A SURVEY ON DENTAL IMPLANT IN USE AMONG UAE AND IRANIAN DENTISTS

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Abstract

Objective: whilst many questions and doubts still remain, today the use of dental implants has gained an increasing popularity amongst patients as well as dentists. The aim of this study was asses different types of dental implant used in private clinics in U.A.E and compared with clinics in Iran.

Materials and methods: Preliminary survey questionnaire regarding the prosthetic and surgical use of dental implants were developed. The validate questionnaire was distributed to volunteer participates of interest to establish the most pertinent items of interest. The final questionnaire was distributed to all members who are practicing implant in United Arab Emirates and members of implant associated engaged in U.A.E. as well as some private dental clinics in Iran. Responses were compiled and analyzed to determine the differences between two countries dentists for using implants.

Results: Among 420 respondents out of 400 distributed surveys, 200 surveys answered by practitioner in U.A.E. and 200 surveys answered by practitioner in Iran.

Conclusion: This survey concluded that the use of dental implants in treatment of missing teeth is favorable regardless of subject's age, sex, type and location of edentulous area, the causes of tooth lost, usage of bone graft and the type of it if they use, type of implants, and type of radiograph(s) that used by the dentists.

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Introduction

Tooth loss especially in the esthetic zone has been a dilemma for both of clinicians and patients.[1] Loss of teeth due to dental caries and periodontal diseases are very common in developing countries whereas the number edentulous patients have been declining in the developed countries.[2]

In spite of this, dental caries and periodontal disease are still the major cause for extraction, through their relative contribution to tooth mortality varies from place to place.[3,4,5]

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In these situations, the treatment options include a traditional fixed partial denture, a resin bonded restoration and a single-tooth implant. Although each is a viable alternative treatment, the implant restoration has definite advantages. It has become an esthetic, functional restoration with long-term predictability.[6]

Osseointegrated dental implants are increasingly used to replace missing teeth in a variety of situations ranging from the missing single tooth to complete edentulous. The implant possibility must be carefully considered because treatment involves extended time frames, considerable expense and is not without risk. Accordingly, treatment-planning decisions should have an evidence based strategy with appropriate risk assessment.[7]

Dental implants were originally used for the treatment of edentulous patients and are associated with improved denture retention, stability, functional efficiency, and the quality of life.[8,9]

Nowadays, the use of dental implants in treatment of various types of edentulous areas has becomes a routine and acceptable mode of treatment gaining and increasing popularity.[10] In the general population, long-term success rates of over 90% to 95% are considered to be realistic treatment outcomes (Arvidson et al., 1992; Fugazzotto et al., 1993; Mericske-Stern and Zarb, 1993; Spiekermann et al., 1995). However, clinicians must temper their enthusiasm for implant dentistry with thorough knowledge and understanding of the physiologic implications of existing systemic diseases or systemic therapies for treatment outcome and patient well-being. In line with these implications, endosseous implant therapy can greatly improve the function and esthetics of carefully selected partially or completely edentulous patients.[11]

Initially, implant licensing was limited to prosthodontists and oral surgeons and then periodontists; however, predictable outcomes, more patients' demands and willingness of general dentists for surgical training for restorative training soon resulted in a flexible approach to training.[12]

There is not any recently published surveys assess and compering 2 countries according their trends of dental implants, different type of dental implant systems, different type of radiographs and so on between developing countries.

The aim of this study is asses the different types of dental implant systems, most common type of dental radiographic investigation that they use, are they doing dental implants for smoking patient? And some more else questions and comparing them by the answers of the dentist that they do dental implants in private hospital different clinics in U.A.E and compared with dental clinics in Iran.

Materials and methods

Preliminary survey questions regarding the prosthetic and surgical use of dental implants were developed. The master list of questions was distributed to communities of interest to establish the most pertinent items of interest. The final questionnaire was distributed to all members practicing implant in United Arab Emirates and members engaged in U.A.E. as well as in Iran and comparing the answers of dentist with each other.

Surveys were distributed to 420 practitioners. A total of 400 (95.23%) surveys were completed (all of the survey questionnaires innumerous and confidential sample size). On the basis of distribution of survey respondents, it was determined that the respondents were representative.

The survey questionnaire contained twelve following questions including, is the dental implants do by specialized dentist or done by general dentist? Which quadrant has most demands for dental implants? Which kinds of radiographies are most common for pre-implant assessment? Are they do dental implants for smoking patients? And the causes of tooth loss.

Results

Among 420 respondents out of 400 distributed surveys, 200 surveys answered by practitioner in U.A.E. (50%) and 200 surveys answered by practitioner in U.A.E. (50%) out of 100% (Table 1).

Demographic characteristic of our study's participants.

		Iran	U.A.E
Average of ages	30-45	94	102
	46-60	103	83
	61-75	4	15
Gender	Male	198	200
	Female	2	0
Specializatio n	Specialized	111 (55.5%)	190 (95%)
	General	89 (44.5%)	10 (5%)
experiences	Less than 5 years	69	23
	5-10	120	165
	More than 10 years	11	12

Table 1. Factor involving in formulating questionnaires.

The answers of dentists of Iran who are participants in our study shows that the most common causes of tooth loss are tooth decay and periodontal disease and after them accident/violence/injury with a low percentage is another cause of tooth loss but in U.A.E, the first cause is tooth decay then periodontal disease and then accident/violence/injury, respectively, are the causes of tooth loss.

According to our study, in Iran: 1.78% not performed and 98.2% perform dental implant in their offices and in U.A.E. 1.78% not perform and

98.2% perform dental implant in their offices.

Patients that are more candidates for dental implants, in Iran: 88.56% are Female and 11.44% are Male and in U.A.E. 93.22% are Female and 6.78% are male; so in both of countries, females are more demands for dental implants and lower posterior is most common region that requested for dental implants in both countries and then lower anterior, upper posterior and upper anterior respectively are common region that is requested for dental implants (Table 2).

Segment	Iran	U.A.E
Lower posterior	3.7 %	7.7 %
Lower anterior	4.4 %	11.5 %
Upper posterior	22.2 %	46.2 %
Upper anterior	81.5%	76.9 %

Table 2. Common region that is requested for dental implants.

By the effect of smoking on implant survival/success, our study shows that most of implantologist in Iran and U.A.E prefer do dental implants for smoker patients.

The types of implants systems and types of radiographs that prefer by the implantologists are mention below (Table 3) and (Table 4).

Types of implants systems	Iran	U.A.E
ITI	45.8%	84.6%
SPI	0%	34.6%
Implantium	83.3%	46.2%
Straumann	0%	11.5%
Dentsply	0%	7.7%
Zimmer	0%	23.1%

Table 3. The types of implants systems.

In case of need, preferring of bone graft in Iran and U.A.E shows this result which is shown in (Table 5).

If they used bone graft, the types of bone graft are mention in (Table 6).

Our study shows that the usage of surgical guide in U.A.E is more common between implantologist than Iran but usage of self-threaded implant is more common in Iran than U.A.E.

Types of radiographies	Iran	U.A.E
Panoramic	74.1%	96.2%
CT Scan	63%	80.8%
Periapical	11.1%	3.8%
3d Panoramic	18.5%	34.6%
CBCT	11.1%	23.1%

Table 4. The types of radiographs.

Using of Bone graft	Iran	U.A.E
Yes	26.4%	26.4%
No	15%	3.8%
Sometimes	60.4%	68%

Table 5. compare the preferring of bone graft between Iran and U.A.E.

Types of bone graft	Iran	U.A.E
Autogenous	43.5%	73.1%
Allograft	69.6%	61.5%
Xenograft	4.3%	7.7%

Tabel 6. The types of bone graft.

Discussion

In three decades, dentistry has changed tremendously due to the incorporation of dental implant in increasing the options of dental treatment and patient satisfaction, and it has changed the perspective of dental therapy with respect to the long term successful outcomes. Implant dentistry has become a vital part of prosthodontics for partially and completely edentulous patients and hence education of postgraduate and also undergraduate students in the world.

The survey showed that this procedure done by specialists in their clinics in both countries. Also demanding of dental implants is more common between female than male as we can see in both countries but totally the requesting of dental implants in U.A.E has higher rate than iran; also lower posterior, lower anterior, upper posterior and upper anterior are most common quadrants, respectively have more demands for dental implants in both countries, according of our study.

Tooth loss either can due to oral disorders such as caries, gingival and osseous disease or other reasons as well as accidents and iatrogenic procedures, and it can affect on apparent status of persons, more important than that, it affects on their confidence. So using preservative treatments such as implants are received and its success rate is reported 94%. (13) Our survey show that in Iran, both of the tooth decay and periodontal disease have highest rate (77.8%) of causes of tooth loss and after that with high difference (7.4%) is accident, violence and injury but in U.A.E, the most common cause of tooth loss is tooth decay with 76.9% and after that periodontal disease with 61.5% and then accident, violence and injury with 15.4% rate. This survey show that in U.A.E, periodontal disease is less common cause of tooth loss than Iran and tooth loss by the cause of tooth decay is more common but tooth loss because of accident, violence, injury is more common in U.A.E. than Iran.

Usage of bone graft is related to the condition of the alveolar ridges in the site of implants; Our survey shows that in both of the countries dependent on the condition the clinician prefer bone graft but in Iran, the type of bone graft that they used is autograft and after that is allograft but in U.A.E allograft is more common than autograft.

Guided bone regeneration using membranes and autogenous bone grafting is much less commonly performed in these situations and has also been found to result in complications – including exposure of the membrane and wound dehiscence – in up to 45% of cases.[14,15] In a study comparing transmandibular implants, short endosseous implants and autologous bone grafting followed by endosseous implant placement in 60 patients (mean age 59 years) with highly resorbed mandibles, it was found that the treatment involving adjunctive bone grafting resulted in greater discomfort, pain and length of the surgical phase of treatment.[16] In another study where 15 patients received inferior alveolar nerve transposition procedures prior to placement of a total of 46 implants, the cumulative survival and success rates were 95.7% and 90.5%, respectively, over a mean follow-up period of just over four years. However, almost 25% of the patients (four) experienced disturbances in sensation as a result of the procedure.[17] According to our survey, in both countries, most of the technicians use the surgical guide.

Although there is a regulatory body which controls and creates the initial requirements for clinical acceptance of dental implants, it is ultimately the dentists' decision on which implant system should be used in clinical practice.[18] Some important outcome measures dentists may consider include cost, aesthetics, longevity, amount of bone loss, success rates, survival rates, incidence of complications such as periimplantitis, healing time, ease of placement and patient satisfaction.[19]

Afsharzand et al. presented that ITI and Nobel Biocare were used mostly in Europe.[20] Weintraub et al. showed that Nobel Biocare was used most frequently in US.[21] However, Branemark, TiUnite, Straumann and AstraTech are popular implant systems in the Toronto, Ontario, Canada area.[19]

Also we have some different types of dental implant systems such as Straumann, Dentsply, Zimmer and more but our study shows that most common type of dental implant system in Iran is ITI system and after that implantium is more common than other types of dental implant system but in U.A.E, the most common one is ITI, after that Implantium, SPI, Zimmer, Starnmann and Dentsply are more common respectively; and using self threaded implant is more common in iran than U.A.E.

In recent years, numerous cases of bisphosphonate-associated osteonecrosis of the jaw have been reported involving both intravenous and oral therapy regimens.[22] Our study shows that in Iran, Panoramic, CT Scan, 3d Panoramic, Periapical and CBCT are most common ones, respectively. In U.A.E. , , Panoramic: 96.2%, CT Scan: 80.8%, 3d Panoramic, CBCT, Periapical respectively, has common usage by dentists.

The use of dental implants can be definitely recommended for treating all edentulous area. Loss of dental implants is more probable in the posterior region as compare to the anterior region in either of the jaws. Also alveolar bone is preserved after dental implants and a high degree of success is achieved with implants in partly edentulous jaws.

Comparison of different study show that the ages of tooth loss in developed countries is after 70 years old but in Iran, more than 90% of people after 30 years old at least one of their

tooth and this is happen because of low oral hygiene. Also the costs of oral hygiene are only 5 percent of dental implants.[22]

Usage of dental implant is started 13-14 years ago in Iran; at the first, demanding of dental implant was 500 per year but current demand has increased up to 25% and has reached to 10-12 thousands per year. Demanding of dental implant in Germany with 70 million population is 300 to 400 thousand while in Iran requesting od dental implants by the same population is 12 thousands only.

Decreasing of demands of dental implants might be due to lack of enough knowledge about dental implants, younger population of Iran, the costs of dental implants, and also lack of insurance coverage for such treatments by related companies.[22]

Conclusions

By the comparison of their answers of 2 countries, we understand that the demanding of dental implant in Iran is less than U.A.E and also some more differentiations are present between 2 countries. By such as this study we can improve our knowledge and find our problems to improve our country and make update ourselves and try to improve to reach our country to developed one.

Comparing participant's answers in Iran and U.A.E. showed that there is an increasing demand for dental implants in both countries. However there are some differences between delivery of services and also demands. Therefore education courses regarding dental implants would improve the situation in both countries.

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Declaration of Interest

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