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Original Article

Awareness about Mandibular Implant Overdentures among Edentulous Patients in Namakkal District: A Hospital-based Study

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Abstract

Context: The total number of edentulous patients wearing mandibular implant overdentures is very less when compared to conventional dentures inspite of several advantages of mandibular implant overdenture over conventional complete dentures. **Aims:** This study aims to assess the awareness about mandibular implant overdentures among the edentulous patients who visit Vivekanandha Dental College for Women, Tiruchengode, Namakkal, using a questionnaire-based study. **Materials and Methods:** This questionnaire-based study is designed for the purpose of interviewing 300 consecutive edentulous patients. These patients have visited the Outpatient Department of Prosthodontics of Vivekanandha Dental College for Women, Tiruchengode, Tamil Nadu, between September 2015 and January 2016 extending for a period of 5 months. **Statistical Analysis Used:** Chi-square test and Fisher's exact test. **Results:** The level of awareness about implant-supported mandibular overdentures was significantly less among the edentulous patients visiting Vivekanandha Dental College for Women in Namakkal district. **Conclusions:** Almost less than one-fourth of the edentulous population are aware of implant-supported overdentures, and nearly 71% of the population were not informed about this treatment option by their dentists, media, or friends which clearly reinforces the need for proper provision of information by the dentists to the population so that the awareness about dental implants reaches the unreached.

Keywords: *Awareness, edentulous patients, implant overdentures, questionnaire, retention*

Introduction

The treatment of edentulism with traditional removable dentures is less accepted due to many factors such as anatomical, physiological, psychological, and prosthodontic factors.[1] Implant treatment has provided excellent long-term results by increased retention, stability, functional efficiency, and quality of life.[2,3]

The success rate of implant-supported crowns in partially edentulous patients was estimated to be between 96.6% and 98.5%.[4-8] The successful use of dental implants in the treatment of edentulous arches has been confirmed in various clinical studies [Figure 1].[9-11]

For practicing dentists, it is imperative to know whether today's patients are aware of dental implants as a treatment option and whether the information that they have is close to reality. Awareness among patients regarding the procedure can help in eliminating any negative image of the procedure that may have been caused due to lack of adequate communication.[12] The right kind of information, if channelized to the patients correctly, will further help in promoting this superior treatment as a treatment option among the patients.

Materials and Methods

An epidemiological study was conducted to access the level of awareness among 300 edentulous patients in

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Namakkal district. A self-explanatory questionnaire was designed to assess the patient's knowledge and awareness about mandibular implant overdentures. The questions were validated by circulating them among the prosthodontists in the hospital. The questions were then circulated among the 300 consecutive patients visiting the Outpatient Department of Prosthodontics in Vivekanandha Dental College for Women, Tiruchengode, Namakkal district, Tamil Nadu, between September 2015 and January 2016 for a period of 5 months. The patients included 132 females and 168 males. The minimum age of the patients was 32 years and the maximum age of the patients was 80 years. The responses given by the patients were analyzed statistically and the results were concluded.

Results

Age

The minimum age of the patients who were examined is 30 years and the maximum age for the patients is 80 years [Table 1]. The mean age is around 58 years. The number of male patients examined is 169 and the number of female patients examined is 131.

Awareness

The awareness of the population was found to be statistically insignificant at a *P* value of 0.873, which indicates that the awareness is very less among the edentulous patients who visited Vivekanandha Dental College for Women in Namakkal district. The awareness about this treatment procedure among the male and female patients indicates that of the 131 female patients who were examined, only 43 females (32.8%) were aware of the treatment option and of the 169 male patients, only 54 males (32%) were aware of the procedure. From the results, we can see that the awareness is significantly low in this locality with no significant difference between the male and female population. The remaining 67.7% were totally unaware of the treatment procedure [Figure 2]. Thus, among the 300 patients who were questioned, only 97 were aware and the rest 203 patients were unaware about the treatment option [Table 2].

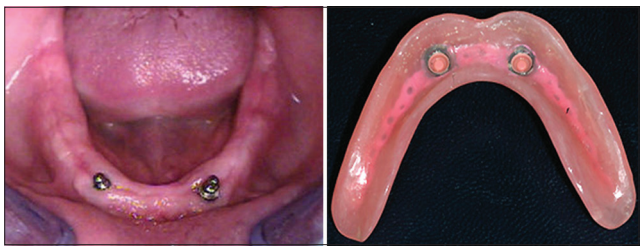


Figure 1: Mandibular implant overdentures

Source of information

When the source of information of these 32.3% of the patients who were aware of the treatment option was analyzed, it was found that among the 97 patients out of 300 who were aware about mandibular overdentures, only 42.3% of them came to know it through the dentist.

Table 1: Age descriptive statistics

Age (years)	Age
n	300
Mean	58
SD	9
Median	60
Minimum	30
Maximum	80

SD: Standard deviation

Table 2: Awareness about mandibular implant overdentures

Q1. Aware about mandibular implant-retained overdentures	Gender		
	Male, *n* (%)	Female, *n* (%)	Total, *n* (%)
Yes	54 (32.0)	43 (32.8)	97 (32.3)
No	115 (68.0)	88 (67.2)	203 (67.7)
Total	169 (100.0)	131 (100.0)	300 (100.0)
Chi-square test	**Value**		***P***
Pearson χ^2	0.026		0.873

Table 3: Source of information

Q2. How came to know about it	Gender		
	Male, *n* (%)	Female, *n* (%)	Total, *n* (%)
Dentist	28 (51.9)	13 (30.2)	41 (42.3)
Media	2 (3.7)	1 (2.3)	3 (3.1)
Friends	24 (44.4)	29 (67.4)	53 (54.6)
Others	0	0	0
Total	54 (100.0)	43 (100.0)	97 (100.0)
Chi-square test	**Value**		***P***
Fisher's exact test	5.156		0.061

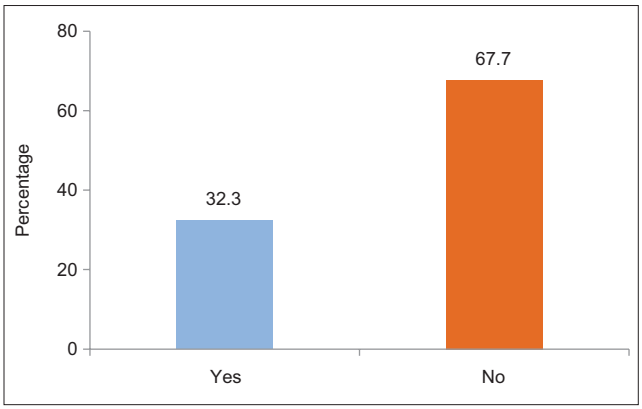


Figure 2: Awareness about mandibular implant overdentures

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Another 54.6% received the information from friends and family. The rest 3.1% of the population knew it through the media [Table 3 and Figure 3].

Patient's willingness for the treatment

After the explanation of the treatment procedure, almost 194 patients (64.7%) out of 300 patients were willing for the treatment. Only 106 patients (35.3%) were not willing to take up the treatment [Table 4].

Reason for denial

Of the 106 patients who were not willing for the treatment, nearly 67 patients (63.2%) were not willing for the treatment due to fear and confusion [Table 5]. Only 36.8% of the population were unwilling for the treatment due to cost factor [Figure 4].

Table 4: Patient's willingness for the treatment

Q4. Willing to take up the treatment	Gender		
	Male, *n* (%)	Female, *n* (%)	Total, *n* (%)
Yes	119 (70.4)	75 (57.3)	194 (64.7)
No	50 (29.6)	56 (42.7)	106 (35.3)
Total	169 (100.0)	131 (100.0)	300 (100.0)
Chi-square test	**Value**		***P***
Pearson χ^2	5.595		0.018

Table 5: Reason for denial of treatment option

Q5. If no what is the reason	Gender		
	Male, *n* (%)	Female, *n* (%)	Total, *n* (%)
Fear	20 (40.0)	16 (28.6)	36 (34.0)
Cost	20 (40.0)	19 (33.9)	39 (36.8)
Lack of awareness	10 (20.0)	21 (37.5)	31 (29.2)
Others	0	0	0
Total	50 (100.0)	56 (100.0)	106 (100.0)
Chi-square test	**Value**		***P***
Pearson χ^2	4.047		0.132

Discussion

Implant dentistry has become the most common and successful treatment procedure in the current dental practice and has become the elite choice for replacement of missing teeth. A study conducted by Grogono *et al.*[13] has proved that the patients who underwent implant treatment procedures had a considerable increase in their level of self-confidence and oral health levels and were willing to undergo the treatment procedures again. However, the awareness about the implant procedure and its success is still meager in the developing countries. This is confirmed by a survey conducted by Chowdhary *et al.* in the year 2010[14] in the Indian urban population, which concluded that only 23% of the Indian urban populations were aware of dental implants.

On searching the literatures for studies in the topic of awareness about mandibular implant-supported overdentures, it was found that the researches are very few, and hence, this study has aimed in fulfilling this defect.

The findings of this study are lower than studies conducted by Zimmer *et al.*,[15] Berge,[16] and Tepper *et al.*,[17] which reported the level of awareness as 77%, 70.1%, and 72%, respectively. This might be due to low socioeconomic status and low education level among the study population. Furthermore, the awareness level was not significantly different for males and females. A similar study conducted by Kranjcic *et al.* (2015)[1] in the Croatia population reported the awareness level to be 59%, with slight variation based on age, education level, and gender. Younger male patients and people with higher educational qualification showed more awareness.

In this study, the patients are examined face to face by the same examiner, and hence, the results though time-consuming and exhaustive are more accurate

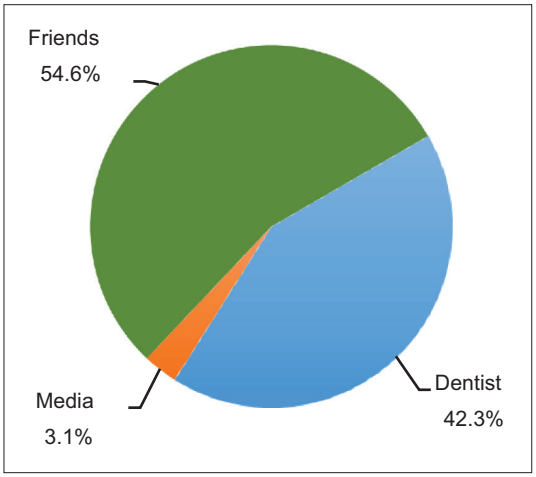


Figure 3: Source of information

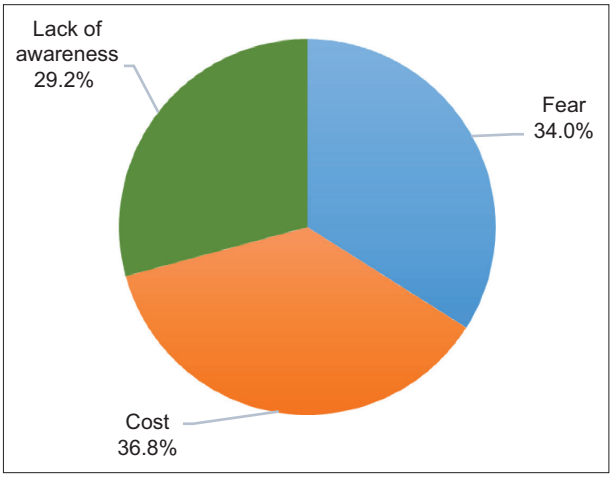


Figure 4: Reason for denial

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when compared to the other methods of data collection such as using many examiners, mails or handouts, or phone interviews. All patients in this study are selected consecutively in the order they visited the Outpatient Department of Prosthodontics of Vivekanandha Dental College for Women, Tiruchengode, Namakkal, thereby eliminating errors due to bias.

Regarding the source of information about implant overdentures, the findings of this study match with Akagawa *et al.*'s study (1988),[18] which concluded that dentists provided not more than 20% of the information. The findings of this study match with many other findings conducted in different parts of India and other places.

Almost 51% of the patients who were questioned about the need for hospitalization thought that hospitalization is needed, and nearly 50% of the patients thought that the implant-supported overdentures can lead to significant adverse effects. These results were similar to the findings by Al-Johany *et al.*[19] who said that despite the comparatively high level of awareness of dental implants, only 49.9% of those questioned correctly cited the jawbone as the host site for implants, which reveals incomplete or incorrect information about dental implants even when being aware of this treatment option.

The main drawback the patients faced with the conventional mandibular dentures was lack of retention, and the main expectation of the patients who were willing for the treatment was adequate retention and stability of the dentures. Hence, by creating awareness among the people regarding the implant-supported overdentures, we can satisfy their need for adequate retention and stability with the mandibular dentures. This problem of lack of awareness is more magnified in the developing countries due to lack of effort taken by the dentists and the concerned authorities in educating the people about dental implant treatment options. The findings of this study are in agreement with various other studies conducted in different parts of India which include Jaipur, Bhopal, Indore, Ahmedabad, and Chhattisgarh.[20-25]

A similar study conducted by Raghoebar *et al.*[26] compared retention, esthetic satisfaction, comfort, and ability to eat and speak between patients wearing implant-retained removable dental prosthesis and conventional removable partial dentures and found that the implant-supported overdentures were a favorable treatment modality among the edentulous patients. Thus, all these studies should be a stimulation for dentists to educate their patients about dental implants and treatment modalities, individually in their practices or even through organized lectures in various elderly care homes and other public places.

Conclusions

Majority of the patients are unaware of mandibular implant overdentures as a substitute for replacement of missing teeth. Dentists are found to provide inadequate source of information to the patients, and hence, dental health education involving dentists should be utilized for effective circulation of information to create awareness toward implant treatment.

Lack of awareness and fear are identified as main barrier for undergoing implant treatment and high cost is identified only as a secondary factor. Dentists should be actively involved in creating awareness not only among the patients who are visiting the clinics and hospitals but also among the general public through the organization of camps, distribution of pamphlets, utilization of media, and publication of journals and articles which could reach the public.

These steps can convince more and more patients on taking up implant-related treatment options and benefitting from it. Thus, the field of dentistry can be taken to the next level in our country.

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Conflicts of interest

There are no conflicts of interest.

References

1. Kranjcic J, Mikus A, Mehulic K, Vojvodic D. Knowledge and awareness of dental implants among elderly people in Croatia. J Prosthodont 2015;24:37-42.
2. Albrektsson T. A multicenter report on osseointegrated oral implants. J Prosthet Dent 1988;60:75-84.
3. Albrektsson T, Zarb G, Worthington P, Eriksson AR. The long-term efficacy of currently used dental implants: A review and proposed criteria of success. Int J Oral Maxillofac Implants 1986;1:11-25.
4. Engquist B, Nilson H, Astrand P. Single-tooth replacement by osseointegrated Branemark implants. A retrospective study of 82 implants. Clin Oral Implants Res 1995;6:238-45.
5. Henry PJ, Laney WR, Jemt T, Harris D, Krogh PH, Polizzi G, *et al.* Osseointegrated implants for single-tooth replacement: A prospective 5-year multicenter study. Int J Oral Maxillofac Implants 1996;11:450-5.
6. Andersson B, Odman P, Lindvall AM, Branemark PI. Cemented single crowns on osseointegrated implants after 5 years: Results from a prospective study on CeraOne. Int J Prosthodont 1998;11:212-8.
7. Scheller H, Urgell JP, Kultje C, Klineberg I, Goldberg PV, Stevenson-Moore P, *et al.* A 5-year multicenter study on implant-supported single crown restorations. Int J Oral Maxillofac Implants 1998;13:212-8.
8. Scholander S. A retrospective evaluation of 259 single-tooth replacements by the use of Branemark implants. Int J Prosthodont 1999;12:483-91.
9. Adell R, Lekholm U, Rockler B, Branemark PI. A 15-year study

[Downloaded free from http://www.jiadsr.org on Friday, June 21, 2019, IP: 103.58.116.141]

of osseointegrated implants in the treatment of the edentulous jaw. Int J Oral Surg 1981;10:387-416.
10. Adell R, Eriksson B, Lekholm U, Branemark PI, Jemt T. Long-term follow-up study of osseointegrated implants in the treatment of totally edentulous jaws. Int J Oral Maxillofac Implants 1990;5:347-59.
11. Adell R, Lekholm U, Gröndahl K, Branemark PI, Lindström J, Jacobsson M, *et al.* Reconstruction of severely resorbed edentulous maxillae using osseointegrated fixtures in immediate autogenous bone grafts. Int J Oral Maxillofac Implants 1990;5:233-46.
12. Kaurani P, Kaurani M. Awareness of dental implants as a treatment modality amongst people residing in Jaipur (Rajasthan). J Clin Diagn Res 2010;4:3622-6.
13. Grogono AL, Lancaster DM, Finger IM. Dental implants: A survey of patients' attitudes. J Prosthet Dent 1989;62:573-6.
14. Chowdhary R, Mankani N, Chandraker NK. Awareness of dental implants as a treatment choice in Urban Indian populations. Int J Oral Maxillofac Implants 2010;25:305-8.
15. Zimmer CM, Zimmer WM, Williams J, Liesener J. Public awareness and acceptance of dental implants. Int J Oral Maxillofac Implants 1992;7:228-32.
16. Berge TI. Public awareness, information sources and evaluation of oral implant treatment in Norway. Clin Oral Implants Res 2000;11:401-8.
17. Tepper G, Haas R, Mailath G, Teller C, Bernhart T, Monov G, *et al.* Representative marketing-oriented study on implants in the Austrian population. II. Implant acceptance, patient-perceived cost and patient satisfaction. Clin Oral Implants Res 2003;14:634-42.
18. Akagawa Y, Rachi Y, Matsumoto T, Tsuru H. Attitudes of removable denture patients toward dental implants. J Prosthet Dent 1988;60:362-4.
19. Al-Johany S, Al Zoman HA, Al Juhaini M, Al Refeai M. Dental patients' awareness and knowledge in using dental implants as an option in replacing missing teeth: A survey in Riyadh, Saudi Arabia. Saudi Dent J 2010;22:183-8.
20. Satpathy A, Porwal A, Bhattacharya A, Sahu PK. Patient awareness, acceptance and perceived cost of dental implants as a treatment modality for replacement of missing teeth: A survey in Bhubaneswar and Cuttack. Int J Public Health Dent 2011;2:1-7.
21. Pragati K, Mayank K. Awareness of dental implants as atreatment modality amongst people residing in Jaipur (Rajasthan). J Clin Diag Res 2010;4:3622-6.
22. Mathuriya S, Agarwal S. To study awareness of patients about implant and willingness for implant. J Appl Dent Med Sci 2015;1:10-8.
23. Kumar S, Chauhan A. Knowledge and awareness of dental implants in India: An exploratory study. Int J Oral Health Med Res 2015;2:29-33.
24. Shah RJ, Chaturvedi A, Agarval H. Dental implants as a treatment modality: Awareness survey among people of Ahmedabad. Int J Prosthodont Restor Dent 2014;4:32-8.
25. Saha A, Dutta S, Vijaya V, Rajnikant N. Awareness among patients regarding implants as a treatment option for replacement of missing teeth in Chattisgarh. J Int Oral Health 2013;5:48-52.
26. Raghoebar GM, Meijer HJ, Stegenga B, van't Hof MA, van Oort RP, Vissink A, *et al.* Effectiveness of three treatment modalities for the edentulous mandible. A five-year randomized clinical trial. Clin Oral Implants Res 2000;11:195-201.