



RESEARCH ARTICLE

TO ASSESS THE KNOWLEDGE AND AWARENESS OF PERIODONTAL DISEASE AMONG OUT PATIENTS IN SAVEETHA DENTAL COLLEGE- A QUESTIONNAIRE STUDY

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ABSTRACT

Background and Objectives: Periodontal disease is one of the most prevalent diseases affecting the oral cavity and is one of the principal causes of tooth loss now. It also has a strong relationship with various systemic diseases such as diabetes, cardiac diseases, adverse pregnancy outcomes, HIV, chronic lung diseases. Sufficient knowledge of oral health care behaviour and understanding of scientific reason for its improvement is an important precondition to improve oral-health. Educational level is one of the factors that could determine the oral health status of the individuals. Hence this study was conducted to obtain baseline data about the knowledge levels of periodontal disease among various educational groups to determine areas of oral health education that needs to be improved for the vulnerable population.

Materials and Methods: The present study was done on out patients that reported to Saveetha dental college and hospitals, Chennai, India. 470 patients (Males = 260 Females = 210) were included in this study. A 15-item questionnaire was designed for the study, which contained questions about knowledge of the patients about periodontal disease and oral-systemic diseases link along with their demographic details. Patients from both genders, with any educational (illiterates, primary, medium, high school, college and post graduates) level were included in the study.

Results: According to 40.2% patients gum disease is hypersensitivity of teeth and for 20.63% patients it is bleeding from gums. The highest reported predisposing factor that causes gum disease was dental plaque and calculus (35.1%) and pan chewing (34.74%). Of the total population, 67.23% patients were aware about the relationship between diabetes and oral health status. 24.46% believed that oral problems can affect heart and about 69% of the patients were unaware of the relationship of HIV, pregnancy and chronic lung disease with oral health status.

Conclusion: There seemed to be much room for improvement of oral hygiene and self-care among the patients. This can be done not only by increasing the accessibility to the oral health services in the country but to a greater extent by improving the knowledge and awareness about dental problems, their link with other systems of the body and by attempting to change their attitude towards oral health.

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INTRODUCTION

General health cannot be attained without oral health. Periodontal disease is one of the most prevalent diseases affecting the oral cavity and is one of the principal cause of tooth loss. (Deinzer *et al.*, 2009) Bacterial plaque is one of the main etiological factor that causes periodontal disease and other factors such as smoking, pan chewing, stress can also cause periodontal disease. (ShamsulAlam *et al.*, 2015) Periodontal disease has a strong relationship with various systemic diseases. Several studies have been done to prove this relationship. Severe periodontal disease is associated with risk for cardiovascular disease such as in developing coronary,

carotid and aortic atherosclerotic plaques. (Cairo *et al.*, 2004; Iwai *et al.*, 2005; Pussinen *et al.*, 2003) There exists a bidirectional relationship between type 1, type 2 diabetes mellitus and periodontal disease which occurs through the ability of both these conditions to induce an inflammatory response, whether through advanced glycation end products or bacterial accumulation, respectively, leading to the production of inflammatory mediators. (Moreu *et al.*, 2005) Studies have also shown statistical significant relationship between low birth weight infants and maternal periodontal probing depth. (Teng *et al.*, 2002) Researchers have also found that in people with periodontal disease, the bacteria that grow in the oral cavity can be aspirated into the lungs to cause respiratory diseases such as pneumonia. (Scannapieco *et al.*, 1998) There exists a relationship between HIV and periodontal disease. During chronic inflammatory events triggered by oral pathogens,

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immune and oral epithelial cells latently infected with HIV in gingival tissues may be an important source for HIV reactivation (González *et al.*, 2009). The rise in the prevalence of periodontitis has increased the burden of oral health care system in India. (Hosadurga *et al.*, 2015) The prevention and control of this disease should be addressed at both population and individual level. Poor oral hygiene and noncompliance leads to progression of periodontal disease. (Ramseier *et al.*, 2008; Axelsson *et al.*, 1991) Sufficient knowledge of oral health care behaviour and understanding of scientific reason for its improvement is an important precondition to improve oral-health (Ajzen, 1991). The compliance with oral health care regimens is better with informed patients. In developing countries there is no much emphasis on oral health care in primary, middle and high school education. The educational level of the patient is one of the factors that could determine the oral hygiene status of the patients. To maintain oral health, patients also need to be aware of this oro-systemic link. However to due to lack of knowledge majority of the population is ignorant about this link. Hence this study was conducted to obtain baseline data about the knowledge levels of periodontal disease among various educational groups to determine areas of oral health education that needs to be improved for the vulnerable population. The aim of the study was to assess the knowledge and awareness of periodontal disease and oro-systemic link among the out patients of Saveetha dental college and hospitals.

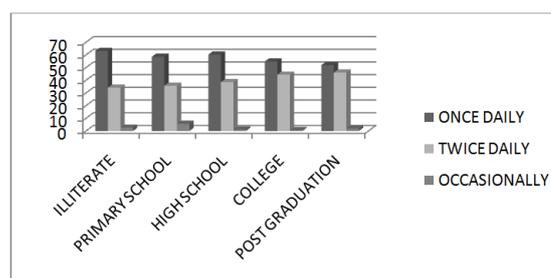
MATERIALS AND METHODS

The present study was done on out patients that reported to Saveetha dental college and hospitals, Chennai, India. People of different educational status visit the hospital for their dental care needs. A total of 470 patients (Males = 260 Females = 210) were included in this study. A 15-item questionnaire was designed for the study. The questionnaire contained questions about knowledge of the patients about periodontal disease and oral-systemic diseases link along with their demographic details. The patients with medical problems, mentally retarded, physically handicapped and patients below age 19yrs were excluded from the study. Patients from both genders, with any educational (illiterates, primary, medium, high school, college and post graduates) level were included in the study.

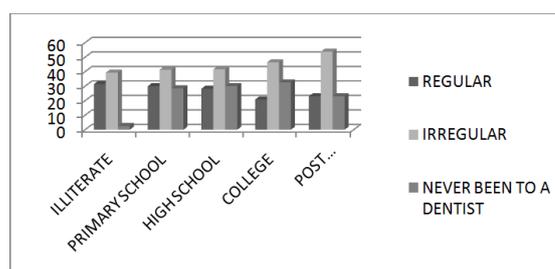
RESULTS

In this study there were a total of 260 (55.3%) males and 210 (44.6%) females. A majority of the patients belonged to the second and third decade of life. In this study, 8.08% (n=38) patients were literate, 14.8% (n=70) patients went to primary school, 35.3% (n=166) patients went to high school, 30.6% (n=144) patients went to college and 11.06% (n=52) patients did their post graduation. About 57.6% of the patients brushed their teeth once daily and 40.42% of the patients brushed their teeth twice daily. With increase in the educational level, there was an increase in the number of patients who brushed twice daily. (Graph 1) About 44.25% of the patients were irregular attendees to the dentist and about 29.79% patients have never been to dentist before. (Graph 2) According to 40.2% patients gum disease is hypersensitivity of teeth and for 20.63% patients it is bleeding from gums (Table 1). The highest reported predisposing factor that causes gum disease was dental plaque and calculus (35.1%) and pan chewing (34.74%). These results were consistent among all the groups irrespective of their educational level (Table 2). According to 81.2% of the

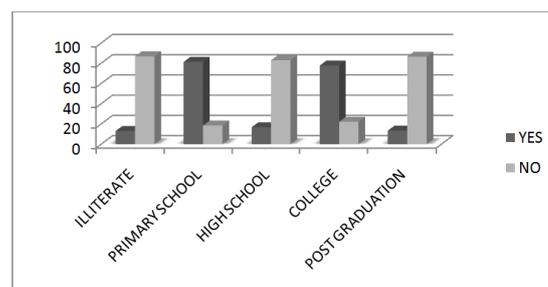
population, scaling does not cause mobility and it was reported the highest among the patients who went to primary school and was inconsistent with the level of education (81.42%) (Graph 3).



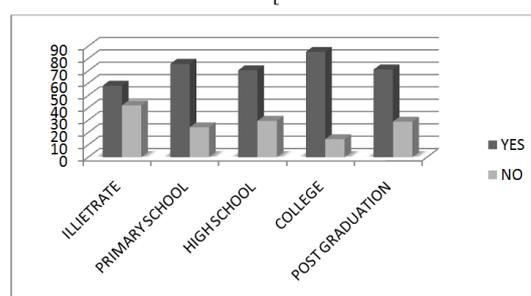
Graph 1. Frequency of tooth brushing



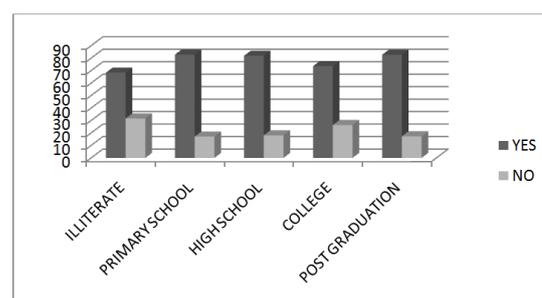
Graph 2. Dental visits



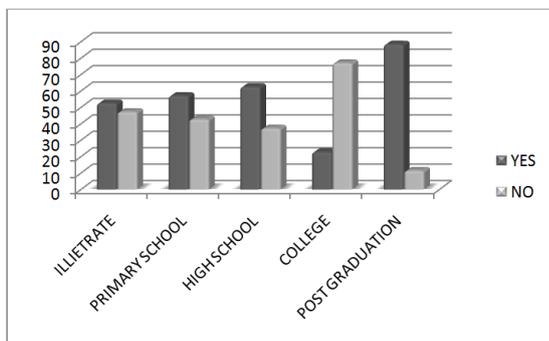
Graph 3. Distribution of responses about the believe that cleaning causes mobility



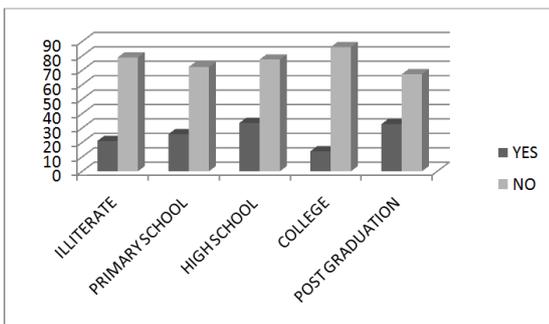
Graph 4. Can gum disease be prevented by tooth brushing



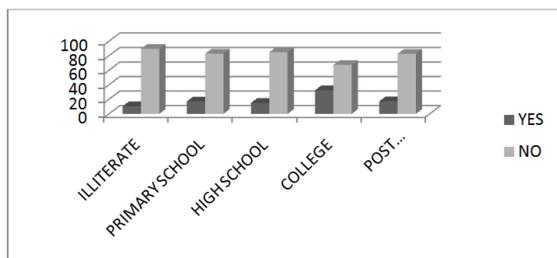
Graph 5. Can gum disease be prevented by regular visits to a dentist



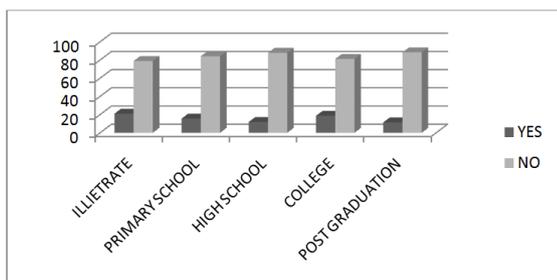
Graph 6: Relationship between diabetes and oral health status



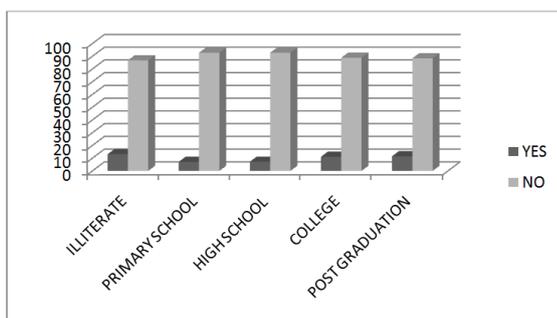
Graph 7. Does dental problems affect heart



Graph 8. Relationship between HIV and oral health status



Graph 9. Relationship between pregnancy and oral health status



Graph 10. Relationship between chronic lung disease and oral health status

Table 1. Meaning of periodontal disease among patients by level of education

	Illiterate	Primary school	High school	College	Post graduation
Bleeding from gums	15.8%	20%	18.1%	26.4%	17.31%
Pain in gums	29%	18.57%	17.5%	13.9%	7.69%
Hypersensitivity of teeth	42.1%	44.28%	38.6%	34.72%	51.92%
Swelling of gums	0%	1.42%	3.6%	2.78%	1.92%
Loosening of teeth	2.63%	2.85%	8.4%	4.17%	9.61%
Exposure of teeth roots	5.26%	7.14%	8.4%	9.72%	11.53%
Bad smell in mouth	2.63%	4.28%	3.6%	4.86%	0%
Pus discharge from gums	2.63%	1.42%	1.8%	3.47%	0%

Table 2. Etiology of periodontal disease among patients by level of education

	Illiterate	Primary school	High school	College	Post graduation
Plaque and calculus	26.3%	38.57%	37.95%	32.64%	32.69%
Smoking	23.6%	14.28%	18.1%	16.67%	15.38%
Pan chewing	31.5%	35.71%	35.5%	38.2%	34.61%
Stress	13.1%	10%	6.63%	10.45%	13.46%
Medications	5.26%	1.42%	1.8%	2.1%	3.84%

About 74.25% patients believed that gum disease can have prevented by regular brushing which was lowest among the illiterates (58%) and highest among the patients who went to college (85.45%) (Graph 4). About 82.12% patients believed that gum disease can be prevented by regular visits to a dentist (Graph 5). Of the total population, 67.23% patients were aware about the relationship ship between diabetes and oral health status (Graph 6). 24.46% believed that oral problems can affect heart (Graph 7) and about 69% of the patients were unaware of the relationship of HIV, pregnancy and chronic lung disease with oral health status (Graph 8,9,10).

DISCUSSION

The current study was conducted to assess knowledge and awarness of periodontal disease among the out patients in Saveetha dental college. Quetish Taani (2010) showed that a greater percentage of adults reported gum bleeding on brushing, bad breath and were irregular attendees to dentists. Yokoyana *et al.* (2005) conducted a study consisted of 225 participants who pinpointed that predisposing factors for periodontal diseases were plaque and calculus, lack of brushing and smoking. Similar findings were shown studies conducted by Shamsul *et al.* (2015), Paul Erik Petersen *et al.* (2005) and Axelsson *et al.* (2004) A national health survey in Pakistan showed that about 36% of the population cleaned their teeth daily, while 54% did so either on alternative days, weekly or monthly. A study conducted by Archana Bhatia in Punjab (Bhatia *et al.*, 2013) revealed that out of 245 subjects, 167 were brushing once a day and 78 subjects did not performing brushing. This study showed that the major reasons for brushing were the prevention of dental caries (58.6%) and esthetic reasons (15.5%). Most of the subjects mentioned that the main reason for no brushing was carelessness (53.8%) and the least important reason was expenses (1.2%). These findings however did not match with our study as almost of the participants brushed regularly and only 1.9% of the patients brushed occasionally. Archana Bhatia (2013) reported that about 72% males and 42.5% females undergo periodontal

treatment in his/her life. Males are having more positive attitude towards dental treatment. Females are more illiterate and so about 76.6% female participants believe in myth that scaling causes tooth mobility. Most of the females turned down periodontal treatment due to this myth (Bhatia *et al.*, 2013). This result is however not consistent with our study. As reported in graph 2, least number of illiterates have never been to a dentist. However, as the educational increased the percentage of respondents who have never been to a dentist increased. One of the major reasons which could be attributed to this trend is the possibility of poorer oral hygiene maintenance among the illiterates which warrants them to visit a dentist more frequently. Archana Bhatia also showed that only (13.8%) subjects were aware about the oral-systemic disease link while almost 68.9% was unaware about this (Bhatia *et al.*, 2013). Our study showed that about 67.23% of the patients (mainly post-graduates) were aware about the relationship between diabetes and oral health status. However about 70% of the patients were unaware of the link between pregnancy, HIV and chronic lung disease with oral health. In our study this trend seemed to be synonymous among all the five educational groups. Saito *et al.* (2009) conducted a 19-item questionnaire survey that comprised of oral hygiene, dietary habits and perception of oral condition on 65 patients. Significant associations were found between self-care behaviour of the patient and oral hygiene levels document the important role of patient-centered oral health assessment in periodontal care.

The maintenance of periodontal health requires an informed patient. Treatment will fail, in fact will not even start, if individuals are not aware of the differences between periodontal health and disease; the significance of these differences and the part they can play in prevention and control. In developing countries there is no much emphasis on oral health care in primary, middle and high school education. Hence this study was conducted to assess the knowledge and awareness of periodontal disease among patients with various educational levels. This study showed that only a few subjects were aware of the oro-systemic link. There seemed to be much room for improvement of oral hygiene and self-care among the patients. This can be done not only by increasing the accessibility to the oral health services in the country but to a greater extent by improving the knowledge and awareness about dental problems, their link with other systems of the body and by attempting to change their attitude towards oral health. Oral health care should be made an integral part of curriculum in schools and for illiterates via various awareness camps organized in order to educate them.

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