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Prevalence of periodontal diseases among the patient visiting at Periodontology OPD Update Dental College Hospital, Dhaka

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ABSTRACT:

OBJECTIVE: The aim of the study was to investigate the prevalence of periodontal diseases with regards to the age and sex in population around a dental hospital, and to compare the results with national and international studies.
METHODOLOGY: A cross sectional study was initiated to characterize the demographic, oral health behavior. Prevalence of different types of periodontal diseases was evaluated in the out patients periodontology department of Update Dental College and Hospital Dhaka, Bangladesh. Investigation was determined by taking the history and with oral examination, using examination instruments, CPITN probe and with the help of radiographs.

RESULT: Out of 2130 patients during year 2014-2015, 1807 were diagnosed, as suffering from Chronic plaque induced gingivitis and 323 were diagnosed, as suffering from chronic plaque induced periodontitis. Prevalence was revealed more cases of gingivitis then periodontitis and males are suffering with periodontal diseases more than the females. 21-40 years of age group patient has been suffering with gingivitis more but 41-60 years of aged patients are has been suffering with periodontitis. So commonly gingivitis occur in early ages population and they are more concern about the treatment also.

CONCLUSION: Gingivitis is prevalent on periodontitis and male are suffering more with periodontal diseases.

INTRODUCTION

Periodontal disease is a common chronic inflammatory disease. In older adults it may increase patient's risk of developing systemic diseases such as diabetes mellitus, lung disease, heart disease and stroke.¹ Priodontal infections have also been implicated as one of several

factors in the development of coronary heart disease.² Oral infections may have an association with the occurrence and severity of a wide variety of systemic conditions and diseases such as heart diseases, preterm low birth weight babies, respiratory diseases and diabetes mellitus.³ WHO report (2005) described that the global problem persisted

with the worldwide oral diseases such as dental caries, periodontal disease, tooth loss, oral mucosal lesions and oropharyngeal cancers.⁴ There are reports which revealed the association of Periodontal disease with the risk of adverse pregnancy outcomes.^{5,6} Stillbirth, neonatal and perinatal deaths were reported to be increased with the severity of periodontal disease.⁷ Bone loss in periodontal disease may also occur in bursts of osteoclastic activity, triggered by cells or factors generated during an acute phase.⁸

There was a positive correlation observed, between the female gender and the occurrence of periodontal disease.⁹ The prevalence and severity of early onset of periodontitis in Uganda was found, being significantly more prevalent in males than females.^{10,11,12} Incidence of incipient periodontal destruction has pragmatically increased with age, the highest rate occurs between 50 and 60 years of age.¹³ Moderate periodontal disease has been reported being prevalent among very old dentate adults while advanced periodontal disease was much less prevalent.¹⁴ It was found that the risk indicators for a higher prevalence of periodontal disease included increasing age, poor education, and lack of professional dental care.¹⁵ According to the WHO report (2003), the socio-environmental determinants to oral disease were highly related to the lifestyle factors.¹⁶ Frequency of chronic periodontitis in a cross section was studied by Chaudhry et al in Pak Army Personnel. They detected that 32.04 % of subjects in the population had a poor level of oral hygiene and consequently suffered from chronic periodontitis.¹⁷ Subgingival calculus was reported to be closely associated with gingivitis and Periodontitis.¹⁸

Prevalence of periodontitis associated with a healthy lifestyle was significantly lower when compared to an unhealthy lifestyle.¹⁹ The aim of the study was to report the prevalence of periodontal diseases with regards to age & sex in a population of patients reporting to Update Dental College & Hospital, Dhaka.

METHODOLOGY

A cross sectional study was conducted to evaluate the occurrence of periodontal diseases in male and the female population, in the department of periodontology of Update dental College and Hospital. A routine oral examination was performed for the diagnosis, for which a patient's examination form was used to record the data. Only the dentate patients who attended the out patients department of Periodontology of Update Dental College & Hospital during year 2014-2015, were included in the study. Three distinct levels were considered for screening of the patients i.e. gender, age and type of periodontal diseases (Gingivitis and periodontitis). Diagnosis was derived from the information obtained from the patient's medical and dental history, regarding the predisposing disease combined with findings from a thorough intraoral examination. Screening of the patients was done by their clinical examination, performed by the dental officer assisted by some Intern doctors with a dental assistant, with the help of sterile instruments i.e. mouth mirrors, explorers, CPITN probe, disposable gloves, and masks, while the patients seated in the dental chair.

Evaluation of the disease was done by the visual method of examination. In this study we follow **Community Periodontal Index for Treatment Needs (CPITN):**

1=The dentition divided into six sextants (One anterior and two posterior)

2=Probing assessment are performed either around all teeth in a sextant or around certain index teeth.

3=The periodontal conditions are scored as follows: For each sextant.

Code 1=No pockets, calculus or overhanging fillings, but BOP present in several gingival units.

Code 2= If there are no pocket exceeding 3mm, but calculus and plaque retaining factors are seen or recognized sub gingivally.

Code 3= Harbors 4-5 mm deep pocket.

Code 4= harbors pocket 6mm deep or deeper.

4=The treatment needs (TN) are scores based on the most severe code in the dentition as TN=0 in case of gingival health, TN 1 indicating need for improved oral hygiene if code 1 has been recorded, TN 2 indicating need for scaling , removal of overhangs, and improved oral hygiene (Codes 2+3) and TN 3 indicating complex treatment complex treatment (code 4).

Where there was an apparent gum recession especially due to the deposition of calculus, was recorded as Chronic Periodontitis. CPITN probe was used where needed, according to the standardized method. In the subjects where the code of CPITN appeared 3 or more, it was also regarded as Chronic Periodontitis. This is said to be an accurate method of recording, and time efficient in the outpatient department.²⁰ It is important to note, the diagnosis criteria of Armitage (2000), that the probing depth measurements was not used as the primary criterion for establishing the severity of periodontitis. According to him, the gingival margin is not a fixed reference, it can be considerably coronal to the cemento-enamel junction in pathological conditions, and can be apical to the cemento-enamel junction in the case of gingival recession. Therefore it was not considered as a good reference point to assess the longitudinal changes in clinical attachment.²¹

This diagnosis criteria was considered and implemented in this study. A pre designed

patient's examination form was used to keep the proof of the entire data. The state of Chronic or adult Periodontitis was recorded, as consisting of chronic inflammation of the periodontal tissues with the accumulation of profuse amounts of dental plaque.²²

RESULT

Overall 2130 patients were examined in the out patients department of Update Dental College & Hospital during the year 2014-2015. There were 1807 (85%) out of 2130 patients who diagnosed, as suffering from gingivitis (Table-1,2, Figure-2) , Among them 56 % males and 43.6 % females (Table:3, Figure-1). There were 48.6 % males and 51.4 % females were diagnosed as suffering from chronic periodontitis out of 323 patient. (Table-3, Figure-1) .

Results of the distribution among both types of the diseases in term of their age bracket revealed that; Periodontal diseases were diagnosed among the age group of 0 to 20 years(11% gingivitis,1.5% periodontitis), in 21 to 40 years (64% gingivitis, 30.7% gingivitis) , in 41-60 years of age (25% gingivitis, 67.8% periodontitis) (Table-2, Figure-2).

Overall scenario among age and gender with periodontal diseases has shown in table -4 .

Table:1 Account of total number of patients and periodontal diseases respect to age:

Age	Gingivitis	Periodontitis	Total
0-20	200 (97.5%)	5 (2.44%)	205 (9.6%)
21-40	1155 (92%)	99 (8%)	1254 (58.9%)
41-60	452 (67%)	219 (33%)	671 (31.5%)
Total	1807 (85%)	323 (15%)	2130

Table: 2 Account of total number of patients and periodontal diseases respect to age:

Periodontal diseases	Age group: 0-20	Age group: 21-40	Age group: 41-60	Total
Gingivitis	200 (11%)	1155 (64%)	452 (25%)	1807 (85%)
Periodontitis	5 (1.5%)	99 (30.7%)	219 (67.8%)	323(15%)
	205 (9.6%)	1254 (58.9%)	671 (31.5%)	2130

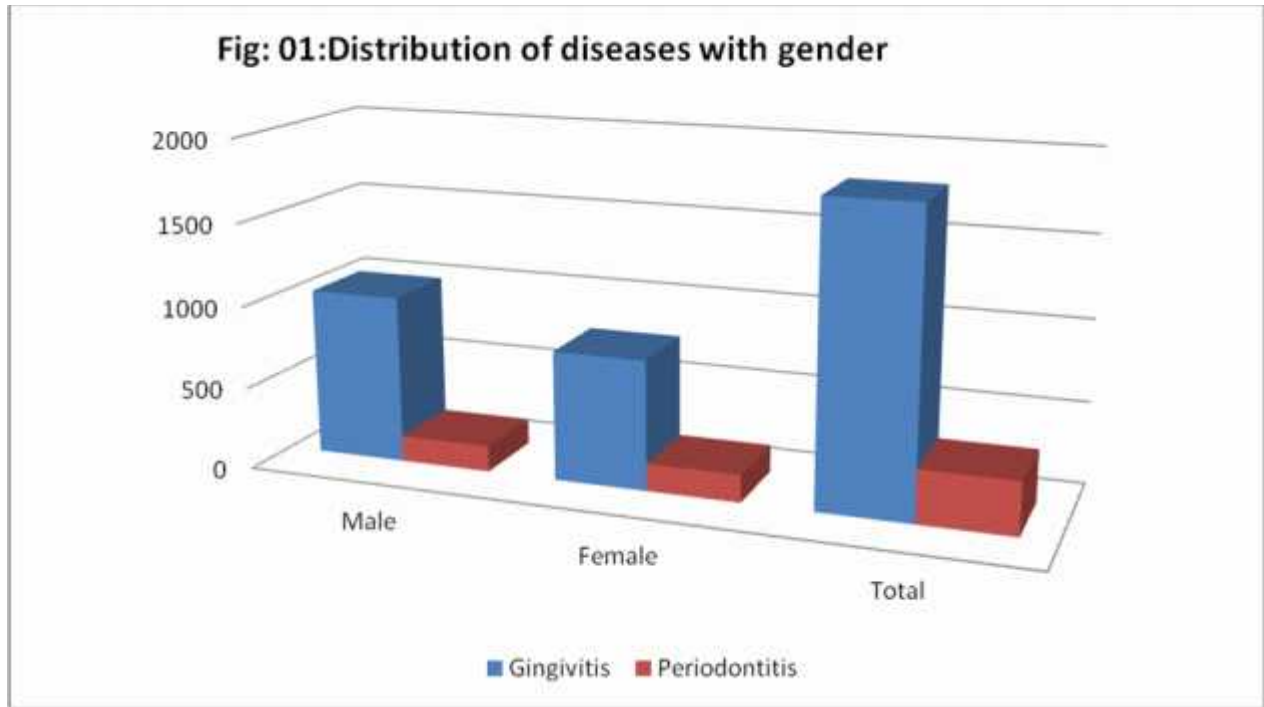


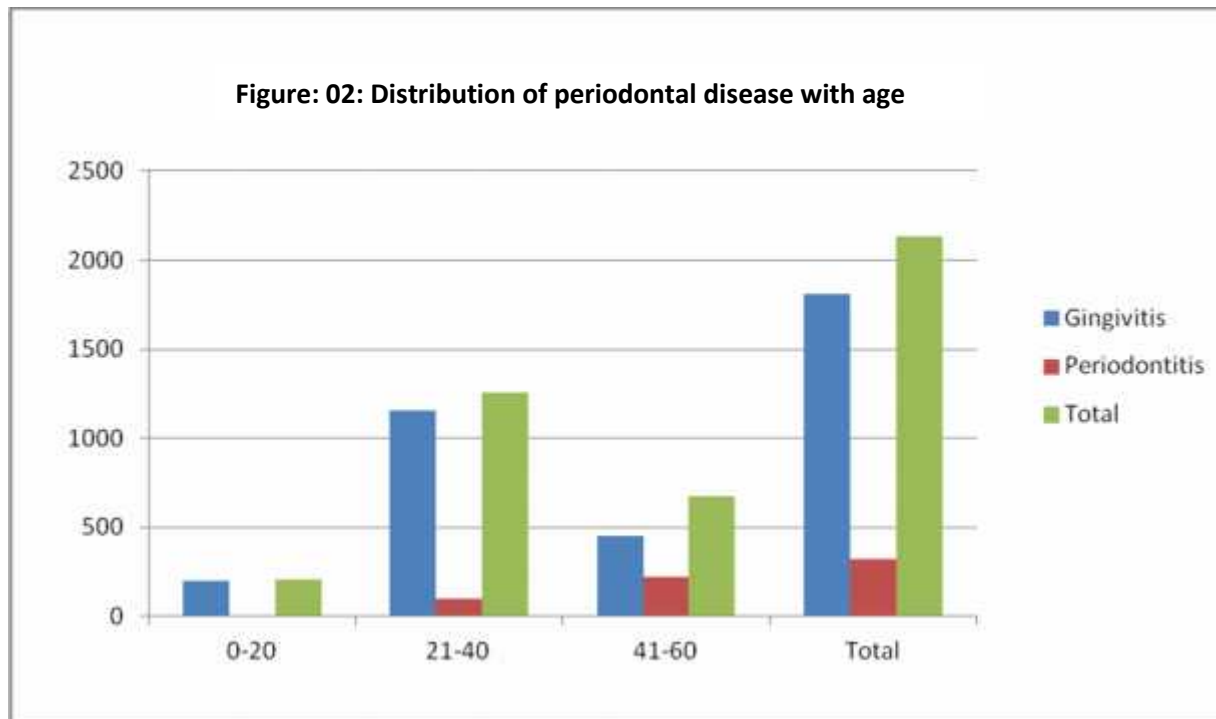
Table: 3 Account of total number of patients and periodontal diseases with gender

	Male	Female	Total
Gingivitis	1020 (56%)	787 (43.6%)	1807 (85%)
Periodontitis	157 (48.6%)	166(51.4%)	323(15%)
Total	1177 (55%)	953 (45%)	2130

Table: 4 Overall scenario with age , gender and periodontal disease:

Age	Female		Male		Total
	Gingivitis	Periodontitis	Gingivitis	Periodontitis	
0-20	116 (14.7%)	4 (2.4%)	84 (8.2%)	1 (.6%)	205 (9.6%)
21-40	486 (61.8%)	55 (33.1%)	669 (65.6%)	44 (28%)	1254 (58.9%)
41-60	185 (23.5%)	107 (64.5%)	267 (26.2%)	112 (71.3%)	671 (31.5%)
Total	787 (37%)	166 (7.8%)	1020 (48%)	157 (7.3%)	2130

Figure: 02: Distribution of periodontal disease with age



DISCUSSION

The prevalence is the number of cases in a designated population at a given point. Any Prevalence information must be interpreted in light of the population studied. It was the first effort of the periodontology department in Update Dental College & Hospital, Dhaka.

Among 2130 patients were examined in the out patients department during the year 2014-2015.

In the present study, the prevalence of gingivitis was found 85% . Gingivitis were more prevalent in the teenage group as compared to periodontitis that were more prevalent in older age groups. Out of total patient suffering from gingivitis 56% of male and 43.6% of females. Males suffered more from gingivitis then as compared to females. This is similar to the study on American population showed males were affected more as compared to females by Li Y, Lee S, Hujoel P in their study.²³ This is opposite to a study conducted by Zhang J. on Chinese adult population which showed no difference between gender based distribution of gingivitis²⁴. The factors responsible for this

finding may be that males are less health conscious and have poorer oral hygiene than

female due to heavy deposition of plaque and calculus.²⁵

The possible another reason for the negligence to maintain their oral hygiene could be, due to the workload on the males, being the single earning member for the whole family. Hence the results appeared in accordance with the previous reports.^{9,10,11,12}

Shah ²⁶ in her report for the National Commission on Macroeconomics and Health (NCMH) observed that for periodontal diseases, the projection is alarming, with prevalence at present being 45%. Which is opposite with this study where the prevalence is only 15% of the total patient. And more prevalence of Periodontitis (67.8%) of the patient of the study are within 41-60 years of age

Categorizing the prevalence, with respect to the types of diseases, among the adults (21-40 years) and the seniors (41-60 years) in this study, it is important to note that Periodontitis appeared more prevalent in the population of the senior age group, irrespective of their gender

(Table:2). In the developing countries, like Bangladesh, the awareness of the people to maintain their oral hygiene is lacking, as a result the disease which was developed at an early age progressed to its severity with the passage of time when the patient reached at an older age. However there are some other reports on the prevalence of periodontitis that allowed the comparison with our study e.g. the incidence of incipient periodontal destruction increased with age, the highest rate occurred between 50 and 60 years.¹³ An overall prevalence of periodontitis 70.9 % and 87.4 % was reported to be higher in both the age groups i.e. adults (35-44 years) and seniors (65-74 years) respectively.¹¹

Similarly the prevalence of periodontitis was also reported, increasing significantly with age and remained constant after the age of 50-59.²⁷

It was observed that most of the patients from the rural areas were undernourished, having high levels of undisturbed dental plaque, which was the main cause of destruction of their oral and periodontal tissues. There are several reports revealing the association of periodontal diseases with various systemic diseases,^{1,2,3,4} and the risk involved regarding the adverse pregnancy outcomes.^{5,6,7} It is therefore important to control and treat the disease in its initial stages to improve the public health.

CONCLUSION

The study detected that a perceptible percentage of the subjects had a poor level of oral hygiene and consequently suffered from Periodontal diseases. The main causative factor was, the unhealthy conditions in which they live and a deprived literacy rate in such population, resulting into a deplorable understanding regarding the awareness to maintain their oral hygiene. Oral diseases are major public health problems in all regions of the world, eventually effecting the general health and the quality of the lives among the individuals and communities. The worthwhile goal should be the prevention and treatment of the disease, which could only be achieved by population's awareness programs.

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