

# A Study to Evaluate Awareness of Psychosomatic Factors as a Possible Risk Factor for Periodontal Diseases in General Dental Practitioners of Mangalore City

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## ABSTRACT

**Background:** Clinical observations and epidemiological studies suggest that some negative life events and psychological factors may contribute to an increased susceptibility to periodontal diseases. Management of periodontal diseases is a fundamental part of general practice. This study explored general dental practitioner's awareness about psychosomatic factors and their role in periodontal disease progression.

**Aim:** To evaluate the awareness of general dental practitioners of Mangalore city and their professional behavior towards patients with stress and depression and periodontal infection.

**Method:** Data were collected from 55 general dental practitioners of Mangalore city. 27 respondents were purely general practitioners and other were academicians who were practicing general dentistry.

**Results:** the respondents had awareness about the effect of stress and depression on periodontal tissues and their management. They were able to identify the periodontal conditions which occur primarily because of stress.

**Conclusion:** The general dental practitioners play a key role in the success of the treatment of periodontal disease since they are the primary care providers. The respondents were significantly aware about the psychological factors such as stress and depression and its significance on periodontium. This may be due to the involvement of more number of young practitioners who were well educated about psychosomatic factors and their effects on periodontium in their dental education.

**Keywords:** Psychosomatic factors, Stress, General dental practitioners, Periodontal diseases.

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## INTRODUCTION

Periodontal diseases are the some of the most common ailments to afflict populations (1). Current knowledge about the pathogenesis of periodontal disease obtained mainly from the results of animal and human experiments, analysis of periodontal histopathology, epidemiological studies and clinical trials – describes a complex and multi-factorial etiology (2). It mainly involves a triad of host, bacteria and environment. Most human studies have found significant associations between certain psychosocial factors and chronic inflammatory periodontal disease. This result in large number of patients who need treatment to avoid the loss of appearance and function that is associated with tooth loss due to this problem. The use of proper screening methods on a

regular basis will result in the detection and eventual treatment of periodontal diseases. The diagnosis of periodontal disease then requires treatment, or referral to a periodontists, so this becomes the ethical responsibility of the dentist to decide when to treat and when to refer. Thus management of the periodontal diseases is a fundamental part of general practice. Indeed it may be considered as the foundation of general practice because unless the diseases of periodontal tissues are controlled all other dental care will ultimately fail. Most of the periodontal diseases are chronic and their treatment presents a unique challenge to the general dentist. The science of periodontology is rapidly changing (1). Researchers have shown that negative life events like stress other psychological factors may contribute to an increased susceptibility to periodontal

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**Table 1: Condition/conditions is/ are predominantly due to stress and their effect in count and percentage**

Condition	Nature of the practice- general	Nature of the practice -Both	Total
NUG count	8	19	27
%	29.6%	67.9%	49.1%
Desq. Gingivitis (DESQ) count	10	3	13
%	37.0%	10.7%	23.6%
Both count	9	6	15
%	33.3%	21.4%	27.3%
Total	27	28	55
	100.0%	100.0%	100.0%

a.X2=8.835 p=.012 sig

diseases (3). Pre treatment assessment of depression status may serve to improve quality and effectiveness of periodontal treatment for patient suffering from depression (4). Therefore this study aims at evaluating the awareness of general dental practitioners of Mangalore city and their professional behavior towards patients with stress and depression and periodontal infection.

Stress and depression are the most prevalent mental disorders in adult population. Depression ranks in the top ten causes of disability worldwide. Depression has been associated with anxiety. According to the surgeon general's report on mental health depression and anxiety disorders affect twice as many females as males (4).

Psychological factors, particularly stress have been implicated as a risk indicator for periodontal disease. The most notable example is the documented relationship between stress (experienced by soldiers at war or by the students during examination) and necrotizing ulcerative gingivitis (NUG). Stressful life events and individual's personality and coping skills are the factors to consider in assessing the risk of periodontal disease destruction and the potential for successful periodontal therapy (5).

**MATERIALS AND METHODS**

- **Respondents;** All the general dental practitioners of Mangalore city.
- The periodontists and dental surgeons who were purely academicians were excluded from the study.

- Out of 75 respondents 12 surveys were not analyzed due postal difficulties and 8 were incomplete. Total numbers of subjects (respondents) were 55.
- **Procedure;** The survey was personally distributed among the general dental practitioners. The distant areas were covered by postal means. A self addressed stamped return envelop was attached with each form which was sent through post.
- **Materials;** A close ended questionnaire was specially designed for the study. Nine questions with yes/ no options and a multiple choice answer were specially designed for the study. Each questionnaire had column for type of practice, qualification, and number of years of practice.

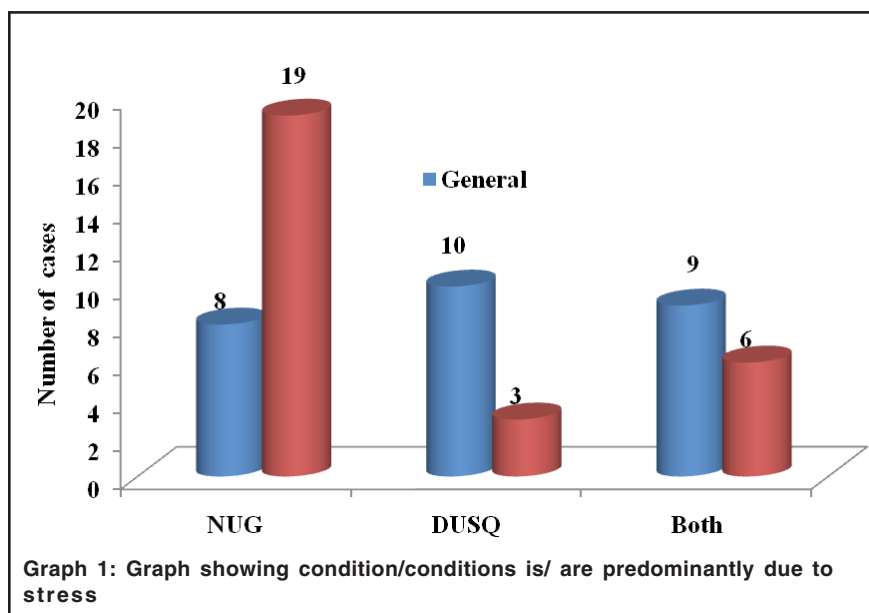
**Statistical Analyses**

Chi -square tests were used to analyze the frequencies of responses to the questions answered with Yes and No. Correlation analyses were used to analyze the data.

**Result**

Majority of general dental practitioners (58.2%) agreed that they consider stress as one of the etiological factor for periodontal disease but 41.8% dentists disagreed. The literature says depression and anxiety disorders affect twice as many females as males (4). In our study 58.2% practitioners are of opinion that depression is more common in females compared to men. It's a proven factor that periodontal pathogens are crucial for the development of periodontal disease (5) and in our study to 94.5% practitioners gave the same opinion. Among the periodontal diseases NUG and Desquamative gingivitis have been most commonly associated with psychosocial factors. In our study as it is shown in Table 1 and Graph 1 the 49.1% of dental practitioners felt that NUG is the commonly occurring condition due to stress followed by desquamative gingivitis (23.6%) as the second most common disease and 27.3% practitioners felt both conditions occur due to stress. This has been statistically significant (p=0.12).

Research has clearly demonstrated that there



**Table 2: Stress increases the rapidity of disease progression in chronic periodontitis**

Rapidity of chronic periodontitis increased by stress	Nature of the practice-general	Nature of the practice –Both	Total
Yes count	26	22	48
%	96.3%	88.6%	87.3%
No count	1	6	7
%	3.7%	21.4%	12.7%
Total count	27	28	55
%	100.0%	100.0%	100.0%

*a.X2=3.888 p=.049 sig*

is a significant relationship between depression and oral health(6,7,8). Depression is one of most common psychosomatic factor which delays wound healing(5). The study distinctly points out that depression delays wound healing by 67.3%.Increased stress modulates the disease progression resulting in greater periodontal destruction(9). In our study 87.3% practitioners are of the opinion that stress increases the rapidity of disease progression in chronic periodontitis (p=0.49)(5). As shown in Table 2 and Graph 2.

Generally stress reduces the salivary flow and people are prone for poor oral hygiene(4). Surprisingly the current study gave a contrasting picture where in 67.3% practitioners were of the opinion that stress increases the saliva flow. Body posture and facial expressions are suggestive of stress in individuals who are the experiencing

them .The clenching of teeth and grinding are the common findings in them. In our study 98.2% of the respondents were of the same opinion. This particular finding is statistically significant (p=0.011) (Table 3, Graph 3)

Depression is generally correlated with increased post operative pain and use of analgesics(4). The participants in study were aware of the same and 65.5% said that depression is co related with post operative pain and amount of analgesics to alleviate the pain. The individuals with stress generally report high degree of smoking and in our study 96.4% agreed that smoking and other environmental factors are commonly associated with psychosomatic factors.

**DISCUSSION**

The concept of psychosocial factors contributing to the development of

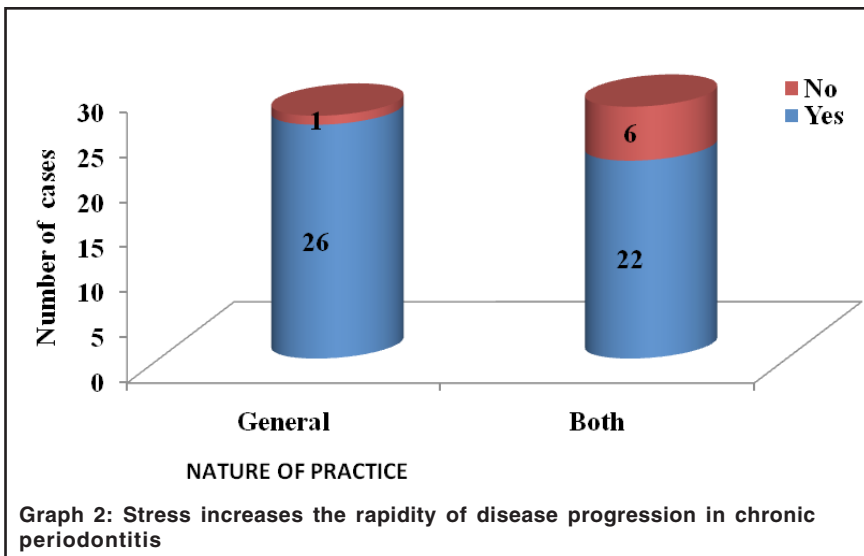
periodontal pathology is well established and accepted in the case of NUG and desquamative gingivitis. More recently, the role of psychosocial factors in the causation of more common forms of periodontal disease has been investigated by Genco *et al* (1).

The cellular and molecular basis for the interaction between stress and periodontal disease can be explained b the HPA axis, such as the promotion of the release of the corticotrophin releasing hormone from the hypothalamus and glucocorticoid from the adrenal cortex. The glucocorticoids exert major suppressive effects through highly specific mechanisms at multiple levels. They reduce the number of circulating lymphocytes monocytes and eosinophils and inhibit the accumulation of macrophages, eosinophils and neutrophils at inflammatory site. They also inhibit the production of cytokines, the secretion of IgA and IgG (5).

The effect of psychosocial stress on periodontal disease has been hypothesized to occur through the influence of stress on behavioral changes that affect at –risk health behaviors such as smoking, poor oral hygiene and poor compliance with dental care (1).

The current study used the questionnaire method to accesses the knowledge and awareness of the general dental practitioners of Mangalore city. The majority of the respondents consented and returned their response sheets timely. The study suggests that the respondents have a better understanding of the relationship between psychosocial factors and the outcome of periodontal diseases. Majority of the participants agreed with the fact that NUG and desquamative gingivitis are the common periodontal disease occur due to stress.

Psychosocial factors lead to changes in the oral habits and in behavioral responses of the host, such as poor oral hygiene and smoking. Monterio da Silva *et al* (10) proposed that psychosocial perturbations may result in patients neglecting their oral



**Table 3. Grinding and clenching of teeth is usually associated with high level of stress**

Grinding & clenching associated with stress	Experience					Total
	<5yrs	5-10yrs	10-15yrs	15-20yrs	>30yrs	
Yes	count 25	18	6	3	2	54
%	100%	100.0%	100.0%	75.0%	100.0%	98.2%
No	count 0	0	0	1	0	1
%	0%	0%	0%	25.0%	0%	11.8%
Total	count 25	18	6	4	2	55
%	100.0%	100%	100.0%	100.0%	100.0%	100.0%

*a.x2=12.988 p=.011 sig*

hygiene. From the present study it is evident that the general dental practitioners are much aware of the behavioral aspect of stress. The grinding and clenching of the tooth is a common behavioral manifestation of the teeth seen in individual with high level of stress.

Paul W.Kloostra *et al.* in their study quoted that depression was the least identified psychosomatic factor by the respondents (4). This is in contrast to our study which showed high degree of awareness among the respondents. This can be explained on the basis that the respondents in our study were of younger age group who had good dental education about psychosomatic factors and its significances in periodontal aspect.

There is a relationship between depression

and oral health and between wound healing and pain. Studies by Arpino *et al* (11) and Eremenko *et al* (12) showed that depression was correlated directly with postoperative pain and amount of analgesics required to alleviate the pain. In our study the respondent were of the same opinion that depression has negative impact on wound healing and usually such patients requires more amount of analgesics to alleviate the post operative pain.

Paul W Kloostra *et al.* in their study reported that xerostomia is the one of major oral finding in patient with psychosocial factors and due to this maintance of good oral hygiene is difficult for patients with psychosocial factors, (4) but in current study the respondents have

contrasting opinion that salivary flow is increased in patients with psychosomatic factors.

**CONCLUSION**

Psychosocial factors have a major role in the periodontal infections and have the most significant impact on pain perception, use of pain medication and wound healing. The high level of awareness among the respondents in this study is an encouraging finding however it is worthwhile to remember that knowledge alone is insufficient and they need to be aware of special techniques to treat these individuals suffering with stress disorders. Therefore it seems crucial to educate the general dental practitioners about the role of psychosocial factors in the treatment process. In addition, future research should focus on developing targeted interventions that could improve the patient’s outcomes, and thus, their quality of life during treatment. Since general dental practitioners are the primary care providers they will help in guiding patients towards maintenance of good oral hygiene at primary level.

**REFERENCES**

1. Milton A. Glicksman. Referral of the periodontal patient to the periodontist. *Periodontology* 2000-2001;**25**:110-113.
2. Chistoph A Ramseir, Zachary R Abramson, Qiming Jin, *et al.* Gene therapeutics for periodontal regenerative medicine. *Dental Clinics of North America* 2006;**50**(2):245-256.
3. Daiane C Peruzzo, Bruno B Benatti, Glauca MB *et al.* A systematic review of stress and psychological factors as possible risk factor for periodontal disease. *J Periodontal* 2007;**78**:1491-1504.
4. Paul W Kloostra, Robert M Eber, Marita Rohr Inglehrtl. Anxiety, stress, depression, and patients’ responses to periodontal treatment; periodontists’ knowledge and professional behavior. *J Periodontol* 2007;**78**: 64-71.
5. Michael G Newmann, Henry H Takei, Perry R Klokkevold, editors. Carranza’s Clinical Periodontology 10<sup>th</sup> ed. First printed in India; 2007:284-311.
6. Wimmer G, Janda M, Wieselmannpenkner K, *et al.* Coping with stress: Its influence on periodontal disease. *J Periodontol* 2002;**73**:1343-1351.
7. D’Mello DA. Are your patients depressed? Implication for dental practice. *J Mich Dent Assoc* 2003;**85**:26-32.

