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**Abstract:**

**Aim:** Oral health problem is one of the major health problems during pregnancy in both developing and developed countries. This cross-sectional study was carried out to assess the oral health status of the pregnant women attended some selected mothers and children welfare centers (MCWCs) in Bangladesh.

**Methods:** Data was collected by face-to-face interview and clinical examination with the help of a structured questionnaire and check list.

**Results:** Half (50.0%) of the pregnant women was of 15 to 20 years old and their mean age was 22.28±4.22 years. Thirty eight percent (38.2%) of the women had primary education and 78.4% did not visit any dentist. Majority (93.1%) used tooth brush before breakfast and most (84.4%) of them had no information about oral hygiene care. Regarding oral health status, 87.3% had caries affected teeth and 94.1% had gingivitis. Presence of gingivitis and calculus were higher among the elder women (21-35 years) than the younger group (15-20 years) which was 92.2% among the housewives. Gingivitis was significantly higher among the women in low income group (95.7%) than the other income groups ( $X^2 = 5.80, p < 0.05$ ).

**Conclusion:** The study findings recommended for provision of essential dental health services to the pregnant women for prevention and control of various dental health problems during pregnancy.

**Key words:** Oral health status, pregnant woman, oral health education, socio-economic status, mothers and children welfare center (MCWC) in Bangladesh.

**Introduction:**

Pregnancy may have an important effect on oral health, and pregnant women are a population group with special needs in terms of oral health status. International research studies shows that oral health care for pregnant women has been inadequate, especially in relation to the areas of education and health promotion with some evidence of disparities by socio-economic status and ethnicity.<sup>1</sup>

Pregnancy, the period from conception to birth, is characterized by profound hormonal changes. Fluctuation

in hormones, particularly female steroid hormones (estrogen and progesterone) influence many tissues in the body. The tissues supporting the teeth, including the periodontium and especially the gingiva, are also affected. The United States Surgeon General suggested that oral health treatment during pregnancy was an important strategy to maintain good oral health, prevent the development of inflammatory diseases (gingivitis and periodontitis) and thus minimize any possible link to pre-term low birth weight

infants, pre-eclampsia and gestational diabetes.<sup>2,6</sup> Pregnancy-related changes may be severe on gingival tissue.<sup>3</sup> Periodontal disease may be present as gingivitis or periodontitis and has the potential to affect pregnancy outcomes.<sup>4</sup>

Support for dental treatment in governmental hospitals is not enough in district levels in Bangladesh. Mothers and children welfare center (MCWC) is a sister organization of Bangladesh government under the Ministry of Health and Family Welfare, where the antenatal women come for regular check up. They have dental problems but in MCWCs have no support for dental treatment. For this reason, data needs to be collected and analyzed so that programs are set up effectively to reach all segments of the population.

This study identifies special attention to pregnant women's oral health in Bangladesh. Increasing oral health education in pregnancy can lead to better oral health for women and better health outcomes for children.

**General objective:** Assessment of the oral health status of pregnant women in some selected MCWCs in Bangladesh.

**Specific Objectives:**

- To find out the socio-demographic characteristics of the pregnant women.
- To find out the dental problems of pregnant women in terms of dental caries.
- To determine the gingival problems of women in terms of gingivitis.

**Materials and Methods:**

**Study design:** A descriptive type of cross-sectional study was conducted among the pregnant women in some selected MCWCs in Bangladesh.

**Duration of the study:** The duration of study was six months from January to June 2012.

**Study places:** This study was conducted in MCWCs at Thakurgaon, Panchagarh, Nilphamary of Bangladesh.

**Study population:** The populations of the study were pregnant women, who attended Thakurgaon, Panchagarh, Nilphamary districts MCWCs.

**Sample size:** The sample size of the study was 102 where the degree of accuracy was  $d = 8.95\%$ .

**Sampling technique:** The pregnant women were selected by using purposive sampling technique.

**Data collection instruments:** In order to collect data, a structured questionnaire and check list was prepared considering variables and the objectives of

the study. Then translated into Bangla version and data was collected in the real fields.

**Data collection technique:** The purposive technique was adopted as per the data collection technique. Data were collected by face to face interview and by oral examination.

**Data analysis:** Data analysis was done by using statistical package for social science (SPSS-16) program. The descriptive statistics included the frequencies, percentages, mean, median, standard deviation SD of the findings and inferential statistics included  $\chi^2$  tests to find out association between oral health and socio demographic characteristics of the pregnant women.

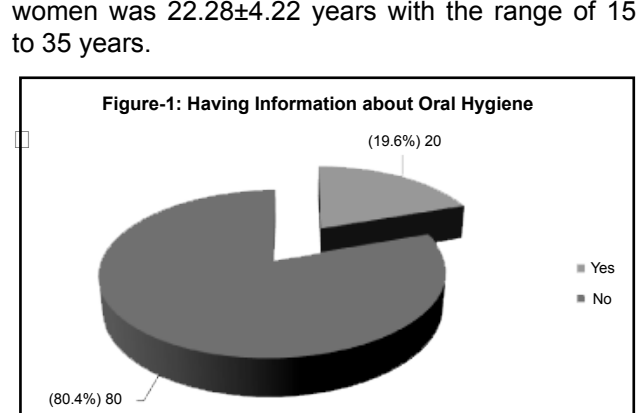
**Ethical considerations:** Initially ethical clearance was taken from the ethical committee of the National Institute of Preventive and Social Medicine (NIPSOM) and followed by the permission of the concerned authority of Family Planning & MCWC of Thakurgaon, Panchagarh and Nilphamary before data collection. At the beginning, informed written consent was taken from each pregnant woman. During data collection, privacy and confidentiality were maintained strictly.

**Results :**

**Table-1: Distribution of the pregnant women by Age (years). n=102**

| Age (Years) | Frequency            | Percent |
|-------------|----------------------|---------|
| 15-20       | 51                   | 50.0    |
| 21-30       | 45                   | 44.1    |
| 31-35       | 6                    | 5.9     |
| Total       | 102                  | 100.0   |
| Mean (± SD) | 22.28 (± 4.22) years |         |

Table-1 revealed that the mean age of pregnant women was 22.28±4.22 years with the range of 15 to 35 years.



Out of all pregnant women, most (80.4%) of them were not informed about oral hygiene and the rest of them (only 19.6%) were informed (Figure-1).

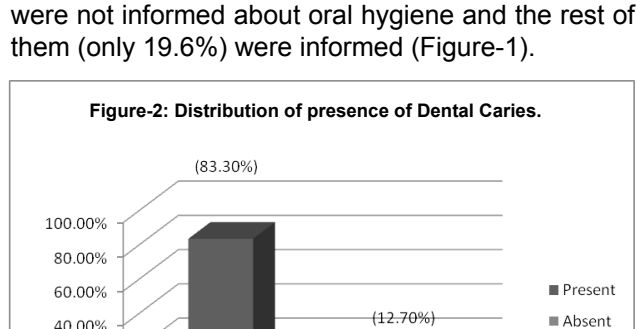
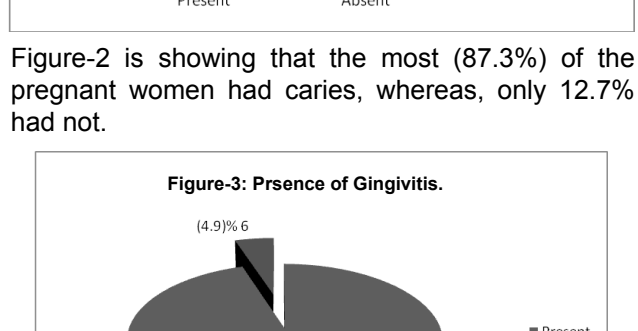


Figure-2 is showing that the most (87.3%) of the pregnant women had caries, whereas, only 12.7% had not.



Out of all pregnant women, most (94.1%) of them were suffering from gingivitis, and only 5.6% were not suffering from gingivitis (Figure-3).

**Discussion:**

Oral health problem is a major health problem in developing countries, including Bangladesh. This study revealed that the mean age of pregnant women involved in this study was 22.8 years where 50% were of 15 to 20 years old (Table-1). A vast majority of the pregnant women (78.4%) did not visit any dentist and 60.8% of them did not brush their teeth two times daily. A similar study conducted in New Zealand, where 100% of them visited dentist regularly, 81.1% brushed their teeth twice daily. The difference between the studies can be justified by the oral health care status between a developing country like Bangladesh and a developed country like New Zealand.<sup>1</sup>

Most (80.4%) of pregnant women were ignorant of oral hygiene care and rest (19.6%) of them were informed (Figure-1). Out of all pregnant women, 50% of them took 5 to 7 minutes for brushing, but ideally brushing time would be 2 to 3 minutes. Most of the pregnant women (93.1%) used to brush their teeth

before breakfast, while 5.9%, after breakfast, 7.8% at noon and only 1% after dinner, but ideally brushing times would be two times daily at bed time and after breakfast.

The study revealed that out of all pregnant women, majority (87.3%) had caries affected teeth (Figure-2). A similar study, conducted by Md. Harun Or Rashid and Junichi Sakamoto, Thailand found that 43.36% of them had caries affected teeth.<sup>14</sup>

Among all pregnant women, most (98%) of them had food debris and 96.1% had calculus which was much higher (66.92%) as found by Ingrida Vasiliauskiene, Stomatologija, Baltic Dental and Maxillofacial Journal.<sup>13</sup> The study revealed that out of all pregnant women, most (94.1%) of them were suffering from gingivitis which was much higher than the previous study, where 49.44% of the pregnant women had gingivitis.<sup>13</sup> Regarding gingivitis and calculus, in the age group of 15 to 20 years, 92.2% pregnant women had gingivitis and calculus while in the age group of 21 to 30 years, 95.6% and in the age group of 31 to 35 years, all (100%) of the pregnant women had gingivitis and calculus (data is not shown.)

In respect of monthly family income, in the family income group Tk.3,000/- to Tk.10,000/-, 95.7% pregnant women had gingivitis. But the difference of occurrence of gingivitis by monthly family income was statistically significant ( $\chi^2 = 5.80, df=2, p < 0.05$ ) (data is not shown.)

**Conclusions:**

This study contributes in making a public policy regarding the oral health service for the pregnant women country wide. This could be achieved through strategies that may render integrated dental health services during pregnancy, particularly through dissemination of adequate information usually oral health problems and its preventive measures. Increasing oral health education and care in pregnancy can lead to better oral health for women and better pregnancy outcome.

**Recommendations:**

The study forwarded following recommendations on the basis of the findings:

1. Health education and awareness building intervention should be enhanced to provide information regarding oral health problems and related care for the pregnant women.
2. Oral health care services and periodic oral check up for specific dental problem like dental caries, gingivitis, and calculus should be done during pregnancy.

3. Information should be made available during pregnancy regarding their oral health condition and oral hygiene practices.
4. Special attention should be paid for building awareness on prevention and control of gingivitis and calculus.

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