

## Pattern of Periodontitis among Adult Patients Attending at Medical University of Bangladesh

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### Abstract

**Background:** Periodontitis is one of the most common oral diseases and is one of the widest spread chronic diseases all over the world. If a person maintains a good oral hygiene, he/she can control periodontitis easily. Periodontitis is a preventable disease. **Objectives:** This study was aimed to know the current pattern, the possible causes and the attitude towards periodontitis among adult patients attending at outdoor of dental faculty of Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh. **Methodology:** This cross-sectional study was carried out in the OPD of Dental faculty of BSMMU, Dhaka from January 2013 to December 2013 over a period of one year. One hundred twenty patients with any sort of dental problem were enrolled in this study. **Results:** The current study depicted that 68.3% of the patients were from age group of 18 to 40 years and 59.2% were male while 40.8% were female. Most of the respondents (65.8%) lived in urban area. This study showed that 80.8% experienced bleeding from gums and 59.2% had knowledge about cleaning teeth before going to bed and after breakfast. It was found that 77.5% of the respondents used tooth brush and tooth paste for cleaning their teeth. Only 15.8% of the respondents visited dentist for oral and dental check-up regularly. According to life style related habit, 53(44.2%) respondents were smoker, 55 (45.8%) respondents chewed betel leaf and 30 (25%) of the respondents hewed betel leaf with Jarda or SadaPata. Majority 104 (86.7) had calculus, defective margins and restorations. Most of the respondents (95.0%) had bleeding on probing. **Conclusion:** In this study a significant number of respondents have periodontitis who have attended outdoor of dental faculty. Older age, smoking, betel, jarda/sadapata, diabetes mellitus and presence of calculus and restorations are the risk factors for developing periodontitis. [*Journal of National Institute of Neurosciences Bangladesh, 2019;5(1): 76-80*]

**Keywords:** Periodontitis, risk factor and diabetes mellitus

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### Introduction

The World Health Organization (WHO) defines oral health as a state of being free from mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal (gum) disease, tooth decay, tooth loss and other diseases and disorder that limit an individual's

capacity in biting, chewing, smiling, speaking and psychosocial wellbeing. Risk factors of oral diseases include unhealthy diet, tobacco, alcohol and poor oral hygiene<sup>1</sup>. Periodontal diseases are a group of conditions affecting the supporting structures for the dentition. Diagnosis of periodontitis and the identification of

affected individuals can sometimes be difficult because there may be no self-reported symptoms. It is therefore recommended that clinicians should screen patient's susceptibility to periodontitis by evaluating their exposure to associated risk factors so that early detection and appropriate management can be achieved. Destructive periodontitis has been described as a consequence of the interaction of genetic, environmental, microbial and host factors<sup>2</sup>.

Among those risk factors identified for periodontitis are age, gender, socioeconomic status, and genetic predisposition, bacterial colonisation, certain systemic conditions (hypertension, diabetes) and smoking<sup>3</sup>. The main clinical types of periodontal diseases are grouped together on the basis of what it seems to be the predominant pathological process. Types of periodontal diseases include gingivitis and periodontitis which can be further divided into chronic gingivitis and chronic adult periodontitis. Less common types of gingivitis include acute necrotizing ulcerative gingivitis, HIV-associated gingivitis and herpetic gingivostomatitis etc. Uncommon types of periodontitis include prepubertal periodontitis, juvenile periodontitis and acute leukemic periodontal destruction. Miscellaneous periodontal disorders include familial or drug induced gingival hyperplasia, periodontal atrophy recession, periodontal abscess and pericoronitis<sup>4</sup>.

Periodontitis develops through gingivitis which is an inflammation of the marginal periodontium. Both the amount and virulence of the microorganisms and the resistance factors of the host (risk factors and immune status) are crucial for the progression of the periodontal destruction. Periodontitis has been proposed as having an etiologic or modulating role in cardiovascular and cerebrovascular diseases, diabetes, and respiratory disease. Besides adverse pregnancy outcome and several mechanisms have been proposed to explain or support such theories. Moreover, oral lesions are the indicators of disease progression and the oral cavity can be a window to overall health and body systems. In recent years, remarkable epidemiological and pathological relationships between periodontal diseases and rheumatic diseases, especially rheumatoid arthritis (RA) have been presented<sup>5</sup>.

Periodontitis is one of the most common oral diseases. It is a destructive inflammatory disease of the supporting tissues of the teeth and is caused by specific microorganisms<sup>6</sup>. Researchers indicate that people with periodontal disease are almost twice as likely to suffer from coronary artery disease; as those without periodontal disease. The presence of maternal

periodontitis has been found to be associated with adverse pregnancy outcomes such as pre-term birth, pre-eclampsia, gestational diabetes, delivery of a small-for-date infant and foetal loss<sup>7</sup>. In a review van Palenstein Helderma observed the prevalence of subjects with deep periodontal pockets in Bangladesh was 26.0% and it can tentatively be concluded that Bangladesh belongs to the 20.0% of countries in the world where periodontal conditions of the population are among the worst<sup>8</sup>. Aim of this study was to know the current pattern, the possible causes and the attitude towards periodontitis among adult patients attending at outdoor of dental faculty of Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh.

### Methodology

This cross-sectional study was carried out in the Outdoor of Dental faculty at Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh from January 2013 to December 2013 over a period of one year. The target population was adult men and women of age more than 18 years attending at outdoor of dental faculty for any sorts of dental problems. Information about socio-demographic factors, oral hygiene habits, frequency of dental visits, smoking and family history of periodontal diseases were collected from each subject in pre-designed questionnaire. Periodontal condition was evaluated after full mouth examination and the severity of periodontitis was assessed clinically by measuring the depth of periodontal pocket using periodontal probe. Each tooth, except third molars, was examined by walking the periodontal probe around the whole circumference of the tooth. Data were checked, cleaned and edited properly before analysis. The data were analysed by using the software SPSS version 21.0. The analysed data was presented in tables. Descriptive statistics was used for interpretation of the finding. Cross tabulations and associations was determined by using the Chi-square test where applicable.

### Results

Socio demographic factors include age, gender, level of education and residency. 82(68.3%) of the respondents were in the age group of 18 to 40 years and only 3(2.5%) were more than 70 years. Males (59.2%) were predominant than females (40.8%). Among the total, 75(62.5%) of the respondents had HSC and above degree. Out of 120 cases, most of the respondents 79(65.8%) lived urban area (Table 1).

Majority of the respondents (80.8%) experienced bleeding from gums while tooth brushing; 71(59.2%)

replied that they had knowledge about cleaning teeth before going to bed and after breakfast. The majority (77.5%) of the respondents used tooth brush and tooth paste for cleaning their teeth. Only 19(15.8%) of the respondents visited dentist for oral and dental checkup regularly (Table 2).

Table 1: Demographic and Clinical Characteristics of the Study Population (n=94)

Variables	Frequency	Percentage
<b>Age Group</b>		
• 18 to 40 Years	82	68.3
• 41 to 55Years	29	24.2
• 56 to 70Years	06	05.0
• More than 70Years	03	02.5
<b>Sex</b>		
• Male	71	59.2
• Female	49	40.8
<b>Level of education</b>		
• Upto secondary	45	37.5
• Higher Secondary & above	75	62.5
<b>Residency</b>		
• Urban	79	65.8
• Rural	41	34.2

Table 2: Oral Health Behaviour and Periodontal Diseases of the Respondents

Variables	Frequency	Percentage
• Gum bleeding	97	80.8
• Knowledge about brushing	71	59.2
<b>Materials used for cleaning teeth</b>		
• Tooth brush & Tooth powder	14	11.7
• Tooth paste & brush	93	77.5
• Finger & coil	05	4.2
• Finger & toothpowder	08	6.7
• Visit dentist	19	15.8

According to life style related habit, 53(44.2%) of the respondents were smoker, 55 (45.8%) of the respondents chewed betel leaf and 30 (25%) of the respondents hewed betel leaf with Jarda or SadaPata. Among the respondents 25(20.8%) had diabetes mellitus (Table 3).

Table 3: Life Style Related Habit of the Respondents (n=120)

Variables	Frequency	Percentage
Smoking	53	44.2
Chew betel leaf	55	45.8
Having Jarda/ Sadapata	30	25.0
Suffering from diabetes	25	20.8

Among the total, majority 104(86.7) had calculus, defective margins and restorations. Most of the respondents (95.0%) had bleeding on probing (Table 4).

Table 4: Oral Cavity Examination Findings (n=120)

Oral cavity examination findings	Frequency	Percentage
Presence of calculus & restorations	104	86.7
Bleeding on probing	114	95.0

Most of the respondents' age over 40 years had periodontitis (81.4%). Periodontitis was observed more male (69.8%) than female (30.2%) respondents. Periodontitis was observed more among the respondents having HSC and higher than respondents having education up to SSC. Respondents from urban area (65.1%) had periodontitis more than from rural area (34.9%). Periodontitis found less among the

Table 5: Risk Factors of Periodontitis (n=120)

Variables	Periodontitis	Non-Periodontitis	p-value
<b>Age Group</b>			
• 18 to 40 Years	8 (18.6)	74 (96.1)	<0.001
• More than 40Years	35 (81.4)	3 (3.9)	
<b>Gender</b>			
• Male	30 (69.8)	41 (53.2)	0.077
• Female	13 (30.2)	36 (46.8)	
<b>Education</b>			
• Up to SSC	17 (39.5)	28 (36.4)	0.731
• HSC and above	26 (60.5)	49 (63.6)	
<b>Residence</b>			
• Urban	28 (65.1)	51 (66.2)	0.901
• Rural	15 (34.9)	26 (33.8)	
<b>Material used for brushing</b>			
• Tooth brush with paste/ powder	7 (16.3)	6 (7.8)	0.151
• Others	36 (83.7)	71 (92.2)	
<b>Visit to dentist</b>			
• Yes	9 (20.9)	10 (13.0)	0.253
• No	34 (79.1)	67 (87.0)	
<b>Smoking</b>			
• Yes	26 (60.5)	27 (35.1)	0.007
• No	17 (39.5)	50 (64.9)	
<b>Betel leaf chewing</b>			
• Yes	28 (65.1)	27 (35.1)	0.002
• No	15 (34.9)	50 (64.9)	
<b>Having Jarda/Sadapata</b>			
• Yes	17 (39.5)	13 (16.9)	0.006
• No	26 (60.5)	64 (83.1)	
<b>Suffering from Diabetes mellitus</b>			
• Yes	18 (41.9)	7 (9.1)	<0.001
• No	25 (58.1)	70 (90.9)	
<b>Presence of calculus and restorations</b>			
• Yes	43 (100.0)	61 (79.2)	0.001
• No	0 (0.0)	16 (20.8)	
<b>Bleeding on probing</b>			
• Yes	43 (100.0)	71 (92.2)	0.060
• No	0 (0.0)	6 (7.8)	

respondents using brush paste/powder and other materials. Periodontitis was almost absent among the patients used to visit dentist regularly. Periodontitis was significantly higher among the smoker (60.5%), betel leaf chewer (65.1%) and the respondents having jarda and sadapata (39.5%). Periodontitis was also significantly higher among the respondents with diabetes mellitus (41.9%) and the respondents with calculus and restorations (100.0%). All respondents with periodontitis had bleeding on probing (Table 5).

### Discussion

This cross-sectional study was conducted to assess the pattern of gingivitis and periodontitis among adult patients attending at outdoor of Bangabandhu Sheikh Mujib Medical University.

This study included adult subjects 18 years of age and older because it is recognized that periodontitis typically occurs as people get older and most common after age 35<sup>9</sup>. The current study depicted that 68.3% of the patients were from age group of 18 to 40 years followed by 24.2% from age group 41 to 55 years. Periodontitis was more common among the respondents of age above 40 years.

The current study depicted that 59.2% were male while 40.8% were female. Male (69.8%) suffers from periodontitis more than female (30.2%). The gender differential in frequency of brushing, flossing and use of meswak agrees with the trend found in other study<sup>10</sup> that, females use brushing more than males while males use meswak more than females. In the present study, education level and participant's residency did not show any difference from suffering periodontitis.

A study done on Saudi population found no difference in plaque scores between meswak and tooth brush users, rather a positive association between the frequency of meswak and lesser need for periodontal treatment<sup>11</sup>. In the current study periodontitis was more prominent at the group who did not use brush and paste (16.3%) than who use brush and paste (83.7%).

Grossiet al<sup>12</sup> showed that those who smoked were at greater risk for developing periodontal disease than non smokers. Current study has shown a significant association between the smoking habit and periodontitis.

Many studies have been conducted to highlight the link between betel leaf (Pan) chewing and periodontal diseases, many authors stressed that the effects on periodontal diseases and periodontal therapy are heavily influenced by chewing betel leaf (Pan)<sup>13,14</sup>. Periodontitis was more common with the habit of betel

leaf chewing (65.1%) than without the habit (34.9%). Moreover, periodontitis was more common in the group using jarda & sadapata (39.5%).

Data obtained from several studies strongly suggest diabetes as a risk factor for gingivitis and periodontitis<sup>15</sup>. Evidence suggests that periodontal changes are the first clinical manifestation of diabetes<sup>16</sup>. The current study depicted that respondents suffering from diabetes were also suffering from periodontitis (41.9%).

In this current study, all patients with periodontitis had calculus & restorations. Similarly all the patients with periodontitis had bleeding on probing.

### Conclusion

In this study 35.8% respondents who attended outdoor of dental faculty had periodontitis. Elder age, smoking, betel, jarda/sadapata, diabetes mellitus and presence of calculus and restorations were the risk factors for developing periodontitis.

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