

Dental Implant Knowledge Assessment as Tooth Replacement Option in Central Region of Nepal: A Cross Sectional Study

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ABSTRACT

Introduction: One of the most common complaints told by the adult patients these days visiting the dental clinics is their need to replace their missing or lost teeth posing a difficulty in eating, esthetics, speaking and swallowing.

Objective: The aim of this present study is to know about the attitude and knowledge of patients about dental implants as tooth replacement treatment modality in central region of Nepal.

Methodology: A cross sectional study was conducted in Central region of Nepal involving the patients who attended the dental OP clinics in Teaching hospitals and general hospitals. A total of eight hospitals including six general hospitals and two teaching hospitals were selected from a list of twenty hospitals.

Results: A total of 400 patients were enrolled in the survey out of which 49% were males and 51 % were females giving an almost equal ratio of males and females. The age of the study population ranged from 18-80 years with a mean of 35 years. Most of the respondents ie 252 (63%) had tertiary education. Out of the total sample size, 180 (45%) patients had missing teeth and out of that 64 (16%) got their teeth replaced.

Conclusion: According to present study, the level of dental education should be uplifted in the country and dentists along with media should provide correct and detailed information about the procedure so that people can get the maximum benefit. Also there should change in dental insurance policies so that implant can be easily afforded by the patient.

Key words: Dental implants, tooth replacement, cost, affordable

INTRODUCTION

One of the most common complaints told by the adult patients these days visiting the dental clinics is their need to replace their missing or lost teeth posing a difficulty in eating, esthetics, speaking and swallowing. [1] There can be either completely missing teeth or it could be partial and many different tooth replacement options are available these days to solve

these problems. These options include complete or partial removable dentures, fixed partial dentures and dental implants. [2]

Because of the advantages like stability, increased retention, functional efficiency and better quality of patient's life, dental implants provide the best long term results and therefore has become the best treatment option available these days to replace the missing teeth. [3] The option of

dental implant is just the simulation of the original root of tooth which is inserted surgically into the bone so as to support a single tooth replacement, a complete or partial denture or a maxillofacial prosthesis. Because of the advancement in information technology along with dentistry, patients are increasingly asking for dental implants as a tooth replacement option. Patient is much more satisfied with an implant supported prosthesis rather than the conventional prosthesis because of the advantages of tooth and bone preservation. [4,5]

There were reports of varied results in many countries about the assessment of knowledge of patients on dental implants as implied by the studies carried out. A high awareness and positive attitude was demonstrated in a survey by Zimmer et al towards dental implants. There was 43.5% awareness among Turkish population towards dental implants as option to replace missing teeth in a survey done by Ozcakir Tomruk et al whereas this percentage was about 66.4% according to a study done in Saudi Arabia. The awareness was 23.24% and 26% in urban and South Coastal population respectively in state of Karnataka of India. [6-9]

Giving all the available information about dental implants along with other treatment modalities including their advantages, disadvantages, cost efficiency, life span to the patient is very important so that he/she can choose the treatment modality based upon his/her current situation which is most suitable to the patient. There can be barriers in the unbiased selection of treatment modality by the patient if he/she is not being provided by the proper information about all the treatment options. This can lead to the biased selection and which can be discomfoting for the patient. [10,11]

As dentists are the prime source of information about dental implants as a tooth replacement modality, so it is also important to know the knowledge of dentists about dental implants. According to a study carried out by Akeredolu et al among

Nigerian dentists, 98.7% of the dentists had not used dental implants as tooth replacement modality even a single time however 42.9% of these dentists claimed that they believe that dental implants is the best way to replace missing teeth. This study revealed that may be due to lack of training, equipments or materials, there was a strong barrier between the knowledge about implants and actual implant practice among these Nigerian dentists. Another study conducted by Mgbeokwere et al also established that there was a low awareness of 9.7% about dental implants in Nigeria among health workers of government dental clinics. [12]

The aim of this present study is to know about the attitude and knowledge of patients about dental implants as tooth replacement treatment modality in central region of Nepal.

METHODOLOGY

A cross sectional study was conducted in Central region of Nepal involving the patients who attended the dental OP clinics in Teaching hospitals and general hospitals. These hospitals had a good reputation with the patients and the patients of all socio-economic classes visited the hospitals. A total of eight hospitals including six general hospitals and two teaching hospitals were selected from a list of twenty hospitals. In one of the teaching hospitals, a pilot study was carried out so as to check the clarity of questionnaire and later on corrections were made.

The target population was the patients who got registered in the outpatient diagnosis clinics and questionnaires were administered to the target population with the help of an interviewer. Only those patients were included in the study that were older than 18 years and could give a verbal consent after explaining the whole procedure to them. Information about educational background, implant knowledge source and patient's desire to choose dental implants to replace his missing teeth were

all included in the questionnaire. This survey was carried out over a period of two months.

Using SPSS software, the data collected was analyzed and chi-square test was used to find out the significance which came out to be $p < 0.05$.

RESULTS

A total of 400 patients were enrolled in the survey out of which 49% were males and 51 % were females giving an almost equal ratio of males and females. The age of the study population ranged from 18-80 years with a mean of 35 years. Most of the respondents ie 252 (63%) had tertiary education. Out of the total sample size, 180 (45%) patients had missing teeth and out of that 64 (16%) got their teeth replaced (table 1). The most common options of tooth replacement were removable partial denture and fixed partial denture.

Table 1: Awareness of dental implants according to socio-demographics of subjects

Age (years)	Knowledge about implants			p-value
	Yes	No	Percentage	
Less than 19	3	21	6%	0.21
20 - 39	48	184	58%	
40 - 59	19	85	26%	
60 - 79	2	38	10%	
Total	72	328	100%	
Sex				0.71
Male	36	160	49%	
Female	39	165	51%	
Total	75	325	100%	
Level of education				0.01
No education	1	11	3%	
Primary Education	2	22	6%	
Secondary education	8	104	28%	
Tertiary Education	69	183	63%	
Total	80	320	100%	

Table 2: Level of awareness about dental implants along their life span

Knowledge of dental implants	Number (%age)
Yes	80 (20%)
No	320 (80%)
Total	400 (100%)
Knowledge of site of placement	
Gums	26 (32.5%)
Jaw bone	26 (32.5%)
Don't know	28 (35%)
Total	80 (100%)
Knowledge about life span	
<10 years	3 (3.75%)
Lifelong	18 (22.5%)
Don't know	59 (73.75%)
Total	80 (100%)

After the assessment of the knowledge of implants, it was assessed that only 80 (20%) of the patients had knowledge about implants. When asked about the location of placement of implant, 28 (35%) of them did not know about the site of placement of implants. Most of the participants ie 59 (73.75%) did not had an idea about the lifespan of implants (table 2).

More than half of the participants who had knowledge about dental implants ie 48(60%) were ready to replace their missing teeth with dental implants. The others were not ready for implant placement because of the fear from surgery or cost issues. The most common source of information about dental implants was the dentist followed by internet, then media, some friends or other oral health care professionals and at last the medical doctors and nurses.

There was higher number of females as compared to males who knew about dental implants but this difference was statistically not significant ($p = 0.70$). The young adults in the age group of 20-39 years had a higher knowledge about implants but this knowledge kept on decreasing with increasing age and this difference was also statistically insignificant ($p = 0.21$). The knowledge about implants significantly increased with educational background as those subjects who had tertiary education had knowledge about implants ($p = 0.01$).

DISCUSSION

The teaching hospitals and other general hospitals provide dental treatment to the general public at quite reasonable rates in Central Nepal so that the people from all socioeconomic background can get the treatment done and have a healthy smile. So, there was no biasing in the selection of subjects based upon the socioeconomic status. Still the knowledge about dental implants as a good tooth replacement option was low in the study subjects. As almost half of the study subjects (45%) had their teeth missing due to any reason, still the main modes of tooth replacement were found to be removable and fixed partial

dentures. This finding was in correlation with one of the older studies which depicted that most common form of treatment option in case of missing teeth tends to be partial dentures and this finding can be supported by the reason that partial dentures are not much expensive and can be easily afforded by the patient.

When compared with developed countries like America, Austria and Norway which had the levels of awareness ranging from 77%, 72% and 70% respectively, the knowledge of implants displayed by the study subjects in Nepal was significantly very low (20%). This level was similar to that of awareness in neighboring country India (23.24%) and the reason that can be attributed to this low level of awareness could be that both the nations are not economically that sound when compared to the developed countries and development is still going on in these nations. Another study conducted by Gbadebo et al also concluded the similar results (28.9%) in the participants of his study.^[1] There was no significant difference in the knowledge about dental implants among the different age groups but still there was higher percentage of subjects knowing about dental implants in younger age group of 20-39 years and this finding was in correlation with a study done in Malaysia where the age group of 21-40 years showed higher knowledge about dental implants as compared to other age groups. The reason which can be thought of for this difference could be more access to media, change in attitude of younger generations towards the advancements in medical and dental field along with more interest of coming generations towards their oral health care. In our study, there was a significant difference in the knowledge about implants among the educated people as compared to uneducated ones ($p = 0.01$).

As reported by Ozcakir Tomruk et al, the results of our present study also suggested that the prime source of information among general public about implants are the dentists which is also

supported by many other studies.^[2] But the dentists actually practicing implant dentistry are still very low in this country as also suggested in a study by Akeredolu et al. The reason that could be attributed to this low dental implant practice could be deficient equipments, materials or training in the respective field. So, the country requires frequent workshops, seminars, lectures and hands on courses in the respective field so that the local dentists could be trained and enlightened about the particular subject themselves. The present study also resulted that the next major sources of information about dental implants to general public is media and internet as concluded by many other studies. So the nation needs to strengthen its media and there should be more and more information about the particular topic on the internet but all this information should come from a reliable source as wrong information could do much more harm than the benefit. A regulatory body should be appointed to keep a check on the reliability of the source of information.

Even after the fact that 20% of the total study subjects claimed that they know about the dental implants, still most of them had wrong information about the implants as treatment modality. Many of the subjects did not know that implants are placed in mouth and many reported that they are placed in gums. Only a few actually knew that the implants are placed in jaw bones so that they can help with the chewing. Therefore, our present study reported that there was a big level of wrong and partial information in the study population when it comes to dental implants as a tooth replacement option. When these subjects were asked about the life period of implants, most of them had no idea about the information and few of them had weird expectations of life long period. So, there is a need to educate general public about dentistry and newer treatment options available as the present study indicated a high level of wrong information and

misconceptions about dentistry among general public.

According to the results of our study, the major disadvantages of dental implants are its high cost and unaffordability by the patient which makes them the major reasons why people tend not to go for implants as a tooth replacement option. Many other studies have also concluded that high cost of implants is the major factor for the hindrance of dental implants to become the people's choice when it comes to replacement of a tooth. The system of dental insurance which covers implant treatment should be incorporated in the system so that patient can easily afford the best treatment. Dentists along with media and internet should come up with detailed information about the merits and demerits of other treatment options so that cost does not remain the only deciding factor for the patient and he could make a correct informed decision. The other factor after cost which leads to non-acceptance of dental implants as first choice for tooth replacement is fear from surgical procedure and this finding is in accordance with many other studies which came to the same conclusion. This finding needs the detailed description of procedure by the dentists and media that placement of implants is a minor surgical procedure and not a major one. This again necessitates the improvement of dental education in the country so that the common public can be enlightened about this miraculous procedure.

CONCLUSION

The present study concluded that a very less percentage of study population had knowledge about the dental implants as tooth replacement option and that too was exhibited by the educated part of the subjects but most of the people exhibiting knowledge about dental implants had wrong or partial information. Those people who had missing teeth also don't want to get dental implants as tooth replacement because of cost factors and less

affordability. So, according to present study, the level of dental education should be uplifted in the country and dentists along with media should provide correct and detailed information about the procedure so that people can get the maximum benefit. Also there should change in dental insurance policies so that implant can be easily afforded by the patient.

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How to cite this article: Pasha KSA, Pandav G, Singla N. Dental implant knowledge assessment as tooth replacement option in central region of Nepal: a cross sectional study. *International Journal of Research and Review*.2018; 5(5):1-6.
