



## THE EFFECT OF GENDER FACTOR ON PERIODONTAL DISEASE

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### ABSTRACT

Several studies showed a various results about the effect of gender on periodontal health in which some studies shows an evidence to support the higher prevalence of destructive periodontal disease in men than women. Aim of the study. This study was undertaken to detect the effect of gender factor on periodontal health status clinically. The study population consist of 30 patients (15 males and 15 females) having gingivitis with ages range between 20 and 30 years and 30 patients (15 males and 15 females) having periodontitis , ranging in age from 30 to 59 years. Plaque index, gingival index, probing pocket depth and clinical attachment loss were measured for all patients. The result showed that there is no significant effect of the gender on the periodontal health status clinically. This study revealed that there was no significant effect of gender on periodontal health of patients.

**KEYWORDS:** gender, gingivitis, periodontitis.

### INTRODUCTION

Gingivitis and periodontitis are the two main periodontal diseases and may be present concurrently gingivitis is a form of periodontal disease in which gingiva are inflamed but there destruction is reversible while periodontitis chronic inflammatory response to the sub gingival bacteria with irreversible changes<sup>[1]</sup>. Gingivitis is reversible with good oral hygiene. However, in the absence of treatment, or if not controlled, gingivitis can progress to periodontitis, where the inflammation results in tissue destruction and alveolar bone resorption, which can ultimately lead to tooth loss <sup>[2]</sup>. The clinical feature that distinguishes periodontitis from gingivitis is the presence of clinically detectable attachment loss. This loss is often accompanied by periodontal pocket formation and changes in the density and height of the subjacent alveolar bone. In some cases, recession of the marginal gingiva may accompany attachment loss, thereby masking ongoing disease progression if only probing depth measurements are taken without measurements of clinical attachment levels. Clinical signs of inflammation such as changes in color, contour, and consistency as well as bleeding with probing may not always be positive indicators of ongoing attachment loss. However, the presence of continued bleeding with probing during sequential visits has proved to be a reliable indicator of the presence of inflammation and the potential for subsequent attachment loss at the bleeding site. The attachment loss associated with periodontitis has been shown to progress either continuously or in episodic bursts of disease activity<sup>[3-5]</sup>. The important factor to be considered is that women still have varied periodontal problems due to hormonal fluctuations in various decades of life<sup>[6]</sup>. Data suggest that this finding may be related to gender dependent genetic predisposing factors or other socio-behavioral factors<sup>[7]</sup>, so the aim of the study. This study was undertaken to detect the effect of gender factor on periodontal health status clinically.

### MATERIALS & METHODS

This study was carried out during the period from February to April. We were examined the plaque index, gingival index and probing pocket depth for all patients.

#### Human sample

The subjects included in the study were down from the patient attending the College of Dentistry, Baghdad University. The whole study sample consist of 60 patients (30 males and 30 females) ranging in age from 20 to 59 years.

**The first group (gingivitis group)** consists of 30 patients (15 males and 15 females) ranging in age from 20 to 35 years and those patients has no history of any systemic diseases.

**Second group (periodontitis group)** also consists of 30 patients (15 males and 15 females) ranging in age from 30 to 59 years and those patients has no history of any systemic diseases.

#### Inclusion criteria

1. Patient without history of any systemic disease
2. Patient taking no medication

#### Exclusion criteria

1. Medically compromised patients.
2. Patient takes medication.
3. Smokers.
4. Pregnant women
5. Women taking contraceptive pills

**Clinical examination:** The oral examination was carried out on the four surfaces) buccal, lingual, mesial, distal) of natural teeth

The collected data include:

#### Assessment of plaque index (PLI)

According to Silness and Loe, 1964<sup>[29]</sup> the criteria for plaque index:

0: no plaque.

1: a film of plaque adhering to the free gingival margin and adjacent area of the tooth. The plaque may be recognized by running a probe across the tooth surface.

2: moderate accumulation of soft deposits within the gingival pocket, on the gingival margin and /or adjacent tooth surface, which can be seen by naked eye.

3: abundance of soft matter within the gingival pocket and/or on the tooth surface and gingival margin.

**Assessment of gingival index (GI)** according to Loe 1967 (30)

0: absence of inflammation/normal gingiva

1: mild inflammation, slight change in color, slight edema, no bleeding on probing.

2: moderate inflammation, moderate glazing, redness, edema, bleeding on probing. 3: severe inflammation, marked redness, ulceration and tendency to spontaneous bleeding.

**Assessment of probing Pocket Depth (PPD)**

Pocket depth is defined as 'the distance from gingival margin to the base of clinical periodontal Pocket' which was measured in mm. by using Williams's periodontal probe.

Score 0: those included depth from 1-3mm.

Score 1: those including depth from 4-5 mm.

Score 2: Those including depth 6 mm.

**Determining the Level of Attachment**

When the gingival margin is located on the anatomic crown, the level of attachment is determined by subtracting from the depth of the pocket the distance from the gingival margin to the CEJ. If both are the same, the loss of attachment is zero. When the gingival margin coincides with the CEJ, the loss of attachment equals the pocket depth. When the gingival margin is located apical to the CEJ, the loss of attachment is greater than the pocket depth. Therefore, the distance between the CEJ and the gingival margin should be added to the pocket depth. Drawing the gingival margin on the chart where pocket depths are entered helps to clarify this important point.

**RESULTS & DISCUSSION**

Table (1) and figure (1) shows the mean value of PLI for both males and females patients diagnosed with gingivitis. The males group their mean PLI  $1.496 \pm 0.335$  comparing with the females group  $1.522 \pm 0.337$ , with no significant statistical difference was observed between the males group and females group with the P value (0.706). While table 2 and figure (2) shows the mean value of the GI for the patients with males group have a mean of  $1.063 \pm 0.129$  and the females group have mean of  $1.118 \pm 0.253$ , also no significant difference was observed between the males and females with p value of (0.646).

**TABLE 1:** Total means male having gingivitis and it's comparison to female of PLI of

parameter	Gender	No.	mean	T-test	P value	SD
PI	Male	15	1.496	0.381	0.706	0.335
	Female	15	1.522			

**TABLE 2:** Total means of GI of male having gingivitis and it's comparison to female

parameter	Gender	No.	mean	T-test	P value	SD
GI	Male	15	1.063	0.464	0.646	0.129
	Female	15	1.118			

Table 3 and figure 3 shows the mean values of PLI for patients diagnosed with periodontitis for males and females, the males group have a mean of  $1.79 \pm 0.673$

comparing with the females group which has mean value of  $1.64 \pm 0.545$ . A non-significant statistical difference was observed between males and females with p value (0.46).

**TABLE 3:** Showing total means of PLI males having periodontitis and it's comparison to female

Parameter	Gender	NO.	Mean	T-test	P value	SD
PLI	Male	15	1.79	0.747	0.46	0.673
	Female	15	1.64			

Table 4 and figure 4 shows the mean values of GI for patients diagnosed with periodontitis for both males and females, the males group have a mean of  $1.4 \pm 0.449$  comparing with the females group which have mean value

of  $1.3 \pm 0.470$  also non-significant statistical difference was observed between males and females with p value (0.470).

**TABLE 4:** showing total means of GI of males having periodontitis and it's comparison to female

Parameter	Gender	No.	mean	T-test	P value	SD
GI	Male	15	1.4	0.728	0.47	0.449
	Female	15	1.3			

Table 5 and figure 5 shows the mean values of PPD for patients diagnosed with periodontitis for both males and females, the males group have a mean of  $3.88 \pm 0.387$  comparing with the females group which have mean value

of  $3.6 \pm 0.499$  also non-significant statistical difference was observed between males and females with p value (0.667).

**TABLE 5:** Showing total means of PPD of males having periodontitis and it's comparison to female

parameter	Gender	No.	mean	T-test	P value	SD
PPD	Male	15	3.88	0.667	0.51	0.387
	Female	15	3.6			

Table 6 and figure 6 shows the mean values of CAL for patients diagnosed with periodontitis for both males and females, the males group have a mean of  $2.87 \pm 0.779$  comparing with the females group which have mean value

of  $3.37 \pm 0.784$  also non-significant statistical difference was observed between males and females with p value (0.97).

**TABLE 6:** Showing total means of CAL of males having periodontitis and it's comparison to female

parameter	Gender	No.	mean	T-test	P value	SD
CAL	Male	15	2.87	0.037	0.97	0.779
	Female	15	3.37			

## CONCLUSION

This study revealed that there was no significant effect of gender on periodontal health of patients in spite of that some previous studies showed there was an influence of gender on periodontal health, this difference in results between our study and their study related to size of the sample we collected which was small.

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