

# Oral Health Knowledge of Pregnant Women: A cross-sectional study

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## Abstract

**Background:** Poor oral health during pregnancy has been linked to negative results for both the mother and the child, suggesting that it should be a priority in prenatal care. Hormonal alterations during pregnancy, and notable alterations in estrogen, have been linked to an increase in gum disease symptoms such as hyperemia, inflammation, bleeding, hypersensitivity of the gingiva, and risk of bacterial infection. The purpose of the study is to evaluate women's awareness of oral health during pregnancy and the correlation between women's knowledge and their socio-demographic attributes.

**Methods:** This study was guided by a cross-sectional study. A descriptive analysis is utilized to analyze women's oral hygiene knowledge throughout pregnancy and the association between women's knowledge and social demographic attributes.

**Results:** There were primarily people between the ages of 25 and 30 (58.3%), followed by those aged over 30 (25.0%) and younger than 25 (16.7%). Most participants (50.0%) were in their third trimester, whereas most Gravida participants (40%) were older than six. 46.7% of the sample group brushed their teeth more than once daily. Concerning the use of mouthwash, the responses of the vast majority of the participants indicated that they had never made previous use of the mouthwash. This group represented approximately seventy per cent of the total sample size. 26 women, or 43.3% of the total, were unaware of the benefits of brushing their teeth and believed that it was simply a habit. Even though the majority of the participant's responses (36.7%) to the cause of gum disease were that they did not know.

**Conclusions:** The majority of individuals brush their teeth purely out of habit. The vast majority of respondents were unaware of the reasons for dental decay. There was a strong association between women's oral health knowledge and their age group, degree of education, and occupation.

**Keyword:** Oral health, Dental care, Knowledge , Pregnant women

## Background

Dental health is crucial to overall health, well-being, and life satisfaction. Dental health allows people to talk, consume food, and interact with others. Dental health denotes the absence of persistent orofacial pain and oral disorders, including dental caries (tooth decay) and periodontal disease (gum disease)(Schimmel et al., 2021). Poor oral hygiene impacts the oral cavity and increases the chance of developing several systemic disorders. Excellent oral hygiene is a sign of good bodily health. Dental plaque is a sign of bad oral hygiene and, if left untreated, can develop into dental calculus, making the issue even worse. Environment-based elements that affect oral hygiene greatly include culture, socioeconomic level, lifestyle, and dietary habits(Nazir, 2017). Dental caries is one of the most frequent dental disorders. It is an infectious microbial disease of the teeth that causes the breakdown and loss of calcified structures. It is the second most prevalent reason for tooth loss globally, regardless of age, gender, caste, religion, or region. It is influenced by both

lifestyle and genetics(Shah et al., 2017). Pregnant women are among the people who are meant to receive extra attention and care. The state of a woman's oral and dental health is of the utmost importance throughout pregnancy. During pregnancy, particularly notable shifts in estrogen have been linked to an increase in gum disease symptoms such as hyperemia, inflammation, bleeding, the sensitivity of the gingiva, and the risk of bacterial infection(Gaikwad et al., 2014).

Oral hygiene directly impacts a person's self-respect, communication, nurturing, and general well-being. These issues reduce the quality of life for women and pose major economic and social issues(Fakheran et al., 2020). Changes during pregnancy produce an environment conducive to oral and dental health deterioration. During pregnancy, benign oral gum lesions, tooth spinning, tooth erosion, tooth decay, and periodontitis are common oral and dental health concerns. A 25–100% incidence of gingivitis has been documented in pregnant women(Yenen & Ataçağ, 2019). Nonetheless, it has been claimed that frequent morning sickness and puking in pregnancy lead to tooth erosion and an imbalance in the mouth's acid base. It was also shown to cause an increase in pregnancy-related caries, mouth and halitosis(Dwarakanath, 2016).

## Methods

This research was guided by cross-sectional analysis. Women's knowledge of oral health during pregnancy is evaluated using descriptive research. The association between women's knowledge and socio-demographic status (such as age group, place of residence, level of education, income, and occupation) is determined. The women who attended the consultation clinics offered by the dentistry faculty have been chosen through a purposive sample, which is a sample based on non-probability throughout the period covered by the study (from March 1, 2022, through May 31, 2022), a total of sixty women went to consultation clinics.

## Data Collection

The sample was collected using a questionnaire that was distributed to the women. The questionnaire consisted of five sections: socio-demographic characteristics, Obstetric History, oral hygiene practice, oral hygiene knowledge, and the association between sociodemographic parameters and oral hygiene knowledge.

## Statistical Analysis

The Statistical Package for the Social Sciences (SPSS) version 23 was used to enter and analyze the data. The results are given as numbers and percentages for categorical variables; for continuous variables, they are the mean of the score (MS). A chi-square correlation was used to determine if the two variables were linked. P 0.05 was presumed to be statistically important.

## Results

From March 1, 2022, to May 31, 2022, we asked 60 women to participate in the study in Thi-Qar province, Iraq. Based on their demographic features (Table 1), the majority (58.3%) were between the ages of 25 and 30, whereas 25.0% and 16.7% were older than 30 and younger than 25 years old, respectively. The bulk of residences was urban (66.7%) and rural (33.3%). The majority of participants had attained a high school degree (40.0%), and the majority had a moderate income level (75.0%). In addition, most of the participants (55.0%) were housewives.

According to the participants' obstetrical histories (Table 2), the majority of participants were in their third trimester of pregnancy (50.0%) and more than six of gravida (40.0%). At the same time, most of the sample (40.0%) answered that more than six were in para. The vast majority of respondents (78.3%) answered "None of the above" when asked about abortion.

Regarding the importance of oral hygiene practice (Table 3), it is estimated that 46.7% of the whole sample regularly brush their teeth more than once a day. However, while some respondents reported using dental floss or toothpicks, the vast majority did not; this group accounted for nearly (76.7%) of the responses. About seventy percent of the people polled said they never use mouthwash, making up the bulk of the sample. Around 95% of women in the study didn't see a dentist when pregnant.

Regarding oral hygiene knowledge (Table 4), 43.3% of women were unaware of the advantages of brushing their teeth; they did it out of habit. Even though the majority of participants (36.7%) did not know the cause of gum disease. 24 (40.0%) Most of the women answered that the source of their information was their family.

Concerning socio-demographic and oral hygiene knowledge relationship, there was a significant association between (age group, degree of education, and occupation) with oral hygiene knowledge with.001, .002, and .002 consecutively.

**Table (1): Distribution of the Study Sample by Their Demographic Characteristics**

Socio demographic	Scale	F	%
Age group	less than 25	10	16.7
	25-30	35	58.3
	more than 30	15	25.0
	Mean (2.08), SD (0.64)		
place of residence	urban	40	66.7
	Rural	20	33.3
Level of Education	illiterate	2	3.3
	primary	16	26.7
	high school	24	40.0
	university or more	18	30.0
Income Status	low	5	8.3
	moderate	45	75.0
	high	10	16.7
Occupation	Housewife	33	55.0
	employee	27	45.0

F: Frequency, %: Percentage, M: Mean , SD: Standard Deviation

**Table ( 2): Distribution of the Study Sample by Their Obstetric History**

Obstetric History	Scale	F	%
Gestational age	First trimester	7	11.7
	second trimester	23	38.3
	third trimester	30	50.0
Gravida	1-3	13	21.7
	4-6	23	38.3
	>6	24	40.0

Para	1-3	13	21.7
	4-6	23	38.3
	>6	24	40.0
Abortion	Non	47	78.3
	1-3	12	20.0
	>3	1	1.7

F: Frequency, %: Percentage

**Table ( 3): Distribution of the Study Sample by Their Oral hygiene practice**

Oral hygiene practice	Scale	F	%
Teeth brushing	once/day	26	43.3
	more than once/day	28	46.7
	never	6	10.0
Use of dental floss/tooth picks	once/day	11	18.3
	more than once/day	3	5.0
	never	46	76.7
Mouth wash	once/day	15	25.0
	more than once/day	3	5.0
	never	42	70.0
Dentist visit during pregnancy	once/ month	3	5.0
	more than once/month	0	00
	never	57	95.0

F: Frequency, %: Percentage

**Table (4 ): Distribution of the Study Sample by Their Oral hygiene knowledge**

Oral hygiene knowledge	Scale	F	%	MS
Advantage of tooth brushing	prevent bad smell	9	15.0	2.15
	prevent tooth decay	17	28.3	
	prevent gum disease	8	13.3	
	only habit	26	43.3	
Causes of tooth decay	sugar and carbohydrate consumption	7	11.7	1.65
	bacteria	5	8.3	
	other	8	13.3	
	I do not know	40	66.1	
Causes of gum diseases	food debris and unclean teeth	20	33.3	

	<b>bacteria</b>	<b>7</b>	<b>11.7</b>	<b>2.4</b>
	<b>other</b>	<b>11</b>	<b>18.3</b>	
	<b>I do not know</b>	<b>22</b>	<b>36.7</b>	
<b>Source of knowledge</b>	<b>television</b>	<b>21</b>	<b>35.0</b>	<b>2.9</b>
	<b>family</b>	<b>24</b>	<b>40.0</b>	
	<b>dentist</b>	<b>6</b>	<b>10.0</b>	
	<b>from my study</b>	<b>9</b>	<b>15.0</b>	

Frequency, %: Percentage, MS: Mean of score

**Table (5): Correlationship between Socio-demographic and Oral hygiene knowledge**

<b>Socio demographic</b>	<b>Oral hygiene knowledge</b>	
	<b>X<sup>2</sup></b>	<b>Sig.</b>
<b>Age group</b>	<b>17.097</b>	<b>.001</b>
<b>Level of Education</b>	<b>0.978</b>	<b>.002</b>
<b>Occupation</b>	<b>16.754</b>	<b>.002</b>
<b>Income Status</b>	<b>11.768</b>	<b>.025</b>
<b>place of residence</b>	<b>.180</b>	<b>.672</b>

X<sup>2</sup>=Chi-square S= significant ( P≤ 0.05 )

### Discussion

Given the significance of dental health for a pregnant woman and its impact on the woman's safety and the fetus's safety, pregnant women must maintain optimal oral health. Those between the ages of 25 and 30 were the predominant group at 58.3 percent. At the same time, most of the study population (66.7%) was urban. Although the amount of education was a factor, most participants were high school graduates (40%). While most of the respondents were of middle-level income (75%), the majority (55%) of the study sample held the occupation of housewife. The findings of this study are consistent with the findings of a study carried out by (Onwuka et al., 2021). That study found that the average age of the people who participated in the study was 29.71 years. The vast majority of them had reached at least the secondary school level (98.1%), were married (97%), lived in the urban districts of Enugu (84.5%), and had several children (56.2%). Forty percent of the respondents were those who received a salary regularly.

According to (Lakshmi et al., 2020). The study of the general demographic data revealed that the study population consisted of pregnant women with an average age of 22.8 ± 3.09 years. Most research respondents completed only high school (38%) and elementary school (30%). Fewer participants in the study (8.7%) held a bachelor's degree.

Regarding gestational age, most respondents were in their third trimester, making up 50% of the study sample. Most respondents answered more than six of Gravida, which comprised 40% of the study sample. At the same time more than 6 in para was also the most common answer, with 40% of the study's sample giving that answer. regarding abortion, the (non) answer was chosen by 78.3% of the study participants. Our findings are consistent with those of (Avula et al., 2013). They said that the pregnancy features of individuals suggested that the majority of the participants were in the third trimester of pregnancy. The majority of the pregnant women had numerous pregnancies. Contrary to our results, miscarriage was the second most common reason for this study's subjects.

In terms of oral hygiene practices, the majority of respondents (46.7%) brushed their teeth more than once each day. Most survey participants never used dental floss or toothpicks, as indicated by their responses (76.7%). A large portion of respondents (70%) say they have never used mouthwash; most of the study sample comprises these individuals. Approximately ninety-five percent of pregnant women have never visited a dentist. Similarly,(ISHAQ et al., 2018). Found that all respondents brushed at least once daily, and 20.9% brushed twice daily. None of the pregnant women in the research reported ever using dental floss. (Thomas et al., 2008) reported that of the women surveyed, 351 (91%) indicated they cleaned their teeth once or more per day, while slightly more than half (222, 57%) reported using dental floss weekly or more often. Just over half (221, 55%) of women reported using mouthwash more frequently than once per month. According to the current research findings, the vast majority of respondents cleaned their teeth solely because it was a habit carried out by approximately 43.3% of the study sample. Most of the respondents were unaware of the causes of tooth decay; the responses from those respondents accounted for 66.1% of the study sample. On the other hand, most of the study sample was unaware of the factors contributing to gum disease, and those respondents' responses accounted for 36.7% of the study. Most of the respondents obtained their information through their families, accounting for approximately forty percent of the total sample in the study. Our findings agree with (Avula et al., 2013) finding that pregnant patients didn't know much about gum disease and bad pregnancy outcomes, but most of the survey respondents did agree that brushing teeth helped the gums and stopped tooth decay. Most of the answers said they brushed to keep their mouths fresh. Gum disease was the least important reason.

Our data analysis revealed three statistically significant associations between demographic factors and oral hygiene knowledge. Significant correlations among age, education, and occupation were included. Our findings are consistent with those of (Bamanikar & Kee, 2013). They reported that answers to questionnaire items about oral and dental healthcare knowledge and practice revealed a strong correlation between education and employment status and that knowledge about oral and dental care during pregnancy was particularly tied to these factors.

## Conclusion

Most pregnant women wash their teeth solely because doing so is something they are accustomed to doing. The overwhelming majority of respondents were unaware of what causes tooth decay. There was a strong correlation between the women's oral health awareness and their age group, degree of education, and occupation.

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