



Evaluation of awareness of dental implant treatment in a population of Vadodara district

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Abstract

Introduction: A dental implant is an artificial prosthesis with the various titanium based single or multiple screws fitted into the oral cavity to provide partial or full mouth prosthesis. As the new age advances, the era of modern dentistry has seen a robust growth in implants. The main aim of this study is to gain access regarding the awareness of dental implant treatment in population, with regard to the age variation amongst the young and old population, and awareness amongst female and male.

Materials and method: A questionnaire based survey consisting of 12 questions regarding the awareness of dental implant treatment selected randomly in population of Vadodara district, distributed randomly in various clinics of Vadodara district through google forms and printed questionnaire.

Results: The study reveals that age range varying from 18 to 40 years are 47.9% and from 41 to 70 years were 39.6% aware regarding the dental implant treatment whereas considering the female and male ratio, 50.3% female were more aware as compared to 49.7% male in general population of Vadodara district.

Conclusion: The study shows that there is lack of awareness regarding the dental implant treatment in old population as compared to young population. There is lack of knowledge in male population as compared to female in general patient population of Vadodara district. More and more of dental camps should be organised targeting the old and male population of Vadodara district.

Keywords: dental implant, prosthesis, titanium

Introduction

Going through the history of mankind, substantial weightage has been given to a complete set of teeth for functional as well as aesthetic motives^[1]. Modern Dentistry emphasizes on restoring the patient's function, normal contour, speech and overall health. This can be done either by removing the caries (decay) from the affected tooth or by repairing/replacing multiple teeth. Implant dentistry fulfils this requirement in all its uniqueness regardless the magnitude of the atrophy, injury, discomfort or disease inflicting the stomatognathic system^[2]. Recent times have brought the number of implants inserted worldwide close to 1 million annually^[9]. It has been observed that more than 90% dental interfacing surgical specialists have provided dental treatment on a routine basis in their regular practice, a number of general dentists have integrated the usage of implants to support fixed and removable prosthesis which has risen substantially from 65% to 80% in a span of 15 years and about 90% prosthodontists restore implants regularly for their patients^[4-8].

Literature pertaining to implant dentistry has plentiful publications focussing on Quality Assurance based on extensive research. However only a few of them shed light on the opinions of laymen concerning implant dentistry^[10]. There have been considerable breakthroughs in the evidence-based literature on implant dentistry, however as little as 2% of published work deals with patient-centric issues^[11]. Furthermore, the 4th European Workshop on

Periodontology has significantly discussed the necessity of patient-centric consequences after implant treatments^[12]. Unfortunately studies conducted and the literature published on the patient's opinion of the treatment and the psychological impact that comes with it are extremely limited^[13, 14]. Hence, there is a growing necessity to conduct adequate surveys and publish effective literature to assess and document the public outlook as well as general awareness regarding dental implants.

With the changing world and the advancements in dentistry where most of the efforts are given to save the tooth or the loss to be fulfilled with something like natural-dental implants have made a great impact on the world. But considering the urban population of a city such as Vadodara in Gujarat state where you find the mixture of everything it was very necessary to conduct a survey if the patient population knows about the advancements in modern dentistry and if were ready for it.

Materials and methods

This questionnaire^[15] based cross sectional study consists of 12 questions. These basic questions were based on knowledge of the participants regarding dental Implants as an alternative treatment in dentistry. The questions and their responses can be seen in Table 1.

Vadodara being the third largest city of Gujarat, it has a population of mixed age group in a good ratio. So 12 private clinics were chosen for the study in which all the zones of

Vadodara district were covered. Due to this reason, sample size of 312 patients is taken into consideration randomly who were visiting the 12 private clinics all over across Vadodara district. The mode of questionnaire consisted of both google forms as well as hard copies. In both the cases, a consent form was provided with all the information regarding the foregoing study explained to the patients as both hard and soft copies. Prior consent was taken from all the patients following the distribution of the questionnaire. The study was conducted between the time periods of 16th May 2019 to 16th July 2019.

Inclusion criteria consisted of individuals who were above 18 years of age and could understand English. Exclusion criteria were individuals below 18 years of age and those who were seriously ill, mentally challenged, physically handicapped, pregnant women and patients who do not read or write the English language.

To obtain detailed demographic information, the participants were allocated to several subgroups based on their gender as female and male with different age groups (18-30, 31-50, 51-70, 71 and above).

Completed questionnaires were coded, the data at hand has been tabulated before analysis. The distribution of responses was examined using frequencies and percentages. Descriptive statistics were presented for the scores of questionnaire domains in the groups based on gender and age.

The ethical clearance was obtained from the Institutional Ethical committee.

This study was conducted in adherence to relevant national and international laws and followed the GCP guidelines and was in accordance with the STORBE statement for cross-sectional studies.

Results and discussion

The demographic distribution of sample is described in table 2.

A total of 316 samples were collected in which 49.7% (n=157) males and 50.3% (n=159) females reported that they were aware about the alternative treatment as implants in dentistry. The differentiation according to gender as well as age groups as per their awareness has been provided in Table 2 below.

As observed in Table 1, 9.5% of the patients were unaware about the dental implants as an alternative option whereas amongst the population 90.5% are aware about dental implants as a treatment. The patient population aware about the dental implants were given various options as seen in Table 1, but it has been observed that the major source of information came from dentists which amount to 61.4% as seen in Figure 1.

When asked if they want more information on dental implants to which a majority of 85.1% agreed upon and out of those 69.3% wanted more information from dentists, as observed in Table 1 and Figure 2.

Distribution of responses from the participants to the questions based on their knowledge of dental implants such as location, longevity, maintenance and the reasons for failure or loss of dental implants can be observed in Table 1 and Figure 3(a, b, c).

When asked about the main disadvantages of dental implants, high cost of treatment was considered to be prime reason which is about 51.3% as observed in Table 1 and Figure 4. About 54.7% of the population knew someone

who had undergone dental implant treatments. When asked about the satisfaction levels, the patient population who had undergone dental implant treatment, 79.4% population have marked their response as satisfied and 20.6% have marked themselves as not satisfied. When the patient population were asked if they would consider dental implants as an option to their treatment a majority of 85.4% responded in affirmation as observed in Table 1.

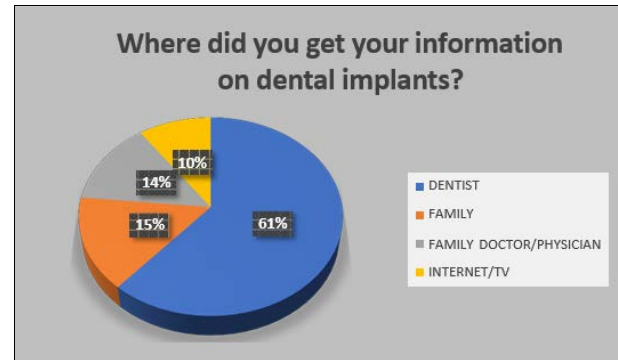


Fig 1

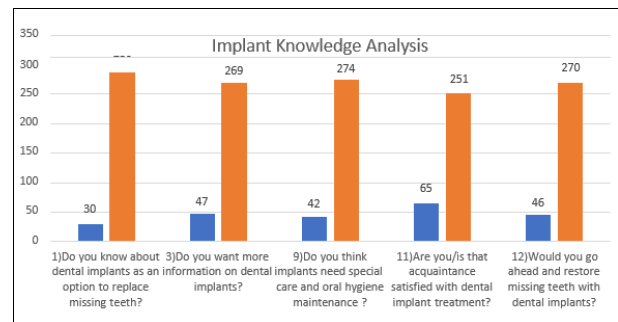


Fig 2

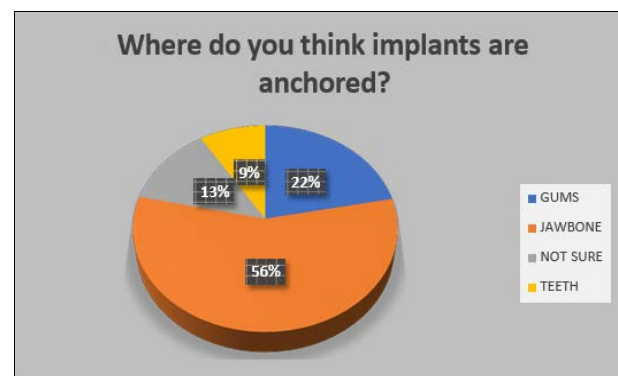


Fig 3a

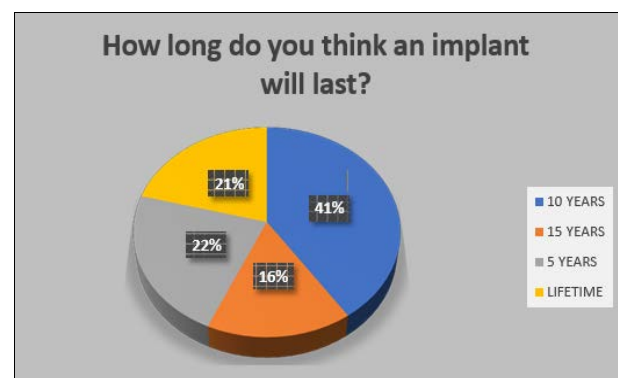


Fig 3b

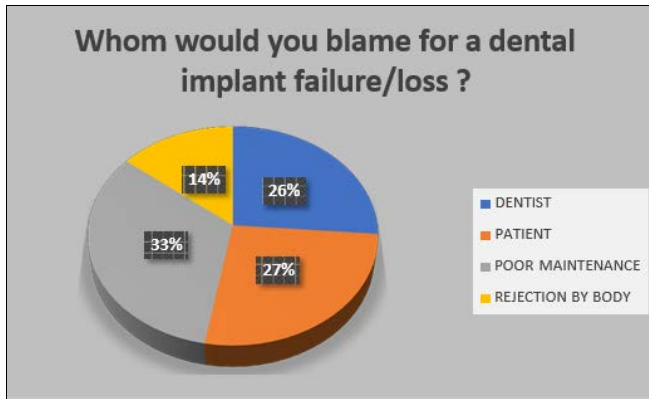


Fig 3c

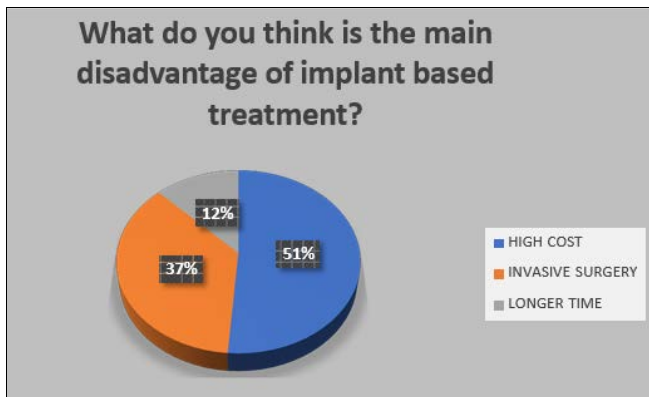


Fig 4

Discussions

In the following study, awareness regarding dental implants were recorded at a total no. of 90.5% which is much higher than the 77% as mentioned in the previous study done by Christa, *et al* [16] whereas on the other hand we see a study done by Pragati *et al* [17] where in out of 200 urban dental patients, only 38% had heard about the dental implants as a dental treatment modality, most of them being in the age group of 25-44 years (35.5%), with no significant statistical difference between males and females. Out of these, 55.2% had heard it from their dentist and the rest had heard it from other sources like magazines and electronic media. As seen in the current study, the male population has lesser amount of knowledge as compared to female population [Table 2]. When we see the age group comparison, it has been recorded that the age group between 31-40 had the highest amount of awareness of about 31.6% whereas ages above 70 had just 1.3% in terms of awareness [Table 2]. However, when compared to study done by Chowdhary *et al*, in which higher awareness was observed in males as compared to females [18]. It has been noted that females are more concerned about aesthetics, hence, they tend to stay more forward regarding the treatment information which could be better aesthetically, rather than functionally.

The number of participants who got the information via dentists about the dental implants has a highest consideration rate of about 61.4%. Whereas when compared to media and family it was lower at about 15.2% and 9.8%

[Table 1]. The findings are very much similar to the findings seen in Pommer *et al*. and Tepper *et al* [19, 20].

There has been an increased demand regarding the dental implants information and more people want to know from dentists which is about 69.3% in terms of numbers which is quite similar to previous studies [19, 20]

Due to lack of knowledge, 56.6% participants said that dental implants to be fitted into jaw bone and 12.7% answered into the teeth [Table 1]. Which is the reason that majority of population about 40.5% opted for 10 years of longevity for dental implants and 20.9% opted for lifetime [Table 1]. Patients complained poor maintenance as reason of loss of dental implants of about and about 26.3% blamed the dentists for their implant failure [Table 1]. In an another question it was asked if poor maintenance could be reason for implant failure to which about 86.7% opted Yes [Table 1] proving similarity to previous studies [19, 20].

Detailed analysis of the responses submitted by the participants [Table 1] suggest that almost two-thirds of them have found high cost as the biggest disadvantage of dental implant treatments, apart from this the invasive nature of the treatment and the completion rate have also been marked as major disadvantages. Previous studies indicate similar outcomes [19, 20]. Various studies also suggest a valid fear in the patient’s mind regarding dental implant treatment and this psychological turmoil creates a deterrence of the treatment method [21]. As discussed above, the cost of dental implants is high and borne entirely by the patient. This causes patients to either procrastinate the treatment or wait for their medical insurance to cover the same. Solutions to this problem are limited, one of them being the government’s support to provide such treatments at a cheaper rate for patients with lower socioeconomic status.

However, as per the data available in Table 1 54.7% of the participants who are aware of the dental implant treatments has either been operated upon or have been acquainted with a patient. Out of those 79.4% participants have marked their response satisfied with the treatment. Furthermore, upon asking their response regarding the restoration of missing teeth via dental implants, 85.4% of the participants aware of such treatments have agreed to undergo implant-based treatments [Table1]. This concludes that the participants who possess the knowledge or experience of the treatment are generally satisfied with the result and are more likely to opt for implant-based treatment to restore/replace missing teeth [15].

The observations for the undertaken study suggest a general lack of awareness about implant-based treatments in the Vadodara district population. However, a surge of interest has been observed in recent times by individuals to gain knowledge and understand the implant-based treatments from their regular dental practitioner. As discussed in the previous paragraph, people who are aware of implant-based treatment are more likely to opt for it in the future. As a result, it is expected from dental practitioners to educate the general public regarding the benefits and scaling of the dental implant-based treatments.

Table 1: Distribution of various questions regarding knowledge of dental implants and their responses by participants

Questions	Responses	
1) Do you know about dental implants as an option to replace missing teeth?	No	30 (9.5%)
	Yes	286 (90.5%)
2) Where did you get your information on dental implants?	Dentist	194 (61.4%)
	Family	48 (15.2%)
	Family Doctor/Physician	43 (13.6%)
	Internet/TV	31 9.8%
3) Do you want information on dental implants?	more	No
		Yes
		47
4) From where do you want more information on dental implants?	Dentist	14.9%
		269 85.1%
	Family	219
		69.3%
5) Where do you think implants are anchored?	Family Doctor/Physician	19 6.0%
		51 16.1%
	Internet/TV	27 8.5%
6) What do you think is the main disadvantage of implant based treatment?	GUMS	69
		21.8%
	Jawbone	179 56.6%
	Not Sure	40 12.7%
	Teeth	28 8.9%
7) How long do you think an implant will last?	High Cost	162
		51.3%
	Invasive Surgery	115 36.4%
	Longer Time	39 12.3%
8) Whom would you blame for a dental implant failure/loss?	10 Years	128
		40.5%
	15 Years	51 16.1%
		5 Years
9) Do you think implants need special care and oral hygiene maintenance?	Lifetime	66 20.9%
		Dentist
	Patient	26.3%
		84 26.6%
	Poor Maintenance	104 32.9%
Rejection by Body	45 14.2%	
10) Do you know someone with dental implant treatment?	No	42
		13.3%
11) Are acquaintance satisfied implant treatment?	Yes	274 86.7%
		No
12) Would you go ahead and restore missing teeth with dental implants?	you/is with	that dental

Table 2: Demographic distribution of the participants on the basis of awareness of dental implants.

Age	<20	7	2.2%
	21-30	66	20.9%
	31-40	100	31.6%
	41-50	83	26.3%
	51-60	40	12.7%
	61-70	16	5.1%
	>70	4	1.3%
Gender	Female	159	50.3%
	Male	157	49.7%

Conclusions

After a comprehensive study of the data at hand via the questionnaire provided to the public/patient population the following points can be concluded. The study shows a lack of awareness regarding dental implants in the older age group, however the younger age group shows positive awareness figures. It has also been observed that there is a visible knowledge gap amongst the two gender groups amongst the general patient population in Vadodara district, male patients possess lesser knowledge about dental implant treatment as compared to female patients. To bridge these gaps it is vital to understand as well as impart a proper understanding of dental implant treatments via different sources such as dental camps for various age groups discussed above.

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