of them didn’t work. The current study findings were in accordance with the study of

Pregnant Women Knowledge Regard Oral Health Care

Bamanikar and Kok-Kee, (2013), who study in similar study about Knowledge, and Practice of Oral and Dental Healthcare in Pregnant Women, in Oman Center of dental care, mentioned that more than half of the study sample were aged from 21 to 30 years old and were educated in secondary school the researcher believes that, the same period of age due to this is the age of high fertility rate.

This finding presented that; most of study sample of pregnant women (the highest percentage) didn't do any gynecological investigations preconception and little of them suffered from gynecological health problems and gynecological surgery respectively, this study was in agreement with the study of **Nogueira, et al., 2016** who study, Knowledge of Pregnant Women About Oral Health, in Brazil, mentioned that most of the study sample in the maternal health centers didn't go to the clinics for preconception investigation, only the visits after conception as antenatal care, the researcher believes that, in Egypt there is no community awareness about the important of pre marriage or preconception investigation and its important, while in Brazil the females have the awareness but they ignore it because of its cost.

It was obvious from the current study that there was nearly one quarter of pregnant women in first trimester, and more than one third of them in second trimester, and nearly half of them in third trimester as more than one quarter of them suffered from health problems during the current pregnancy and one fifth of them didn't follow the antenatal care regularly. This study finding was in accordance with the study of **Khalaf, et al., 2018**, who study Knowledge, and practice of oral healthcare among pregnant women in Assiut, Egypt, mentioned that most of the study sample follow the antenatal care, this because of minister of health (MOH) in Egypt

provide proper antenatal care through the MCH centers and hospital for gynecology in their universities hospitals all over Egypt.

On assessing the health problems for the studied pregnant women, this study illustrated that, there was more than quarter of total study sample of pregnant women had health problems during current pregnancy and nearly one third out of them suffered of nausea as, nearly one quarter vomiting, and dizziness while, few of them suffered of back ache and gingivitis. The study of **Saskatchewan Prevention Institute, 2014** about Knowledge, Beliefs, and Practices.

Regarding the pregnant women's knowledge about oral health care and follow up during pregnancy, this finding presented that, nearly one quarter of them, mentioned that the teeth should be washed once a day, while more than one third of them, reported that, it should be washed after every meal during pregnancy. In addition nearly three quarters of women said that, the pregnant woman shouldn't visit a dentist and more than half out of them reported the main reason of that was the fear of affecting their fetus while the majority of them answered that, safety concerns about dental treatment were considered from the contraindications of visiting the pregnant woman to the dentist also they clarified that, the dental treatment can be postponement postnatal for pregnant women as more safety period.. The study of **Clement and Vivian, 2017**, who study Oral health in pregnancy: Self-reported impact of exposure to oral health information, mentioned that they afraid to visit the dental clinic to avoid any acquired infection and most of them afraid from hepatitis.

Also This finding illustrated that, nearly one quarter of pregnant women answered that going to the dentist is the correct behaviors which followed in case of dental pain, while more than half of

them said that the necessary foods to maintain the mouth and teeth healthy during pregnancy was milk while they reported that sweaty foods are considered from the types of food should be avoided, these study findings were in accordance with the study of **Chawla, et al., 2017**. Who study Knowledge, Attitude, and Practice of Pregnant Women regarding Oral Health Status and Treatment Needs, mentioned that the pregnant women went to the dentist clinics only when they felt teeth pain only and they mentioned that sugar and food high in sugar should be avoided during pregnancy.

Also, it was found from the current finding that There were approximately three quarters of study sample of pregnant women had unsatisfactory knowledge about oral health care during pregnancy this finding was in accordance with **Praveen, et al., 2014**, who study Oral health related knowledge, and practices among pregnancy in India, who mentioned that most of the studied pregnant women were have poor knowledge about oral health care and only About one-tenth of them had high knowledge regarding oral health.

In relation to the relation between the studied pregnant women, it was found that, there were insignificant statistically relations between pregnant women's total knowledge regard oral health care and their age, residence, mother's educational level, and mother's Occupation with P value >0.5 for all of them.

Also, the study of **Nogueira, et al., 2016** reported that The results from the responses to the 6 questions concerning knowledge and practice related to oral and dental healthcare indicate that the knowledge related to oral and dental treatment (e.g. filling, scaling, and extraction) during pregnancy was significantly associated with educational level and job status.

The researcher believes that proper education on oral and dental healthcare among the pregnant women may lead to correct practice of oral and dental health. Pregnant women are more susceptible to periodontal disease like gingivitis because of female reproductive hormonal influences. Pregnancy is a time when women may be more motivated to make health changes. Therefore, maintaining good oral health during pregnancy is important, apart from reducing the risk of adverse pregnancy outcomes, but it also improves general health of both the mother and her infants.

Conclusion

The current study concluded that most of the study sample had unsatisfactory knowledge regard oral health care during their pregnancy period. Also, it was clear from the current study that findings support the research hypothesis.

Recommendations

In the light of the study findings, the following recommendations are suggested:

1. Emphasize the importance of oral health care during pregnancy to prevent the oral health problems for both mothers and their infants
2. Prevent any oral health care problems by teaching, supporting and counseling through the antenatal care period
3. Counseling services regarding prevention, detection and management of oral health problems should be available of all follow up of pregnancy.
4. Improving the mother knowledge about oral health care through using

Pregnant Women Knowledge Regard Oral Health Care

media such as television, news papers pamphlets, booklets and other communication channels.

5. Improving caregivers, knowledge, and practice towards oral health care for pregnancy to reflect this services on the mothers during their follow up.
6. Further research to identify factors predisposing to oral health problems, and barriers hindering continuity of oral health care through follow up.

References

- American Academy of Pediatric Dentistry Guideline on perinatal oral health care (2016)**, Retrieved from www.aapd.org/media/policies_guidelines/g_perinatal_oral_health_care.pdf
- Bamanikar S and Kee LK. (2013)**. Knowledge, and practice of oral and dental healthcare in pregnant women. *Oman Medical Journal*, 28(4), 288-291.
- Bansal M and Kumar G (2013)**: Pregnancy and oral health. *Dental Journal of Advance Studies*; 1 (2): 73-76.
- Chawla R, Shetiya S, Agarwal D, Mitra P, Bomble N, Narayana S (2017)**. Knowledge, Attitude, and Practice of Pregnant Women regarding Oral Health Status and Treatment Needs following Oral Health Education in Pune District of Maharashtra: A Longitudinal Hospital based Study. *J Contemp Dent Pract*; 18(5):371-7.
- Clement C Azodo, Vivian O., (2017)**: Omuemu Oral health in pregnancy: Self-reported impact of exposure to oral health information, Department of Periodontics, University of Benin, Benin City, Edo State, Nigeria and Department of Community Health, University of Benin, Benin City, Edo State, Nigeria, 14 (3): 119-125 .
- Geisinger ML, Geurs NC, Bain JL, Kaur M, Vassilopoulos PJ, Cliver SP, Hauth JC, Reddy MS. (2013)**: Oral health education and therapy reduces gingivitis during pregnancy. *J. Clin. Periodontol.*, 41(2):141-8, 2013.
- Hemalatha V, Manigandan T, Sarumathi T, Aarthi Nisha V, and Amudhan A. (2013)**. Dental considerations in pregnancy – a critical review on the oral care. *J Clin Diagn Res*; 7(5): 948–953.
- Hummel J, Phillips KE, Holt B, and Hayes C. (2015)**. Oral health: An essential component of primary care. Seattle: Qualis Health.
- Khalaf, S., Safaa Rabea Osman, Ahmed M. Abbas, Taghreed Abdul-Aziz M. Ismail (2018)**: Knowledge, attitude and practice of oral healthcare among pregnant women in Assiut, Egypt, 5, (3): 204-207.
- Lopez NJ, Da Silva I, Ipinza J, Gutiérrez J. (2015)**: Periodontal therapy reduces the rate of preterm low birth weight in women with pregnancy-associated gingivitis. *J Periodontol.* 76 (11): 2144-2153.
- Manchir M. (2016)**. Survey: More pregnant women in US visit a dentist. *American Dental Association News.* 14:257–64.
- Nogueira BML, Nogueira BCL, Fonseca RRS, Brandão, GAM, Menezes TOA, Tembra DPS. (2016)**: Knowledge of pregnant women about oral health. *Int. J. Odontostomat.*,10(2):297-302.
- Patil S, Thakur R, Paul ST, Gadicherla P. (2013)**. Oral health coalition: knowledge, attitude, practice behaviours among gynaecologists and dental practitioners. *J Int Oral Health*; 5 (1): 8–15.
- Praveen H., Peddi R., Arpitha K., Monica Mancherla, Prathibha, B., and Amit S. (2014)**: Oral health related knowledge, attitude and practices among the

pregnancy of a district in India, J Int Soc Prev Community Dent; 4 (1): 211–217.

Sajan P, Pattansetti J, Padmini C, Nagathan VM, Sajjanar M (2015). Oral health related awareness and practices among pregnant women in Bagalkot district, Karnataka, India. J Int Oral Health, 7(2): 1-5.

Saskatchewan Prevention Institute. (2014). Knowledge, beliefs and practices regarding oral health among pregnant women, literature review; 1-21.

Srinivas SK, and Parry S. (2012). Periodontal disease and pregnancy outcomes: Time to move on? Journal of Women's Health, 21 (2), 121-125.

Sun W, Lei L, Chen L, Yu Z, and Zhou J. (2014). Multiple gingival pregnancy tumors with rapid growth. Journal of Dental Sciences, 9 (3), 289-293.

Thomas R, MacDonald, Leslie A, Hudock, Stephen D, and Goddard Donald E. (2013). "Provisional Recommended Weight Limits for Manual Lifting During Pregnancy". Human Factors. 56 (1): 203–214.

Varshney A. and Gautam S (2014). Gautam Poor periodontal health as a risk factor for development of pre-eclampsia in pregnant women, Journal of Indian Society of Periodontology, 18 (3): 321-325.