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ORAL HEALTH STATUS OF PREGNANT WOMEN & AWARENESS ABOUT ORAL HEALTH AMONG PREGNANT PATIENTS AND GYNECOLOGISTS

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ABSTRACT

Pregnancy is a physiological condition with multiple oral health outcomes such as gingivitis, gingival enlargement, salivary alterations and dental caries. Poor oral hygieneincreases the risk of complications during pregnancy including preterm delivery, low birth weight, gestational diabetes, preeclampsia and stillbirth. Pregnant women are usually unaware of the consequences of oral health problems. Gynecologists play a unique role in providing health care to pregnant women. Therefore, this study aimed to evaluate the oral health status and awareness of oral health among pregnant women and gynecologists attending a government hospital gynecology ward in Lahore, Pakistan. It was a cross-sectional study. The study sample consisted of 220 healthy women of age 18-31 years. Divided into 2 groups; 110 healthy pregnant women were considered. 110 women who were not pregnant were used as the control group. The clinical examination was done based on WHO criteria for periodontal assessment and PH of the saliva was also measured. Pregnant women were interviewed according to a questionnaire and documented in a specially designed Proforma. Another questionnaire was given to 60 clinicians working in the gynecological ward and responses were recorded in a separate Proforma. The clinical manifestations showed statistical significance values for oral health problems as compared to nonpregnant women. There were only 14.5% of pregnant women who consulted a dentist for their oral health problems during pregnancy and only 35% of the clinicians have advised their patients regarding maintenance of good oral hygiene and routine dental checkups during pregnancy. This study showed lack of awareness in pregnant women. It also showed the presence of misconceptions among gynecologists regarding dental treatment.

Key Words: *Oral health in pregnant women, complications, awareness.*

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INTRODUCTION

Pregnancy is a physiological condition amplified by various changes in the oral cavity along with other physiological changes in the body.[1] These can be represented as a variety of signs and symptoms. Gingival hyperplasia, gingivitis, pyogenic granuloma, dental erosion and various salivary alterations are some of the changes commonly witnessed among pregnant women.[2] Oral health is an important component of general health and should be maintained during pregnancy and throughout a woman's life.Pregnancy results in increased secretion of estrogen and progesterone which leads to various changes in body organs including the oral cavity.[2] Poor oral hygiene and hormonal changes can lead to gingivitis, periodontitis, benign lesions like pregnancy tumors and increased susceptibility to oral infections.[3] These hormonal changes may also contribute to change in salivary ph[4,5] in turn, leading to increased incidence of dental caries.[6] Modification in diet and frequency of eating can increase the risk of developing tooth decay. Poor oral hygiene also increases the risk of complications during pregnancy including preterm delivery, low birth rate, gestational diabetes, preeclampsia and stillbirth.[7]

Pregnant women are usually unaware of oral problems that may arise during the antenatal period and their consequences on the mother's and infant's oral and systemic health.[7] Even when they are aware of oral health problems, they don't visit the dentist. The use of dental services by pregnant women is consistently

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low internationally, including the United States of America (23–49%)[5], Greece[6](27%) and United Kingdom[7] (33–64%). In an underdeveloped country like Pakistan, there is limited baseline data available[8=10] despite the fact that maternal mortality rates in Pakistan are almost 10 times greater than in developed countries.[11] In a study[12] on periodontal disease and adverse birth outcomes in Pakistani pregnant women, it was found that they had high levels of moderate to severe dental disease.

Gynecologists play a unique role as major health care providers for pregnant women. Oral health-related problems in pregnancy can easily be avoided by getting advice from gynecologists to increase the use of dental services.[13,14] George et al[15]mentioned that the obstetricians were aware of the importance of oral health screening but were unable to perform this on their own due to lack of training and also because they prioritized other health issues over their patients' oral health. Moreover, in Pakistan, limited research has been done in this regard. There are still gaps in understanding the utmost importance of good oral health among dentists and medical health care practitioners.[16]

Therefore, the present study was undertaken to determine the 1) Oral health status of pregnant women 2) Awareness of pregnant women and their gynecologists towards oral health, which can help in improving maternal oral health and preventing fetal complications. It can also help in establishing oral health care guidelines for pregnant patients.

METHODOLOGY

It was a quantitative cross-sectional study. Ethical approval was taken from the institution. The study subjects comprised 220 women attending outpatient clinics at a government tertiary care hospital gynecological ward. The sampling technique was nonprobability convenience sampling. They were divided into two groups. GROUP 1: Confirmed pregnancy status by a gynecologist. No medical condition, no serious systemic illness, no labor pains. GROUP II: Non-pregnant healthy females with no serious medical condition. Clinical examination was done based on WHO criteria[16] for periodontal assessment (CPITN) using CPI probe and PH of the saliva was measured by using color-coded ph strips.[17] Written informed consent was taken from all participants before examination and interview. Clinical examination was done by the dental residents under the supervision of a consultant. For assessing the need for periodontal treatment (using CPITN index) in pregnant women, the dentition was divided into six sextants (one anterior and two posterior regions in each dental arch). The periodontal conditions were scored as follows:

• Code 0 was given to a sextant with no sign of pocket or calculus and bleeding on probing (gingival health with no treatment needs).

• Code 1 was given to a sextant with no pockets, calculus, or overhangs of fillings but in which bleeding occurs after gentle probing in one or several gingival units (mild gingivitis; improvement of oral hygiene is needed).

• Code 2 was assigned to a sextant if there were no pockets exceeding 3 mm, but in which, dental calculus and plaque-retaining factors were seen or recognized in sub-gingival regions (established gingivitis; scaling, removal of overhangs, and improvement of oral hygiene were needed).

• Code 3 was given to a sextant that harbored 4- 5 mm deep pockets (mild periodontitis, scaling, removal of overhangs, and improvement of oral hygiene were needed).

• Code 4 was given to a sextant that harbored pockets 6 mm deep or deeper (periodontitis and complex treatments such as surgery were needed).

A specially designed questionnaire was given to study subjects asking questions about oral health problems and who gave them advice about oral health problems in pregnancy and to visit the dentist. Sixty gynecologists who were attending the pregnant women regardless of their experience were also given 4 item questionnaires regarding if they were aware of these conditions or if they give any advice to their patients about oral health.

DATA ANALYSIS

Data collected was analyzed by using SPSS 16.0 and Microsoft Excel was used to produce graphs and tables. The student's t-test was used to compare pregnant and non-pregnant women's results. A probability value of <0.05 was taken as statistically significant.

RESULTS

A total of 220 patients were included in the study who were aged between 18 and 31 years.

The demographic data of participants' age, education and employment status were shown in Table 1.

Self-reported oral health problems among groups I and II showed that pregnant women had an increased frequency of oral problems as compared to the non-pregnant group, except for oral ulcers as shown in figure 1.

PH of pregnant was 5.6 which was less than the mean PH of non-pregnant ladies who showed a PH of 7.15. Non-pregnant subjects showed statistically higher values as compared to pregnant ladies as shown in figure 2.

TABLE1: DEMOGRAPHIC INFORMATION OF THE GROUP OF WOMEN (PREGNANT/NOT PREGNANT) EVALUATED.

Variable		n	%age
Age	18-23	64	30.48%
	23-28	109	51.90%
	28-31	47	22.38%
Education	Illiterate	109	51.90%
	primary	63	30.00%
	high	41	19.52%
	degree	7	3.33%
Employment	unemployed	197	93.81%
	employed	23	10.95%

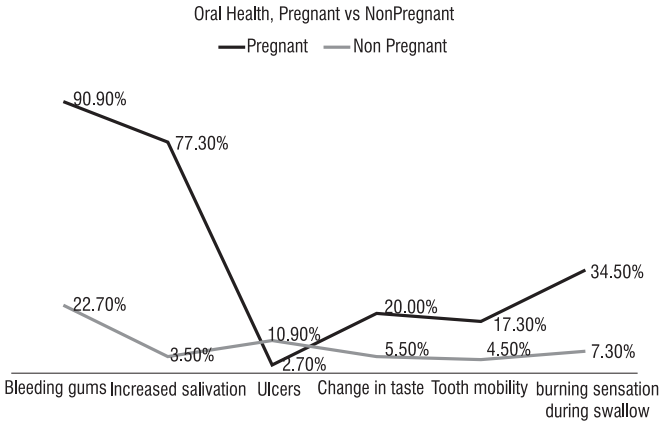

Fig 1: Self-reported Oral Health status

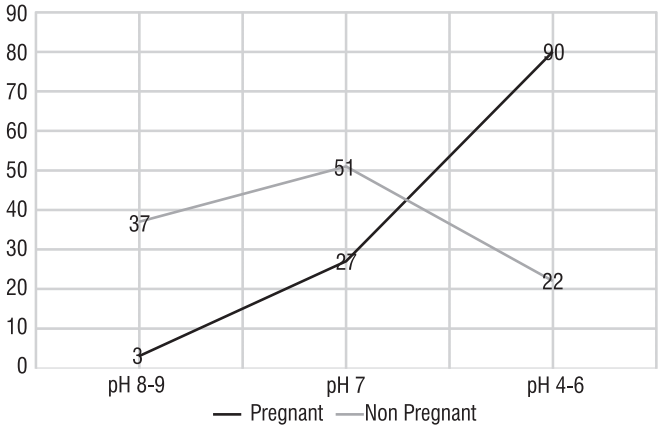

Fig 2: pH variance

CPITN index for pregnant women showed a higher percentage for code 2 and code 3 i.e, 40.9% and 41.82% respectively as compared to non-pregnant ladies. Non-pregnant ladies showed a greater frequency of healthy gingiva as compared to pregnant women as shown in figure 3.

The pregnant women received advice from elders and general doctors, nurses or medical staff. Only 16

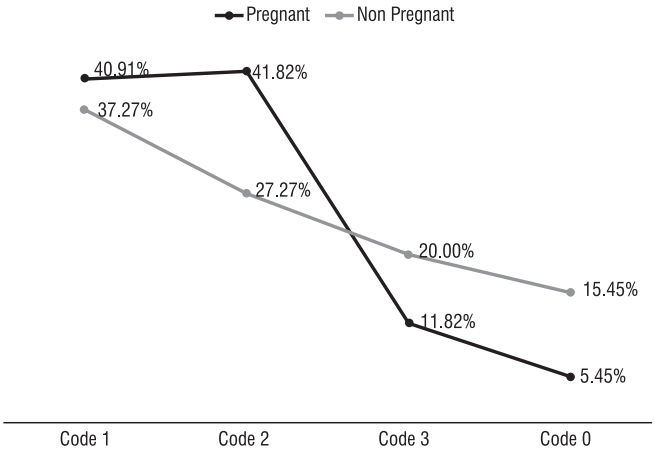

Fig 3: CPITN Index

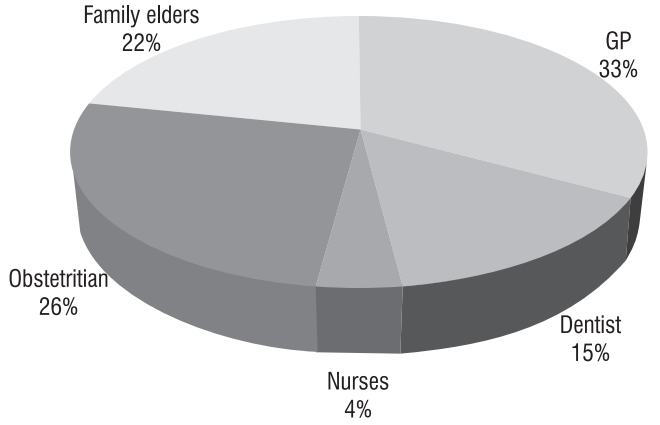

Fig 4: Who advised you on oral health care during pregnancy

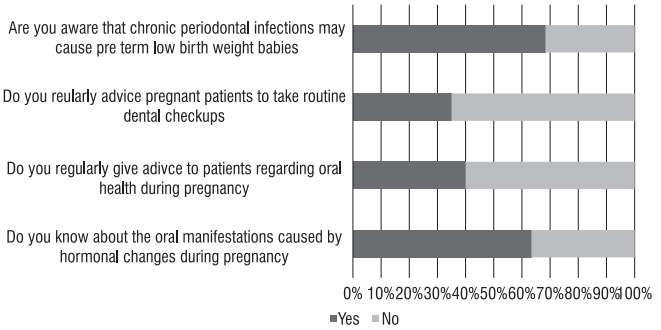

Fig 5: Clinician Questionnaire

percent consulted a dentist for oral problems as shown in figure 4.

Only 35% of doctors advise their patients regarding maintenance of good oral hygiene. 68% were aware that chronic periodontal infection can cause low preterm birth weight as shown in figure 5.

DISCUSSION

The percentages obtained in this study showed that approximately half of the study population was of young mothers. Young mothers should be well informed about

oral care. It will ultimately impact the oral health care of children as well. 49% of study groups were uneducated. It is also a risk factor for poor oral health status in pregnant women. 92% of study groups were housewives with no source of income of their own. Marbury et al[5] conducted a study on low-income pregnant women and reported that financial burden was one of the major reasons for not utilization of dental care.

In this study, 90.9% of pregnant women reported bleeding gums (fig 2). It was an early stage of periodontal disease aggravated by changing hormones during pregnancy. In the present study higher frequency showed the neglected dental care of pregnant women. Gingival bleeding could be the reaction caused by preexisting plaque and calculus.

The salivary PH of the pregnant women was acidic in this study as compared to non-pregnant subjects. These results are similar to the results of the study by Lassis et al[17]. It can be attributed to the fact that there was more gastric acid reflux in pregnancy as compared to non-pregnant ladies. This lower PH provided an ideal environment for dental caries and tooth decay.

Results of the CPITN treatment index provided information that most of the pregnant women were code 2 (40%) and code 3 (41%) fig3. Only 5% of the pregnant subjects had healthy gingiva which showed an alarming situation among pregnant women. In contrast, there was a subtle curve in the CPITN graph in non-pregnant women. 15% of non-pregnant women had healthy periodontium. The finding in the current study suggests a lack of awareness among them and there was a need for immediate dental prophylaxis and referral to the dentist. Miyazaki et al[18] conducted a study in japan and showed exactly opposite results. In his study, 95% of pregnant women had healthy gingiva. Their results can be attributed to the emphasis on maintaining good oral hygiene and regular dental checkups of pregnant women.

According to the results of this study, most of the pregnant women took advice from their elders showed a lack of knowledge regarding oral health. It can also be attributed to the fact that in Pakistan, family influences might be the reason for the lack of utilization of dental services. Other reasons could be lack of emphasis from the attending health care provider and fear of dental treatment. Pakistan is a socioeconomic underdeveloped country so the financial burden can also be the reason for not visiting the dentist. Any reported literature on this topic for comparison???

In response to the questionnaire for gynecologists, more than half of gynecologists were aware of the consequences of periodontal disease on maternal health and fetal birth weight. But only 40% gave advice regarding oral health and 35% advised a routine dental checkup. It can be attributed to the fact that the majority of medical health workers assume that dental treatment is not safe in pregnancy. This baseline data was very important because this misconception was acting as a barrier for providing oral health care in pregnancy. Govindaswamy et al[19] conducted a similar study in India and found out that the knowledge of the prenatal practitioners was appreciable but practical implementation was not optimal.This study had its strength and weaknesses. It is the strength of the present study that qualitative data i.e., responses to questionnaires had clearly explained the results of quantitative data i.e., self-reported oral health and treatment need. Among the weaknesses of the study was the small sample size. It is beyond the scope of this paper to do the multiple regression analysis. Future studies can be done with a larger sample size with the correlation of demographic factors in multiple maternity hospitals in Pakistan. It will be helpful in reaching a consensus statement regarding the oral health of pregnant women.[20,21]

It is also suggested to develop a periodontal prevention program for pregnant women. There is also the requirement of continuing education regarding pregnancy and oral health conditions. It is the need of the day to develop the guidelines in health care practices for the provision of oral health care in pregnancy. This can be effective for the prevention of poor oral health-related adverse pregnancy outcomes, such as pre-term birth or pre-eclampsia.

CONCLUSION

Pregnant women showed poor oral health and there was a need for immediate referral to a dentist. There was also a lack of awareness among pregnant patients regarding the utilization of dental treatment. Gynecologists were aware of adverse outcomes of bad oral health but there were misconceptions among them regarding dental treatment. There is a need of filling in the interdisciplinary gaps between dentists and gynecologists.

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2 Hamnna Khawaja:	Data collection, proofreading
3 Ammar Mehmood:	Data collection, Data analysis.