

Patients' Awareness of a Dental Implant as an Option for Tooth Replacement: a Survey in Alkharj Province, Saudi Arabia

Fawaz Alqahtani^{1*}, Hamod Alqahtani², Abdulrahman Alshalwi², and Hussam Alzahrani²

¹Department chairman and assistant professor, Department of Prosthetic Dental Sciences, Prince Sattam bin Abdulaziz University School of Dentistry, Al-Kharj, Saudi Arabia

²Internship program, Prince Sattam bin Abdulaziz University School of Dentistry, Al-Kharj, Saudi Arabia

*Corresponding author: Dr. Fawaz Alqahtani, Prince Sattam bin Abdulaziz University, PO Box 153, Alkharj 11942, Saudi Arabia, Tel: +966115886272; Fax:+966115886201;

E-mail: implantologist@yahoo.com

Received date: 31 May 2015; Accepted date: 9 June 2015; Published date: 15 June 2015.

Citation: Alqahtani F, Alqahtani H, Alshalwi A, Alzahrani H (2015) Patients' Awareness of a Dental Implant as an Option for Tooth Replacement: a Survey in Alkharj Province, Saudi Arabia. *Int J Dent Oral Health* 1 (3): doi <http://dx.doi.org/10.16966/2378-7090.113>

Copyright: © 2015 Alqahtani F et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

Abstract

Objectives: To evaluate patient awareness's and source of information about dental implant as an option of treatment to replace the missing teeth, in Alkharj Province Saudi Arabia.

Methods: Cross-sectional study performed to access the level of awareness regarding dental implants. Self-explanatory questionnaire was designed and distributed in two places: Military Hospital and College of Dentistry (Prince Sattam Bin Abdul-Aziz University) both in Alkharj, Saudi Arabia. The questionnaires were handed to the patients during their regular dental visits. The quantitative data was entered onto computer for analysis using Statistical Package for Social Science (SPSS). The Student's t-test and ANOVA test were used to test the significance level ($p < 0.05$).

Result: Out of 360 persons approached, 355 answered the questionnaire. 276 respondents heard about dental implant (77.7%) and 79(22.3%) persons they did not heard about dental implant. 105 (32.31%) of the patient heard about dental implant from newspaper Magazine, 91 (28%) from friends, 75 (23.08%) from dentist and 54 (16.61%) from other patients. Answer of the respondents to question what the advantages you know about replacing missing teeth with dental implants, 170 (44.5%) believed that it provided a higher esthetic, 153(40.05%) improve function, 32(8.38%) high success rate and 27 (7.07) no risk.

Conclusion: Among the participants, the awareness level was more than seventy percent and media were the major sources of information. Patient are willing to know more about dental implant and the dentists should give more detailed information to the patients about dental implants and different treatment options that implant will provide.

Keywords: Implant awareness; Missing teeth; Replacement

Introduction

Since the introduction of dental implants, long-term clinical studies have confirmed the efficacy of implant therapy [1,2]. Dental implants were originally used for the treatment of edentulous patients and are associated with improved denture retention, stability, functional efficiency and quality of life [1-6]. Currently dental implants are widely accepted as a prosthetic treatment of completely or partially edentulous patients [7]. This led to widespread popularity of acceptance and dental implants within the dental professional community [8]. The treatment of edentulism with traditional removable dentures is less accepted due to many factors like anatomical, physiological, psychological and also prosthodontics factors like it can often induce impaired masticatory function due to limited retention and stability, especially in the lower jaw [9]. Patient awareness of dental implant must be provided to guide the patient in the choice of the most appropriate option [10]. This problem is more magnified in developing nations where there is a lack of education and awareness amongst people about dental implants as a dental treatment modality [11].

The level of awareness of dental implant treatment varies among several studies in different countries [12]. In a survey by Zimmer et al. [13] among 120 American subjects, public awareness and acceptance of dental implants were found to be high as well as to have a general positive attitude toward dental implants. Other reports by Salonen et al. [14] and

by Best [15] have shown that the level of awareness of dental implant treatment procedures among selected group of patients was found to be around 29% and 64%, respectively. A survey report by Tepper et al. [16] showed that the awareness rate of dental implant procedure was 72%, and 42% of those who questioned said that they were not informed at all about dental implants, while only 4% said they were well informed about dental implants. Previous studies showed that the information about conventional dentistry was only marginally higher than that about implant dentistry [17]. It also showed the need for providing more general and correct information to the patients about this treatment modality. Studies have shown significant improvement in patients' attitudes toward their dental health after treatment with implant prostheses. Unfortunately, the same cannot be said of developing countries with poorer access to dental care, where it has been reported a large variability in the acceptance of this newer option of tooth replacement [18]. The aim of this study is to evaluate the patients' awareness and source of information about dental implant as an option of treatment to replace the missing teeth in Alkharj Province, Saudi Arabia.

Material and Method

Cross-sectional study was done to access the level of awareness regarding dental implants among patients coming to dental clinic. The survey was conducted between September 1 and November 20, 2014. Self-explanatory questionnaire was designed to assess the patient information

and awareness about dental implant. The questionnaires were distributed to a 355 new dental patient in two places: Military Hospital and College of Dentistry (Prince Sattam Bin Abdullaziz University) both in Alkharj, Saudi Arabia. The questionnaires were handed to the patients during their regular dental visits. In the conduct of this survey, the guidelines of ethical consideration were strictly adhered to and participants filled the questionnaire after signing informed consent. The inclusion criteria were: all the subjects coming to dental college and who were willing to give informed consent and above 20 years of age were included. The excluded patients were those not willing to give consent and they were below 20 years old.

The final questionnaire consisted of 14 questions to assess the following aspects:

1. Level of information about dental implants as an option in replacing missing teeth.
2. Level of acceptance of dental implants as a treatment option compared to other conventional treatment modalities.
3. Source of information about dental implants.

The data collected included age, gender, education, missing teeth, option of tooth replacement, awareness of dental implants and attitudes toward implant treatment. For data analysis, each positive response was given a score '1' and each negative response was assigned as a score of '0'. Individual scores were summed up to yield a total score. The quantitative data was entered onto computer for analysis using Statistical Package for Social Science (SPSS) Version 18 for Windows. Descriptive analysis was undertaken to present an overview of the findings from this population. The Student's t-test and ANOVA test were used to test the significance level ($p < 0.05$).

Result

Out of the 360 persons approached, 355 answered the questionnaire. 234 interviewees (65.9%) were males and 121 (34.1%) were females (Table 1). 255 respondents (63.4%) were below the ages of 30 years, 97 (27.3%) were between the ages of 30 and 50 years, 33 (9.3%) were above the age of 50 years.

The educational level of 10 respondents (2.8%) was uneducated, 52 (14.6%) were less than high school, 107 (30.1%) had graduated from high school. 160 interviewees (45.1%) had some college education and 26 (7.3%) were high degree education level (Table 2). 200 (56.3%) of respondents had missing teeth and 155 (43.7%) had not missing teeth.

Of 131 who had missing teeth; caries was the main reason in 36.9%, periodontal disease was the reason in 11.5% and trauma was the reason of teeth missing in 7.9% of respondents (Figure 1). 245 (69%) of the respondents they plan to replace the missing teeth and 110 (31%) they don't have any plan to replace them. 199 (81.1%) of the respondents willing to replace missing teeth are prefer to replace them with a fixed prostheses while 46 (18.8%) chose removable prostheses (Figure 2).

Regarding the sources of information; 105 (32.31%) of the respondents have some knowledge about dental implant from newspaper Magazine, 91 (28%) from friends, 75 (23.08%) from dentist and 54 (16.61%) from other patients.

Answer of the respondents to question what are the advantages of using dental implants to replace missing teeth; 170 (44.5%) believed that implant has a higher esthetic, 153 (40.05%) believed it will improve the function, 32 (8.38%) believed it has a high success rate and 27 (7.07%) believed it has no risk.

Regarding the negative information they received about dental implant: 191 (51.77%) thinking the implants are costly to pay, 54 (14.63%) selected

the risk of surgery, 53 (14.36%) believed that it is difficult to place, 53 (14.36%) scared about the success rate of dental implants and 18 (4.88%) believed it is not helpful (Figure 2).

Out of 355 of the respondents, 68 (19.2%) believed on that implant doesn't last more than 5 years, 105 (29.6%) of them believed on that implant last in a range of 5-10 years and 182 (51.3%) of them believed it will stay for a lifetime. 294 of 355 (82.8%) respondents they want to know more about dental implant while 61 (17.2%) of them doesn't want to. 264 (74.4%) of respondents they would like to replace their teeth with implant and 91 (25.6%) of them doesn't like to.

Student's t-test were use to correlate the respondents Knowledge toward dental implants as an option for replacement of missing teeth according to gender and age. Statistically significance difference were not found between both gender and age groups ' $P < 0.05$ '.

| Sex | Frequency | % |
|--------|-----------|------|
| Male | 234 | 65.9 |
| Female | 121 | 34.1 |
| Total | 355 | 100 |

Table 1: Respondents Gender

| Level of education | Frequency | % |
|----------------------------------|-----------|------|
| Uneducated | 10 | 2.8 |
| Less than high school diploma | 52 | 14.6 |
| High school, no college | 107 | 30.1 |
| Some college or associate degree | 160 | 45.1 |
| Bachelor's degree and higher | 26 | 7.3 |
| Total | 355 | 100 |

Table 2: Respondents Level of Education

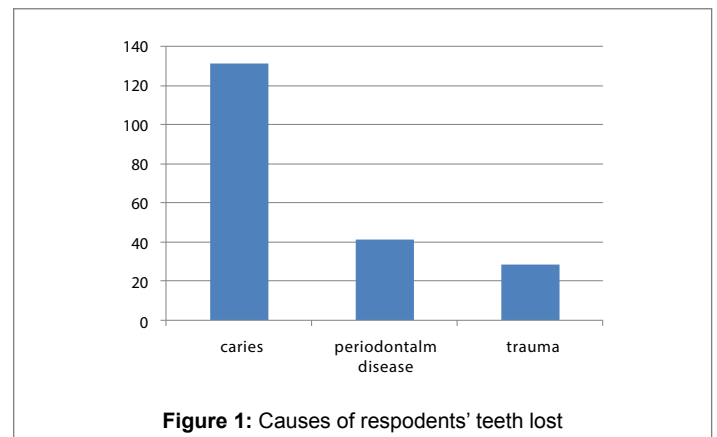


Figure 1: Causes of respondents' teeth lost

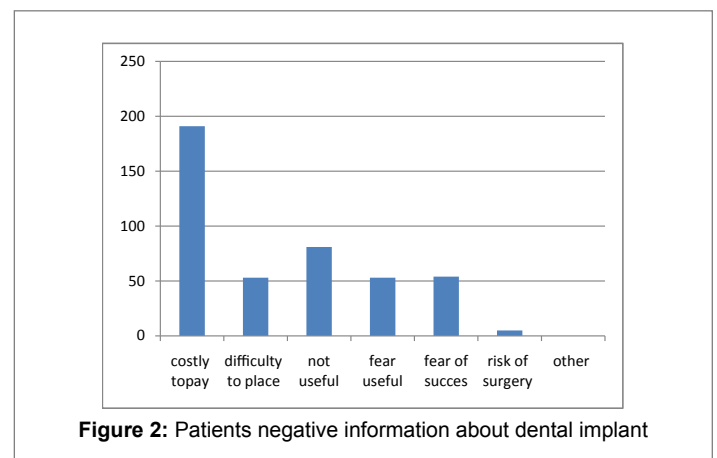


Figure 2: Patients negative information about dental implant

One-way ANOVA test were use to correlate the respondents Knowledge toward dental implants as an option for replacement of missing teeth according to education level. Statistically significance difference was not found between the groups 'P<0.05' (table 3).

Discussion

The current study involved a self-administered questionnaire survey of dental implant awareness in Alkharj province, Kingdom of Saudi Arabia. Generally, questionnaires are quicker to administer, cost effective, easier to analyze and reduce bias. On the other hand, one of the advantages of quantitative research is providing information in breadth, from a large number of units but fails to explore a problem in depth. It is well suited for testing of theories and hypothesis and is also best for looking at cause and effect. The present study shows a higher percentage of younger individuals. 63% of the interviewees were below 30 years of age, compared with 22% in a similar publication, which could be related socioeconomic status and the education level of the rural area [13].

The study group had a high level of education in the present study. 45.1% were college graduates while 22.9% were college graduates in a previous publication that can be related to the presence of the university in that area which will make it convenient to the university employees and post-graduate student having regular dental check-up. 56.3% of the participants have one or more missing permanent teeth. 65.5% of missing teeth due to caries which can be explained due to in rural area they lack knowledge of how to maintain good oral hygiene, they don't do a regular check-up and lack of high standers dental offices.

Fixed prosthesis was the most common type of treatment selected to replace the missing teeth. 82.5% of respondents below age of 30 years choose to replace missing teeth with fixed prosthesis while 17.5% choose removable prosthesis. 75.9% of interviewees between 30 and 50 years old choose fixed prosthesis, 24.1% select removable prosthesis .91.3% of respondents over 50 years old choose fixed prosthesis while 8.7% choose removable prosthesis. Higher percentage of the respondents selected a removable prosthesis to replace missing teeth comparing with similar publications shows that a rural population has less knowledge and demanding about different treatment options that can be provided in dental clinic [17].

The patient's information level about dental implants varies, but 77.7% knew about dental implant as an option in replacing missing teeth that is comparable to what has been published about patient awareness of dental implants in a different population [17].

In the present study, 76.9% of the information received by the patient about dental implant was from: newspaper, media, friends, and from other patients while 23% of this information has been given in a dental clinic. In another study by Zimmer et al. [13], media and lay persons such as friends and family provided information in most cases, while health professionals such as dentists and physicians were named only by 1 out of 6 respondents. It appears that non-dental sources provide most of the information about the advantages and risks of implant treatment that is might negatively affect patient selection of dental implant as the ideal

option of teeth replacement. 74.4% of our group they would like to have an implant while in a similar study by Gbadebo et al. [19], 22.6% of the participants would like to have implant-retained prosthesis as an option for missing teeth replacement. High esthetic and improve the function were the main advantages that patient knows about using dental implant for tooth replacement which is similar to what has been published [13].

The majority of the respondents selected a higher cost for dental implant was the most common disadvantage while the risk of surgery and the difficulty in placement were second most common disadvantages. This finding is in line of the finding of previous studies shows that the cost was the most frequently mentioned reason for not considering implant treatment [13]. 51.3% of the respondents expect that the implant will last for the lifetime which is in agreement with previous published [20].

Dental professionals in a rural area should give more time in education and motivation their patient toward dental implant as an ideal option to replace missing teeth since more than 82% of our respondents in this survey were interested to getting more information about dental implants.

Conclusion

Among the participants the awareness level was more than seventy percent and media were the major sources of information. Patient are willing to know more about dental implant and the dentists should give more detailed information to the patients about dental implants and different treatment options that implant will provide.

References

- Adell R, Lekholm U, Gröndahl K, Brånemark P-I, Lindström J, et al. (1989) Reconstruction of severely resorbed edentulous maxillae using osseointegrated fixtures in immediate autogenous bone grafts. *Int J Oral Maxillofac Implants* 5: 233–246.
- Adell R, Eriksson B, Lekholm U, Brånemark P-I, Jemt T (1989) Long-term follow-up study of osseointegrated implants in the treatment of totally edentulous jaws. *Int J Oral Maxillofac Implants* 5: 347–359.
- Albrektsson T, Blomberg S, Brånemark A, Carlsson GE (1987) Edentulousness—an oral handicap. Patient reactions to treatment with jawbone-anchored prostheses. *J Oral Rehabil* 14: 503–511.
- Albrektsson T, Zarb G, Worthington P, Eriksson AR (1986) The long-term efficacy of currently used dental implants: a review and proposed criteria of success. *Int J Oral Maxillofac Implants* 1: 11–25.
- Albrektsson T (1988) A multicenter report on osseointegrated oral implants. *J Prosthet Dent* 60: 75–84.
- Albrektsson T, Dahl E, Enbom L, Engevall S, Engquist B, et al. (1988) Osseointegrated oral implants: a Swedish multicenter study of 8139 consecutively inserted Nobelpharma implants. *J Periodontol* 59: 287–296.
- Naert I, Koutsikakis G, Duyck J, Quirynen M, Jacobs R, et al. (2002) Biologic outcome of implant-supported restorations in the treatment of partial edentulism. *Clin Oral Implants Res* 13: 381–389.
- Berge TI (2000) Public awareness, information sources and evaluation of oral implant treatment in Norway. *Clin Oral Implants Res* 11: 401–408.
- Balshi TJ, Wolfinger GJ, Hernandez RE (1994) Patient Attitudes Before and After Dental Implant Rehabilitation. *Implant Dent* 3: 106–110.
- Guyatt GH, Cook DJ (1994) Health status, quality of life, and the individual. *JAMA* 272: 630–631.
- Saha A, Dutta S, Vijaya V, Rajnikant N (2013) Awareness among patients regarding Implants as a treatment option for replacement of missing teeth in Chhattisgarh. *J Int Oral Health JIOH* 5: 48.
- Chowdhary R, Mankani N, Chandraker NK (2009) Awareness of dental implants as a treatment choice in urban Indian populations. *Int J Oral Maxillofac Implants* 25: 305–308.

| Education level | N | Mean | Std. Deviation | P - value |
|-----------------------|-----|------|----------------|-----------|
| Uneducated | 10 | 1.40 | .52 | 0.089 |
| Less than high school | 52 | 1.35 | .48 | |
| High school | 107 | 1.21 | .41 | |
| College | 160 | 1.19 | .40 | |
| Higher degree | 26 | 1.15 | .37 | |
| Total | 355 | 1.22 | .42 | |

Table 3: One-way ANOVA test to correlate the respondents Knowledge toward dental implants as an option for replacement of missing teeth according to education level

13. Zimmer CM, Zimmer WM, Williams J, Liesener J (1991) Public awareness and acceptance of dental implants. *Int J Oral Maxillofac Implants* 7: 228–232.
14. MA (1994) Assessment of states of dentures and interest in implant-retained prosthetic treatment in 55-year-old edentulous Finns. *Community Dent Oral Epidemiol* 22:130–135.
15. Best HA (1992) Awareness and needs of dental implants by patients in New South Wales. *Aust Prosthodont J* 7: 9–12.
16. Tepper G, Haas R, Mailath G, Teller C, Zechner W, et al. (2003) Representative marketing-oriented study on implants in the Austrian population. I. Level of information, sources of information and need for patient information. *Clin Oral Implants Res.* 14: 621–33.
17. Al-Johany S, Al Zoman HA, Al Juhaini M, Al Refeai M (2010) Dental patients' awareness and knowledge in using dental implants as an option in replacing missing teeth: A survey in Riyadh, Saudi Arabia. *Saudi Dent J.* 22: 183–188.
18. Chowdhary R, Mankani N, Chandraker NK (2009) Awareness of dental implants as a treatment choice in urban Indian populations. *Int J Oral Maxillofac Implants.* 25: 305–308.
19. Gbadebo OS, Lawal FB, Sulaiman AO, Ajayi DM (2014) Dental implant as an option for tooth replacement: The awareness of patients at a tertiary hospital in a developing country. *Contemp Clin Dent.* 5: 302.
20. Özçakır Tomruk C, Özkurt-Kayahan Z, Şençift K (2014) Patients' knowledge and awareness of dental implants in a Turkish subpopulation. *J Adv Prosthodont* 6: 133–137.