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Oral Health Problems in Pregnant Women attending Selected Tertiary Hospitals of Bangladesh

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ABSTRACT

Background: Oral health problems are common during pregnancy and can adversely affect overall health and quality of life (QoL). This study aimed to assess the prevalence and types of oral health issues among pregnant women in Bangladesh and to explore their association with demographic factors.

Methods: A cross-sectional study was conducted among 206 pregnant women attending ante-natal checkup at two tertiary level hospitals. Data were collected through dental examinations and structured interviews. Demographic characteristics, oral health status and dental care-seeking behavior were analyzed. Associations between oral health problems and demographic variables were assessed using chi-square tests.

Results: The mean age of participants was 25.5 ± 5.3 years. Most women were housewives (86.9%) and had education up to higher secondary level (74.3%). Overall, 69.3% had at least one oral health problem. The most common issues were tooth sensitivity (65%), tooth decay (53.4%), swollen gums (41.3%), painful or reddish gums (37.4%), gum bleeding (33.4%) and dental caries (26.7%). Gum bleeding was significantly associated with education level (p =0.016) and occupation (p =0.03) but not with age. Only 17.9% of participants visited professional dentists during pregnancy, while 21.7% reported that oral health issues affected their overall health or eating habits.

Conclusions: A high proportion of pregnant women in Bangladesh experiences oral health problems, although the majority do not seek professional dental care during their pregnancies. Educational interventions and the integration of oral health services into antenatal care are essential to improve maternal oral health and preventing oral health complications.

Keywords: Oral health, pregnancy, oral health problems, dental care, pregnant women.

INTRODUCTION

The Global Oral Health Policy of the World Health Organization (WHO) emphasizes that oral health is an essential part of overall health and a crucial predictor of quality of life (QoL).[1] Pregnancy is associated with profound physiological and hormonal changes that predispose women to various oral health problems, including gingivitis, periodontitis, tooth sensitivity, dental caries, and tooth erosion.[2,3] Elevated levels of

estrogen and progesterone during pregnancy lead to increased vascular permeability and inflammatory responses in the gingival tissues, which contribute to a higher risk of periodontal disease.[4,5] Evidences indicates that preterm birth, low birth weight babies, and preeclampsia are among the adverse pregnancy outcomes that have been associated with oral health issues during pregnancy.[6,7] Despite these potential complications, oral health often remains neglected in antenatal care, particularly in low- and middle-income countries like Bangladesh.[8] Limited awareness, cultural misconceptions regarding the safety of dental treatment during pregnancy and inadequate integration of oral health services into antenatal programs contribute to the persistence of untreated oral conditions among pregnant women.[9,10] A growing body of literature from different countries has reported a high prevalence of oral health problems among pregnant women, ranging from 66% to 99%.[11-13] However, there is limited evidence on the burden, types and determinants of oral health problems in pregnant women in Bangladesh, especially in tertiary care settings where diverse populations access care.

This study aimed to assess the prevalence and types of oral health problems among pregnant women attending antenatal checkups in two tertiary level hospitals in Dhaka, Bangladesh. And also to examine the association between oral health problems and selected socio-demographic traits. The findings are intended to inform strategies for integrating oral health into maternal health services and improving the overall health outcomes of mothers and their children.

MATERIALS AND METHODS

This cross-sectional study was conducted among 206 pregnant women who visited the Obstetrics departments of two selected tertiary level hospitals in Dhaka city for their antenatal checkups between October and December, 2023. The study assessed the prevalence and types of oral health problems among these pregnant women. Prior to collecting data through structured interviews and dental examinations, written informed consent was obtained. The semi-structured questionnaire asked questions about oral health issues, pregnancy-related characteristics, and sociodemographic factors. Written permission for the collection of data was taken from the concerned authority and the ethical clearance for the study was taken from the Institutional Ethical Review Board (IRB) of National Institute of Preventive and Social Medicine (NIPSOM) with the reference number NIPSOM/IRB/2017/09. In accordance with the study goals, both descriptive statistics (frequency, percentage, mean, SD) and inferential statistics (test of significance) were employed in the analysis of the obtained data using SPSS software (Version 21). The test was deemed statistically significant at $p < 0.05$.

RESULTS

Table 1: Demographic details of pregnant women. (n =206)

Variables		n (%)
Age (years)	18-25	109 (52.9)
	26-35	91 (44.2)
	≥36	6 (2.9)
	Mean (± SD): 25.5 (± 5.3) years; Range: 17 – 40 years	
Education	No schooling	25 (12.1)
	Up to higher secondary	153 (74.3)
	Graduation	28 (13.6)
Occupation	House wife	179 (86.9)
	Working	27 (13.1)
Pregnancy stage	1st trimester	51 (24.8)
	2nd trimester	80 (38.8)
	3rd trimester	75 (36.4)
Parity	First pregnancy	96 (46.7)
	Has other children	110 (53.3)

Table 1 outlines the demographic details of 206 pregnant women. The majority were aged 18–25 years (52.9%), with a mean age of 25.5 years. Most had education up to higher secondary level (74.3%) and were housewives (86.9%). Regarding pregnancy stages, 38.8% fell in the second trimester; followed by 36.4% in 3rd trimester and 24.8% in the 1st trimester. Slightly more than half (53.3%) had previous children.

Figure 1: Distribution of oral health problems in pregnant women through dental checkups. (n =206).

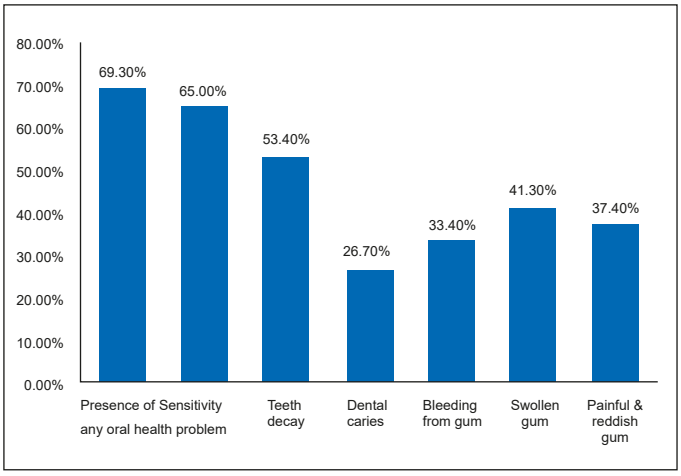

Figure 1 represents the distribution of oral health problems among pregnant women. Overall, 69.3% had at least one oral health issue. The most common problems were tooth sensitivity (65.0%), teeth decay (53.4%), swollen gums (41.3%), painful and reddish gums (37.4%), gum bleeding (33.4%) and dental caries (26.7%).

Table 2: Oral health problems among pregnant women according to demographic characteristics. (n =206)

Demographic characteristics		Oral health problem (Gum bleeding)		p value
		Present n (%)	Absent n (%)	
Age (years)	≤25	63 (57.8)	46 (42.2)	.355 ns
	>25	47 (48.5)	50 (51.5)	
Education	No schooling	16 (64.0)	9 (36.0)	.016 hs
	Up to higher secondary	76 (49.8)	77 (50.3)	
	Graduation	13 (46.4)	15 (53.6)	
Occupation	Housewife	101(56.4)	78 (43.6)	.03s
	Working	15 (55.6)	12 (44.4)	

Note: s- significant; ns- not significant; hs- highly significant

Table 2 presents the association between demographic characteristics and oral health problem (gum bleeding). Gum bleeding prevalence was higher among women with no schooling (64%) compared to more educated ones, and this association was statistically highly significant (p =0.016). Occupation also showed a significant relationship (p =0.03), while age was not significantly (p =0.355) associated with gum bleeding.

Table 3: Distribution of pregnant women according to dental checkups.

Dental checkup	Category	n (%)
Onset of oral health problems	During pregnancy	49 (34.5)
	Before pregnancy	94 (65.5)
Dental visit during current pregnancy	Visited dental surgeon	37 (17.9)
	Not visited	169 (82.1)
Affecting oral health , overall health and /or eating habits	Affected	31 (21.7)
	Not affected	112 (78.3)

Table 3 shows that 65.5% experienced oral health problems prior to pregnancy, yet only 17.9% visited dental surgeon during their current pregnancy. Additionally, 21.7% reported that oral issues affected their overall health and/or eating habits.

DISCUSSION

Various oral health problems are common during pregnency.2,3 Oral health is an important determinant of QoL according to WHO Global Oral Health Policy.[1] The Present study was carried out among the Bangladeshi pregnant women who attended two tertiary level hospitals for their antenatal checkups to assess their oral health problems. Out of 206 pregnant women, more than half (52.9%) were in the age group of 18-25 years with a mean age of 25.5 years (SD ± 5.3) and range 17 - 40 years, which was quite similar to the results obtained by Shrestha[11] and Ifesanya[14]. In another study, Rahman et al.[15] found that the mean age of Bangladeshi pregnant women was 22.2 (±4.2) years ranged 15-35 years. Regarding other socio-demographic details, majority (86.9%) of the study participants were housewives, almost three-fourth (74.3%) had educational qualification up to higher secondary level. Regarding pregnancy related status, almost one-fourth (24.8%) participants were in their 1st trimester; 38.8% and 36.4% were in the 2nd trimester and 3rd trimester, respectively. Present study also found that (69.3%) pregnant women had at least one oral health problems, such as sensitivity, teeth decay, dental caries, swollen gums, gum bleeding, etc. which could affect their eating habit and overall health status. This finding is consistent with that of studies done in India, Nepal, where the prevalence was found to be 66.8% to 99%.[12,16-18] Among different oral health problems, gum bleeding has been reported as the most common problem in pregnant women showed in different studies.[19,20] On the other hand, current study reported 33.4% pregnant women complained for gum bleeding, whereas sensitivity of teeth was found the highest (65.0%). Other oral health problems like teeth decay (53.4%), swollen gums (41.3%), painful or reddish gums (37.4%), dental caries (26.7%) were found in pregnant women. The current study reported that 17.9% pregnant women visited dental surgeons during their current pregnancy, while majority (65.5%) participants mentioned their oral health problems started before pregnancy and 21.7% participants' overall health status and /or the eating habits were affected by the oral health problems, which was quite consistent with a study conducted in Dubai.[13]

CONCLUSION

A high prevalence of oral health problems was found among pregnant women including teeth sensitivity, teeth decay, swollen gums, dental caries, and gum bleeding. In spite of having oral health problems in pregnancy, the tendency to visit a dental surgeon found minimum. Educational qualification and occupation of pregnant women were significantly associated with oral health problems. The provision of oral health education to all antenatal mothers should be made mandatory, and the need for routine dental visits before and during pregnancy must be emphasized.

CONFLICT OF INTEREST

The authors claimed no conflict of interest.

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This research received no external funding.

DATA AVAILABILITY STATEMENT

The data presented in this study are available on reasonable request from the corresponding author.

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