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EVALUATION OF PERIODONTAL DISEASE AWARENESS BY COMPARING SELF REPORTS AND CLINICAL MEASUREMENTS OF PATIENTS AT ISTANBUL UNIVERSITY FACULTY OF DENTISTRY

İstanbul Üniversitesi Diş Hekimliği Fakültesi'ne Başvuran Hastaların Periodontal Hastalık Farkındalıklarının Klinik Ölçümler ve Kendi İfadeleri Karşılaştırılarak Değerlendirilmesi Dağılımı

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ABSTRACT

Purpose: The aim of this descriptive, cross-sectional investigation was to evaluate the periodontal disease awareness of patients by comparing their clinical periodontal measurements and self-reports.

Material and Methods: In total, 674 subjects, referred to Istanbul University Faculty of Dentistry, Periodontology Department, were included in the study. Self-report of periodontal disease of the subjects were determined using a questionnaire. Periodontal indices were recorded.

Results: Periodontal disease awareness was 44% among patients. The comparison of age, PI, BOP were similar between the groups. PD, number of teeth and CPITN code were significantly different between aware and unaware patients. Periodontal disease awareness was higher among patients who attended to periodontology by a complaint than patients who referred by dental physician.

Conclusion: Periodontal disease awareness of the patiens attended to our department was low. Low awareness could be associated with patients that were attended to our clinic mostly by referral of other dentists.

Keywords: *Periodontitis, self report, periodontal disease, awareness*

ÖZ

Amaç: Bu kesitsel çalışmanın amacı İstanbul Üniversitesi Diş Hekimliği Fakültesi'ne başvuran hastaların klinik periodontal ölçümleri ve kendi ifadeleri karşılaştırılarak periodontal hastalık farkındalıklarının değerlendirilmesidir.

Gereç ve Yöntem: Çalışmaya 674 hasta dahil edilmiştir. Plak varlığı (%), sondalamada kanama (%), sondalanabilir cep derinliği, CPITN ölçümleri yapılmıştır. Hastaların kendi periodontal hastalık durumları hakkındaki düşünceleri hazırlanan anket sorularıyla belirlenmiştir. Periodontal hastalık farkındalıkları klinik ölçüm değerleri ile kendi ifadeleri karşılaştırılarak değerlendirilmiştir.

Bulgular: Hastaların periodontal farkındalık oranı %44'dür. Yaş, sondalamada kanama ve plak varlığı ölçümleri farkında olan ve olmayan hastalar arasında farklılık göstermemekle birlikte, cep derinliği, diş sayısı, 4mm' den daha derin periodontal cep sayısı ve CPITN değerleri gruplar arasında belirgin farklılık göstermiştir. Bir diş hekimi tarafından yönlendirilen hastalara göre şikayet nedeniyle başvuran hastaların farkındalıklarının daha yüksek olduğu gözlenmiştir.

Sonuç: Kliniğimize başvuran hastaların periodontal hastalık farkındalıkları düşüktür. Hastaların çoğu ne kendi periodontal durumlarının ne de periodontal hastalık belirtilerinin farkındadır.

Anahtar kelimelerler: *Periodontitis, periodontal hastalık, farkındalık*

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Introduction

Even though periodontal disease is not life threatening, it usually affects the patient's quality of life (1-3). At initial phases, the first symptom of the disease is gingival bleeding (4, 5). The progression of the disease is usually painless unless the root surface is exposed. Root carries may lead to sensitivity or pain as the disease progresses. Patients who are more aware of their oral situation, notice gingival bleeding and visit dental offices complaining. On the other hand, some patients do not associate the situation with the disease despite their gingival bleeding. It is important for a patient to be aware of the disease's etiology and symptoms which would help early diagnosis. However, patients are usually informed by their dentists that they actually have periodontal disease at the advanced stage when there is mobility. In this case, improving periodontal disease awareness is very important in terms of recognition of the disease symptoms earlier by the patients and enable to receive periodontal treatment if needed.

A possible alternative to clinical periodontal assessment is self-report, a method widely used to assess the prevalence of various medical conditions (6, 7). It has also been investigated as a possible alternative to clinical periodontal assessment (8, 9). Self-reported periodontal measures, if found to be valid, would be very useful for surveys, surveillance, as well as large etiological epidemiological studies. That could be a highly cost-and time-effective measure of periodontal disease history. Clinical data is still the gold standard for determining periodontal disease and improving periodontal disease awareness which will provide the recognition of the disease symptoms earlier by the patients and enable to receive periodontal treatment.

The purpose of this study was to assess periodontal disease awareness by comparing self-reports and periodontal clinical measurements of the patients attending to Istanbul University Faculty of Dentistry, Periodontology Department.

Material and Methods

The study was conducted among patients seeking for dental treatment at Istanbul University, Faculty of Dentistry. Data were collected between December 2009 and April 2011. Oral and systemic anamnesis were obtained and a questionnaire form was used to assess the knowledge of patients' own oral health. Clinical measurements were performed to evaluate the subjects' periodontal status. The study was approved by the Ethics Committee of Istanbul University, Faculty of Medicine (2012/891-1085).

Periodontal Examination

All subjects underwent a full mouth periodontal examination at four sites per tooth (mesio-mid and disto-vestibular; mesio-mid and disto-palatinal). Periodontal indices recorded were: % presence of plaque (PI, %), % of sites of bleeding on probing (BOP, %), probing depth (PD), and Community Periodontal Index (CPI). Periodontal condition was assessed using the Community Periodontal Index Treatment Needs (CPITN) (10). All parameters were measured with a manual periodontal probe calibrated in millimeters. Patients were diagnosed according to 1999 AAP workshop by a well trained periodontist (11).

Dental Knowledge

The subjects were asked if they knew the following dental terms: dental floss, dental plaque, calculus, temporomandibular joint disorder, periodontal disease.

Oral Health Behaviours

Questions were asked about tooth-brushing frequency, use of dental floss, and interdental brush.

Periodontal Disease Awareness

Periodontal disease awareness was determined by comparing self-reports obtained by a questionnaire and clinical periodontal measurements, and was described as follows: Subjects who had bleeding gums, tooth mobility, or gingival recession and answered the question "Do you have any periodontal disease?" as negative were accepted as "unaware" of their periodontal health and vice versa.

Statistical Analysis

Data were evaluated with the SPSS software (SPSS Inc., Chicago, IL). The chi-square and independent samples t-tests were used to identify statistically significant differences between distributions or means. The chi-square and Mann-Whitney U-tests were used to compare periodontal clinical measurements between aware and unaware patients.

Results

CPITN code distribution among patients was as follows; 1% Code 1, 63% Code 2, 31% Code 3, 5% Code 4. CPITN Code 2 was the most common score of the patients. CPITN code distribution was shown in table 1.

Table 1. CPITN code distribution of patients by age.

Age Groups (years)	CODE 1 (%)	CODE 2 (%)	CODE 3 (%)	CODE 4 (%)
9-18	**5.8**	**87.5**	**5.8**	**1**
19-39	**1.2**	**62.5**	**28.9**	**7.5**
40+	**0**	**51.5**	**41.6**	**6.9**

Periodontal disease awareness was 44% among patients. When patients were divided into two groups according to their awareness, PI and BOP values were found similar between the groups. However, clinical parameters such as PD, CPITN, number of deep periodontal pockets and number of teeth between aware and unaware patients were significantly different (Table 2).

Table 2. Comparison of periodontal disease awereness according to age and periodontal parameters.

	Aware (n=378)	**Unaware** (n= 296)	**p**
Age	35.42±14 (9-78)[37]	37.5±15 (14-82)[36]	NS
PI (%)	68.7±24.6 [69]	69.2±26.6[69]	NS
BoP (%)	49.7±30.1 [46]	45.8±29.4[49]	NS
PD (mm)	2.49± 0.79 (1-6)[2.4]	2.32±0.68 (1-5)[2.3]	**0.003**
Number of teeth	24.6±4.7 (5-32)[25]	23.3±6 (3-32)[23]	**0.001**
Pockets>4mm (n)	3.78±7.2(1-24)[2]	1.87±4.1(1-18)[2]	**<0.001**
CPITN code	2.49± 0.67 [3]	2.34±0.56 [2]	**0.003**

Mann-whitney-U and independent samples t-test were performed. Bold indicates significant different between the groups. The results were shown as mean ± standart deviation (min- max) [median]. NS: non-significant.

In table 2 clinical periodontal measurements were indicated. Aware and unaware patients' mean PI was 68.7±24.6 and 69.2±26.6, BOP was 49.7±30.1 and 45.8±29.4, respectively ($p<0.05$). Aware patients' mean number of teeth was 24.6±4.7, unaware patients' mean number of teeth was 23.3±6 ($p=0.001$). Mean number of pockets was 3.78±7.2 in the aware group and 1.87±4.1 in the unaware group ($p<0.001$).

Indication and gender did not affect patient awareness. However, the awareness was found to be higher if the patient attended to our clinic by a complaint rather than by referral (Table 3).

Table 3. Periodontal disease awareness distribution by indication, reason of attending and gender. Gender or indication was not differed between the groups. The awareness of the patients was significantly diffferent according between patients attended by complaint and referral.

	Aware n (%)	**Unaware** n (%)	**p**
Indication			NS
Gingivitis	113 (21.4%)	78 (28.4%)	
LCP	90 (24.3%)	65 (23.6%)	
GCP	160 (43.2%)	125 (45.5%)	
AP	7 (1.9%)	6 (2.2%)	
Reason of attending			**0.001**
Complaint	121 (32%)*	145 (49%)	
Referral	257 (68%)*	151 (51%)	
Gender			NS
Female	184 (62.4%)	225 (60.3%)	
Male	111 (37.6%)	373 (39.7%)	

Chi-square test was performed between aware and unaware patients. Bold indicates significant different between the groups. NS: non-significant.

To understand whether patients know the etiologic factors of periodontal disease, the question "Do you know why your gums are bleeding?" was directed and only 29% responded correctly. 71% did not know the etiologic factor.

All subjects were aware of the dental terms. 34% of the patients declared that they brush their teeht once a day, 24% twice a day, 25% three times a day, 6% every second day, and 7% few times in a week. The remaining 4% declared that they never brush their teeth. The assessment of oral hygiene practices showed that interproximal surface cleaning was insufficient among patients.

Discussion

Periodontal disease is an episodic disease which shows exacerbation and remission phases. The primary etiologic factor of periodontal disease is dental plaque (12, 13). Therefore, the first step of a dentist should be to correct oral hygiene behaviors of the patients. The symptoms of periodontal disease are often overlooked by the patients and even by the dentists. Furthermore, patients do not associate the existing symptoms with

the disease. Our study results revealed that patient awareness was low among patients attended to Istanbul University, Dental Faculty clinics.

Self-report is efficient and accepted means of assessing many diseases such as cardiovascular disease, diabetes, obesity and some other systemic diseases (6, 7). The use of self-report in periodontology would allow for an easier and low-cost method of obtaining data for research and would support the creation of oral health programs (14, 15). However, studies evaluating the validity of self reported measures for periodontal disease and gingivitis have reported inconsistent results. Our results support previous studies. Comparisons between studies about self-report of periodontal diseases are difficult, because of the heterogeneity of study populations and the differences in definitions of periodontal disease. However, there is a general agreement between studies that the sensitivity of self-perceived periodontal health is fairly poor (8, 9, 16-18). Dietrich et al. (8) found that self-perceived periodontal disease was more specific than sensitive. Self-assessment can additionally serve as a motivational tool for good oral hygiene for the population (19, 20).

According to our study results validation of self-report is low. Only about half of the patients (44%) correctly identified themselves as having periodontal disease. This present study results also confirm previous studies that self-report measurement is a fairly poor method compared to clinical periodontal measurements. Clinical assessment is still the gold standart to evaluate periodontal diseases.

When clinical periodontal measurements were compared between aware and unaware patients, all the periodontal measurements, except PI and BOP, were significantly high among aware patients. Our study results demostrated that patient awareness rates increase when there is more severe periodontal disease. Especially having more number of deep periodontal pockets is a significant phenomenon that is associated with awareness.

Males usually are reported to have more periodontal disease than females. Furthermore, it has been shown that females have better lifestyles and oral health behaviours than males (21-24). However, our results indicated that, patient awareness show no difference between males and females.

The reason that periodontal disease awareness was found to be low among patients attending to our department may be because most of the patients were not seeking for a treatment consciously, but they were referred to periodontology by a dental physician. Periodontal disease was found higher among patients who attended to periodontology by complaint rather than patients referred by dental physician.

Improving periodontal disease awareness among patients would provide the chance of early diagnosis and help the prevention and control of periodontal diseases. Patients' oral health attitudes reflect their understanding of the importance of the periodontal health and their perception would effect the maintenance of oral health. In addition, the awareness of the population must be improved in order to increase oral health in Turkey.

Conclusion

Having self periodontal disease awareness would provide patients to discriminate early signs of diseases and might be a useful tool to maintain good oral health. High awareness of oral-health may help to decrease periodontitis severity and its prevalance in the population.

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