

Knowledge and Attitude of Patients Toward Dental Implant in Asser Region, Saudi Arabia: A Cross-Sectional Comparative Study among Patients with and without Implants

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Abstract

Aim: This study aims to assess and compare knowledge and attitude of patients with and without dental implants.

Subjects of Methods: This study involved 212 subjects admitted in a military hospital in Khamis Mushaite, Saudi Arabia. A self-questionnaire was used, and clinical examination was conducted on male and female subjects. All data were analyzed using Statistical Package for Social Science, whereas Student's t-test and ANOVA test were used to determine significant levels.

Results: This study enrolled 212 subjects (males: 88, 41.1%; and females: 124, 52.9%). Patients with implants comprised 92 (43.4%) males and 120 (56.6%) females. The majority of subjects possessed adequate knowledge and were fully informed that dental implant is a good choice for replacement of loose teeth. A significant difference was observed between patients with and without dental implants.

Conclusion: Patients with implants feature more knowledge and better attitude toward dental implants compared with those without. Dentists provide information regarding dental implants.

Keywords: *Implant; Treatment; Patient Knowledge; Missing Teeth; Patient Attitude*

Introduction

Modern dentistry aims to restore normal functions, aesthetics, speech, and health of patients. Many treatment options, including implant therapy, are available. Implants feature uniqueness because they can almost ideally achieve the aforementioned goals. Currently, dental implants are widely accepted as treatment option for completely or partially edentulous patients [1,2].

Although replacement of lost teeth with dental implants is considered a positive experience by patients, patients' awareness of evidence-based treatments is dispersed, and data provided by the media do not reflect evidence-based information [3].

However, in most situations, given the importance of individual preferences, no generally accepted rules can estimate needs, demands, or utilization of prosthodontics services. Individuals with less education and low income feature poorer dental status because of lack in finances [4]. Hence, these people do not consider unaffordable treatments [5]. Information on patient awareness regarding dental implants is important for planning health care services and marketing. Awareness on such treatment modality prevents negative image that may result from lack of adequate communication [6]. Conversely, any negative experience can affect acceptance of implant treat-

ment; however, information about patients' expectations is limited [7]. Most published studies have reported satisfaction with treatment outcomes [8-11].

Awareness of cognition of patients on dental implants can help with evaluation of their expectations and actual outcomes and can also prevent negative impression of patients from dentists because of communication gap and patients' disapproval [12].

Level of awareness on dental implant treatment varies among several studies in different countries. Many investigations have been conducted worldwide with regard to patients' awareness of dental implants [12-17]. Few studies were recently conducted in the Kingdom of Saudi Arabia (KSA) using the same subjects in both Riyadh and Al-Kharj provinces [18-21].

Currently, no data are available for comparison of awareness between patients with and without dental implants, particularly in Asser Region, KSA. Thus, the present study aims to evaluate the level of knowledge on dental implants among a selected sample of dental patients in Asser Region, KSA.

Material and Methods

Subjects

The target population for the present cross-sectional questionnaire survey was determined random charts at a military hospital in Khamis Mushait. Data were randomly abstracted from charts of 200 patients. First, a descriptive test using a self-administered questionnaire was used to assess patients' knowledge and attitude toward dental implants. Patient participation was voluntary, and no incentive was provided to respondents.

Data Collection

After obtaining the necessary ethical approval, a self-administered, pre-coded, and closed-ended questionnaire was used. The first part of questionnaire was ascribed to collection of demographic information, such as age, gender, and level of education, whereas the latter part assessed patient awareness, acceptance, and perceived cost of dental implants as treatment modality for replacement of missing teeth. Contents of questionnaire were prepared both in Arabic and in English and were explained in local language to those who needed assistance.

Inclusion criteria: All subjects who went to dental clinics, military hospitals, and dental centers in Khamis Mushait, Asser, KSA and who were willing to provide informed consent and were above 18 years of age.

Statistical Analysis

Statistical Package for Social Sciences (SPSS Inc, Chicago) 15.0 was used for statistical analysis. Descriptive variables, such as frequencies and percentages, were used to describe knowledge and attitude of patients toward dental implants. Unpaired test and one-way ANOVA were used to compare significant differences in mean scores between genders. Results were tabulated.

Results

A total of 212 subjects were involved in this study (male: 88, 41.1%; and female; 124, 52.9%). Patients with dental implants totaled 92 males (44; 20.8 and 48; 22.6) and 120 females. Table 1 shows descriptive statistics among gender groups with and without implants. Based on questionnaire scores, the knowledge and attitude of patients with and without implants yielded means and standard deviations (Table 1) of 16.62 ± 2.82 and 14.98 ± 3.13 , respectively. Mean and standard deviation of scores for knowledge and attitude of males and females reached 15.92 ± 3.19 and 15.55 ± 3.05 , respectively, as shown in table 1.

Variable	Gender		Gender and dental implant			
	Male	Female	Male with implant	Female with implant	Male without implant	Female without implant
Number/%	88/41.1	124/52.9	44/20.8	48/22.6	44/20.8	76/35.8
Total	212		212			
Mean	15.55	15.92	16.70	16.55	15.09	14.95
Standard Deviation	3.19	3.05	2.86	2.86	3.32	3.02
p-value	0.0323		0.000 ⁸			

Table 1: Descriptive characteristics of males and females with and without implants.

Two-tailed t-test was used to determine significant differences ($p = 0.000$) in knowledge and attitude of patients with and without implants. Minimum or no correlation was observed between patients with and without implants.

One-way ANOVA (Table 2) provided statistically significant results ($F = 15.133$, $p = 0.000$), indicating a significant difference in knowledge and attitude of patients with and without implants. No significant difference ($F = 0.739$, $p = 0.391$) was observed between male and female groups (Table 2), indicating that gender does not influence knowledge and attitude of patients with and without implants.

Groups	F value	Significance (p-value)
Between patient groups with and without implants	15.133	0.000 ⁸
Among patient groups	5.036	0.002
Male with implants, female with implants, male without implant, female without implants		
Between females and males	0.739	0.391

Table 2: One-way ANOVA results.

At 0.05 significance level, one-way ANOVA (Table 2) showed significant differences between males and females with and without implants ($F = 5.036$, $p = 0.002$), indicating that males and females with and without implants possess varying knowledge and attitudes on dental implants. Post hoc Tukey’s test results (Table 3) showed that knowledge and attitude of the male group with implants significantly differed from those in the female group without implants ($M = 1.75$, $p = .013$), indicating that males with implants incurred better scores, whereas females with implants significantly differed from and featured better knowledge and attitude than those without ($M = 1.60$, $p = 0.023$). Post hoc Tukey’s test concluded that males and females with implants show better knowledge and attitude than females without implants. However, no significant difference was found between males with and without implants and males and females with implants.

Results of chi-square test (Table 3) showed that patients with implants possess more ($p = 0.010$) knowledge and better attitude toward implants, whereas those without implants feature significantly poorer knowledge and attitude toward implants. Therefore, gender ($p = 0.113$, 0.535) poses no effect on knowledge and attitude toward implants.

(I) Gender Cases	(J) Gender Cases	Mean Difference (I-J)	Std. Error	Sig.	p-values
Males with implant	Females with implant	.14650	.63065	.996	0.000 ⁸
	Males without implant	1.61023	.64421	.063	
	Females without implant	1.74874*	.57240	.013	
Females with implant	Males with implant	-0.14650	.63065	.996	
	Males without implant	1.46373	.63065	.097	
	Females without implant	1.60225*	.55709	.023	
Males without implant	Males with implant	-1.61023	.64421	.063	
	Females with implant	-1.46373	.63065	.097	
	Females without implant	0.13852	.57240	.995	
Females without implant	Males with implant	-1.74874*	.57240	.013	
	Females with implant	-1.60225*	.55709	.023	
	Males without implant	-0.13852	.57240	.995	

Table 3: Multiple comparisons according to Tukey's honest significant difference.

*. Mean difference is significant at the 0.05 level.

Discussion

Implants are increasingly becoming popular treatment modality for teeth replacement with high success rate. In developed countries, with the aid of health programs, implants are becoming the focus of interest of patients and dentists. However, the public exhibits major information gap concerning dental implants. Dental patients possess knowledge on implants, but confusion arises regarding implant care, price, and the procedure itself. In the present study, the majority of subjects assumed that dental implants are costly and only available for rich people. Dentists are the second source of information after relatives and friends. Thus, dentists should actively inform and counsel implant potential patients and provide them with correct scientific information. Awareness among patients regarding dental implants can help in eliminating incorrect or negative images of the procedure resulting from lack of information.

Results of the present study showed that the majority of patients knew about dental implants and accept it as treatment option for replacing missing teeth. This finding agrees with results of other local studies conducted in Riyadh and Al-Kharj, KSA [18-21].

In a study by Zimmer, *et al.* [13] awareness of dental implants was high among 120 American subjects. The same researchers also reported that implant-supported rehabilitations are aesthetically more attractive than removable prosthesis, showing agreement with our findings.

A survey report from Australia showed that awareness rate of dental implant procedure reaches 72%; 42% of respondents stated that they were uninformed, whereas 4% said that they were well-informed about dental implant [12]. Information about dental implants can be provided by various means. In some countries, media can play a major role in public dental education and contribute to increased level of awareness on dental implants. The study of Tapper, *et al.* [12] in Australia showed that 77% of people who were asked about dental implants possessed some information, which they obtained from media rather than from their dentists. Another study in India showed that only 23.24% of people consider dental implants as replacement for lost teeth, and they obtained this information from dentists [14]. Previous percentages were close and coincided with values obtained in our cross-sectional study.

Dentists, social media, relatives, and friends are the main sources of information regarding dental implant; most patients think that this technology is expensive and unaffordable, but they are interested in learning more. This study demonstrates the association between

educational level and knowledge on dental implant as treatment modality. Regarding sources of information on dental implants, the present study agrees with a previous study [12-16, 20,21], which indicated that dentists are the major source of information followed by social media and newspaper magazines [19].

One limitation of the present study is that subjects were obtained from only one location, which was a military dental center in Asser region, KSA. Further studies should include different dental clinics and centers, such as private clinics, government dental centers, and dental schools, in different sites in Asser region.

Conclusion

Results of the above cross-sectional study suggest that based on knowledge and attitude, awareness among patients with implants is higher compared with those without. Dentists and social media are the main sources of information on dental implants. No significant differences were detected between males and females.

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