



## Knowledge and Awareness Regarding Dental Implants among Patients Attending a Tertiary Care Center

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### ABSTRACT

**Introduction:** Loss of natural teeth is a debilitating and irreversible process, which leads to functional, cosmetic and psychological morbidities. Dental implant serves as one of the options of tooth replacement, which are stronger, functionally effective and more durable. However, public awareness regarding it has been found to be low in Asian countries. This study was designed to know the status of knowledge and awareness of dental implant.

**Methods:** Seventy nine patients visiting dental department of Patan Academy of Health Sciences were included in this study through non-probability sampling. Data on knowledge and awareness regarding dental implants were collected through a survey after ethical approval from Institutional Review committee of Patan Academy of Health Sciences. Data entry was done in Epidata and analyzed with the help of Statistical Package of Social Sciences version 20.

**Results:** Total 33 (41.8%) of study populations choose dental implant as alternative for replacing teeth, 22 (30.4%) choose fixed dental prosthesis. 36 (45.6%) and 32 (40.5%) of population stated that long treatment time and high cost respectively as the disadvantages of dental implants. Only 12 (15.2%) were aware that dental implants are anchored in jaw bone. The source of information about dental implants was dentists for 48 (60.8%) of the patients followed by friends, media and medical doctors.

**Conclusions:** Within the limitations of this study, we conclude that awareness of patients attending tertiary care center of Kathmandu valley is low. Hence, there is a need of organizing dental education programs to create awareness about dental implants.

**Keywords:** dental implant; fixed dental prosthesis; information; knowledge.

### INTRODUCTION

For some patients, oral health care consist solely of maintenance of teeth and gums, whereas for others, it also include impact on aesthetics, self-esteem and interaction with others.<sup>1</sup> Loss of natural teeth is a debilitating and irreversible condition and is described as "final marker of disease burden for oral health," leading to functional, cosmetic and psychological morbidities.<sup>2</sup>

In order to diminish these problems, various attempts made to replace the lost dentition resembling natural teeth. Dental implants are stronger, functionally

effective and more durable than bridges and dentures.<sup>3</sup> Public awareness of dental implants was found to be high in the US citizens in 1992.<sup>4</sup> But low level of awareness was seen in Malaysian population.<sup>5</sup> In our scenario, there is limited literature regarding status of knowledge and awareness of dental implant.

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Objective of this study was to assess knowledge regarding dental implant in the patient visiting tertiary care center of Lalitpur District.

**METHODS**

This was a cross-sectional survey carried out to know awareness regarding dental implants among patients visiting dental department of PAHS from December 2017–January 2018. Ethical clearance was taken from Institutional Review Committee (IRC), PAHS and written informed consent was taken by each individual.

The study participants were enrolled using a convenience sampling technique and standard questionnaire from previous study conducted by Pommer et al<sup>6</sup> was used.

A total of 79 patients of above 18 years were included in the study and sample size was calculated as,

$$n = \frac{z^2 \times \sigma^2}{d^2}$$

= 75.26 = 76

Where,

n = sample size

z = Level of confidence (95%) = 1.96

= Predicated value of standard deviation = 1.40 (value obtained from previous research conducted by Ashistaru Saha et al<sup>7</sup>)

d = Absolute margin of error = 5% (0.05)

Considering less than 1% of non-respondent of total sample size will not give informed consent, sample size was decided as 79.

For data collection, face-to-face interview was utilized with the standard questionnaire (translated to Nepali) in the printed form. The questionnaire addressed information like; general information, have you undergone treatment for dental implants, knowledge of dental implants, sources of information, have you seen implant in any other patient, choice of treatments regarding replacement of missing teeth, various constraints in implants treatment etc.

Data entry was done in Epidata and was exported to Statistical Package for Social Sciences (SPSS) version 20 for data analysis. Descriptive statistics were calculated and displayed with the help of frequency distribution tables. Informed consent was taken from all the patients. Ethical approval was taken from Institutional Review Committee of PAHS.

**RESULTS**

This study included total 79 volunteers of which 38 were males and 41 were females with the mean age of 40.90 years.

**Table 1. Questions on dental situations.**

		n (%)
Previous history of implant therapy	Yes	5 (6.3)
	No	74 (93.7)
Present history of dental prostheses	Yes	7 (8.9)
	No	72 (91.1)
Contentment with a removable denture (n = 07)	Yes	3 (42.8)
	No	4 (57.2)

**Table 2. Questions on alternatives for replacing teeth.**

		n (%)
Alternatives for replacing teeth	Implant-supported reconstructions	33 (41.8)
	Removable partial dentures	24 (27.8)
	Removable complete dentures	0
	Fixed partial dentures	22 (30.4)
Subjective feeling regarding information about implants	Very well	6 (07.6)
	Well	5 (06.3)
	Moderately well	41 (51.9)
	Poorly	11 (13.9)
	No answer	16 (20.3)
Subjective feeling regarding information about alternatives for replacing teeth	Very well	7 (8.9)
	Well	5 (6.3)
	Moderately well	40 (50.6)
	Poorly	10 (12.7)
	No answer	17 (21.5)

**Table 3. Questions on advantages and disadvantages of different dentures.**

		n (%)
Advantages of non - removable vs. removable dentures	Less annoying in the mouth	19 (24.1)
	Esthetics (look nicer)	23 (29.1)
	Are as good as one's own teeth in function	23 (29.1)
Disadvantages of implant-supported dentures/bridges	Like a foreign body	14 (17.7)
	High costs	32(40.5)
	Need of surgery	11 (13.9)
	Long treatment time	36 (45.6)

**Table 4. Questions on anchorage and life of implants.**

			n (%)
Where the implants are anchored?	the Jaw bone are	Jaw bone	12 (15.2)
		Gingiva	28 (35.4)
		Adjacent teeth	14 (17.7)
		No answer	25 (31.6)
Life of an implant	an	> 5 years	10 (12.7)
		> 10 years	6 (7.6)
		> 20 years	3 (3.8)
		Lifetime	27 (34.2)
		No answer	33 (41.8)

**Table 5. Sources of information about alternatives for replacement of teeth.**

			n (%)
Sources of information about dental implants	of	Dentists	48 (60.8)
		Friends	7 (08.9)
		Media	6 (7.6)
		Medical doctor	4 (5.1)
		Other	7 (8.9)
		No answer	7 (8.9)
Sources of information about alternative for replacement of teeth	of	Dentist	54 (68.4)
		Friends	5 (6.3)
		Media	6 (7.6)
		Medical doctor	5 (6.3)
		Other	2 (2.5)
		No answer	7 (8.9)

**Table 6. Questions on expectations about the source of information.**

			n (%)
Expectation about source of information about implants	Dentist	Dentist	55 (69.6)
		Friends	4 (5.1)
		Media	7 (8.9)
		Medical doctor	6 (7.6)
		Other	2 (2.5)
		No answer	5 (6.3)

**Table 7. Correct response on Knowledge of Dental Implants.**

Questions on Knowledge	n (%)
Alternatives for replacing teeth	33 (41.8)
Subjective feeling regarding information about implants	6 (7.6)

Subjective feeling regarding information about alternatives for replacing teeth	7 (8.9)
Advantages of non - removable vs. removable dentures	46 (58.2)
Disadvantages of implant-supported dentures/bridges	79 (100)
Where the implants are anchored?	12 (15.2)
Life of an implant	30 (38)

For above questions on knowledge, we gave the scoring as 1 for correct response and 0 for the incorrect response. Then, all 7 questions scores were added and formulated the total mean knowledge score as  $2.7 \pm 1.13$ , where minimum score was 1 and maximum score was 7.

## DISCUSSION

Dental Implants are a prosthetic device made of alloplastic materials implanted within the bone to provide retention and support for a dental prosthesis.<sup>8</sup> These are affirmed as safe and present high survival rates and minimum marginal bone loss thus regarded as the best alternative for replacing missing teeth.<sup>9</sup>

In the present study, while questioning the alternatives of tooth replacement 30.4% choose fixed dental prosthesis and 41.8% choose dental implant. However, there was limited knowledge of dental implant as only 7.6% of our study participants were well informed, which is similar to the study done by Tomruk et al<sup>10</sup> in Turkish population where 43.5% choose implants and 5.7% were well informed about this treatment. To assess the level of general knowledge of dental implants, participants were questioned where implants were anchored in the jaw. 15.2% respondents believed that they are anchored in the jaw bone, 35% in gingiva, 17.7% adjacent teeth while 31.6% did not respond. These results are in contrast to study results obtained by Pommer et al<sup>6</sup> where 65% answered as a jaw bone. Hence, shows that our sample populations have relative less knowledge regarding dental implant treatment.

In our study, more than fifty per cent of respondents stated their dentist as their source of information of dental implants and alternatives for replacement of missing teeth respectively followed by friends, media, and medical doctor. This is in agreement with Kholi et al,<sup>5</sup> Pommer et al<sup>6</sup> and Deeb et al<sup>11</sup>. However, studies conducted by Zimmer et al<sup>4</sup> stated media as main source of information.

About one fourths 24% of those questioned, reported that non removable dentures were less annoying in the

mouth, 29% believed to be esthetic and 29% reported it as good as own teeth during function. These values were lesser than the values obtained by Kohli et al<sup>5</sup> in Malaysian population where they obtained, 51.4% of those questioned reported that non-removable dentures were more comfortable in the mouth, 47.8% defined it to be better in appearance and 55.6% reported it to be as good as own teeth in function.

While questioning the life of implant, 41.8% had no answer, 34.2% said life long and 7.6% said more than five years. Unlike in the study done by Ozcakar Tomruk et al<sup>10</sup> where 15.6% had no answer, 33.0% said life time and 26.8% said more than 10 years. The disadvantages of implant therapy, according to volunteers are high cost 40.5%, long treatment time 45.6% and need of surgery 13.9% which was similar to the study done by Kholi et al<sup>5</sup>, Chhabra et al.<sup>12</sup>

Total knowledge score, when calculated in our study as  $2.7 \pm 1.13$ , where minimum score was 1 and maximum

score was 7, which was lower than the knowledge value in the study done by Suprakash et al., where they got the value as  $4.1 \pm 1.17$ . These results shows that knowledge score was low in our study population.

## CONCLUSIONS

Within the limitations of the study, we concluded that only less than half of sampled populations choose dental implant as the alternative of tooth replacement. Knowledge score when calculated was minimum, which showed less awareness among them. Hence, a dental education program is necessary to organize for creating awareness about the dental implants, choosing right treatment options for replacement of missing teeth.

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