

Oral Health Issues During Pregnancy

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ABSTRACT

Objective: To find out what oral health issues women face during pregnancy.

Study Design: A cross-sectional observational study

Place and Duration of Study: This study was conducted at the Chiniot General Hospital Korangi Karachi's Dental OPD from November 2019 to July 2020.

Materials and Methods: This study was originally intended to involve 150 pregnant women, however owing to the COVID-19 crisis and the closing of dental OPDs, many pregnant women are unable to get dental check-ups and appointments. Thus, 90 individuals' data was gathered, encompassing all phases of pregnancy, and the outcomes of 90 people were analyzed. Each participant gave their informed consent prior to the start of data collection.

Results: Seven components were examined during the oral examination. The first was the oral hygiene status, which revealed that 24 women (26.7 percent) had good oral hygiene, whereas 66 women had terrible oral hygiene (73.3 percent). Second, 74 (82.2%) pregnant women had gingival bleeding on probing, which was followed by visible plaque in 77 (85.6%) women, caries activity in 83 (92.2%) women, and extra oral edoema in 14 (15.6%) women. Finally, 78 (86.7%) of the women showed gingival edoema, with 35 (38.9) having localized swelling.

Conclusion: The significance of dental care throughout pregnancy, as well as sociodemographic differences in clinical OH during pregnancy, are highlighted in this study, which provides important results for customizing treatments for pregnant women.

Key Words: pregnancy, oral hygiene, gingivitis, dental caries

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INTRODUCTION

During pregnancy, a woman's body undergoes hormonal, biochemical, and physiological changes, resulting in several systemic changes. During pregnancy, the oral cavity is also impacted, just like the rest of the body, and is particularly prone to oral mucosal alterations, which can lead to a variety of dental disorders. This might result in orofacial discomfort.⁽¹⁾ Pregnant women's general and dental health were both impacted by physiological and hormonal changes. Increased oestrogen and progesterone levels promote blood vessel dilatation and permeability, weakening immune response and making

the host more vulnerable to oral infections and inflammation^(2,3). When foetal growth reduces the stomach's volumetric capacity in the third trimester, pregnant women frequently increase the frequency and quantity of carbohydrate ingestion. Increased tooth plaque accumulation, acid generation, and dental decay are all linked to these changes^(4,5). During pregnancy, rising oestrogen and progesterone levels increase the permeability of oral vascular structures and lower immunocompetence, increasing the likelihood and severity of mouth inflammation^(5,6). Increased levels of progesterone and oestrogen can cause hyperemia, edoema, bleeding, and an increased risk of bacterial infections in the mouth⁽³⁾. Pregnant women are more prone to gingivitis, tooth mobility, dental caries, and erosion, and should undergo preventative oral health care as a result.^(7,8) Gingivitis and periodontitis, two types of periodontal disease, have been linked to pregnancy⁽⁹⁾. According to a study the oral cavity undergoes many changes during the gestational period, most commonly faced problems are gingivitis and periodontitis⁽¹⁰⁾. Around 5 % of pregnant females may also develop pregnancy oral tumours. The main factor for this vascular lesion is the increased level of progesterone in combination with bacteria and other irritants. The Vascular lesion must be removed if it bleeds or causes problems in mastication or if they don't resolve after delivery.⁽¹¹⁾ Many studies found that periodontal disease may be a risk factor for preterm

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births⁽¹²⁾. Dental Caries is the localized destruction of tooth substance. It is the most common oral condition in developed countries but its effects on pregnancy outcomes haven't been identified yet. Some studies reported that the bacteria causing dental caries may be responsible for pregnancy outcomes like preterm birth or low birth weight, while many studies found that there is no association between dental caries and adverse pregnancy outcomes. Pregnant women are more vulnerable to have dental caries and gingivitis as compared to non-pregnant women⁽¹²⁾. The dental health of a pregnant woman can have an impact on both her and her unborn child's health. The objective of this article is to provide information about the importance of women's health care providers in recognising, preventing, and managing oral health issues during pregnancy. There are strategies for integrating inter professional oral health competences into the teaching and practise of women's health care providers.

MATERIALS AND METHODS

An observational cross-sectional research. The research was approved by the SZABIST University Ethical Review Board, and a permission letter was received from Chinniot General Hospital Korangi Karachi, with the goal of investigating oral health problems during pregnancy. The data for this study came from pregnant women who had tooth discomfort. All pregnant females aged 18 to 45 years old, at any stage of pregnancy, who visited the Dental OPD or emergency department for routine dental consultations were included. A sample size of 140 to 150 pregnant women was calculated. Non-probability Consecutive Sampling Approach was employed as the sampling technique. Consecutive sampling is a sampling technique in which every subject who meets the inclusion criteria is chosen until the required sample size is reached; the reason for choosing this sampling technique is due to the limited time period for data collection and the small number of pregnant females visiting dental clinics; therefore, keeping the time interval in mind, I chose consecutive sampling and included every pregnant female visiting dental clinic having dental discomfort and other dental issues. This study was originally intended to involve 150 pregnant women, however owing to the COVID - 19 crisis and the closing of dental OPDs, many pregnant women are unable to get dental check-ups and appointments. Thus, 90 individuals' data was gathered, encompassing all phases of pregnancy, and the outcomes of 90 people were analysed. Each participant gave their informed consent before the data collection began. The study's specifics were disclosed to them, and they were not forced to participate if they did not want to. Participants in the study were interviewed and answered questions regarding sociodemographic data such as age, educational status, marital status, and family income status. They were questioned about their

current complaints, which necessitated a trip to the dentist. Patients were also inquired about their pregnancy status (gravida and trimester). Medical history about any medical conditions or any complication during pregnancy were asked like gestational diabetes, gestational hypertension or any other issue during pregnancy. The patient's teeth were evaluated by qualified clinical professionals at Chinniot General Hospital Karachi's Dental Care Unit. The oral hygiene status was then assessed, as well as the presence of visible plaque and calculus, gingival bleeding on probing, and the caries status, which included determining how many carious teeth were present and whether the same tooth pointed by the patient with dental pain was carious or not. Any trauma history, gingival edoema (localized, widespread), and extra oral swelling were also checked, as well as any previously treated, filled, removed, or RCT treated teeth. SPSS software version 21.0 was used to analyze the data. For numeric variables, the mean of the data was presented. For nominal and categorical data, frequency and percentage were provided. The Fisher exact test was used to determine the significance of the variables.

RESULTS

Table No.1: Intra oral Examination

Oral hygiene status	
Bad	66(73.3)
Good	24(26.7)
Plaque or calculus	
Absent	13(14.4)
Present	77(85.6)
Gingival bleeding on probing	
No	16(17.8)
Yes	74(82.2)
Carries activity	
Absent	7(7.8)
Present	83(92.2)
Gingival swelling	
Absent	12(13.3)
Present	78(86.7)
Gingival swelling (generalized or localized)	
Generalized	43(47.8)
Localized	35(38.9)
Extra oral swelling	
Absent	76(84.4)
Present	14(15.6)

During the oral examination seven components were examined. Firstly, the oral hygiene status which showed good hygiene in 24 women (26.7%) followed by bad oral hygiene in 66 women (73.3%). Secondly, gingival bleeding on probing was observed in 74(82.2%) pregnant women, followed by visible plaque in 77 (85.6 %) women, caries activity in 83 (92.2 %) women, extra oral swelling in 14(15.6%) women. lastly gingival

swelling was present in 78 (86.7%) women out of which 35(38.9) had localized swelling and 43(47.8) had generalized swelling as illustrated in table-1.

The most prevalent associated factor with the history of presenting complaint was dental caries, which was present in 53.4 percent of the patients, followed by gingivitis (27.8%), and 7.8 percent had both of the aforementioned correlations. In the study group, 77 (85.6%) of the women had no pregnancy-related problems, whereas 13 (14.4%) of the women developed gestational diabetes. Table 2 contains information on the most recent prenatal dental appointment.

Table No.2: Presenting complain during Pregnancy

Limited mouth opening	2(2.7)
Extra oral swelling	17(23.0)
Sensitivity	4(5.4)
Bleeding gums	32(43.2)
gingival pain	4(5.4)
Halitosis	3(4.1)
Swollen gums	12(16.2)
Restoration dislodgment	2(2.2)
RCT treated tooth	1(1.1)
Impacted tooth	4(4.4)
Gingivitis	25(27.8)
Fixed Prosthesis dislodgment	1(1.1)
Dental Trauma	2(2.2)
Dental Caries and gingivitis	7(7.8)
Dental Caries	48(53.4)
Pregnancy general health complication	
No	77(85.6)
Yes(Gestational Diabetes)	13(14.4)

DISCUSSION

Pregnant women often ignore basic dental treatment and oral hygiene maintenance as a consequence of various changes in their bodies, weakness, and different lifestyles, which can aggravate their oral problems and cause adverse pregnancy outcomes. Prenatal health care practitioners must have a thorough understanding of oral health care and recognize the significance of proper oral hygiene and oral health throughout pregnancy. In this study Dental caries was present in 53.4% of the participants and was the most common associating factor with the history of presenting complain followed by gingivitis (27.8%) and 7.8% presented having both dental caries and periodontal issues. Others reported with other problems like dislodged fixed prosthesis (1.1%), pain due to impacted third molars(4.4), pain due to restoration dislodgment (2.2%), abscess formation and pain in RCT treated tooth (1.1%), pain due to trauma and fractured tooth(2.2).

A previous study conducted in a Government hospital Karachi aimed to access the frequency of dental caries during pregnancy stated that prevalence or frequency of dental caries is high among pregnant women. They reported dental caries prevalence around 57% among

pregnant females which was high among rural women than urban women ⁽¹⁰⁾. It further explains that socioeconomic status, education status, rural urban lifestyles, gestational diabetes, gestational hypertension, lack of awareness are all responsible factors for caries initiation and progression during pregnancy ⁽¹⁰⁾. Previous studies conducted in Brazil, Pakistan, Hungary also reported the prevalence and frequency of dental caries around 47% to 69% among pregnant women. A study conducted in Thailand by Adulyaman to access oral health related quality of life also obtained the similar results that low education level and limited access to the health care services are actually the main reason ⁽¹³⁾. A previous study conducted in France reported that about 50 % of pregnant females had tooth decay. They also evaluated that tooth decay was associated with lower educational level and lower age and lack of proper prenatal care ⁽¹⁴⁾. Because dental plaque is the main etiological element in caries and gingivitis, oral hygiene is an important role in their prevention ⁽¹⁵⁾. Poor dental hygiene is the only significant risk factor of caries presence and severity, according to clinical trials ^(6, 16, 17). If plaque is not removed on a regular basis, a carious lesion forms and protects the biofilm; caries will grow until the patient is able to clean this region. The study conducted in a Government setup in Karachi in Jan 2020 also sought out that diabetes and caries are associated with each other and gestational diabetes may be responsible for enamel development defects in teeth of the children born to diabetic females ⁽¹⁰⁾, but in this study association of dental caries with diabetes was not evaluated as patients who are known case of diabetes mellitus were excluded from the study. Although 13 (14.4%) women were reported with gestational diabetes, they were included but evaluating the association of dental caries or dental pain with gestational diabetes was beyond the scope of this study. In a previous cross sectional survey 28.68% study participants complained of swollen gums with redness, 27.49% complained of bleeding gums, 25.89% complained of just halitosis (bad breath) and 13.9% didn't complain about any signs of gingivitis ⁽³⁾. Women during their gestational period are more vulnerable to tooth decay, due to recurrent vomiting that causes erosion of the dental enamel, teeth become more prone to dental caries and if the carious lesion left untreated it may result in its transmission towards the inner layers of tooth and pulp thus causing abscess formation or cellulitis a previous short study that was conducted in Pakistan around 47 % of women had at least one decayed tooth. A study conducted on low income Brazilian women showed the prevalence of 61 % decayed teeth. A previous study in Hungary reported 69 % of postpartum females required at least one or more restorations and need dental assistance ⁽¹⁴⁾.

CONCLUSION

The point of major concern is that a large group of pregnant women are not aware about pregnancy gingivitis and other oral health issues like dental caries, bleeding gums, dental pain during pregnancy, many are not aware about the preventive and treatment measures during pregnancy and there is lack of awareness about importance of necessary dental treatments during pregnancy among dentists and oral health care experts also.

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