

Edentulism and Public Awareness - An Epidemiological Study

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(Received: February 28, 2013; Accepted: April 30, 2013)

ABSTRACT

AIM: A study was performed to determine the prevalence and public awareness regarding edentulism among the general population in the suburbs of South Chennai, TamilNadu. Edentulism is a condition characterised by partial or complete loss of teeth. The various treatment options available are Removable/Fixed partial dentures, complete dentures and implants. The study involved 894 patients. Each subject was provided with a questionnaire and the response was evaluated. **CONCLUSION:** A high unmet need for prosthetic care existed among the population which requires patient education and motivation through Prosthodontic outreach programs or dental camps to spread and disseminate information regarding.

Key words: Edentulism, prevalence, public awareness.

INTRODUCTION

Tooth loss has always been a part of the aging process that is inevitable. The twentieth century has witnessed a wide array of changes in the rate of edentulism between the developed and the developing countries. Edentulism is the state of having lost one's natural teeth (partial or total)¹. The poor oral condition particularly has a significant impact on the edentulous people. Extensive tooth loss reduces masticatory performance and affects the choice of food of an individual. Hence edentulous people tend to avoid dietary fiber and often prefer soft foods rich in saturated fats and cholesterol². Thus edentulism is considered to be an indicator of oral health of a person³.

Edentulism is reported to be prevalent among people all over the world⁴ and is highly associated with their socio-economic status. Numerous epidemiological studies have shown that people belonging to low social status or income and individuals with low level of education are more likely to lose teeth than people of high social status and high income level and education^{5,6}.

The rate of total edentulism is said to be on a steady decline in developed countries, while the reverse is seen in the case of developing countries⁷. Tooth loss results from severe dental caries, periodontitis, or trauma. Use of tobacco poses a high risk factor for tooth loss in people consuming them for a long period of time. Thus it becomes an important task as the health care provider to detect the rate of edentulism and generating awareness among the general public and offering the appropriate treatment wherever necessary.

MATERIALS AND METHODS

A cross sectional study on loss of teeth was conducted in order to assess the awareness of edentulism and its treatment options among the people residing in the suburban areas of Chennai, India. Information was collected from a sample of 894 individuals. Each of them was informed about the scope and nature of the study and their prior consent was obtained.

A pretested questionnaire to collect general and socio-demographic information was

used in the survey. The questionnaire was duly filled by trained investigators. Clinical examinations were taken up to analyze oral health and tooth loss on the basis of visual and tactile examination. The sample of 894 patients was segregated on the basis of Sex, Age, cause and reason of edentulism, literacy level, socio-economic status and the knowledge of availability of different treatment modalities (especially with regards to Implants), reason for patients not opting for Implants. Complete intraoral examination was done for each patient by the trained investigator. The data collected was statistically analyzed using SPSS version 10.

Table 1: Reason for edentulism

Causes of edentulism	n = 894	Percentage
Trauma	136	15.2%
Caries	395	44.1%
Periodontitis	238	26.6%
Trauma and caries	10	1.1%
Trauma and periodontitis	10	1.1%
Caries and periodontitis	103	11.5%

Table 3: Education level and knowledge about implants

Education level	Aware of implants	Unaware of implants
Illiterates	5	82
Primary schooling	50	327
Sec. schooling	56	217
Graduates and Post graduates	64	93
TOTAL	175	719

11.5% of patients had both caries and periodontitis as a reason for tooth loss. Regarding the period of edentulism, 60% of patients were edentulous for the past one year while, 40% of patients were edentulous for more than 2-5 years (Figure 1). When the patients were asked whether they were aware of implants as a treatment option in replacement of missing tooth, only 19.4% of patients were aware (Table 3). The major source of knowledge about implants were through the college (41.1%),

RESULTS

The study presented in this paper is based on a sample of 894 patients of which, 494 were males and 400 were females in the age group of 18- 70 years. Of the total patients, 155 were completely edentulous, while 18 had single completely edentulous arch. A total of 188 patients had only anterior teeth missing, 250 with posterior teeth missing and 283 had both anterior and posterior tooth missing. The various reasons for tooth loss were trauma (15.2%), caries (44.18%), periodontitis (26.6%) and others (2.5%) (Table 1).

Table 2: Age distribution and edentulism

Age group n = 894	Completely edentulous	Partially edentulous
<25 years	-	82
26-40 years	9	231
41-50 years	23	176
51-60 years	68	140
>60 years	73	92

Table 4: Reason for patients not opting for implants

Reason	Number of patients	Percentage
Surgical procedure	129	16.6%
Cost	444	57.2%
Long waiting time	24	3%
Surgical procedure and cost	165	21.2%

newspaper (15.4%), Private Dentist (29.7%) and others (13.7%) (Fig. 2).

Patients numbering 119 (13.3%) had opted for implants, while 775 (86.6%) didn't opt for it. The major reason for patients not opting for implants were cost (57.2%), followed by surgical procedure(16.6%) while, 21.2% of patients considered both cost and surgical procedure as a reason for not opting for it (Table 4)

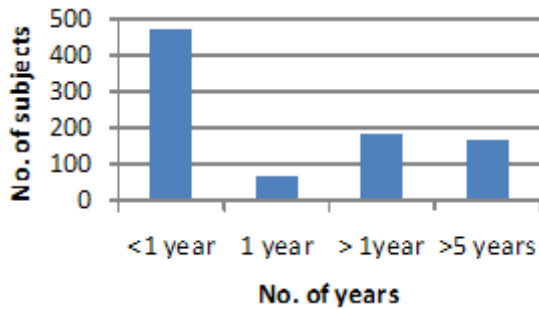


Fig. 1: Period of edentulism

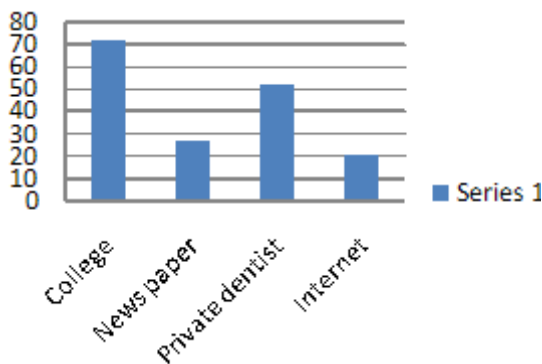


Fig. 2: Source of information about implants

DISCUSSION

The present survey gives a detailed view of information about subjects’ knowledge and their need for more information related to edentulism and its treatment options in replacing missing teeth. This specific group sample was selected for ease of access and to increase the response rate as they are dental patients who were approached during their regular visits for consultation and treatment. Of the total 894 respondents, 494 (55.2%) were males and 400 (47.8%) were females in the age group of 18-70 years. Majority of patients (47.2%) were in the age group of 36-55 years and the mean age group was 46.7 years. Only 9% of the population was uneducated, while 30% of the subjects having completed their higher secondary schooling and 17% were graduates.

Partial edentulism was seen in all age groups, maximum among those aged 26-40 years. Thereafter, the percentage of partially edentulous individuals decreased as the age increased. This can be explained by the fact that the condition of

partial edentulism was replaced by complete edentulism from the age group of 40 years onwards, the latter increasing steadily till the age of >60 years (Table 2).

Majority of the patients (52.5%) wanted to replace the missing tooth within the first one year, while only 18.7% of patient’s have not replaced the missing teeth for more than 5 years.

The socio economic status of the patients involved were evaluated using Kuppusamy’s socioeconomic scale (2012 revised) which involves three factors-Education, Occupation and Income⁸. Based on this, the patients were classified into five categories- Lower, Upper lower, Lower middle, Upper middle, Upper class. According to this classification, 9.2% of patients belonged to lower class, 55.7% belonged to upper lower class, 24.8% of them to lower middle class and 10.1% of patients to upper middle class.

A significantly higher percentage of subjects in the middle and upper socio economic categories had opted for implants and fixed partial denture, compared to those in the lower socio economic categories. The social pressure of maintaining the esthetics and function may be the driving force that influences the subjects in the upper classes to get their missing teeth replaced. In addition to this, the attitude and awareness towards dental care and the cost of dental treatment might also be the significant factors that determine the prosthetic status in a person. This was evident when the utilization of dental services was assessed, which was also significantly better among the subjects from the more well to do classes.

In all 61% of the subjects chose fixed prosthesis as the best treatment in replacing missing teeth, which confirms the fact that most patients do not prefer removable prosthesis in replacing their missing teeth regardless of the clinical situation they have. Most of the patients felt that the fixed prosthesis gives a better feeling in the mouth and appears more natural. This result confirmed almost what was concluded by Tepper *et al.*, (2003a) (9) and Zimmer *et al.* (1992)¹³ that fixed prosthesis is esthetically more attractive than removable prosthesis and less annoying in the mouth.

The subjective level of information about dental implants varies, but only 19.4% of the patients knew about dental implant as an option in replacing missing teeth. This does not conform to the study conducted by Tepper *et al.*,^{9,10} and Berge *et al.*,¹² in which the awareness regarding dental implants was around 72% & 70.1% respectively. Such low level of awareness in the Indian population may be attributed to the low socio economic status and educational level of the individual. This survey showed that, the main source of information about dental implant was dental school (41.1%), followed by the dentists (29.7%), newspaper and magazines (15.4%), and lastly the internet (13.7%). This is different than what were published before. The survey made by Zimmer *et al.*,¹³ showed that, the media was found to be the main source of information about dental implants, while the dentists were the source for such information in not more than 17% of the cases. Berge, 2000¹¹ and Best, 1993¹² also found that, the media was the main source of information; while dentists played a secondary role at best. Thus the scenario in India is different when compared to that of the western countries. When patients were asked about the factors that may prevent them from choosing implants, the responses were high cost, fear from surgery and long treatment time (Table 4). Many patients couldn't afford dental implants and had quoted cost as the major factor (57.2%) for not opting for it. Some patients think that, the implant is a major surgical procedure because of the use of the word surgery. This shows the lack of awareness among the patients regarding implants and the high

level of fear factor associated with implant surgery. Socio economic status and education level of an individual plays a major role in patients opting for dental implants with only the people in upper socio economic status opting for it. This study indicates that educating and motivating the population regarding edentulism and its treatment option is the need of the hour.

CONCLUSION

The study clearly indicates that the awareness regarding edentulism and its treatment options is very low in this population. Although knowledge about removable and fixed partial denture was high, most of them were unaware of implants. A high unmet need for prosthetic care existed among the population which requires patient education and motivation. This underlines the importance of disseminating the information to the public through Prosthodontic outreach program and dental camps. In India, media plays a very minimal role in creating awareness regarding implants. Cost is a major constraining factor in choosing implants as a treatment option. Thus, if financial assistance is provided to patients, implants can be more affordable to the general public.

ACKNOWLEDGMENTS

We thank Dr. Sivakumar M, BDS., M.Sc., Research Officer, Bharath University, for Data Analysis.

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