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Awareness of Periodontitis in Smokers.

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ABSTRACT

The objective of the study was to investigate patients' knowledge of the effects of smoking on periodontal health. A questionnaire based survey was carried out among 47 patients with a habit of smoking in Saveetha Dental College, India. A self-prepared questionnaire was used to assess the awareness of periodontitis amongst smokers, the effects of smoking on oral health and to determine whether any association could be made among chronic smokers and their periodontal health using a questionnaire based study. 85.59 per cent of patients were aware that smoking had a negative impact on oral health, but did not state how it affected the gums. 93.48 percent had experienced bleeding from their gums, 42.55 percent experienced halitosis, swelling in the gums and mobility. 14.89 percent had systemic problems. This study highlights patients' awareness of the relationship between smoking and periodontal diseases, with 85.59 percent of respondents knowing of the link between tobacco and periodontal diseases.

Keywords: smoker, periodontitis, oral cancer

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INTRODUCTION

Smoking has been established as a risk factor for many systemic diseases, including respiratory diseases, cardiovascular diseases, and has also proved to have a deleterious effect on the oral health ranging from aesthetic problems caused due to tooth discoloration, periodontitis and to potentially life threatening oral cancer [1].

Cigarette smoking is an important risk factor for periodontal disease with smokers being five times more likely to develop periodontitis when compared to non smokers [2]. A meta analysis of the effects of smoking on the periodontal tissues confirmed smoking as a risk factor for periodontal disease with an odds ratio of 2.82 [3,4,5]. Epidemiological data indicates that smokers have a greater incidence of tooth loss when compared to non smoker and show a higher degree of furcation involvement when compared to non-smokers [6]. Smokers tend to have greater number of deep pockets and a greater mean periodontal probing depth. Studies have also shown a greater mean clinical attachment level loss in smokers compared to non smokers [7,8,9].

Periodontal diseases can affect the quality of life of patients by affecting the function of the dentition and the dental appearance. It can also lead to the loss of teeth in susceptible patients as smoking generates a more favourable habitat for periodontal pathogens [10]. In susceptible patients, the clinical effects of smoking are dependent on the number of cigarettes smoked daily and the duration of the habit [11]. The consequences may involve the vascular effect of nicotine and the enhanced production of inflammatory cytokines [12]. It has been reported that smokers do not respond well to periodontal therapy compared to non-smokers and this may be related to the fact that smoking compromises periodontal ligament cell adhesion to root planed surfaces, resulting in the decreased possibility of regeneration [13,14,15,16].

Nicotine has cytotoxic effects on periodontal ligament fibroblasts. It also has inhibitory effects on periodontal cell proliferation and protein synthesis which result in impaired wound healing [17]. Smoking results in changes to vascular, inflammatory, immune and healing responses [18,19,20,21]. There is considerable scientific evidence of its harmful long term effects on periodontal diseases [22].

The present study was done to assess the awareness of periodontitis amongst smokers, the effects of smoking on oral health and to determine whether any association could be made among chronic smokers and their periodontal health using a questionnaire based study.

MATERIALS AND METHODS

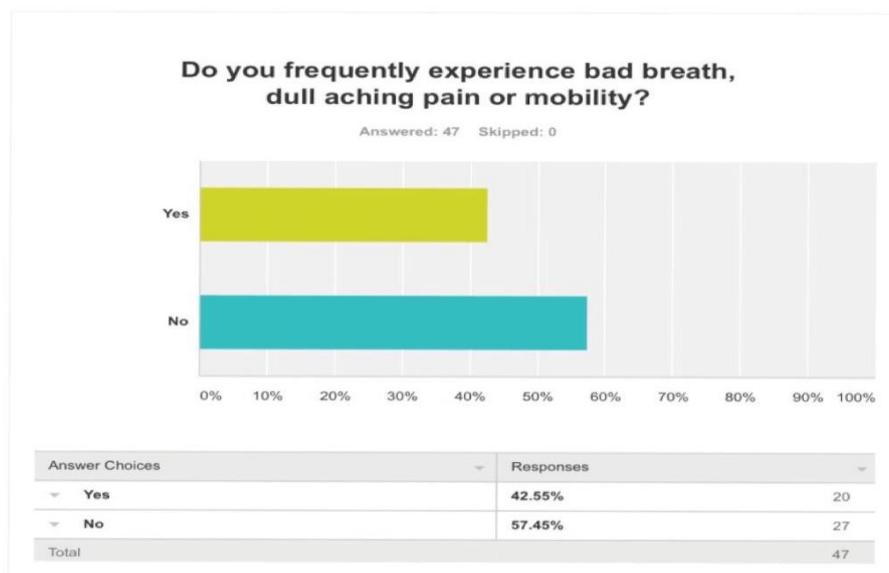
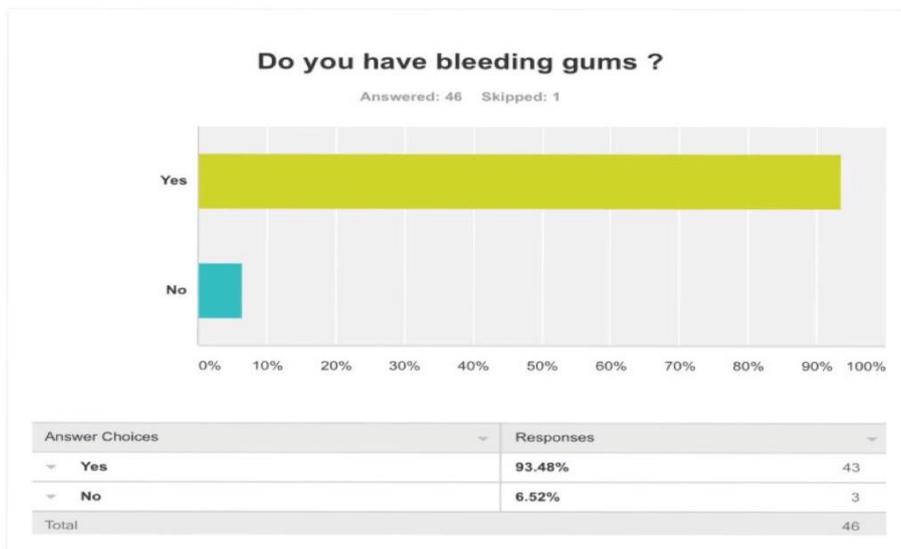
This study was conducted from January to April 2016 at Saveetha Dental College, TamilNadu, India through the use of anonymous, patient completed, questionnaires and carried out among 47 patients who reported with the habit of smoking. These were distributed to the patients attending consultant clinics and were completed on the dental chair. Once completed the questionnaires were returned immediately. It consisted of one page of mainly close-ended questions with options in simple English which were completed by these patients. The questions were translated into the patients' mother tongue for those who could not understand English. The only open ended question was the number of cigarettes smoked. Information requested in the questionnaire included smoking status, duration, oral hygiene protocol followed, questions regarding their periodontal status and their knowledge about how smoking affects oral health. Demographic details included were age and gender. Anonymity and confidentiality were ensured and there were no personal identifiers on the questionnaire.

RESULTS

In the sample study comprising of 47 smokers, statistics revealed that 24.44% of the population had been smoking between the time frame of six months to two years, 28.89% of the population of 47 smokers had been smoking for a time period ranging from two to five years, 28.89% had been smoking for a time period ranging from five to ten years and 17.78% of the population had been smoking for over ten years. 21.28% of the population revealed a positive history of consuming smokeless tobacco, whereas the vast majority comprising of 78.72% did not use any form of smokeless tobacco. Regarding the periodontal status of the patient's in the present population of smokers, 93.48% patients gave a positive history of bleeding from

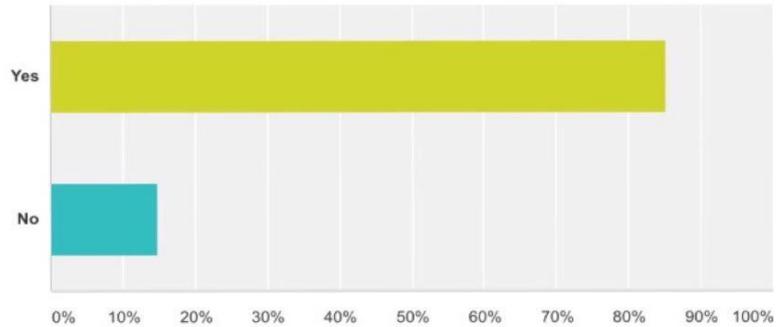
their gums, with only 6.52% experiencing no bleeding from their gums. 42.55% of the population experienced halitosis, dull aching pain or mild mobility, whereas 57.45% did not give a positive history for the former. When questioned about oral hygiene protocol, 21.28% patient's gave a history of brushing once a day using vertical tooth brushing movement, 23.40% gave a history of brushing once a day using horizontal tooth brushing movement. 21.28% gave a history of brushing once a day using a combination brushing technique. 2.13% brushed twice a day using vertical tooth brushing movement, 10.64% brushed twice a day using horizontal tooth brushing movement, 21.28% gave a history of brushing twice a day using a combination technique. When questioned about their past dental history, 38.30% had been aware about the fact that they had gum disease and have had treatment for the same. 8.51% were aware about the fact that they had gum disease but had not undergone any treatment for the same while the majority comprising of 53.19% were not aware that they had gum disease and did not undergo any form of treatment for the gums.

When questioned about their overall systemic health, 85.11% gave a history of being systemically healthy, while a minority of 14.89% gave a history of having systemic problems. When questioned about their awareness of smoking halving deleterious effects on the oral cavity, a stunning 85.11% were aware that smoking caused gum problems while only a small minority comprising of 14.89% of the population were unaware of the deleterious effects of smoking on the gums. When questioned about oral cancer 100% of the population of 47 smokers were aware that smoking proved to be a risk factor for oral cancer.



Are you aware smoking causes oral and gum problems?

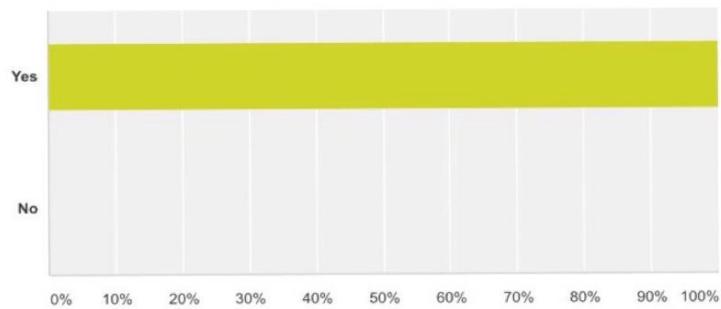
Answered: 47 Skipped: 0



Answer Choices	Responses	Count
Yes	85.11%	40
No	14.89%	7
Total		47

Are you aware smoking causes oral cancer?

Answered: 47 Skipped: 0



Answer Choices	Responses	Count
Yes	100.00%	47
No	0.00%	0
Total		47

DISCUSSION

Among the 47 patients with the habit of smoking 24.44% had been smoking for a time frame of six months to two years, 28.89% had been smoking for a time period ranging from two to five years, 28.89% had been smoking for a time period ranging from five to ten years and 17.78% of the population had been smoking for over ten years. On being questioned about the frequency of smoking habit, a few patient's revealed the urge to smoke right after waking up, indicating an increased risk of developing lung, head and neck cancer as evident by recent research regarding the timing of smoking the first cigarette. A vast majority confessed to smoking in order to best stress. The reason being that upon the first inhalation, nicotine enters the blood

stream, crosses the blood brain barrier and starts acting on the brain cells. The nicotine then begins to mimic the neurotransmitter acetylcholine, releases adrenaline and nor adrenaline which causes an immediate rush of stimulation by increased blood flow to the brain, leaving the smoker feeling energised. 21.28% of the population revealed a positive history of consuming smokeless tobacco, whereas the vast majority comprising of 78.72% did not use any form of smokeless tobacco. Smokeless tobacco users, while a minority, also risk inducing oral health complications. Localised gingival recession and attachment loss at specific sites have been attributed to the use of chewable tobacco products. There is also a link between smokeless tobacco with leukoplakia and oral carcinomas. Regarding the periodontal status of the patient's in the present population of smokers, 93.48% patients gave a positive history of bleeding from their gums, with only 6.52% experiencing no bleeding from their gums. 42.55% of the population experienced halitosis, dull aching pain or mild mobility, whereas 57.45% did not give a positive history for the former.

Many studies have been undertaken to highlight the link between smoking and periodontal diseases, with many authors stressing that the effects on periodontal diseases and periodontal therapy are heavily influenced by smoking. The NHANES (National Health and Nutritional Examination Survey) III study (2000) in the United States, reported that approximately 40% of periodontitis cases (6.4 million cases in the US adult population) were attributable to patients' smoking habits with a further 10% (1.7 million cases) being attributable to former smoking. Smoking is associated with alveolar bone loss. Jansson and Lavstedt showed a positive correlation with smoking and marginal bone loss, with former smokers having less bone loss than those who had carried on smoking during the 20 year study period.

In a 10 year prospective study, Bergstrom, Eliasson and Dock showed that smoking was associated with an increase in periodontal pocketing with bone loss, compared with non-smokers.

When questioned about oral hygiene protocol, 21.28% patient's gave a history of brushing once a day using vertical tooth brushing movement, 23.40% gave a history of brushing once a day using horizontal tooth brushing movement. 21.28% gave a history of brushing once a day using a combination brushing technique. 2.13% brushed twice a day using vertical tooth brushing movement, 10.64% brushed twice a day using horizontal tooth brushing movement, 21.28% gave a history of brushing twice a day using a combination technique.

In 1983 Ismail et al found that smoking and poorer levels of oral hygiene were linked. They acknowledged that while poor interdental oral hygiene remained an important factor in the onset of periodontitis, smoking appeared to be directly related to periodontitis, independent of other factors such as oral hygiene or socio-economic status.

When questioned about their past dental history, 38.30% had been aware about the fact that they had gum disease and have had treatment for the same. 8.51% were aware about the fact that they had gum disease but had not undergone any treatment for the same while the majority comprising of 53.19% were not aware that they had gum disease and did not undergo any form of treatment for the gums.

In terms of periodontal treatment there was a poorer prognosis for treatment success especially when periodontal surgery was carried out on smokers.

When questioned about their overall systemic health, 85.11% gave a history of being systemically healthy, while a minority of 14.89% gave a history of having systemic problems. When questioned about their awareness of smoking halving deleterious effects on the oral cavity, a stunning 85.11% were aware that smoking caused gum problems while only a small minority comprising of 14.89% of the population were unaware of the deleterious effects of smoking on the gums. The awareness among the smokers about there being a link with smoking and gum disease was good compared to other studies conducted in the UK (Lung et al., 2005), Nigeria (Nwhator et al., 2014) where there was a general lack of awareness. When questioned about oral cancer 100% of the population of 47 smokers were aware that smoking proved to be a risk factor for oral cancer. In the current study awareness of the patients regarding the link between oral cancer and smoking was excellent compared to other studies. (Al-Shammari et al., 2006, Terrades et al., 2009)

CONCLUSION

This study highlights patients' awareness of the relationship between smoking and periodontal diseases, with 85.59 percent of respondents knowing of the link between tobacco and periodontal diseases.

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