

ORIGINAL ARTICLE:

KNOWLEDGE, AWARENESS AND PRACTICE AMONG GYNECOLOGISTS, MEDICAL PRACTITIONERS AND DENTISTS IN NAMAKKAL DISTRICT REGARDING ASSOCIATION BETWEEN ORAL DISEASES AND PREGNANCY OUTCOMES.

¹K Vennila^{2,3,4}, Srimathi¹, Preethi¹, Jayasri

¹ Senior Lecturer,
^{2, 3, 4} CRRRI
Department of periodontics
Vivekanandha dental college for women,
Tiruchencode.

Abstract

Background: The prevalence of oral disease during pregnancy affects the fetal and maternal health. The combined work of gynecologists, medical practitioners and dentists is proved to reduce the incidence of fetal and maternal complications. **Aim:** The aim of the present study is to assess the knowledge, awareness and practice among gynecologists, medical practitioners and dentists regarding the association between oral disease and pregnancy outcomes. **Materials and methods:** This descriptive study was conducted among 150 health care professionals in Namakkal district.

A well structures questionnaire consisting of 14 questions were used to assess the awareness regarding association among gynecologists, medical practitioners and dentists. The knowledge, awareness and practice scores were calculated for the correct answers to the question. A software program (SPSS12) was used for statistical analysis. **Results:** shows the knowledge (p value- 0.768) and awareness (p value- 0.354) among medical practitioners is significantly higher when compared to gynecologists knowledge and awareness (p value- 1.000). The responses showed by the dentists regarding association (p value-< 0.0001). This shows they had significant awareness and try to implement in dental office. This shows majority of health care providers are aware of the association between dental disease and pregnancy outcomes. The practice among medical practitioners (p value- 0.364) and gynecologist (p value - 1.000) are comparatively lower when compared to dentists (p value-< 0.0001). **Conclusion:** It includes proper maintenance of oral health and updating the knowledge on Perio-systemic link may prevent the progression of periodontal disease and maternal, neo-natal complications.

Key words: Gynecologists, Medical practitioners, Dentists, Periodontitis, Pre-eclampsia, Pre- term low birth.

Access this article online

Quick Response Code:



Website:
www.jiadsr.org

Address for correspondence:

Dr. K Vennila Senior Lecturer,
Department of periodontics
Vivekanandha dental college for women,
Tiruchencode.

INTRODUCTION

Oral health is an important integral part of general health. Periodontal disease is an inflammatory disease of gingiva and its supporting structures and it is known to cause systemic infections which has an adverse effect on pregnancy outcomes. It includes pre-term low birth babies, pre-eclampsia, miscarriage which are linked to maternal periodontitis.^[1] Hormonal imbalance is the main aggravating factor for oral disease in pregnancy.^[2]

Prevotella intermedia is the main pathologic micro-organism for oral disease during pregnancy and *A. actinomycetemcomitans*, *T. denticola*, *P. gingivalis* are the other microbial factors.^[3] Maternal age, smoking, alcohol, stress, genetics are the other local contributing factors. Periodontal infections causes production of endotoxins, release of inflammatory mediators like prostaglandins, interleukins like TNF-alpha.^[4] Prostaglandins which leads to premature rupture of membrane thereby causing pre-term low birth weight babies.^[4]

High prevalence of periodontitis and isolation of oral pathogens from placentas of women with pre-eclampsia^[5] showed its role in the pathogenesis of pre-eclampsia. Treatment of periodontitis may prevent pre term low birth weight babies.^[6] So it is important to understand the association between oral disease and pregnancy outcomes. Attitude and knowledge of health care providers is alarming as many of them believe that dental treatment is unsafe during pregnancy and urge the women to postpone the dental treatment.

The present study was evaluating the awareness and perio-systemic link among Gynecologists, Medical practitioners and Dentists in Namakkal district.

AIM

To assess the knowledge, awareness and practice among Gynecologists, Medical practitioners and Dentists in Namakkal district regarding the association between oral disease and pregnancy outcomes.

MATERIALS AND METHODS

This descriptive type of study was conducted from June 2018 to December 2018, among 150 health care professionals in Namakkal district with the questionnaire distributed to all practitioners and the collected 3-4 days after the first visit. A well structured questionnaire consisting of 14 questions were used to assess the awareness. The first part of the questionnaire recorded the demographic information which included the age, sex, and the specialization followed by questions designed to assess the knowledge, awareness and practice towards oral care among the health care professionals. This questionnaire is recorded as strongly agree, strongly disagree, somewhat disagree, somewhat agree, neither agree nor disagree options. In this study Namakkal district is divided into sectors. From each sector both private and government doctors are chosen randomly based on IMA list in Namakkal district. A software programme (SPSS12) is used for statistical analysis. The data collected was analyzed using chi square test which was used to detect the association among variables.

Table 1:Gynecologists

Questions	Strongly disagree	Some what disagree	Neither agree nor disagree	Some what agree	Strongly agree
1. Do you believe whether there is an association between the oral hygiene maintenance and pregnancy outcome?	0%	0%	0%	50%	50%
2. Do you think dental problem would lead to preterm low birth weight babies?	0%	0%	50%	50%	0%
3. Did you come across any pre-eclampsia patients due to poor oral hygiene?	50%	50%	0%	0%	0%
4. Have you come across any of your patients with oral problems during pregnancy?	0%	0%	0%	50%	50%
5. Will you get any opinion from the dentist regarding the oral health condition of your patients?	50%	50%	0%	0%	0%
6. Do you think pregnancy increases the risk of oral disease?	50%	50%	0%	0%	0%
7. Do you think oral disease will regress after pregnancy?	50%	50%	0%	0%	0%
8. Is there any impact of gestational diabetes on oral health during pregnancy?	50%	50%	0%	0%	0%
9. Do you think oral hygiene instructions is necessary during prenatal counselling?	0%	0%	0%	50%	50%
10. Do you think your patients are aware of association between pregnancy outcomes and dental problem?	50%	50%	0%	0%	0%
11. Do you know how much awareness is present in Namakkal district about oral hygiene maintenance?	0%	0%	0%	50%	50%
12. Do you tell your patients about the oral hygiene maintenance during pregnancy?	50%	50%	0%	0%	0%
13. Do you advice your pregnancy patients to undergo dental treatment?	0%	0%	0%	50%	50%
14. Will patients follow the instructions given during pregnancy counseling?	0%	0%	0%	50%	50%

Table 2: Medical Practitioners

Questions	Strongly disagree	Some what disagree	Neither agree nor disagree	Some what agree	Strongly agree
1. Do you believe whether there is an association between the oral hygiene maintenance and pregnancy outcome?	0%	4%	4%	36%	56%
2. Do you think dental problem would lead to preterm low birth weight babies?	16%	8%	20%	36%	20%
3. Did you come across any pre-eclampsia patients due to poor oral hygiene?	24%	16%	40%	20%	0%
4. Have you come across any of your patients with oral problems during pregnancy?	12%	8%	8%	52%	20%
5. Will you get any opinion from the dentist regarding the oral health condition of your patients?	4%	8%	16%	12%	60%
6. Do you think pregnancy increases the risk of oral disease?	28%	8%	16%	32%	16%
7. Do you think oral disease will regress after pregnancy?	24%	8%	12%	48%	8%
8. Is there any impact of gestational diabetes on oral health during pregnancy?	28%	0%	8%	28%	36%
9. Do you think oral hygiene instructions is necessary during prenatal counselling?	0%	4%	12%	12%	72%
10. Do you think your patients are aware of association between pregnancy outcomes and dental problem?	36%	16%	12%	12%	24%
11. Do you know how much awareness is present in Namakkal district about oral hygiene maintenance?	4%	20%	48%	24%	4%
12. Do you tell your patients about the oral hygiene maintenance during pregnancy?	0%	8%	16%	16%	60%
13. Do you advice your pregnancy patients to undergo dental treatment?	12%	0%	28%	16%	44%
14. Will patients follow the instructions given during pregnancy counseling?	8%	20%	28%	32%	12%

Table 3: Dentists

Questions	Strongly disagree	Some what disagree	Neither agree nor disagree	Some what agree	Strongly agree
1. Do you believe whether there is an association between the oral hygiene maintenance and pregnancy outcome?	0%	0%	0%	10%	90%
2. Do you think dental problem would lead to preterm low birth weight babies?	10%	10%	10%	20%	50%
3. Did you come across any pre-eclampsia patients due to poor oral hygiene?	20%	10%	60%	10%	0%
4. Have you come across any of your patients with oral problems during pregnancy?	0%	0%	0%	10%	90%
5. Will you get any opinion from the dentist regarding the oral health condition of your patients?	0%	0%	70%	0%	30%
6. Do you think pregnancy increases the risk of oral disease?	20%	0%	0%	50%	30%
7. Do you think oral disease will regress after pregnancy?	0%	10%	0%	60%	30%
8. Is there any impact of gestational diabetes on oral health during pregnancy?	0%	10%	40%	30%	20%
9. Do you think oral hygiene instructions is necessary during prenatal counselling?	10%	0%	0%	0%	90%
10. Do you think your patients are aware of association between pregnancy outcomes and dental problem?	40%	30%	20%	10%	0%
11. Do you know how much awareness is present in Namakkal district about oral hygiene maintenance?	20%	10%	50%	20%	0%
12. Do you tell your patients about the oral hygiene maintenance during pregnancy?	0%	10%	20%	0%	70%
13. Do you advice your pregnancy patients to undergo dental treatment?	10%	0%	30%	10%	50%
14. Will patients follow the instructions given during pregnancy counseling?	0%	10%	20%	50%	20%

Table 4: Knowledge, awareness and practice among Gynecologists

Gynecologists	Mean value	Standard deviation	P Value
Knowledge among gynecologists	37.500	25.000	1.000
Awareness among gynecologists	25.000	35.355	1.000
Practice among gynecologists	20.000	27.386	1.000

Table 5: Knowledge, awareness and practice among Medical Practitioners

Medical practitioners	Mean value	Standard deviation	P Value
Knowledge among medical practitioners	12.500	7.188	0.768
Awareness among medical practitioners	19.000	9.899	0.354
Practice among medical practitioners	8.000	4.000	0.364

Table 6: Knowledge, awareness and practice among Dentists

Dentists	Mean value	Standard deviation	P Value
Knowledge among dentist	38.750	9.465	< 0.0001
Awareness among dentist	7.500	3.536	< 0.0001
Practice among dentist	33.000	12.550	< 0.0001

RESULTS:

Table 1, 2, 3 shows the percentage of responses provided by gynecologists, medical practitioners and dentists respectively. Results were presented as the mean, standard deviation and significance assessed by p- value.

The responses were recorded as strongly agree, somewhat agree (as positive response), somewhat disagree, strongly disagree (as negative response), no response (as neither agree nor disagree).

Table 5 shows the knowledge (p value- 0.768) and awareness (p value- 0.354) among medical practitioners is significantly higher when compared to gynecologists knowledge and awareness shown in Table 4 (p value- 1.000). The responses showed by the dentists regarding association are shown in Table 6 (p value- < 0.0001) shows they had significant awareness and try to implement in dental office. This shows majority of health care providers are aware of the association between dental disease and pregnancy outcomes.

The practice among medical practitioners shown in Table 5 (p value- 0.364) and gynecologists in Table 4 (p value- 1.000) are comparatively lower when compared to dentists in Table 6 (p value- < 0.0001).

DISCUSSION

Dental awareness among health care providers especially medical practitioners and gynecologists may not be sufficient due to lack of the prior knowledge of disease condition. This questionnaire study was to assess the knowledge, awareness and practice among medical practitioners, dentists and gynecologists regarding the association between oral disease and pregnancy outcomes in Namakkal district.

In our study, medical practitioners (60-70%), gynecologists (30-40%) are aware of importance of maintaining oral health. The importance of providing periodontal treatment will reduce gingival inflammation which usually occurs due to altered hormone levels. Any acute periodontal infection should be treated to avoid harm to developing fetus.

In this study the level of awareness among dentist is comparatively higher (90%) regarding the association between oral disease and pregnancy outcomes, this was supported by the study done by Tarannum et al. [7]

As per the study conducted by Rohini Govindasamy et al [8] in Madurai district, about 96% of general medical practitioners and 92% of gynecologists were aware of the importance of maintaining oral health. But the dentists stopped themselves from providing treatment because of the common misconception about harming the fetus while gynecologist and medical practitioners were aware of the facts but failed to execute at the clinical level.

According to the study conducted by Ravindranath Dhulipalla et al, [9] in Guntur district which was to assess the awareness of periodontal disease and its management among medical faculty demonstrated that medical practitioners had their knowledge about various aspects of periodontal disease those who have had a previous visit to a dentist.

A questionnaire based study conducted by Hashim R et al [10] among 150 gynecologists, the result showed that 75.9% of the gynecologists agreed that periodontal disease can affect the pregnancy outcome and concluded that 73% of the gynecologists believe that X- rays was unsafe during pregnancy and 52% of the gynecologists believe that administration of LA was unsafe during pregnancy. Similar results were shown in our study as 50% gynecologists were aware of association but the misconception lead to decrease in practice

In a recent study done by Al-Habashneh [11], 52% of physicians believed that fetus withdraws calcium from the maternal teeth and 88% advised pregnancy women to delay the dental treatment.

Similar to our study, Suri et al^[12] done an online questionnaire study among gynecologists. The results showed that only 40% recommended dental examination, only 47% of gynecologists advised patient, about oral care.

With the advancement in the field of dentistry the second trimester is safe for dental treatment as reported by the gynecologists (50%), medical practitioners (70%).^[13] Data from Pregnancy Risk Assessment Monitoring System (PRAMS) from four states found that only 2.27 to 34.7% women accessed dental care during pregnancy.

Hence it is essential for the medical practitioners and gynecologists to understand the etiology of oral disease and its association with pregnancy outcomes. There must be an increased involvement of gynecologists in oral health care in order to prevent unwanted pregnancy outcomes like pre- term low birth weight babies, pre- eclampsia etc. So in order to reduce the unwanted pregnancy outcomes due to oral disease a combined work of dentist, medical practitioner and gynecologists is needed.

Interactive seminars and workshops conducted on common platform would enrich knowledge and provide valuable information regarding association.

CONCLUSION:

Proper maintenance of oral health plays an important role in maternal in fetal systemic health. Awareness among health care professionals and updating the knowledge on perio-systemic link may prevent the progression of periodontal disease and maternal, neo-natal complications.

ACKNOWLEDGEMENT:

The authors wish to thank all the gynecologist, medical practitioners and dentists who participated in the study. I take this opportunity to thank my statistician who helped me with the analysis. Above all, I would like to thank my staff and colleagues of Vivekanandha Dental College for Women for their kind support.

REFERENCES:

- 1.Xiong X, Buekens P, Fraser WD, Beck J, Offenbacher S. Periodontal disease and adverse pregnancy outcomes: A systemic review. BJOG2006; 113:135-43
- 2.Sooriyamoorthy M, Gower DB: Hormonal influences on gingival tissues; relationship to periodontal disease, J Clin Periodontal 16:201, 1989
- 3.Kornman K Loseche WJ: The Sub-Gingival Flora during pregnancy, J Periodontal 15:111, 1980
- 4.MG Newman, HH Takei, PR Klokkevold, FA Carranza- Impact of periodontal infection on systemic health. 30-Jun-2014
- 5.Barak S, et al . Evidence of periopathogenic microorganisms in placentas of women with pre- eclampsia. J Periodon. 2007;78:670-676.
- 6.Jeffcoat MK, Hauth JC, Geurs NC, et al. Periodontal disease and pre term birth: results of a pilot intervention study. J Periodontol. 2003;74(8): 1214-1218.
- 7.Tarannum. F, Prasad S, Muzammil, Vivekananda L et al., Awareness and the association between periodontal disease and pre- term low births among general dentists, general medical practitioners and gynecologists. Indian J Public Health 2013;57:92-5.
- 8.Rohini Govindasamy et al., Knowledge, awareness and practice among gynecologists, medical practitioners and dentists regarding association between periodontal disease and pregnancy outcomes in Madurai district. J Indian Soc Periodontal. 2018 Sep- Oct;22(5):447- 450.

9. Dhulipalla R, et al. Awareness of periodontal disease and its management among medical faculties in Guntur district. *J Indian Soc Periodontol*. 2016 Sep- Oct;20(5):525-530. doi:10.4103/jisp.jisp-253-16.
10. Hashim R, Akbar M. Gynecologists' knowledge and attitudes regarding oral health and periodontal disease leading to adverse pregnancy outcomes. *J Int Soc Prev Community Dent* 2014;4:S166-72.
11. Al- Habashneh R, Aljundi SH, Alwaeli HA. Survey of medical doctors' attitudes and knowledge of the association between oral health and pregnancy outcomes, *Int J Dent Hyg* 2008;6:214-20.
12. Suri V, Rao NC, Aggarwal N. A study of obstetricians' knowledge, attitudes and practices in oral health and pregnancy. *Educ Health(Abingdon)* 2014;27:51-4.
13. Jared H, Boggess KA. Periodontal diseases and adverse pregnancy outcomes: a review of the evidence and implications for clinical practice. *J Dent Hyg. Suppl.* 2008: 3s – 20 s.