

Evaluation of the Dental Care Attendance among Pregnant women in Public Health Facilities in Southern Nigeria

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ABSTRACT

Background: A primary goal of public health programs is to restore an expectant mother's oral health to a disease-free status. Several studies have shown that most pregnant women choose not to seek dental care. This study aimed to determine the dental care attendance among pregnant women in southern Nigeria.

Methods: This cross-sectional study was conducted between March 2025 and May 2025, with an interviewer-administered questionnaire in multiple public health facilities, with data from pregnant women who attended their antenatal care in these centers. The questionnaire had three sections, which included - Demographics (age, education, tribe, income, Dental visits during pregnancy), assessment of their oral health status by pre-natal health care providers, and assessment of oral status by dentists during the antenatal visits. Descriptive statistics such as means and standard deviations (SD) were used to present and summarize the data, while frequency and percentages were used to present the categorical data. A chi-squared test was used to identify correlations and differences. The IBM Statistical Package for the Social Sciences (SPSS) version 28.0 for Microsoft Windows was used to analyze the data.

Results: The majority of the participants were in the 26–30-year age group (34.8%) and in the Tertiary Health facilities (78.4%). Most of the pregnant women (83.4%) reported not having dental issues, and 95.3% had not visited the dentist in this study. The level of education, income, and the health facility attended by the pregnant women did not impact them, as there were no significant differences in the associations.

Conclusion: Despite the very high proportion of women attending antenatal clinics, only very few were aware of the need for their dental care during pregnancy as revealed by this study. Hence, oral health care screening should be incorporated and regularly carried out by oral health practitioners among pregnant women across the various tiers of healthcare system.

Keywords: Dental care attendance, pregnant women, public health facilities, Nigeria

INTRODUCTION

Pregnant women's dental health is crucial to their overall well-being (Africa & Turton, 2019). Pregnant women are more likely to get oral disorders because of hormonal changes, reduced immunity, and poor oral hygiene (Alshehri, 2019). Pre-existing periodontitis is made worse during pregnancy, and gingival

inflammation is typically experienced starting in the second trimester (Al-Turck et al., 2021). Tooth caries and tooth erosion can also result from morning sickness, dietary modifications, the consumption of cariogenic foods, decreased salivary flow, and poor oral hygiene habits in expectant mothers (Chen et al., 2022). Globally, periodontal disease affects 40% of pregnant

women, and tooth pain affects 50% of them (Global Oral Health Status Report, 2022), 70–90% of Saudi Arabian expectant mothers have one or more dental issues (Jahan et al., 2022). The most common dental issue (30–60%) was periodontal disease, followed by dental caries (30–40%) and toothache. Preterm birth and low birth weight are two negative birth outcomes that are linked to periodontal disease during pregnancy (Ressler-Maerlender et al., 2005). There is a greater risk of sepsis, pre-eclampsia, and miscarriages among expectant mothers who have untreated oral infections (Rocha et al., 2018). The development of early childhood caries in the offspring of pregnant women is also linked to oral illness. Restoring an expectant mother's oral health to a disease-free status is a primary goal of public health programs due to unfavourable health conditions for mothers and their children, as well as the fact that mothers are responsible for instilling healthy habits in their children at an early age (Shulman et al., 2018).

Most pregnant women worldwide choose not to seek dental care (Togoo et al., 2019). In Saudi Arabia, the Ministry of Health [MOH] oversees and funds the provision of healthcare services, and dental treatment is incorporated into prenatal care. However, the majority of pregnant women in Saudi Arabia only visit the dentist when they experience pain or bleeding gums, and more than half of them completely forego dental care during their pregnancy (Vamos et al., 2015). The most frequently mentioned obstacles to receiving dental care during pregnancy were a lack of perceived need for dental care, low awareness of the value of oral healthcare, and unfavourable opinions about the safety of dental procedures (Vamos et al., 2015).

For the successful prevention and control of oral diseases, the World Health Organization emphasizes the significance of integrating oral health with maternity and child health. To assist women in having comprehensive dental care during pregnancy and throughout life, doctors and dentists must collaborate¹³.

The literature on how dentists and prenatal care providers might urge expectant mothers to seek oral health care during pregnancy is currently lacking. In order to assess the oral health promotion strategies used by oral and prenatal health care providers and to comprehend their influence on pregnant women's propensity to visit a dentist, was the justification in conducting this study.

The objective of the study was to determine the number and knowledge of pregnant women who utilize dental care services in public health facilities across Edo State.

MATERIALS AND METHODS

This study employed a cross-sectional design to provide an understanding of the role of dentists and

antenatal care providers in promoting oral health among pregnant women. It was conducted in multiple public healthcare facilities with antenatal care services across different regions of Edo State, including urban and rural areas. The study was conducted between March 2025 and May 2025.

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Ethical approval was obtained from the Edo State Hospital Ethics Committee on commencement of the study. Informed consent was obtained from all participants, ensuring confidentiality and voluntary participation.

A Stratified random sampling was used to select antenatal care clinics across the three senatorial districts of Edo state. Pregnant women who attended these clinics were recruited using convenience sampling.

Sample size calculation was based on the population of pregnant women attending antenatal care in the selected clinics, aiming for a representative sample.

A margin of error (E) of 5%, indicating how much the sample estimate may deviate from the true population parameter, was assumed.

The proportion of pregnant women with adequate oral health knowledge or practices was assumed to be 50%. For a confidence level of 95%, the Z-score is approximately 1.96.

Using the formula for sample size calculation in estimating a proportion in a large population:

- $n = Z^2 \times P(1-P) / E^2$
- Where:
- n = Sample size needed
- Z^2 = Z-score corresponding to the chosen confidence level (1.96 for 95% confidence)
- P = Estimated proportion (as a decimal) of pregnant women with adequate oral health knowledge or practices
- E = Margin of error (as a decimal)
- Plugging in the values:
 $n = (1.96)^2 \times 0.5 \times (1-0.5) / (0.05)^2 = (1.96)^2 \times 0.5 \times (1-0.5) / 0.0025$
 $n = 3.8416 \times 0.25 / 0.0025 = 0.9604 / 0.0025$
 $n = 384.16 \approx 385$
- Rounding up to the nearest whole number for a conservative estimate, the sample size needed for the quantitative phase is approximately 385 pregnant women. 385 pregnant women were recruited.

Data Collection was done using Structured questionnaires administered to pregnant women who attended antenatal care clinics to collect demographic information, oral health practices, knowledge, and attitudes towards oral health during pregnancy. Data was analysed with descriptive statistics in the form of means and standard deviations for continuous variables and frequencies and percentages for categorical variables. The overall prevalence of each oral health practice and the prevalence of these practices for each demographic characteristic were calculated. The Pearson's chi-squared test for categorical variables (education, family income, dental visits, and any dental problems). All statistical tests would be two-tailed with a type-I error rate set at 5%. The IBM Statistical Package for Social Sciences

software (SPSS), Version 28.0.0.0. was used for data management and analysis.

RESULTS

Most of the pregnant women (134/34.8%) who participated in this study were in the 26–30-year age group. Standard deviation was 1.032. The majority (284/78.4%) of the pregnant women who participated in this study were in the Tertiary Health facilities. A total of 321/83.4% of pregnant women who attended antenatal clinics in the course of this study reported not having dental diseases. A greater proportion, 367/95.3%, of the participants who attended their antenatal clinic had not visited the dentist in this study.

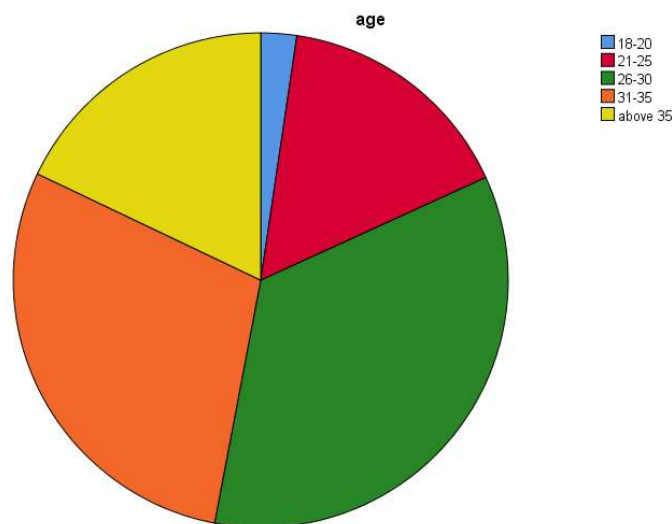


Figure 1: The age of the participants

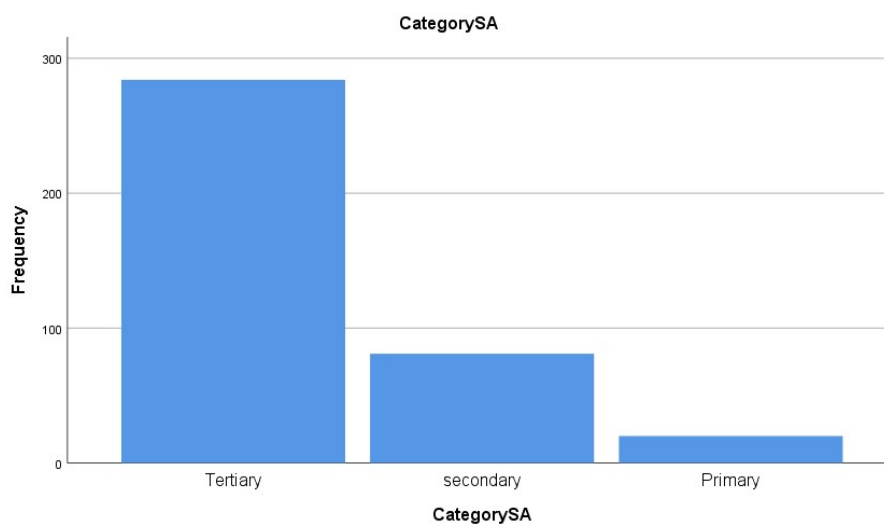


Figure 2: The category of the health facilities among the participants

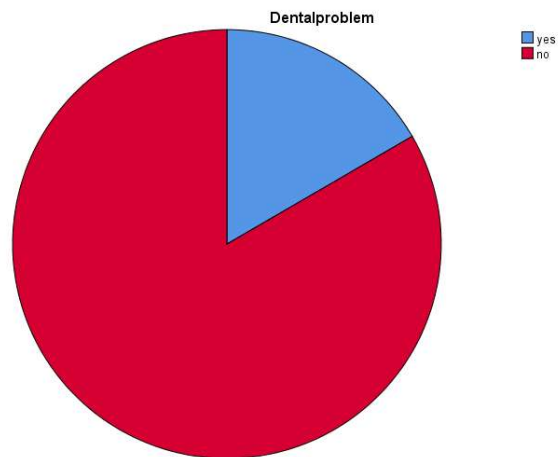


Figure 3: Prevalence of dental problems among the participants

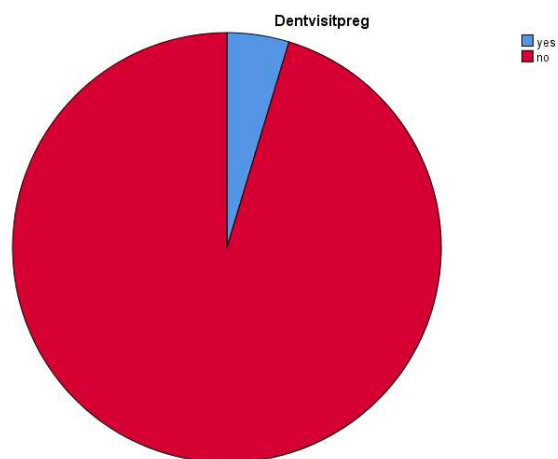


Figure 4: Prevalence of dental attendance among the participants

Table 1: Association of Dental problems among pregnant women in the various health facilities.

Health Facility	Dental Problems		Total n/%	Statistic
	Yes n/%	No n/%		P-value = 0.580
Tertiary	51/17.5%	233/82.5%	284/100%	
Secondary	11/ 13.6%	70/86.4%	81/100%	
Primary	2/10.0%	18/90%	20/100%	

Table 2: Association between Dental problems and the education of the pregnant women.

Education	Dental Problems		Total n/%	Statistic
	Yes n/%	No n/%		P-value = 0.524
Graduate	44/18.3%	197/81.7%	241/100%	
Secondary	20/ 14.5%	118/85.5%	138/100%	
Primary	0/0.0%	4/100%	4/100%	
None	0/0.0%	2/100%	2/100%	
Total	64/16.6%	321/83.4%	385/100%	

Table 3: Association between dental visits among pregnant women in the various health centers

Health facility	Dental Visit		Total n/%	Statistic
	Yes n/%	No n/%		
Tertiary	14/4.9%	270/95.1%	284/100%	P-value = 0.556
Secondary	4/ 4.9%	77/95.1%	81/100%	
Primary	0/0.0%	20/100%	20/100%	

Table 4. Association between Education and dental visits among study participants.

Education	Dental Visit		Total n/%	Statistic
	Yes n/%	No n/%		
Graduate	11/4.6%	230/95.4%	241/100%	P-value = 0.855
Secondary	7/ 5.1%	131/94.9%	138/100%	
Primary	0/0.0%	4/100%	4/100%	
None	0/0.0	2/100%	2/100%	

DISCUSSION

This study was conducted among pregnant women above 18 years of age. Majority of the participants (34.8%) were in the 26–30-year age group. This finding is in tandem with a similar study conducted in Lagos (mean age 30.37 +/- 4.5)¹⁴ and another one conducted in London (28.19 +/- 6.07 years)¹⁵

The majority (78.4%) of the pregnant women who participated in this study were in the Tertiary Health facilities. This is similar to another Nigerian study¹⁵ thus reflecting the skewed pattern in the healthcare system in some parts of the country whereby tertiary healthcare facilities rather than the primary facilities are the main providers of basic healthcare.

Most of the pregnant women (83.4%) also reported not having dental issues. However, the high frequency of participants reporting absence of dental disease in this study does not necessarily reflect its true absence because oral examinations were not carried out. Many dental diseases such as gingivitis, periodontitis and caries are largely asymptomatic in their early stages, hence the need for regular dental check-up. The trend can also be further attributed to the common misconception among many pregnant women that these oral health issues are a normal part of pregnancy and will naturally resolve after childbirth¹⁶.

Furthermore, the majority of the pregnant women (95.3%) had not visited the dentist in this study. Similar findings have been reported by numerous Nigerian studies which were well captured in a scoping review by Ayamolowo et al¹⁷. This buttresses the fact that oral health behaviours need to be improved through tailored oral health education accessible to pregnant women in Nigeria.

Only 14 out of 285 of the pregnant women who attended the tertiary health facilities reported having a dental visit during pregnancy. 4 positive reports were received from those attending the secondary facilities and none from the primary facilities. There was no significant difference in the associations ($p=0.556$). This could mean that the public health care facilities are not doing

enough to motivate pregnant women to seek dental care.

Also, similar to findings by Adeniyi et al¹⁴, graduates reported having dental visits during their pregnancy, with very few visits from the secondary school leavers and none from the primary and no levels of education. This shows that a higher educational status did not positively impact the propensity of pregnant women to seek dental care ($p=0.524$), hence the need for oral health care and antenatal health care providers to educate them.

CONCLUSION

Despite the very high proportion of women attending antenatal clinics, only very few are aware of the need for their dental care during pregnancy, as revealed by this study, as they do not visit the dentist in the course of their pregnancy. Hence, oral health care screening should be incorporated and regularly carried out by oral health practitioners across the various tiers of the healthcare system.

RECOMMENDATION

Oral healthcare screening should be incorporated into the antenatal care packages in Nigerian healthcare facilities with established guidelines for treatment were necessary.

Dental healthcare professionals especially dental therapists and hygienists should be sent on rotational basis to antenatal clinics to educate the pregnant women on their clinic days.

Limitation of the study

A study involving oral examinations needs to be carried out to reflect the true burden of oral disease in pregnant women.

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