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RESEARCH ARTICLE

AWARENESS OF THE PERIODONTAL CONDITIONS AMONG THE GYNECOLOGISTS & AWARENESS OF THE ORAL HEALTH CARE PROFESSIONALS ABOUT THE MANAGEMENT OF PREGNANT PATIENTS- A SURVEY CONDUCTED TO EVALUATE A RELATIONSHIP AND CO-ORDINATION AMONG THE TWO PROFESSIONALS

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ABSTRACT

Introduction: The link between pregnancy and periodontal manifestations has been indicated to pose alteration to the systemic health. There is a very high risk of pre-eclampsia & low-birth-weight, pre-term labour in pregnant females with periodontal problems.

Aim: The aim of his study was to evaluate the awareness among the Obgy about the periodontal problems faced by the pregnant females during the 3 trimesters & oral health practitioners about the complaints reported by a pregnant female during the same time frame. The establishment of the co-ordination among the dentists & the Obgy was the single main aim of this survey conducted.

Materials and Methods: The Obgy& Dentist from various Medical, Dental hospitals & private practises were approached and they consented to join the study. Data was collected from a questionnaire format by means of 2 separate formats. 7 closed ended questions was asked after duly obtaining a consent.

Results: It was found that there was very little co-ordination among the dentists and the Obgy. Dentists usually don't carry out procedures for the pregnant patients, and Obgy's are not keen about the oral health of their patients neither do they follow a referral protocol.

Conclusion: Efforts to increase this awareness may prove valuable in improving preventive care during pregnancy. A strong need for the co-ordination among the Obgy & the Dentists is important to be established. Majority of the periodontal problems can be eliminated if the patient is given proper guidance. Also the chances of pre-eclampsia & low birth weight pre term infants would be decreased.

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INTRODUCTION

Periodontal diseases, including gingivitis and periodontitis, are a group of infectious diseases caused predominantly by different types of gram-negative anaerobic and micro-aerophilic bacteria that colonize the subgingival area resulting in long-term local and systemic elevation of pro-inflammatory prostaglandins and cytokines. (Zanata *et al*., 2008; Huebner *et al*., 2009) Several bacterial species such as *Porphyromonas gingivalis*, *Prevotella intermedia*, *Prevotella nigrescens*, *Tannerella forsythia*, *Treponema denticola*, *Fusobacterium nucleatum*, *Aggregatibacter actinomycetemcomitans*, and *Campylobacter rectus* have been identified in the subgingival biofilm of periodontal disease patients. (Khanna and Malhotra, 2010) A recent report suggested that high levels of *A. actinomycetemcomitans*, *F. nucleatum*, and *P. intermedia* were observed in the subgingival biofilm during the second and third trimesters of pregnancy, with increased susceptibility for gingivitis. (Tandon and D'Silva, 2003) Periodontitis may affect pregnancy outcomes. On the other hand, pregnancy itself may alter the progression of periodontal diseases. Changes in the physiological process during pregnancy can alter the inflammatory response by intensifying the gingival inflammation. Pregnancy gingivitis affects 36–100% of pregnant women. (Xiong *et al*., 2006) Clinical parameters such as bleeding on probing and pocket depth may increase during pregnancy, without associated increase in plaque index score, which reduces after parturition. (Gazolla *et al*., 2007) This increased severity of periodontal disease is

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related to increased vascular permeability, reduced immune responses, and shifts in the composition of supra and subgingival microbial flora during the gestational period. (Xiong *et al*., 2006) Hence, a bidirectional relation can be observed between periodontal disease and pregnancy. It has been reported that the levels of *A. actinomycetemcomitans* and red complex bacterial species started to increase from 22nd week of pregnancy in mothers of premature babies, while these bacterial levels remained stable in mothers at term delivery. Moreover, after delivery, a 2.42-fold increase in the *A. actinomycetemcomitans* species was observed among mothers of premature babies, as compared to the mothers with term delivery. (Da Costa *et al*., 2010) Meta-analyses of reported studies have revealed a significant risk of preterm delivery and low birth weight among pregnant women with periodontitis. (Al Habashneh *et al*., 2008; Silk *et al*., 2008) The odds ratio for preterm birth in mothers with periodontitis varied from 1.7 to 2.73, for low birth weight from 1.5 to 2.11, and for preterm birth and low weight from 2.35 to 3.57. About 25% of preterm low birth weight cases occur without even a suspected risk factor, but estimates suggest that 18.2% of all cases may be attributable to periodontal disease. (Gaffield *et al*., 2001) It has also been reported that subjects with generalized periodontitis have a fivefold increased risk of preterm birth before 35 weeks of gestation and a sevenfold increased risk of delivery before 32 weeks of gestation. (Amini and Casimassimo, 2010) In addition, a significant association between preeclampsia and periodontal disease has been reported in the literature. (AI Habashneh *et al*., 2008; Amar and Chung, 1994) Hence, all meta-analyses have demonstrated that the periodontal disease could promote adverse pregnancy outcomes. (Task force on periodontal treatment of pregnant women, American Academy of Periodontology, 2004) Studies have reported high prevalence of periodontal disease among pregnant women. In addition, the risk of preterm low birth weight remained high despite controlling the other risk factors, suggesting possible correlation between periodontal disease and preterm low birth weight. (Apoorva and Suchetha, 2010) Traditionally, gynecologist's training in oral health has been limited. All the previously mentioned associations between periodontal disease and adverse pregnancy outcomes and universal presence of periodontal disease provide strong rationale for gynecologists to enquire their patients about oral and periodontal health. Gynecologists are the first-line healthcare professionals to come in contact with pregnant women.

Their awareness regarding association between periodontal disease and adverse pregnancy outcomes is extremely important in recognizing modifiable periodontal disease risk factors associated with pregnancy. Also, incorporation of the periodontal care into gynecologic management may improve pregnancy outcomes, if early intervention is sought to reduce microbiologic load on oral tissues during pregnancy. Until now, awareness of periodontal health and disease among practicing gynecologists remains undisclosed. Also, if awareness is present, a lack of co-ordination is found between the gynecologists and the dentists. Hence, the present study was undertaken with an objective to determine knowledge of periodontal disease and pregnancy outcomes among the gynecologists & the dentists and also to determine the co-ordination between the gynecologists and dentists in Mumbai regarding the patient treatment & care.

MATERIALS AND METHODS

Participants

This was a cross-sectional survey of Gynecologists & Dentists from Mumbai. A list of few government and private hospitals and polyclinics providing gynecologic/obstetric care nearby and dental colleges & private practitioners was made. A total of 75 Gynecologists & 155 Dentists were then selected by employing simple random sampling technique. A structured, self-administered, closed-ended questionnaire with a letter mentioning the purpose of the study was distributed to the gynecologists & dentists during their consultation hours. Informed written consent for their participation was obtained and confidentiality of responses was assured. The author personally contacted the gynecologists & dentists and distributed the questionnaire. All the 75 gynecologists and 155 Dentists answered the questionnaire and returned it on the same day. It took 5–7 min to answer the questionnaire. Thus, a 100% response rate was obtained. Data collection took place during January–March 2015

Survey instrument

The questionnaire for the gynecologists consisted of 7 closed-ended questions. Questions on knowledge of periodontal disease and the problems they pose, the complaints received from the patient and mainly the referral rate (co-ordination between dentists and gynecologists). The questionnaire for the dentists consisted of 7 closed ended questions. Questions on knowledge of complications related to pregnancy and periodontal conditions, treatment protocols and mainly the reference rate from the gynecologists was recorded. Our main aim was to understand the rappot between the dentist and the gynecologist formed for the care of the patient.

RESULTS

Analysis: Descriptive statistics were done.

Software: SPSS (Statistical Package for Social Sciences) Version 20.1 (Chicago, USA Inc.)

Output Tables:

DISCUSSION

Recent research in periodontal medicine has shown the link between periodontal disease and poor pregnancy outcomes. Gynecologists, as women's healthcare specialists, can play an important role in oral health care, especially during pregnancy and child birth. Therefore, their awareness regarding periodontal health is important to identify the modifiable oral risk factors to prevent adverse pregnancy outcomes. In general, the present study assessed gynecologists' understanding of various pregnancy-related oral health issues along with their oral self-care attitudes. Although the overall periodontal health knowledge and awareness was acceptable in this study, there still exist some lacunae in the knowledge in recognizing deposits on the tooth surface.

Table 1. Responses to 8-closed ended questionnaire by dentists (n=155)

Questions		N	%
How many pregnant patients do you attend approximately in a month?	<5	120	77.42
	5	30	19.35
	>5	05	03.23
Do pregnant patients complain of problems in the gums more often than other individuals?	Yes	80	51.61
	No	75	48.39
If yes to the previous question, what problems have you come across?	Mobility of teeth	55	40.74
	Swelling of gums	05	03.70
	Bleeding from the gums	70	51.86
	Unusual growth on the gums	05	03.70
Do you get referrals from the Gy-Ob directly?	Yes	05	03.23
	No	80	51.61
	Sometimes	70	45.16
	Yes	120	77.42
	No	05	03.23
	Sometimes	30	19.35
Do you carry out treatment procedures for pregnant patients?	Yes	00	00.00
	No	150	96.77
	Sometimes	05	03.23
If yes to the previous question, then which trimester?	1st trimester	00	00.00
	2nd trimester	05	100.0
	3rd trimester	00	00.00
Are you aware that it is said that complications like Pre-term low birth or pre-eclampsia arise in periodontally compromised patients?	Yes	25	16.13
	No	105	67.74
	Don't know the terms	25	16.13

Table 2. Responses to 8-closed ended questionnaire by gynaecologist (n=75)

Questions		N	%
Do patients complain of bleeding gums or any other problem related to the periodontium often?	Yes	60	80.00
	No	15	20.00
Are you aware that periodontal problems pose a threat to systemic conditions of the mother?	Yes	07	09.33
	No	68	90.67
Are you aware that periodontal problems pose a threat to systemic conditions of the mother?	Yes	45	60.00
	No	30	40.00
Are you aware that the systemic conditions can be transferred to the foetus?	Yes	75	100.0
	No	00	00.00
Are you aware if there is any relationship between the periodontal problems and pre-term low birth or pre-eclampsia?	Yes	60	80.00
	No	15	20.00
Do you refer your patients to a dentist/periodontist?	Yes	10	13.33
	No	65	86.67
Do you personally communicate to the dentist, to follow-up regarding your patients' oral health?	Sometimes	60	80.00
	Always	15	20.00
Should oral health be a part of UG/PG medical student curriculum?	Yes	65	86.67
	No	10	13.33

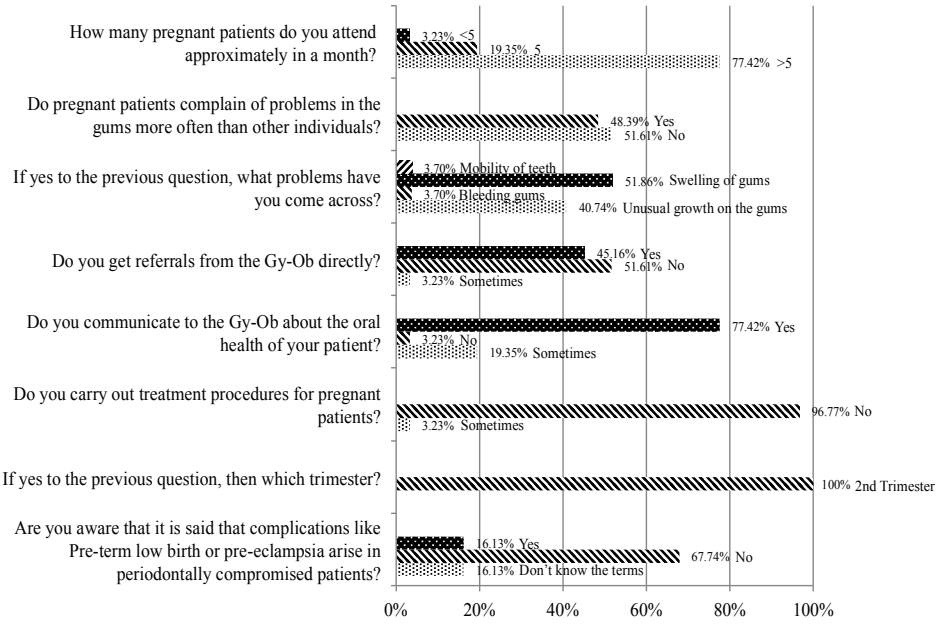


Figure 1. Responses to 8-closed ended questionnaire by dentists (n=155)

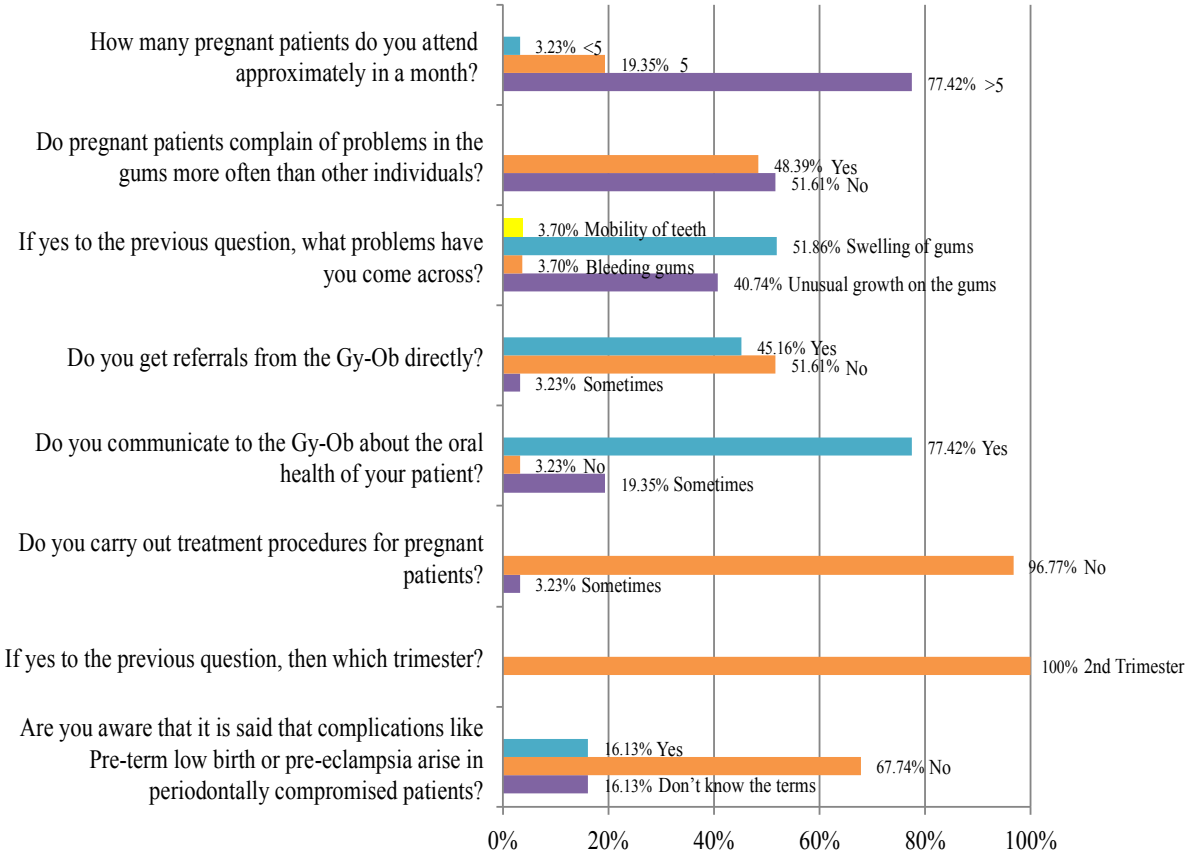


Figure 1. Responses to 8-closed ended questionnaire by dentists (n=1)

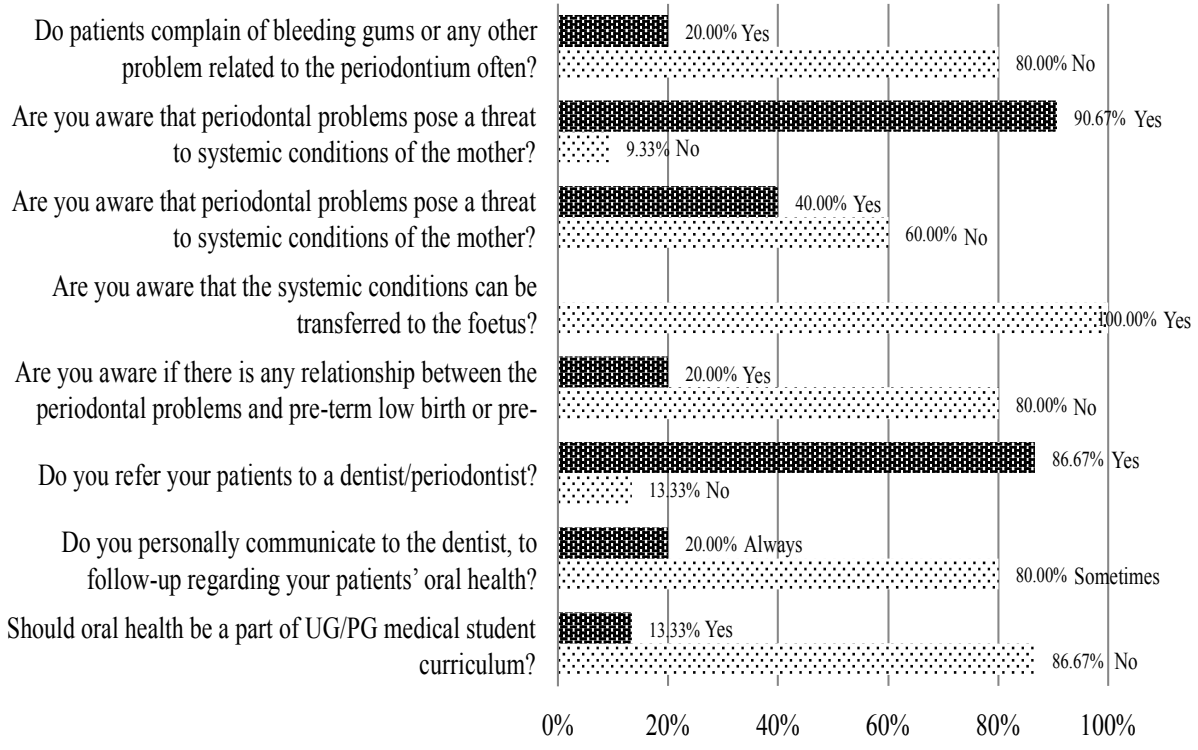
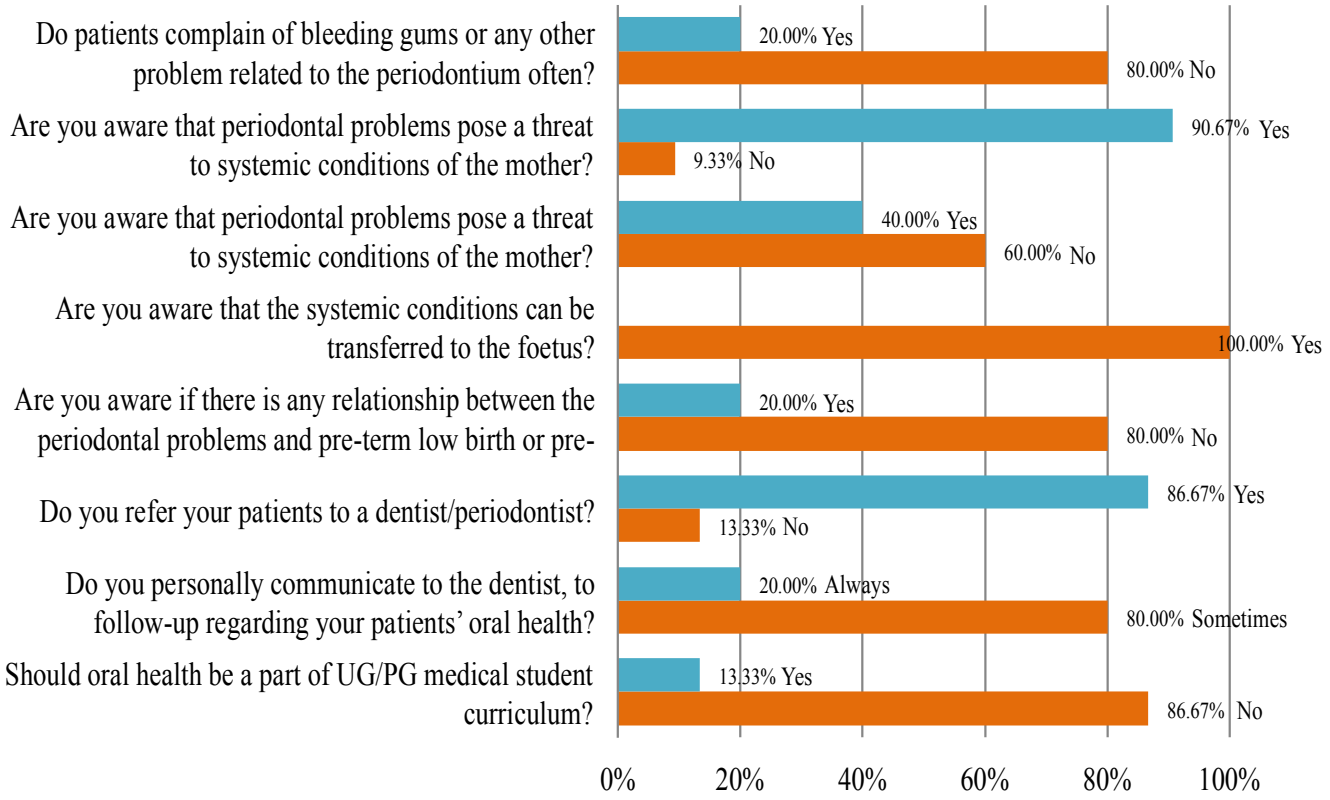


Figure 2. Responses to 8-closed ended questionnaire by gynaecologist (n=75)



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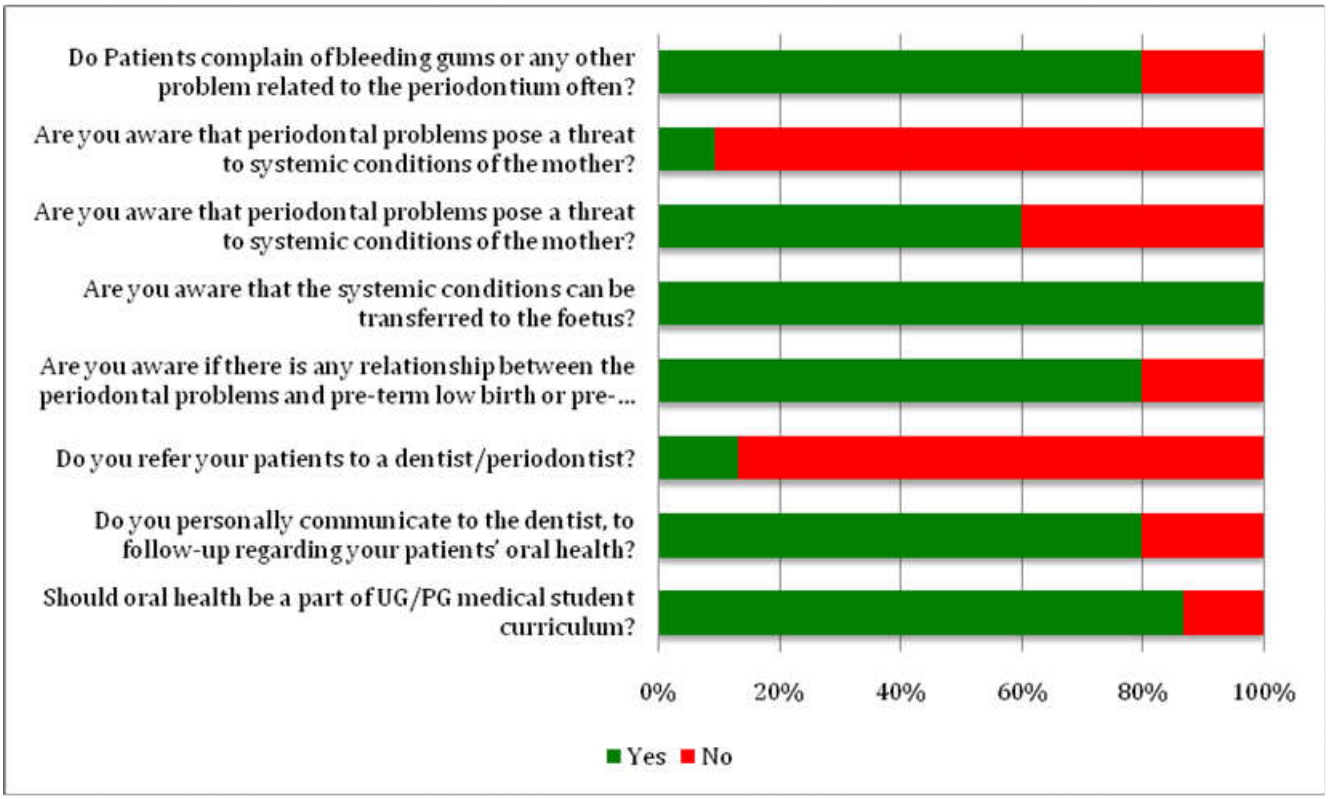
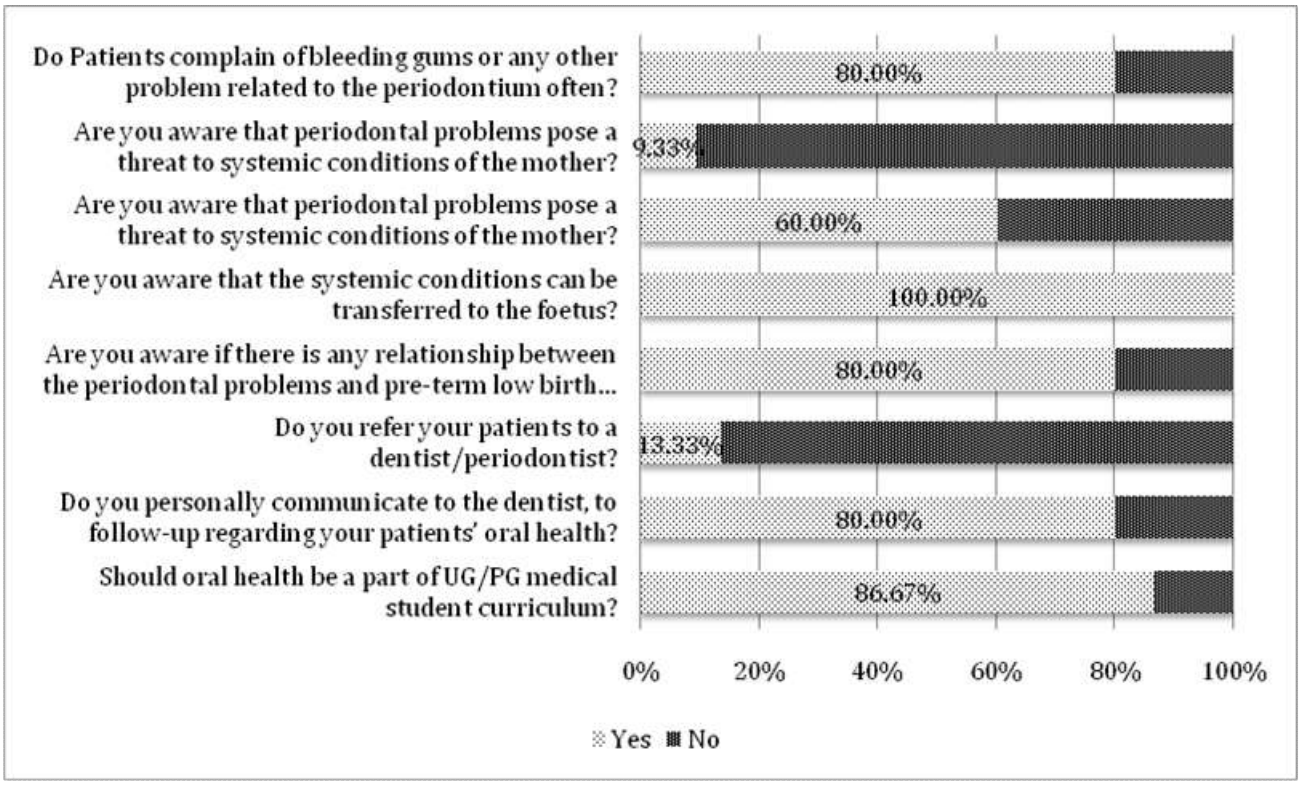


Figure 2. Responses to 8-closed ended questionnaire by gynaecologist (n=7)



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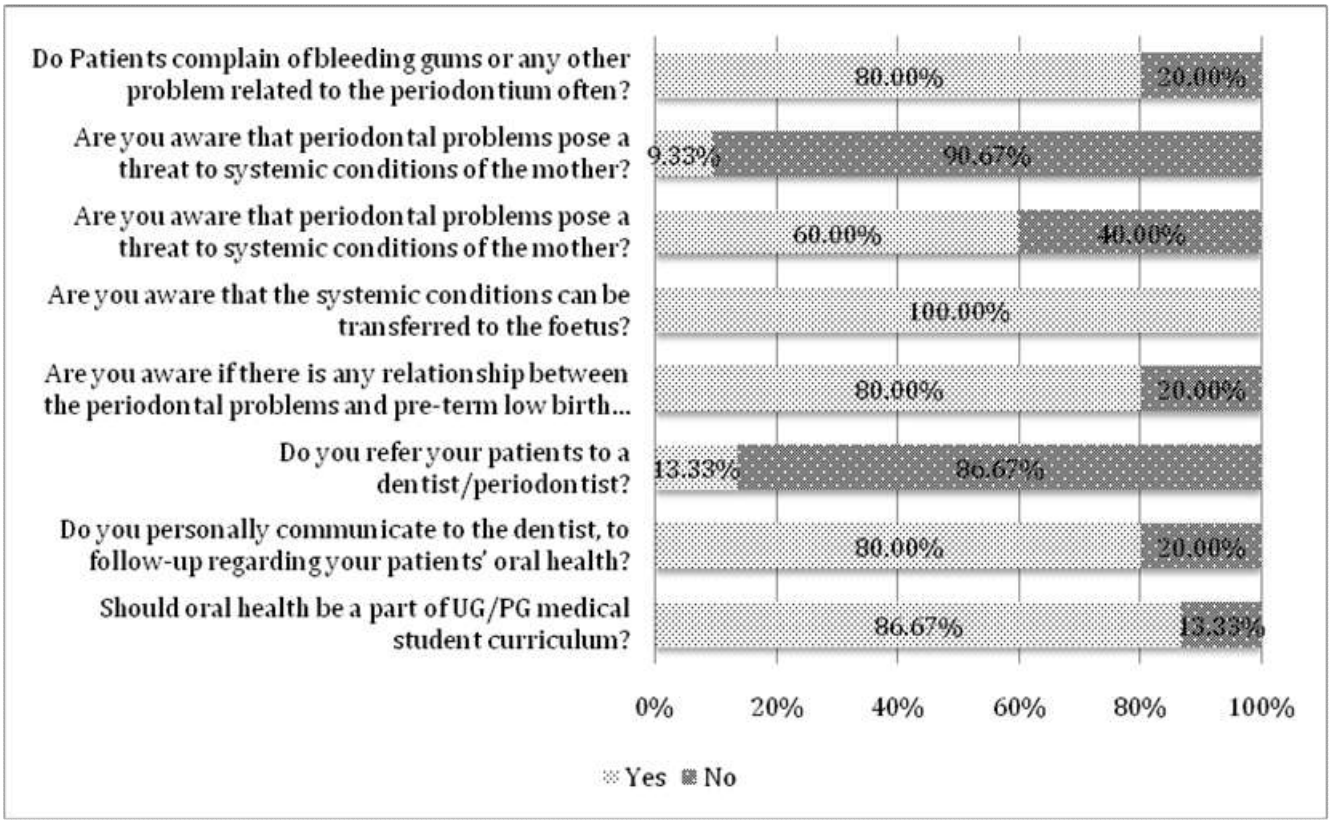

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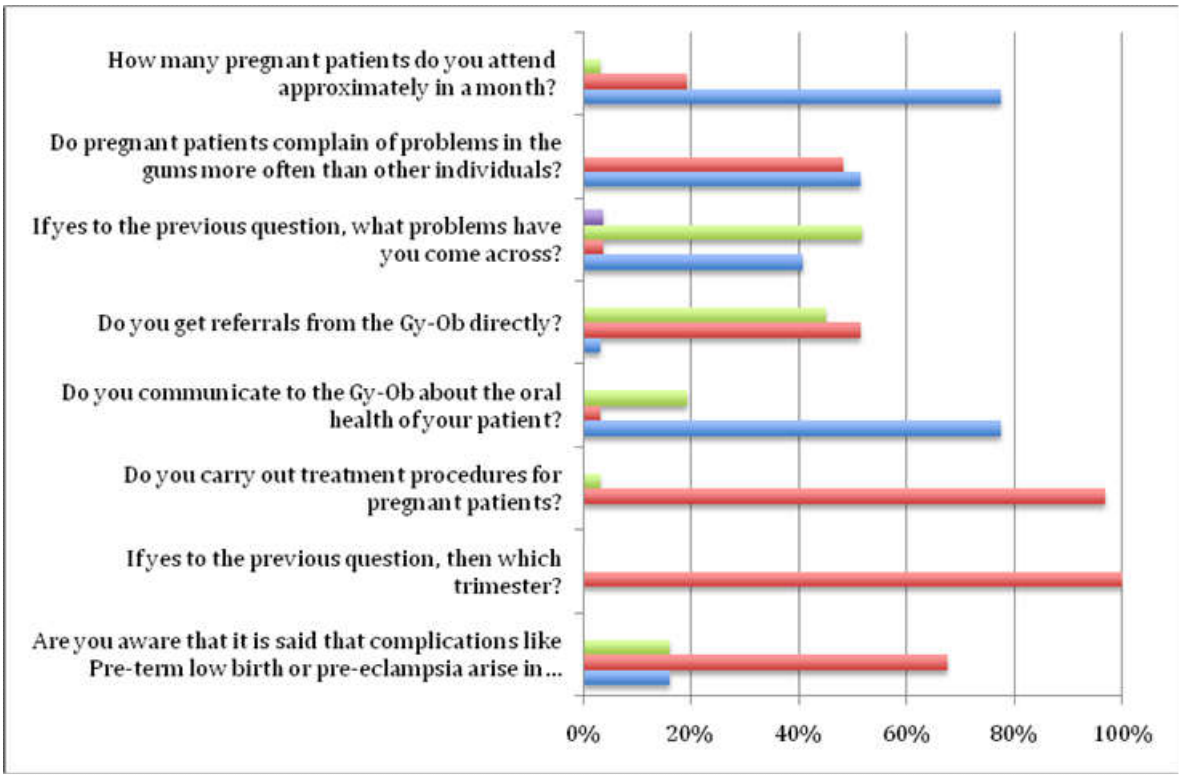

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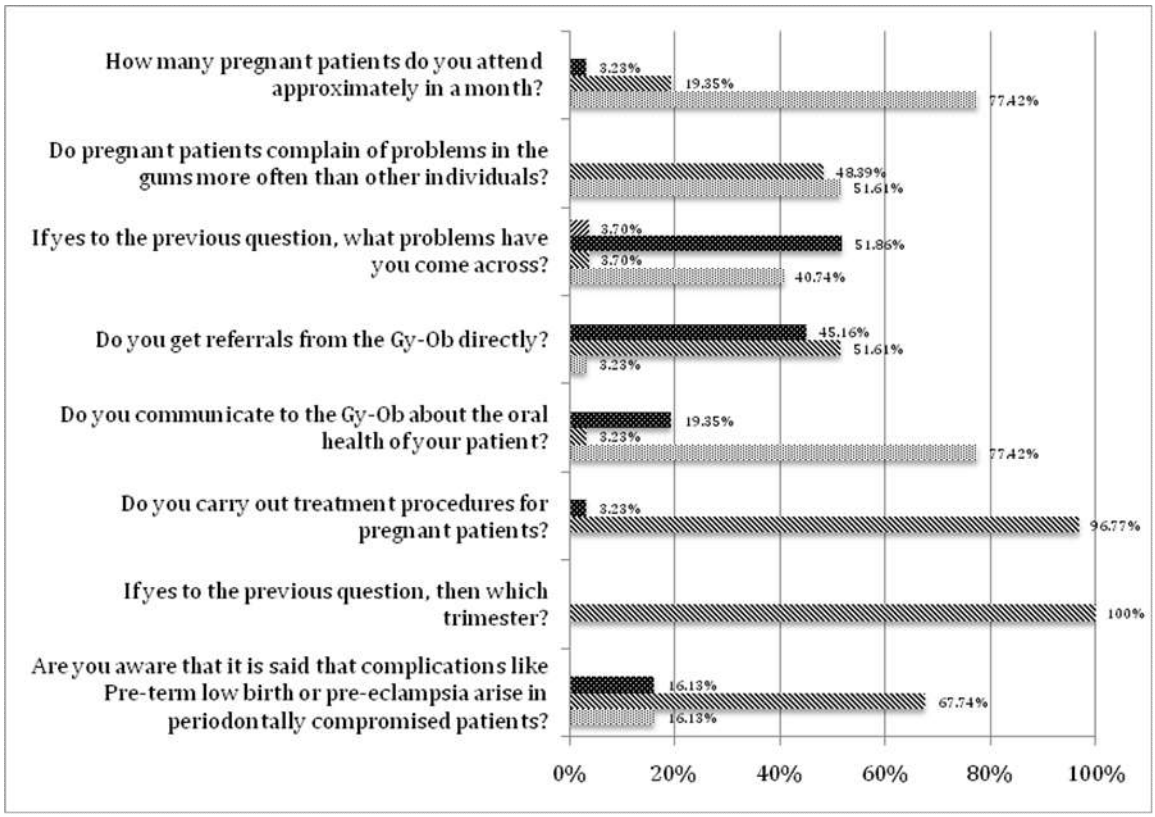

Figure 2. Responses to 8-closed ended questionnaire by gynaecologist (n=75)

Hormonal and vascular changes that accompany pregnancy often exaggerate the inflammatory response to local deposits. (Ferris, 1993) It has been suggested that optimal oral health during pregnancy may have a beneficial impact on the personal health of the pregnant woman as well as that of her offspring. (Parker *et al*., 1998b) Daily oral hygiene practices such as toothbrushing and flossing, which aid in preventing the accumulation of bacterial plaque, should be encouraged during pregnancy and after child birth. Prevalence studies have suggested that 20–50% of women from developed countries report smoking at the beginning of pregnancy. Immediate effects of smoking on pregnancy outcomes may be miscarriage, low birth weight, preterm birth, and perinatal death. (Shenoy *et al*., 2009) All the above-mentioned lower responses by gynecologists could be due to the lack of knowledge regarding outcomes of poor oral health, limited access to oral healthcare professionals, lack of time for prenatal oral health counseling and referral, and inadequate oral health training received during the previous years of medical education. Our study has some limitations. Although oral self-care attitudes were anonymous, the responses might be biased to what the participants believed was ideal. The results presented indicate the opinions of a small sample of gynecologists& dentists. This study does not enable broad generalizations regarding the potential impact of these findings. Caution must be taken in interpreting the applicability of the current data until these findings can be confirmed by larger, prospective investigations.

Conclusion

Oral health professionals need pregnancy specific education to provide appropriate preventive and curative care to pregnant patients. Similarly Obgy's need specific periodontal and dental education related to maternal health. The professionals can play a vital role in promoting good oral health by proper co-ordination. Gynecologists considered in the present study showed an acceptable level of knowledge and awareness toward periodontal health and the association between periodontal disease and adverse pregnancy outcomes. Inter-professional cooperation between gynecologists and dental healthcare professionals is required to bridge knowledge gap. Also, educational programs on periodontal health targeted toward gynecologists are needed to improve the periodontal health awareness, in order to reduce the incidence of preterm low-birth-weight babies.

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