

Prevalence and Knowledge of Dental Implants among Saudi population in Ar Rass, Saudi Arabia

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ABSTRACT

Background: Since dental implants have favorable long-term effects in the rehabilitation of partly or completely edentulous people, they have emerged as a crucial therapeutic option. The focus of this study was to determine the prevalence of dental implants and to assess the knowledge of patients toward implant among Saudi people residing in Ar Rass, Saudi Arabia.

Materials and Methods: About 190 Saudi patients of both sexes, aged above 18 years, were recruited and the knowledge about implant were assessed using a self-administered validated questionnaire comprising of 18 questions. After that the patients were clinically examined for single-tooth implant, Implant overdenture and Implant-supported fixed partial denture.

Results: Concerning the prevalence of implants, 38 patients had at least one implants. In those 28 patients had single tooth implants, 3 patients with implant-supported fixed partial denture and 2 patients with implant supported complete denture. Regarding the knowledge about implants, 53.33% of participants have heard about the implants through the dentist and 89.83% prefer to place dental implants to replace their missing teeth. About 79.20% know the exact area where the dental implants were placed. A good number of respondents (62.66%) mentioned the cost as the major disadvantage for dental implants.

Conclusion: Most of the participants have single tooth implant followed by fixed partial and implant supported denture. The patients have knowledge and awareness regarding dental implants but still need continued education of the general public in conjunction with dental implants.

Key Words: Awareness, Dental Implants, Knowledge, Prevalence

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1. INTRODUCTION

Dental implants are utilized extensively and are regarded as one of the many available treatment options for substituting

single and multiple teeth, as well as a completely edentulous jaw because of their excellent durability, strength, and esthetics; which are artificial titanium fixture that are placed surgically into the jaw bone.¹ When it comes to treating individuals who have lost teeth due to illness, accident, or developmental abnormalities, they are a helpful addition since they are the closest substitute for a genuine tooth.

Due to the recent expansion of the worldwide dental implant industry and the growing demand for cosmetic dentistry, research on dental implant designs, materials, and procedures has expanded in recent years and is anticipated to continue to develop. Dental implants are associated with practical competency, stability, improved denture care, and increased patient satisfaction. They were first used to treat patients who were partly or totally edentulous.² Additionally, several ten-year trials have shown that implant therapy has outstanding long-term results, with success and survival rates > 95%.^{3,4} In contrast, tooth-supported permanent partial dentures are projected to have survival rates of 87% and 69% at 10 and 15 years, respectively.⁵

Patients often like dental implants because of their excellent success rates. The degree of knowledge regarding dental implant care evolved. The overall impression and acknowledgment of dental implants was found to be high in research conducted by Zimmer et al.⁶ There was an overall positive attitude toward dental implants. According to a study report from Austria, 72% of respondents had a negative opinion of dental implant procedures, and 42% of those surveyed claimed to know nothing about dental implants, while just 4% claimed to have adequate information about them.⁷

Alshammari et al assessed the Hail region's residents' knowledge, attitudes, and awareness of dental implants and discovered that they knew very little about them.⁸ One major advantage of implant dentistry is that restorations supported by implants are more aesthetically pleasing than detachable prostheses. According to US research that evaluated the frequency of dental implants over a 17-year period, the prevalence of dental implants has significantly increased, rising from 0.7% in 1999–2000 to 5.7% in 2015–2016.⁹ Unfortunately, little is known about how widespread dental implants are in different parts of Saudi Arabia, therefore it's crucial to keep looking to learn about the universal phenomenon. The purpose of this study was to determine the prevalence of dental implant surgery and to assess the level of awareness among Saudi residents in Ar Rass, Saudi Arabia, regarding implant therapy as an option for replacing lost teeth.

2. MATERIALS AND METHODS

The current cross-sectional investigation was conducted in patients from ArRass, visiting the Dental Clinic, College of Dentistry. The duration of the study was 6 months and was accepted by the Institutional ethical committee (21-12-14), Qassim University. About 190 Saudi patients of both sexes, aged above 18 years, were randomly chosen for the research. A self-administered validated questionnaire comprising of 18 questions was used to assess the knowledge towards implant.¹⁰ The questionnaire is a multiple-choice type consisting of four parts, first part is regarding the personal and demographic information, second part about the knowledge about the implant, third part regarding the information about the implant and the last part about the patient's anticipation in regard to implants. After completing the questionnaire, the patients were clinically examined for single-tooth implant, Implant overdenture and Implant-supported fixed partial denture. Those patients who did not complete the questionnaire and refused to give the consent form did not participate in the research.

Statistical Analysis

All statistical analyses were performed using the IBM SPSS Statistics version 20 data processing software. Chi-Square Test was applied to test the association between categorical variables (age, implant prosthesis type, dental implant) and Mann-Whitney Wilcoxon Test (U-Test) to test the differences in the number of dental implants per patient by (gen). The significance level was set at $p < 0.05$.

3. RESULTS

Out of 190 patients, 13 patients refused to complete the questionnaire, and the data were calculated for 177 patients. Among the participants, 97 were males (54.80 %) and 80 (45.20 %) were females, majority of them (63.22 %) were between 35 and 49 years. The highest number of participants (61.28 %) had bachelor's degree. (Table:1)

Concerning the prevalence of implants, 38 patients (21.46 %) had at least one implants, with an age range from 25 to 55 years, including 33 males and remaining females. Total of 42 implants were found in 38 patients from Al Rass.

Out of 38 patients, 28 patients (73.68 %) had single tooth implants, and there is a statistically significant difference between the percentage of patients who had at least one implant and those who don't have any implants with a p value of < 0.05 . The patients with single tooth implant were in the age group of less than 40 years. Results found that only 3 patients with implant-supported fixed partial denture and 2 with implant supported complete denture. (figure:1) Of all the age groups, patients with implant supported fixed denture were between 45 to 55 years and patients with implant supported denture were above 60 years old. Most of the patients (72.55%) had dental implants in the mandible than in maxilla. (Figure: 2)

More than half of the participants (57.62%) had knowledge about dental implants. Most of the participants (53.33 %) heard

about the implants through the dentist, followed by relatives (20.22 %) and social media (18.45 %). (Figure:3) Around 159 patients (89.83%) prefer to place dental implants to replace their missing teeth. Most of the patients (68.22%) reported that they feel uncomfortable using removable appliances, while others preferred fixed prosthesis.

More than half of the participants (79.20%) know the exact area where the dental implants were placed. When asked about the drawbacks of dental implants, a substantial number of respondents (59.33%) mentioned the cost, followed by surgical intervention (18.88%), and maintenance (17.12%). (Figure: 4) The majority (71.11%) believed that the life span of dental implants is low, while others (28.89%) mentioned that it will last for a long time. Around 59.22% reported that poor oral hygiene is the chief cause of failure of dental implant.

Table 1: Demographic Data

Age (Years)	%
20-34	18.77
35-49	73.22
50-64	13.88
65-79	4.13
Gender	
Male	54.80
Female	45.20
Education Status	
High school	31.33
Bachelor	61.28
Ph.D	1.22
Others	6.17

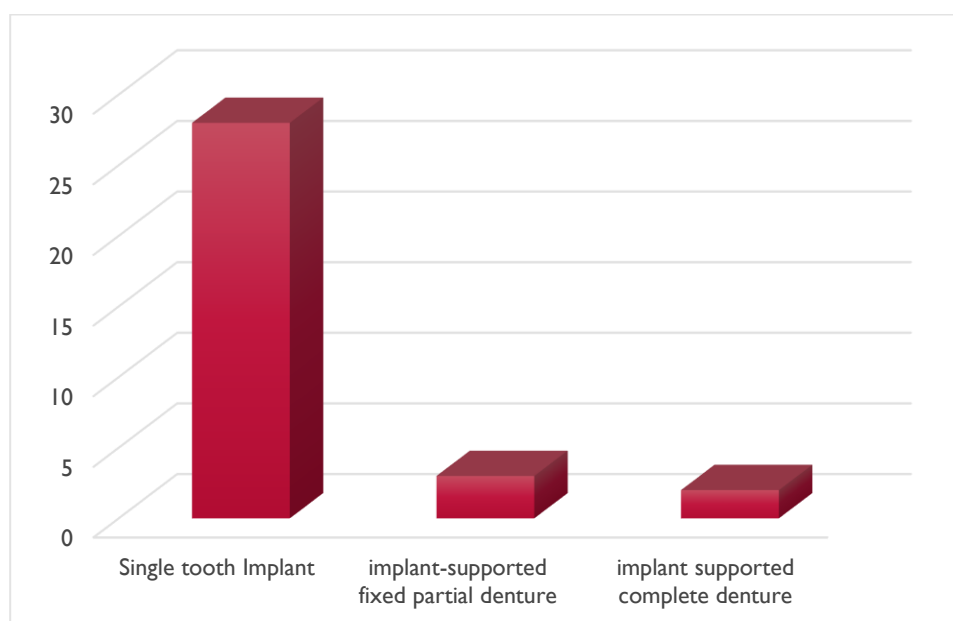


Figure 1: Prevalence of Dental implants

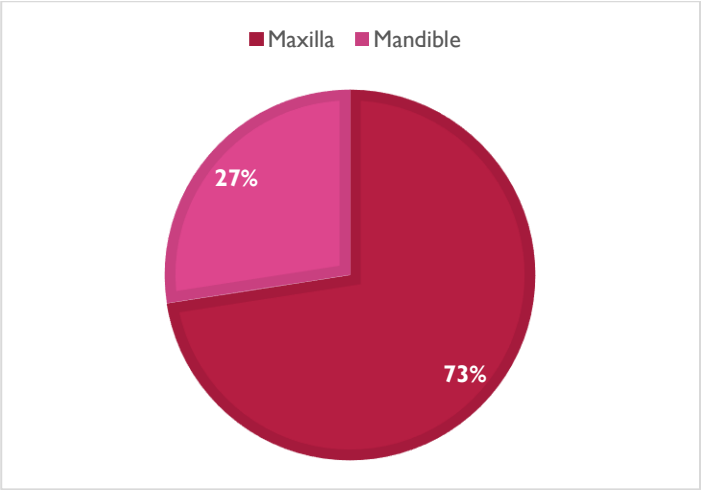


Figure 2: Implant Location

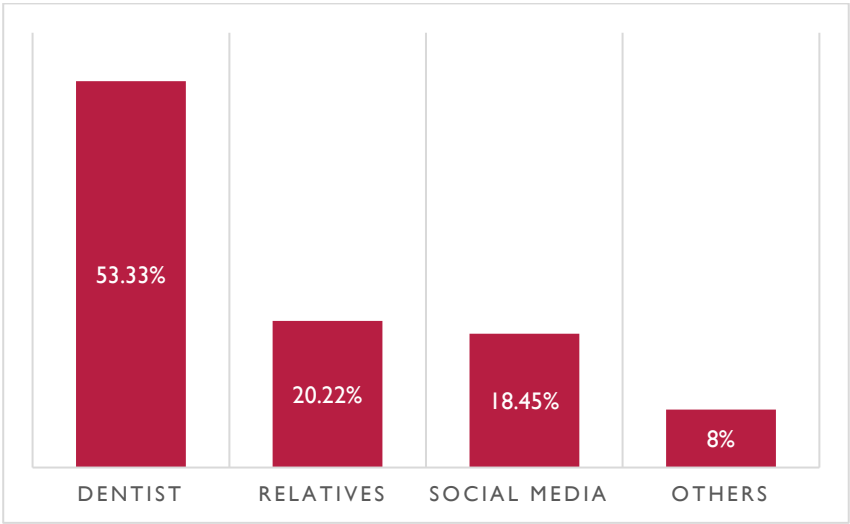


Figure 3: Source of information about implant

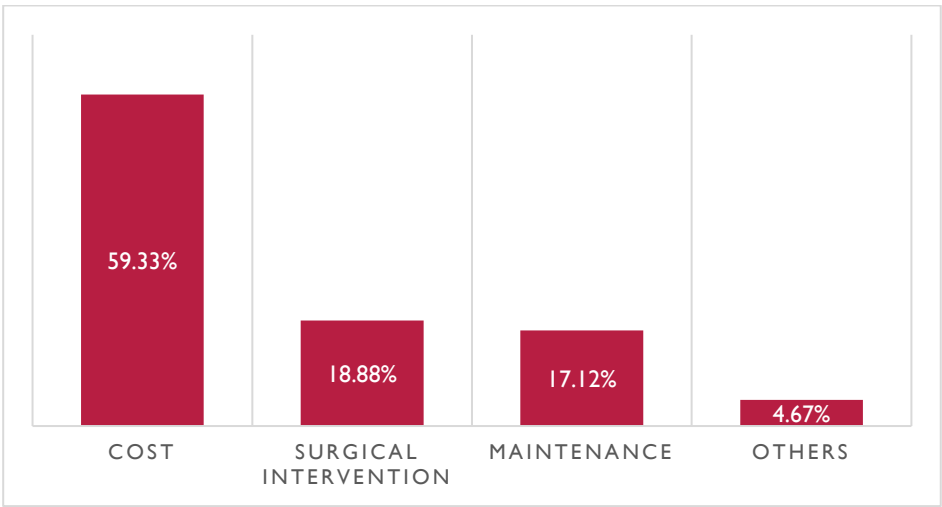


Figure 4: Drawbacks of dental implants

4. DISCUSSION

Nowadays, dental implants are often accepted as a prosthetic treatment option for those who are either fully or partially edentulous.¹¹ The current study perceived the prevalence and Knowledge regarding dental implants among people in Ar Rass region.

The major rationale for choosing an implant is the patient's anticipation of increased function. The current study showed that 21.46% of patients had at least one implant and the majority of patients (73.68 %) had single implant, which is consistent with Safadi et al¹² and Alkan et al,¹³ who also found that most of the patients were treated with single-tooth implants. In the present study, most patients have placed implants in mandible than maxilla. About half of the implants were positioned in the maxilla (49%, 95% CI = 43% to 55%) and the mandible (51%, 95% CI = 45% to 57%), according to Elani et al.¹⁴ Safadi et al also discovered a negligible difference between the maxilla and mandible in terms of dental implant percentages.¹² Additionally, Moy et al. noted that the failure rate was significantly impacted by the implant's placement.¹⁵ For example, compared to implants in the jaw, implants in the maxilla were more likely to fail. Anterior maxillary implants had a greater failure rate than posterior maxillary implants, according to studies. Additionally, they discovered that various implant systems had varying failure rates.¹⁶

It is necessary to evaluate the patient's understanding of dental implants since the number of implant procedures carried out yearly has significantly increased globally. Participants in this study had a high degree of knowledge regarding dental implants as a treatment option, which is consistent with findings by Rafee et al¹⁷ and Al-Johany et al¹⁸ that revealed a greater level of knowledge regarding dental implants among Riyadh residents.

Since the patients are more knowledgeable about the dental implants, it will be easier for the dentist to convince them about the treatment options. Similar to the Pommer et al. study, the dentist in this instance provided the patients with information on the implant.¹⁹ According to other research, the primary source of information on dental implants was friends and family, followed by the media.²⁰ Since dentists are more dependable, trustworthy, and competent, they need to be the primary source of information on dental implants.

Although there are many options to replace the missing tooth, the majority of the participants in the current study showed interest in dental implants, which is comparable to research done by Kola et al. in Saudi Arabia.²¹ The dental implants are a relatively newer modality of treatment. Due to the availability of more resources, high income of the population, further concern about esthetics, and increased awareness, the number of people having dental implants is higher in developed countries than developing countries.

The present survey showed that the most negative aspects about the implants were that many people couldn't afford it due to their high cost. The most significant downsides of implant therapy for patients were high expense, followed by the need for maintenance and surgical intervention. Studies conducted on Japanese and American populations produced similar findings. The present study showed that more than half (59.22%) of participants believe that poor oral hygiene is the chief cause of failure of dental implants. According to Famarzi et al., the majority of patients claimed that utilizing implants required additional care.²²

One of the limitations of the present study was small samples and related to their cross-sectional design. Longitudinal designs might enhance the understanding of sociodemographic and dental implant knowledge.

5. CONCLUSION

Modern implant therapy affords many patients with significant functional and biologic advantages, which has led to a spike in demand for dental implants. From the present study population, most of the participants have single tooth implant followed by fixed partial and implant supported denture. Patients are knowledgeable and aware of dental implants, but since they are a progressively preferred option for tooth loss, there is a need for greater awareness. The most common complaint regarding implants is their expensive cost, thus every attempt should be made to lower the price to a level that is more affordable.

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