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RESEARCH ARTICLE

ASSESSING ACCEPTANCE, EVALUATION, CHALLENGES IN IMPLANT DENTISTRY AMONG DENTAL PRACTITIONERS: A SURVEY-BASED RESEARCH

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ABSTRACT

Background: Implantology is becoming a speciality in thefield of dentistry in the last few decades dentistry appears to have recorded its most sign I cant advancement in the field of dental implantology. Replacement of lost teeth with dental implants are widely accepted as a prosthetic treatment of completely or partially edentulous patients. **Objective:** The aim of this study is to evaluate the level of acceptance and challenges among Dental practitioners. **Method:** The survey was constructed using a convenient sampling method with self administered questionnaires among dental practtioner between October and November 2022. **Results:** majority of questioned subjects knew about the dental implants and accept it as a treatment option for replacing missing teeth. **Conclusion:** Dental implant is an accepted treatment modality in India.

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INTRODUCTION

An adequate dentition of great importance for well being and quality of life .Apart from all advancements in dentistry, edentulism is still a major public health problem worldwide. Modern dentistry aims to restore the patients normal function, asthetics, speech and health. A Revolution in the research and technology of implants during last two decades has made replacement of missing teeth with endoosseus implants the standard care of an implant supported prosthesis. It is being used as the first line of treatment and has long lasting rehabilitation .Implants aim to overcome limitations set by removable partial dentures and fixed partial dentures such as eating difficulties, problems related with asthetics, retention stability of prosthesis, etc. They are stronger, functionally effective and more durable than bridges and dentures. Dental implant is a prosthetic device made up of alloplastic material implanted into the oral tissues beneath the mucosal or/and periosteal layer, and on /or within the bone to provide retention and support for a fixed or removable dental prosthesis, a substance that is planned into or/and upon the jaw bone to support a fixed or removable dental prosthesis.

Although there are certain challenges faced by the practitioners like narrow space availability between adjacent teeth, low bone density that can hamper stability, infection around implants, nerve damage, issues with sinuses incases of implant placement in upper jaw, etc measures to overcome these challenges are being adopted to continue its practice due to the several advantages it provides over other treatment modalities. Considerations are given to evaluate the following criteria that includes bone loss, gingival health, intrusion of mandibular canal, patient's emotional and psychological attitude and satisfaction. Risks and complications have been identified with dental implants though there is continuous innovation in implant systems and various intercepitive treatment modalities that allow it to be the most accepted treatment option in these times. The aim of this study is to know about the challenges faced by dental professionals and the acceptance and evaluation for the same that can further be used as an aid for bringing changes in the implant system and further improving it.

MATERIALS AND METHOD

A descriptive cross sectional study was conducted among dental professionals practising implants in Maharashtra-Pune .The inclusion criteria were post graduate student doing implants or dental practitioners practising implants and willing to participate for the survey.The exclusion criteria for the same were dentists not practising implants or not willing to participate in the survey. A self explanatory close, ended questionnaire with a total number of 31 questions was formulated. Demographic data, socioeconomic status and level of education was recorded and a pilot study among 25 participating dentists was performed, for which the Cronbach's Alpha value was 0.6 and therefore this validated the questionnaire. The sample size was obtained through the formula

Sample Size n = N * [Z2 * p * (1-p)/e2] / [N – 1 + (Z2 * p * (1-p)/e2]

where,

N= Population size =1000
Z= Critical value =1.96
p=sample proportion=25
e=margin of error =5%

This gave the sample size of 150 practitioners which were selected for our study through convenient sampling method ,the responses were collected through google forms and was statistically analysed using SPSS(Statistical Package for the social sciences).The responses of the participants were kept confidential throughout the survey .

RESULTS

In this survey 150 dentist's responses were recorded out of which 84% were post graduates and 16 % were dentists practising implants (Table 1).

Table No 1. Demographic Details

Sr. No.	Questions	Responses	Number (N)	Percentage (%)	Total N(%)
1.	Age (Years)	22-25 26-28 29-31 32-34 35-37 38-41 42-44 45-47 48-50	13 35 22 22 15 12 10 14 07	08.7 21.8 14.7 14.7 9.9 8.7 6.5 9.3 05.7	150 (100%)
2.	Qualification	BDS MDS Phd	24 126 1	16 84 0.6	150 (100%)

According to (Table 2) that includes knowledge based questions 96 % percent population believed finance and lack of knowledge to be the main reason for hindrance in acceptance of dental implant .92.7% participants think that implants last only for 11-20 years and 6.7 % believe them to last a lifetime.30-40 years of the age group is more acceptable towards dental implants as a solution for missing teeth according to 90 % of population.90.7% find D2 (porous cortical and coarse trabecular bone)to be the ideal bone type for implants. Dental implant osseointegration would be achieved by intramembranous type of ossification according to 84% of the population. Gum infection around implants and flap dehiscence are the most common causes of complications of implants .Failure of implants is mainly due to gingival recession (2.7%)and severe pain and discomfort (1.3%)around implants respectively .Screw loosening (24%)is the most common technical complications of implant ,also fracture of restorative material (2%)and implant fracture (0.7%)could be the reasons .

(Table 3) The practical based questions show that 80% dentists do not feel there are any complications related to esthetic and phonetics with dental implants .93.3% believe sinus position to play role in placement of dental implant .Drug therapy effect (88.7%) implant surgery.54.7% agree that we can measure the success of implants before it's placement however 40% are unsure about the same .Implants and natural teeth cannot be used together to support fixed partial denture was recorded according to 47.3% participants. (Table 4) According to the aptitude based question 86.7% responders strongly agree that undergraduates should be provided with more knowledge on dental implants. 42% agree that initial setup for implants is challenging ,however 44% had a neutral response to it .66% agree and 24.7% strongly agree that dental implants affect periodontal health of adjacent teeth if inserted in close proximity to laminate dura. Bone loss can be reduced by blocking pro inflammatory factors was agreed by 45.3% of the responders and the rest 26 % strongly agreed and were neutral each. A high percentage of 47.3% strongly agreed and 44.7% agreed that computer guided implants are more convenient then conventional one

DISCUSSION

In 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 treatment and provides with long term successful outcomes. Implant dentistry has become a vital part of dentistry for partially and completely edentulous patients. The absence of natural teeth is a concern that not only effects the function but also has a significant impact on a patient's appearance and psychological well-being. Since the dawn of time, different line of treatment have been performed to replace missing teeth with prosthetics that function and look like natural teeth. Dentures and fixed bridges are used to attain this result. Dentures and fixed bridges, on the other hand, have certain issues such as compromising adjacent good teeth and accumulating food debris and plaque. Moreover, replacing lost teeth with dental implants are commonly recognised as a complete or partially edentulous line of treatment of patients with prosthetics. Mgbeokwere U, et al conducted a survey of the knowledge of dental implants as a choice in treatment of edentulous jaws among health workers in Government Dental Clinics in Enugu.In this study they collected 320 responds from which ,only 31 (9.7%) were aware of dental implant, while 23(7.2%) recognised it as a choice in tooth replacement. They concluded that the knowledge of dental implants as a replacement choice for missing dentitions is low among health workers in Enugu .The dentists in these centres did not have much knowledge about oral implantology and therefore did not practise it. The overall effect therefore, was poor information and poor knowledge of dental implantology among the health workers.

Shergill DK conducted a survey on Awareness of dental implants-a key of acceptance treatment modality. The purpose of the survey of was to investigate the awareness about dental implants among educated population. It concludes that most of the subjects found implant treatment to be expensive and unaffordable one. High frequency of the population were not taking it due to its higher cost (35%). (21%) were having fear of implant surgery. Some people have different priorities like other prosthesis (18%), some mentioned that it is time consuming (26%). Whereas in this study (96%) population considers higher cost, fear of implant surgery, lack of knowledge the reason for in acceptance of dental implants. In another study conducted by Glauser et al. Shows that only a 66% success with implants immediately loaded in the posterior maxilla compared with 91% survival in other regions of the jaw. In this survey (97.3%)of the population considers less accessibility, difficulty in maintaining straight path during drill and bone thickness as the difficulties faced during posterior region implant placement. Ayad I. Ismail,et al conducted a survey which shows that in Iran, Panoramic, CT Scan, 3d Panoramic, Periapical and CBCT are most common diagnostic tools used. In U.A.E. Panoramic: 96.2%, CT Scan: 80.8%, 3d Panoramic,

Table No. 2

Sr. No	Questions	Responses	Number (N)	Percentage (%)	Total N (%)
1.	What is the reason for hindrance in acceptance of dental implant	Finance Lack of Knowledge Fear of Surgery All of the above	3 3 0 144	2 2 0 96	150 (100%)
2.	What is the main advantage of dental implants as compared to other tooth replacement modalities	Aesthetics More conservative Longevity All of the above	2 1 1 146	1.3 0.7 0.7 97.3	150 (100%)
3.	How long do implants usually last?	3-6 years 7-10 years 11-20 years Lifetime	0 1 139 10	0 0.6 92.7 6.7	150 (100%)
4.	Which age group is more acceptable towards dental implants as a solution for missing teeth?	20-30 years 30-40 years 40-50 years Above 50 years	7 135 7 1	4.7 90 4.7 0.6	150 (100%)
1.	According to you which is the ideal bone type for implant	D1 D2 D3 D4	9 136 5 0	6 90.7 3.3 0	150 (100%)
6.	In implant, how much should be the minimum thickness of buccal plate?	4mm 3mm 2mm 1mm	2 5 141 2	1.3 3.3 94 1.3	150 (100%)
7.	Why do you think drilling is difficult in the posterior region as compared to anterior region while doing implant?	Less accessibility Difficult to maintain straight path Bone thickness All of the above	2 1 1 46	1.3 0.7 0.7 97.3	150 (100%)
8.	Dental implant osseointegration would be achieved by which type of ossification ?	Endochondral Intramem Both Don't know	11 126 9 4	7.3 84 6 2.7	150 (100%)
1.	Which scan is more accurate for assessing the buccolingual dimension of ridge before implant placement ?	CTS CBCT Both are similar Neither	1 143 3 3	0.7 95.3 2 2	150 (100%)
10.	Reasons for inacceptance of implant by body tissue?	Bone density Allergic to foreign material Both A & B Others	2 4 142 2	1.3 2.7 94.7 1.3	150 (100%)
11.	What are early complications of implants?	Infection Bleeding Edema All of the above	5 1 2 142	3.3 0.7 1.3 94.7	150 (100%)
12.	What are the late complications of implants	Bony defects Failed osseintegration Perapical implant lesion All of the above	2 5 5 138	1.3 3.3 3.3 92	150 (100%)
13.	What is the most common cause of complications of implants?	Gum infection around the implants Flap dehiscence Perforation of the mucoperiosteum All of the above	6 6 0 139	4 4 0 92.7	150 (100%)
14.	What are the signs of failed implants ?	Severe pain and discomfort Gingival recession around implants Shifting and loose implants All of the above	2 4 0 144	1.3 2.7 0 96	150 (100%)
15.	What is the most common technical complications of implants ?	Screw loosening Implant fracture Fracture of restorative material All of the above	36 1 3 110	24 0.7 2 73.3	150 (100%)

CBCT, Periapical respectively, has common usage by dentists whereas in our survey 95.3% of the dentist feel cone b e a m computed tomography system as the accurate scan for implants. Despite the high survival rate of dental implants, several systematic reviews have attempted to identify and quantify the occurrence of complications related to dental implants.In 2020, a study was conducted by Attiah et al to evaluate the effect of dynamic cyclic loading on screw loosening in both narrow and standard implants and concluded that screw loosening occurred in both narrow and standard implants, with a higher value in narrow implants. In our survey 94.7%of the population feels infection, bleeding, Edema, failed ooseointegration and periapical implant lesion are the common

Table No. 3

Sr. No	Questions	Responses	Number (N)	Percentage (%)	Total N(%)
1.	Is there any complications related to esthetic and phonetics with dental implants ?	Yes No don't know	17 120 13	11.3 80 8.7	150 (100%)
2.	Does sinus position play role in placement of dental implant?	Yes No Maybe	140 03 07	93.3 2 4.7	150 (100%)
3.	Does occlusal force in anyway affect dental implant ?	Yes No Maybe	33 23 94	22 15.3 62.7	150 (100%)
4.	Does any drug therapy effect implant surgery?	Yes No Maybe	133 11 06	88.7 7.3 04	150 (100%)
5.	Do you any software for designing surgical guide for implant ?	Yes No Maybe	139 06 05	92.7 4 3.3	150 (100%)
6.	Can we measure the success of dental implant before implant placement ?	Yes No Maybe	82 8 60	54.7 5.3 40	150 (100%)
7.	Do diameter and length of dental implant play a crucial role in success of it?	Yes No Maybe	142 1 7	94.7 0.7 4.7	150 (100%)
8.	Can implants and natural teeth be used together to support Fixed Partial Denture	Yes No Maybe	16 71 63	10.7 47.3 42	150 (100%)

Table No. 4

Sr. No	Questions	Responses	Number (N)	Percentage (%)	Total N (%)
1.	Do you think Under Graduate students should be provided with more knowledge on dental implants	Strongly agree Agree Neutral Disagree Strongly disagree	130 09 08 03 0	86.7 06 5.3 02 0	150 (100%)
2.	Do you think there should be more Continuing Dental Education programs giving knowledge about implants ?	Strongly agree Agree Neutral Disagree Strongly disagree	70 75 05 0 0	46.7 50 3.3 0 0	150 (100%)
3.	It's challenging to initially set up/incorporate implant surgery in practice	Strongly agree Agree Neutral Disagree Strongly disagree	17 63 66 02 02	11.3 42 44 1.3 1.3	150 (100%)
4.	Dental implant affects periodontal health of adjacent teeth when inserted in close proximity to lamina dura ?	Strongly agree Agree Neutral Disagree Strongly disagree	37 99 12 1 1	24.7 66 8 0.7 0.7	150 (100%)
5.	It is possible to decrease or stop the bone loss around the dental implant by blocking the pro inflammatory factors ?	Strongly agree Agree Neutral Disagree Strongly disagree	40 68 39 2 1	26.7 45.3 26 1.3 0.7	150 (100%)
6.	Can the micro motion in dental implant affect the occlusion ?	Strongly agree Agree Neutral Disagree Strongly disagree	14 65 67 4 0	9.3 43.3 44.7 2.7 0	150 (100%)
7.	Any systemic disease alter success rate of dental implants ?	Strongly agree Agree Neutral Disagree Strongly disagree	111 29 7 3 0	74 19.3 4.7 2 0	150 (100%)
8.	Are computer guided implants convinent than the conventional one ?	Strongly agree Agree Neutral Disagree Strongly disagree	71 67 9 3 0	47.3 44.7 6 2 0	150 (100%)

complications whereas screw loosening and fracture is considered as the technical complication of implant (24%).

CONCLUSION

The results of this study among the selected sample showed that the majority of questioned subjects knew about the dental implants and accept it as a treatment option for replacing missing teeth.

REFERENCES

Mgbeokwere U, Okoye L, Ekwueme O. A survey of the knowledge of dental implants as a choice in treatment of edentulous jaws among health workers in Government Dental Clinics in Enugu. Ann Med Health Sci Res. 2011;1:91-5.

Shergill DK. Awareness of dental implants- a key of acceptance of treatment modality. J Adv Med Dent Scie Res 2017;5(3):40-43

Schenk RK, Burser D. Osseointegration: A reality. Periodontol. 2000;17:22–35.

Ramesh C, Nivedeta M, Neevaj KC. Awareness of Dental implants as a treatment choice in urban Indian population. Int J Oral Maxillofac Implant. 2010;25(2):305–308.

Taghizadeh G, JafariA, PoorgholiN, Iranizadeh H. Evaluation of knowledge, attitude and practice of Tabriz's school health workers about oral and dental health. Irn J Med Hypothesis Ideas. 2008;2:264–273.

Davis JE. Understanding peri-implant endosseous healing. J Dent Edu. 2003;67:932–949.

Ganeles J, Wismeijer D. Early and Immediately restored and loaded dental implants for single-tooth and partial-arch applications. Int J Oral Maxillofac Implants. 2004;19(suppl):92– 102.

Misch CE, Wang HL, Misch CN, Sharawy M, Lemons J, Judy KW. Rationale for the application of immediate load in implant dentistry: Part II. Implant Dent. 2004;13:310–321.

Giedre BF, Wellington MM, Katia FG, Hugo NF. Effects of mandibular fixed implant-supported prostheses on masticatory and swallowing functions in completely edentulous elderly individuals. Int J Oral Maxillofac Implants. 2009;24(1):576–582.

Attiah EMN, AlGendy AA, Mostafa TMN. Effect of dynamic cyclic loading on screw loosening of retightened versus new abutment screw in both narrow and standard implants (in-vitro study). Int J Implant Dent. 2020;6:30.

Quirynen M, De Soete M, van Steenberghe D. Infectious risks for oral implants: a review of the literature. Clin Oral Implants Res. 2002 Feb;13(1):1- 19. doi: 10.1034/j.1600-0501.2002.130101.x. PMID: 12005139.

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