

# Oral Health Status of Women Attending Public Clinics in Relation to Marital Status

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**Abstract:** *Background:* Some risk factors may place women at higher risk to develop dental caries and periodontal disease especially in developing countries. Neglected oral hygiene during pregnancy and women great responsibility could be part of these factors. *Aims of the study:* This study was designed to determine the prevalence of dental caries and periodontal health status among women according to the marital status of them. *Subjects and methods:* This study was conducted in public clinics of Baghdad city, among women with age range 30-35 years old. Caries experience and periodontal health status were determined by the Decayed- Missing – Filled Surfaces (DMFS) index, gingival index and calculus index. The sample was divided in to five groups according to the marital status or number of siblings. *Results:* The total sample was 200 women. No statistical significant differences were found in mean values of gingival and calculus index among the five groups. The mean value of caries experience was the highest among women with more than three children and the lowest among women with no children with highly statistical significant differences ( $P$ -values  $<0.01$ ). *Conclusion:* Attention to women oral health status should be increased and an effective dental health care program should be made to achieve the standard of oral hygiene especially during pregnancy.

**Keywords:** periodontal, dental caries, marital status

## 1. Introduction

According World Health Organization, periodontal disease and dental caries are the two major dental diseases that affect human populations worldwide at high prevalence rates (1). Bacteria in the dental plaque or biofilm infect tissue surrounding the tooth, causing inflammation around the tooth leading to periodontal disease. Plaque also may eventually harden to form calculus (CDC, 2015). Dental caries is a complex disease caused by a physiological imbalance between fluid and mineral dental biofilm (Fejerskov, 2004).

In some developing countries, periodontal disease is worse in females than males and may be due to frequent child birth, poor nutrition and poor oral hygiene measures (4,5,6). Regarding dental caries, a relatively high caries experience was also reported among women than men in some studies (7,8,9). Some caries risk factors may place women at higher risk to develop dental caries. These factors include dietary habits, hormonal fluctuation, genetic variation, differences in saliva composition and flow rate between male and female (10). Pregnancy may explain some of gender differences in dental caries due to changes in mouth flora and saliva, vomiting, neglected oral hygiene, and nutritional changes (11).

In addition to that, women have the responsibility of food preparation and easier access to foods and snacks outside of mealtime. Psychological causes also may explain caries risk among women as they are more subjected to stress, domestic violence and eating disorders (12,13).

The present study will be conducted to determine the prevalence of periodontal disease and dental caries among women according to the marital status or number of siblings in Baghdad city

## 2. Subjects and Methods

Women, aged from 30-35 years old, with higher education (either college or institute), attending public clinics in health centers of Baghdad city were selected to participate in the current study. Smokers, patients with the history of systemic disease or current use of drugs even oral contraceptive were excluded from the study. Women were divided in to five groups: unmarried or married without children, married with one child, two children, three children and with more than three children.

Oral health status was examined by using the following indices: gingival index (GI) according to Loe and Silness (14) and calculus index (CLI) according to Greene and Vermillion (15), Decayed, Missing and Filled Surface index (DMFS) according to WHO (16). ANOVA (one way) was used to determine whether there are any significant differences between the means of more than two independent groups.  $P$ -values less than 0.05 were considered as statistically significant and  $P$ -values more than 0.05 were regarded as not significant, while  $P$ -values less than 0.01 were considered as a highly significant.

## 3. Results

A total of 200 women were examined in the current study. The highest number of women was married with two children followed by the number of women with three children.

Table 1 shows Means values of gingival index and calculus index among women according to marital status. Gingival index and calculus showed the highest means among women with more than three children. However, the differences in the means of both indices were statistically not significant.

Table 2 shows the differences in caries experience among women according to the marital status. The mean value of decayed surfaces (DS) was highest among women with three

children and women with more than three children but the differences were statistically not significant. On the other hand, mean value of missing surfaces (MS) was highest among women with more than three children and the lowest among women with no children with highly significant differences (P-values <0.01). In addition to that, the filled surfaces (FS) showed highest mean among women with more than three children and the lowest mean among women with no children. As a result of that, the mean value of DMFS was the highest among women with more than three children and the lowest among women with no children with highly statistical significant differences (P-values <0.01).

#### 4. Discussion

Dental caries and periodontal disease are the two most common oral diseases in which poor oral hygiene represents the main etiological factor. Oral hygiene is the practice of keeping the mouth healthy and clean by brushing and flossing to prevent oral diseases (17). Dental caries and periodontal disease were found to be affected by oral hygiene practices in adults like frequency and the method of tooth brushing (18, 19), flossing plus tooth brushing (20). Oral hygiene practices of women could be affected by factor related to the women physiological and psychological status.

The important factor to be considered is that women still have varied periodontal problems. Oral environment could show certain changes in women. Hormonal fluctuation may alter the status of periodontal tissues. These changes occur during life stages of women from childhood through adulthood including menstruation, pregnancy, menopause, the post-menopause period and changes associated with the use of oral contraceptives (21, 22). However, the current study didn't find significant differences in means values of gingival and calculus indices among women due to some of reversible stages of periodontal diseases.

The study also showed that the mean value of caries experience was the highest among women with more than three children and the lowest among women with no children with highly statistical significant differences. Pregnant women was reported to be at higher risk of tooth decay for several reasons, including increased acidity in the oral cavity, sugary dietary cravings with frequent snacking and inadequate attention to oral hygiene (23, 24) which could explain the increase in the prevalence of dental caries among women with more than three children due to the accumulative effect of the disease. In addition to that, women could neglect their oral health status due to their great responsibilities and may prefer tooth extraction than restorative treatment. However, the number of women with more than three children was low in the current study and further investigations may be needed to confirm this result.

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**Table 1:** Means of gingival index and calculus index among women according to marital status

Marital status	Periodontal health status	
	GI	CLI
	Mean ±SE	Mean ±SE
unmarried or married without children N=49	0.80±0.03	0.072±0.01
married with one child N=23	0.84±0.05	0.073±0.02
married with two children N=59	0.83±0.03	0.074±0.01
married with three children N=51	0.90±0.03	0.069±0.02
married with more than three children N=18	0.97±0.03	0.093±0.02
F value (df=4, 195)	1.99	0.12
P value	0.09	0.97

**Table 2:** Caries experience DMFS and its components (DS, MS, FS) among women according to marital status

Marital status	Caries experience			
	DS	MS	FS	DMFS
	Mean ±SE	Mean ±SE	Mean ±SE	Mean ±SE
unmarried or married without children N=49	4.82±1.06	4.80±1.1	6.78±1.03	16.39±2.04
married with one child N=23	4.26±1.05	11.09±2.75	10.91±2.06	26.26±3.61
married with two children N=59	4.36±0.86	8.73±1.56	9.98±1.20	23.07±2.07
married with three children N=51	5.14±1.10	10.59±1.67	10.39±1.23	26.12±2.38
married with more than three children N=18	5.94±1.21	16.11±2.44	10.56±1.77	32.33±3.34
F value (df=4, 195)	0.25	4.07	1.62	4.39
P value	0.91	0.003*	0.17	0.002*

\* Highly significant, P-values <0.01