



## Edentulous patients' awareness about implant treatment: A cross-sectional investigation in Kerman, Iran, 2018

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### Original Article

#### Abstract

**BACKGROUND AND AIM:** The main objective of the present study was to evaluate the source of information and concerns about implant treatment as an option for replacement of missing teeth.

**METHODS:** A cross-sectional study was conducted on 200 dental patients referred to dental school and clinics of Kerman, Iran, in 2018, from October to February. A standardized self-administered closed-ended questionnaire was used in the study. The obtained data from the questionnaires were scored and analyzed with SPSS software.

**RESULTS:** 54.89% of the patients claimed that the dentists were the main source of information and the high cost was the most common concern of participants in implant treatment (53.8%). In case of esthetic zone, the patients should be informed about crown esthetics. The patients' information on the impact of tobacco and systemic factors on the lifetime and potential of implant treatment was close to reality.

**CONCLUSION:** The results of the current survey showed that the majority of the patients were aware about dental implants and their main source of information was their dentists.

**KEYWORDS:** Dental Implants; Patients; Attitude

**Citation:** Safari S, Amini P, Sharif F, Torabi-Parizi M, Sadeghi S. **Edentulous patients' awareness about implant treatment: A cross-sectional investigation in Kerman, Iran, 2018.** *J Oral Health Oral Epidemiol* 2021; 10(2): 58-63.

Teeth play an important role in creating a positive self-awareness and missing of teeth reduces the life quality. Nowadays, since the need for beauty and maintaining the functionality of masticatory system has increased, toothless lifespan is becoming a more common challenge in the industrial life. Missing teeth substitution is treated with dentures, removable partial dentures, fixed partial dentures (bridge), or implant-based prosthetic treatments.<sup>1-5</sup>

Implant-based prostheses have been suggested as an acceptable therapeutic approach to restore mouth beauty and

function. According to studies, patients' awareness about implant therapy is not based on appropriate scientific evidence and the provided information by various media is more promotional, which does not indicate the limitations of implant therapy. It is important for clinicians to know whether patients are aware of dental implants as a treatment option and is their information close to the reality or not.<sup>6-9</sup>

Cross-sectional studies revealed that patients had both misconceptions about costs of implant therapy and unrealistic expectations about implant therapy. Some studies also show that dentists are primary source of

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information for dental patients. Furthermore, there is less awareness about dental implants in developing countries. Finally, comprehensive survey in different regions of the world have shown that public awareness about implant treatments is poor.<sup>10-14</sup>

Hence, due to the less evaluation of this issue in literature survey, especially in Kerman, Iran, and the intense increase in dental faculties and consequently, the rapid increase in the number of dental graduates and their possible impact on changing patient expectations, the authors decided to conduct a study to evaluate the attitude of implant candidate patients towards dental implants and their implant prosthetic treatments (as a choice of missed teeth substitution) in city of Kerman, in 2018.

### Methods

The examination protocol was approved by the standing Ethical Committee of Department of Prosthodontics, School of Dentistry, Kerman University of Medical Sciences (number: IR.KMU.REC.1394.656).

The current study is a descriptive cross-sectional survey performed on 200 (it should be noted that, in the current study, about 16 pieces of questionnaires were rejected due to incomplete filling of the questionnaire by participates) dental patients referred to dental school and dental clinics of Kerman City that were advised to use implants and were chosen by simple sampling method. The used questionnaire consisted of demographic information and 11 attitude assessment questions. The questionnaire content was focused on the source of information about implant treatment, implant durability expectation, ease of chewing with implant, and implant esthetics. For the sake of comparison, the questionnaires consisted of designed questions by researcher and similar used questions in other studies.<sup>3,10</sup> The questions of the prepared questionnaire were reviewed by implant specialist professors, including specialists in prosthodontics, maxillofacial surgery, and periodontology,

and finally, were modified in accordance with the specific research plan and based on our country's culture and language. Some of the questions were corrected and the validity of the questionnaire was achieved. For final evaluation, the Cronbach's alpha was first calculated and was used after that the test-retest (this test was performed on 200 people) intraclass correlation coefficient (ICC) was calculated (~ 0.56), which was acceptable.

In order to review, data were entered into SPSS software (version 21, IBM Corporation, Armonk, NY, USA) and qualitative data were analyzed by chi-square test. Chi-square test also was used in order to examine each individual question. To assess attitude as a whole, questions were coded and attitude was calculated and, univariate tests such as independent t-test and chi-square and multivariate tests (linear regression) were used firstly.

It should be noted that the main objective of the present study was to evaluate the source of information and concerns about implant treatment, as an option for replacement of missing teeth. Hence, the questionnaire was prepared in such a way to assess the awareness level of patients about implant treatment. Therefore, the patients' considerations including systemic, cognitive, or psychological factors and whether they are partially edentulous or fully edentulous is out of scope of the current study. Furthermore, the study was conducted under the obtained informed consent from the participants and all entered information in the questionnaires by patients would remain confidential and the name of the participants also would not be mentioned in the questionnaire.

### Results

The results of the current study which was implemented on 184 people indicated that the majority of respondents were men ( $n = 105$ , 57.06%) and the number of women was 79 (42.90%). The mean age of the subjects was  $47.5 \pm 11.5$  years and in terms of education, 30 people (16.30%) had less than high school

diploma and 154 people (83.69%) had higher than diploma. Regarding the questions about the informative source of implant, 101 people (54.89%) claimed that they were informed by their dentist and 83 people (45.11%) received information from social media, television, friends, newspapers, etc. About 42.90% (79 people) of the patients expected that the implant durability could exceed more than 25 years. In comparison between implant-based bridge and bridge (as esthetic point of view), 101 people (54.89%) believed that the implant was more beautiful, while 79 (42.93%) thought of the same esthetics.

Regarding the ease of chewing with implant question, 132 people (71.72%) considered chewing comfort as a very important characteristic of implant performance, 41 people (22.28%) important, and 11 (5.97%) not significant. About implant treatment (Table 1), 99 people (53.8%) chose high cost and the rest is presented in table 1.

**Table 1.** Descriptive data of the demographic variables between the intervention and control arms

Items	n (%)
High cost and lack of insurance coverage	99 (53.80)
Not knowing professionals of this field	7 (3.80)
Surgery and the possibility of pain after treatment	28 (15.21)
The stages of treatment are time-consuming and uncertain	18 (9.78)
The possibility of treatment failure in the short term	4 (2.17)
Infection after treatment	14 (7.60)
Other (including multiple choice)	14 (7.60)

In case of the effect of implants on preventing facial aging, 131 people (71.19%) agreed with the role of implants in delaying facial aging and 17 people (9.23%) disagreed. In response to the question of the effects of

systemic diseases such as diabetes and the effects of hygiene and tobacco (questions 9, 10, and 11), the amount of correct answers was calculated and represented in table 2.

The mean attitude score of these three questions (Table 2) was  $1.8 \pm 0.8$  out of 3 and  $59.9 \pm 26.0$  percent. Multivariate analysis also showed that percentage of correct answer on these questions (9, 10, and 11) had no significant relationship with age, sex, marital status, and implant treatment; however, it had a significant relationship with education level (Table 3).

**Table 3.** Relationship between variables with attitude

Variable	Percent	P
Sex	16	0.9170
Age	9	0.2260
Marital status	141	0.5810
Implant treatment	294	0.1180
Education level	342	0.0001

### Discussion

According to the findings, the majority of participants' information source (about implants) was dentists (54.90%), which is consistent with other studies.<sup>15-17</sup>

In some studies, the evaluations revealed that media and friends were considered as the primary source of information, and dentists were the second source of information,<sup>18-20</sup> which is inconsistent with the present study. It is well known that the source of information can play an important role in the awareness and attitude of patients in implant treatment. According to numerous studies, there are different point of views about expectations of implant efficacy that may be due to the type of study, the frequency of used implant, and the population under study.<sup>21-25</sup>

**Table 2.** Relative and absolute frequency distribution of individuals based on how to answer the questions of attitude toward the impact of systemic diseases on implant

Questions	Correct attitude	n (%)
Do you think systemic diseases like diabetes affect the implant?	If controlled, they have no effect on treatment.	53 (28.80)
In your opinion, what is the difference between health care for implants compared to natural teeth?	It is more.	45 (24.50)
Do you think smoking can affect implant treatment and survival?	It has a harmful effect.	174 (94.60)

In the present study, 42.90% of people expected implant performance over 25 years. In the study of Ozcakil Tomruk et al.,<sup>16</sup> it was found that in Turkey, 17.80% expected implant durability more than 20 years and 33% believed that it should be lifelong.

In the present study, the high cost (53.80%), surgery (15.21%), and time-consuming treatment (9.78%) were the most common concerns of the participants in implant treatment, respectively. Faramarzi et al.<sup>15</sup> reported that the most common reasons for not using implant treatment were high cost, long time, and fear of surgery. In other studies, high cost has been the most important factor affecting reluctance to treat.<sup>26,27</sup> In this study, most of the people believed that implant-based coatings were more beautiful than the bridges. This result is in contrast with the early studies, which most people believed that fixed dental prostheses (bridge) made them feel better.

According to the current study, 24.46% of people believed that oral hygiene was more important in implant restoration. This finding is in accordance with other studies.<sup>15,17,23,28</sup> It seems that beside implant long life expectation, more hygiene is necessary. In this study, 94.56% of people believed that smoking had a harmful effect on implant durability. Regarding systemic diseases, about 28.10% of patients believed that controlled systematic diseases had no effect on implant restoration. The educational level was also correlated significantly with mean scores of individuals ( $P < 0.0001$ ). This finding is also consistent with the studies of Saha et al.<sup>29</sup> and Grey et al.<sup>30</sup> Generally, people with higher educational levels have more information about dental implants, resulting in more trusting to the clinicians and increasing more referring to therapeutic centers.<sup>7,8,14,15</sup>

This study highlights and discusses about the different motivations of patients and their expectations about dental implants. Finally, based on the collected information from the current study, the following recommendations

are proposed:

- 1- Taking a research at different time intervals on the people who conducted the final implant treatment stage
- 2- Conducting a research about the patients' attitude to the type of implant-based prosthesis
- 3- Assessing patients' knowledge before implant treatment
- 4- Conducting a research on the whole community about implant treatment

It is somewhat difficult to collect the information due to the difficulties to find the collaborative patient in order to participate in the project. Although it was difficult to find the appropriate patients and satisfy them in order to participate and make their time for answering the questioner, the mentioned restriction of the current study was reduced by collaborations of professors and residents of Department of Dentistry of Kerman University of Medical Sciences, including periodontology, prosthetics, and maxillofacial surgery divisions as well as secretaries of the dental clinics of Kerman City.

## Conclusion

The results of the current study showed that the most important information source of patients in city of Kerman, was the dentists. People's attitude toward implant durability was unrealistic and about 25% of people believed that implant hygiene was less than normal teeth. The patients' information on the impact of tobacco and systemic factors on the lifetime and potential of implant treatment was close to reality. It is recommended that, prior to implant treatment, the dentists be aware of the patient's expectations and also remind them of oral health and regular follow-up.

## Conflict of Interests

Authors have no conflict of interest.

## Acknowledgments

The authors would like to acknowledge all people who participated in data collection.

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