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PATIENTS' AWARENESS OF DENTAL IMPLANTS AS AN OPTION FOR TOOTH REPLACEMENT: A SURVEY IN KATHMANDU VALLEY, NEPAL.

Dental Science

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ABSTRACT

Currently, dental implants are widely accepted as prosthetic treatment of completely or partially edentulous patients. The aim of this study was to evaluate patients' knowledge about methods of tooth replacement and assess awareness, motivation and expectation of dental implants. Descriptive cross-sectional questionnaire survey was conducted among 405 partially edentulous patients who visited different dental colleges in Kathmandu valley. Out of 405 participants, only 36.3% were aware about dental implants and majority of them (65.9%) had heard about it from dentists but only 13.1% preferred the treatment for replacement of missing teeth. The main motivating factor for choosing dental implant (56.6%) was avoidance of damage to adjacent teeth and the major constraint (40.5%) for not choosing the treatment was its high cost. The survey concluded that 63.7% of study population was unaware of dental implants and in developing countries like Nepal, where use of dental implants are currently on the rise, patients do not choose this treatment due to high cost and lack of information about it.

KEYWORDS

Missing teeth, Dental implant, Awareness

Introduction

Face is regarded as a symbol of "self" and a smile as a window into one's personality[1] and teeth play important part in maintenance of a positive self image.[2] So loss of teeth affect both an individual's appearance and functioning, with negative impact on psychological and social wellbeing.[3] Many people replace missing teeth with dentures, but attitudes towards them are less than favorable.[4] Since the introduction of titanium implants for intra-oral use in the late 1950s, it has become a viable option for oral rehabilitation of partially and completely edentulous patients.[5] Implant supported prosthesis has proven advantages like increased masticatory efficiency, maintenance of the bone, improved function, phonetics, aesthetics, etc.[6] There is a variation in level of awareness about dental implant treatment among several studies in different countries.[7] In a survey done among 120 American subjects, public awareness and acceptance of dental implants were found to be high and have general positive attitude toward dental implants.[8] Reports from Finland found low levels of awareness[9] and from Saudi Arabia level of awareness about dental implant was 66.4%.[10] The same cannot be said for developing countries with poorer access to dental care, where there is a large variability in the acceptance of this newer option of tooth replacement.[8] To authors' knowledge there is very few existing data regarding the patients' awareness about dental implants in Nepal. Considering this, the study is conducted with an aim to evaluate the patients' knowledge, awareness and acceptance of dental implants as a treatment option for replacement of missing teeth.

Materials and Methods

Ethical approval for the study was obtained from Institutional Review Committee of Kathmandu Medical College. This descriptive cross-sectional study was done among dental colleges in Kathmandu valley. Sample size for the study was formulated using estimated prevalence of 40%. A total of 500 questionnaires were distributed, out of which only 405 completely filled questionnaires were collected. The study was conducted from March 2016 to July 2017. Partially edentulous patients meeting the inclusion criteria: adults 18 year or more, with no previous dental implant treatment were randomly selected. Written informed consent was obtained from the participants. Based on relevance to the study population in present study, we adapted the previously used questionnaires to our study setting.[6-8,11] The content of the questionnaire was prepared bilingually (English and Nepali) by two dentists fluent in both Nepali and English to correspond with the reading and comprehension levels of the participants with different levels of education and improve the respondents understanding of the questions and enable completion of the questionnaire. A standard self-explanatory questionnaires with 12 closed ended questions were delivered to the participants and eligible illiterate were interviewed by four examiner involved in four different dental colleges of Kathmandu valley through interactive discussion based on the questionnaire. The aim of this study was to evaluate patients' knowledge about methods of tooth replacement and assess awareness, source of information, knowledge, motivation and expectation of dental implants. The validity of the questionnaire was assessed by three specialist form the Department of Prosthodontics. A pilot study conducted among 15 patients by using the questionnaire indicated good reliability (α=0.83).

Descriptive statistical analysis was used to assess the percentage of respondents in each category using Statistical Package for the Social Sciences version 20 software.

RESULTS

The ages of the study participants ranged from 19 to 78 years, with a mean age of 37.4±13.46 years. Out of total 405 participants, 204 (50.4%) were female. When participants were asked whether missing teeth should be replaced, 229 (56.5%) were in favor of replacing missing teeth, 138 (34.1%) considered replacing missing teeth only if it is in visible zone and 38 (9.4%) considered that missing teeth need not be replaced.

For the questions about assessment about different methods in replacing missing teeth, 328 (81.0%) were aware about removable partial dentures, 250 (61.7%) were aware about fixed partial dentures, only 147 (36.3%) were aware about dental implant for replacement of missing teeth and 77 (19.0%) were not aware of any of the methods..

Among 147 participants who were aware about dental implants, dentists were the source of information about dental implant for 100 (68.1%) participants, followed by personal communication and patient information boards and the percentages of sources of information is listed in Table 1. The value totals more than 100, because few of the participants had more than one source of information.

Table 1: Different sources of information about dental implant (n=147)

Source of information	Frequency	Percent (%)
Dentist	100	68.1
Print advertisements, social media	15	10.3
Personal communication	18	12.3
Patient information board	18	12.2

Among 147 participants who were aware about dental implants, 91 (61.9%) had some knowledge about it, 52 (35.4%) had no knowledge at all and only 4 (2.7%) had lots of knowledge about dental implants and 135 (91.8%) were willing to know more about it.

Out of 405 participants, 53 (13.1%) participants preferred dental implants for replacement of missing teeth. Percentages of preferred treatment modality for replacement of missing teeth are depicted in Table 2.

Table 2: Preferred treatment modalities for replacement of missing teeth (n=405)

Treatment modality	Frequency	Percent (%)
Removable partial denture	130	32.1
Fixed partial denture	135	33.3
Implant	53	13.1
No treatment	87	21.5

The main motivating factor for choosing dental implants for the replacement of missing teeth was avoidance of damage to the adjacent teeth. The percentages of different motivating factors are listed in Table 3. The value totals more than 100, because for some patients there was more than one motivating factor.

Table 3: Motivating factors for choosing dental implant for replacement of missing teeth (n=53)

Motivating factor for choosing for dental implant	Frequency	Percent (%)
Avoid damage to adjacent teeth	30	56.6
Function	18	35
Comfort	11	26.5
Appearance	9	17.1
Positive experiences	2	3.8
Dissatisfaction form other prosthesis	1	1.9

Out of 53 participants, majority (84.9%) expected improved appear ance and functions after replacement of missing teeth with dental implants and 33 (62.3%) considered that dental implant require more special care and hygiene maintenance than natural teeth and 9 (17.0%) were unknown about amount of care required.

Among those who were aware but did not prefer dental implants, 38 (40.5%) stated that high cost followed by lack of information (27.7%) was the reason for not choosing the treatment for replacement of missing teeth.

Discussion

Loss of natural teeth either due to caries, periodontal disease, trauma, congenitally missing has an effect on apparent status and wellbeing of a person. In the present study, majority 328 (81.0%) of the participants were aware about removable partial denture followed by fixed partial denture and 147 (36.3%) were aware about dental implant for replacement of missing teeth. While use of dental implants is on the rise in Nepal, these results indicate inclination towards the use of removable partial dentures owing to their easier accessibility and afford-ability. The findings of this study is comparable to results of some studies in India where awareness about dental implant are 25.8%,[12] 32.30%,[13] and 33.3%.[14] Gbadebo et al.[15] reported that 28.9% were aware about the same. This might be due to low socioeconomic status and low education level among the study population. However the findings is quite low in contrast to earlier surveys conducted on this topic by Zimmer et al. in American citizens (77%),[8] Müller F et al. in Swiss population (70.7%),[16] Berge et al. in Norwegian population (70.1%),[17] Tepper et al. in Australian population (72%), [18] Johany et al. in Saudi Arabian population (66.4%),[10] Elhadi et al. in Sudanese population (68.5%),[6] and Suwal et al. in Eastern Nepal (52.6%).[19]

Dentists were the source of information about dental implant for 68.1% of the participants who were aware about dental implants, followed by personal communication and patient information boards. The findings is similar to the study conducted by Pommer et al.,[20] Chowdhary et al.,[7] Satpathy et al.,[21] Ravi Kumar et al.,11 Gbadebo et al.,[15] Kohli, et al.,[22] and Gharpure et al.[13] However, this result is contradictory to some other studies [8,10,17,18] that have media and internet as the major source followed by dentists. This could be due to the fact that majority of the people in this environment depend on professionals such as dentists, for the information and accessibility to the social media is relatively expensive and still limited to those of middle and high socioeconomic classes. Thus it is important to promote awareness about dental implant treatment through social media like newspapers, magazine, visual media etc.

Among those who were aware about dental implant only 13.1% patients' preferred dental implants and the main motivating factor for choosing the treatment is avoidance of damage to adjacent teeth (56.6%) which is associated with fixed partial dentures and cast partial dentures and expected to improve function and appearance. In studies by Alqahtani et al.,[23] and Faramarzi et al.[24] esthetic was main reason for choosing dental implant.

Thirty three (62.3%) participants considered that dental implant require more special care and hygiene maintenance than natural teeth. The finding is similar to study conducted by Tepper et al.[25] and contradictory to the finding of Satpathy et al.[21]

The main reason for not choosing dental implant by majority (40.5%) of the participants is high costs associated with implant therapy, followed by lack of information about it (27.7%). Similarly, in other studies the strongest argument against implant therapy was the high costs.[7,8,13,18,19,22,26] This could be largely connected to economic conditions of the society which could be overcome if insurance coverage is provided for dental implant treatment. In study by Gbadebo et al.[15] lack of information about the treatment modality was the major reason for not choosing dental implant. In the present study the second major reason for not choosing dental implant is lack of information about it. This indicates the need for adequate education, on dental implants, and majority of the participants claimed that they would appreciate it if they could be better informed about the advantages and disadvantages that might make them consider it as a better option. However, the findings of study done by Ellis[27] had outlined fear of pain of surgery as the main barrier for implant therapy. Furthermore, the cost was not any concern in European study for major portion of respondents.[28]

As this survey was performed in a limited population, further detailed surveys are needed to learn more about knowledge, attitude and practice of dental implant therapy and also to assess patients' quality of life after dental implant treatment. Also, results of this study cannot be generalized to the entire country of Nepal since study population was restricted to Kathmandu valley only.

Conclusions

Within the limitations of our study, out of 405 total participants, 81.0% were aware about removable partial dentures, 61.7% were aware about fixed partial dentures, 36.3% were aware about dental implant for replacement of missing teeth and 19.0% were not aware of any methods of tooth replacement. Out of those who were aware about dental implants, 68.1% had heard it from their dentists and 53 (13.1%) preferred dental implants for replacement of missing teeth. The main motivating factor for choosing dental implant is avoiding damage to the adjacent teeth (56.6%). Majority of the participants expected improved appearance and functions after replacement of missing teeth with dental implants (84.9%) and major limiting factor in not opting for implant therapy is the cost associated with the dental implant treatment (40.5%).

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Conflicts of interest
There are no conflicts of interest.

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