

KNOWLEDGE ATTITUDE AND PRACTICE ON BICORTICAL PLACEMENT CONCEPT IN IMPLANTOLOGY AMONG GENERAL PRACTITIONERS.

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Abstract: This study assesses general dentists' knowledge, attitude, and practice (KAP) about the implantation of bicortical implants. Compared to traditional implants, bicortical implants have several benefits, such as stability in bone-compromised circumstances and shorter procedure times. Using a structured online questionnaire, 200 general dentists in Maharashtra participated in a survey-based study. According to the results, just 29.3% of the participants have ever used the bicortical placement concept, despite 65.5% of them being aware of it. The results indicate that although bicortical implants are widely known, there is still little use for them in real-world situations. The integration of this approach into standard dentistry practice may be facilitated by ongoing education and training.

Keywords: bicortical implants, dental implantology, knowledge attitude practice, general practitioners, dental survey.

1. INTRODUCTION:

Dental Implants were first introduced by “Per-Ingvar Branemark”. Titanium alloys are the most commonly used materials for dental implants with high rates of success and survival. Branemark observed that the human body will be osseointegrated by titanium into bone tissues (Branemark, 1985). Osseointegration of dental implants is determined by various factors. For instance, surface modification in implants (macro rough features) has shown substantial success in the survival rate of the implant by affecting the early wound healing effects, therefore enhancing the osseointegration. ⁽¹⁾

Dental implants are nowadays commonly used in modern dental practice with inevitable long-term results. Edentulous affects the patient's chewing efficiency, intake of food, and also gives the premature aging appearance. Therefore, the edentulous condition has a detrimental effect on the

oral health related quality of life. Patients are often unsatisfied with the prosthesis because of its instability during functional movements. Therefore edentulous patients can be given prostheses supported by implants that can improve masticatory function in terms of chewing efficiency and bite force (Attard and Zarb, 2004).⁽²⁾

However, implant placement is often not possible in case of anatomically compromised completely edentulous arches, such as bone resorption, inadequate bone width, presence of maxillary sinuses and close proximity to vital structures (Razaviet al., 1995; Ulm et al., 1995; Truhlar et al., 1997). Implants in atrophic completely edentulous arches were placed in upright positions as proposed by the original concept of Brånemark System implants. With such an implant position there is an increased risk of implant failure due to its long

cantilever(Rangert, Jemt, and Jörneus, 1989; Shackleton et al., 1994; Sertgöz and Güvener, 1996).

Implantology advanced in the early years of the twenty-first century. The basal bone is the bony region beneath the alveolar bone. All of the internal and external stresses placed on the body are supported by this bone, which runs the length of our skeleton. The area is classified as bicortical due to its dense structure, which consists of two cortical plates. The tooth structure and dental implants were then intended to be inserted into the basal bone. The implant that was produced was far more resilient. Bicortical implants are the result of further developments in material technology. Like traditional implants, the Bicortical implants can be placed through the gingival tissue.(3)

These implants are stable because they are positioned and fixed in the bicortical region in both vertical and horizontal directions. Therefore, it is advised that they be used in patients who have lost several teeth, have a smaller jaw bone, or have had traditional implants fail. Any traumatic injury, poor oral hygiene maintenance, or extended denture wear can all contribute to the reduction in jaw bone height and width.

The benefit of bicortical implantology is that it can be performed on people with compromised health, such as diabetics and long-term smokers. (4)

Bicortical implants are a high-quality and reasonably priced option for tooth replacement. Unlike the alveolar bone, they are extremely resistant to bone resorption, in addition to being able to be inserted into both the extraction and healed sockets. The fact that these implants can be inserted in as little as 72 hours is another benefit. Compared to typical

implants, which take six months to a year to settle and heal, this time is substantially shorter. Additionally, using bicortical implants requires less surgical tools than other alternative options.

2. **PRIMARY RESEARCH QUESTION:** Is there any awareness and practice of bicortical implant placement among the general dental practioners.
3. **NULL HYPOTHESIS:** There is no any awareness and practice of bicortical implant placement among the general dental practioners.
4. **ALTERNATE HYPOTHESIS:** There is significant awareness and practice of bicortical implant placement among the general dental practioners.
5. **AIM AND OBJECTIVES**

AIM :To evaluate and analyze awareness and practice of bicortical implant placement among the general dental practioners.

OBJECTIVES

- To evaluate and analyze the knowledge and awareness of bicortical implant placement among the general dental practioners.
 - To evaluate and analyze the practice of bicortical implant placement among the general dental practioners.
6. **METHODOLOGY**⁽⁵⁾

STUDY DESIGN: Awareness based survey.

DATA COLLECTION:

A survey of general dentists will be administered. The study will be an online questionnaire designed to evaluate general dentists' knowledge, attitudes, and practices on the concept of cortical placement in implants.

The data collection will be done via google forms.

MATERIAL AND METHOD:

A pretested, self-administered, closed-ended questionnaire comprising the following sections will form the survey instrument. A structured questionnaire containing 15 questions will be framed. This questionnaire was created with the intention of learning more about general dentists' knowledge, attitudes, and practices regarding the Bicortical concept in implants. Answers to the questions had to be either yes or no.

METHOD OF STATISTICAL ANALYSIS

- The data will be entered and analyzed using the Statistical Package for Social Sciences (SPSS) for Windows 26.0. (SPSS, Inc. Chicago, Illinois).
- A p-value \leq of 0.05 will be considered as statistically significant.
- The data will be presented in the form of tabulations and bar graphs

RESULTS AND DISCUSSION

This survey's sample size was 200 general dentists. 34.5 percent of the 200 practitioners practised dental implantology (Fig 1). 65.5 percent of them were aware of the notion of bicortical implant implantation, whereas the remaining 34.5 percent were not (Fig 2). 60.3 percent of those polled were aware of the indications for the insertion of bicortical implants (Fig 3). 60.3 percent of practitioners were aware that the Bicortical idea is an alternate option for replacing teeth in the maxillary posterior portion without bone grafting (Fig 4). Only 58.6 percent of the practitioners were aware of the advantages of bicortical placement over the conventional method (Fig 5). However, 46.6 percent of the population were aware of the steps and clinical procedures involved in placing bicortical Implants, 53.4 percent were not aware of the exact steps and clinical procedures in the placement of bicortical implants (Fig 6).⁽⁶⁾

Among the sample size 56.9 percent were aware of other concepts of placing implants in compromised

completely edentulous arches and 43.1 percent were unaware of different concepts (Fig 7). 69 percent of the sample size agreed that Bicortical implants can be used in partially edentulous patients (Fig 8). 75.9 percent of dentists agree that bicortical implants will provide enough support to the prosthesis (Fig 9). Only 20.7 percent agreed that force acting on bicortical implants won't lead to bone loss over a period. Whereas 58.6 percent were not sure if there would be bone loss or not and 20.7 percent agreed that it might lead to bone loss (Fig 10).

50 percent of the population was aware that bicortical implants can be immediately loaded (Fig 11). Only 29.3 percent of the dentists have ever placed bicortical implants whereas 70.7 percent did not (Fig 12). Among the population 69 percent supported bicortical implant placement (Fig 13). Only half of the sample size were aware of the implant systems which provide bicortical placement (Fig 14). Lastly, 51.7 percent agreed that Bicortical implant placement can be viable treatment option for immediately loaded prosthesis in upcoming future and 32.8 percent were not sure if it is viable option or not and 15.5 percent completely opposed that it can be a treatment option in the upcoming future (Fig 15).^(6,7)

No significant literature opposing the consensus was found. The Survey conducted within Maharashtra does not represent all ethnic groups and populations. Hence the study cannot be generalized. Also, subjective error bias may creep in. Hence a study including all general dental practitioners across the country in a similar study setup can provide better accurate results.⁽⁸⁾

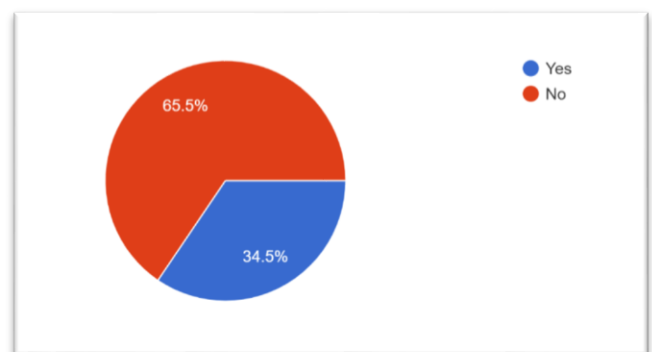


Fig1 The Pie diagram shows the number of dentists among the sample practicing dental implantology

Blue colour represents 34.5 percent of dentists practicing implantology and 65.5 percent not practicing implantology.

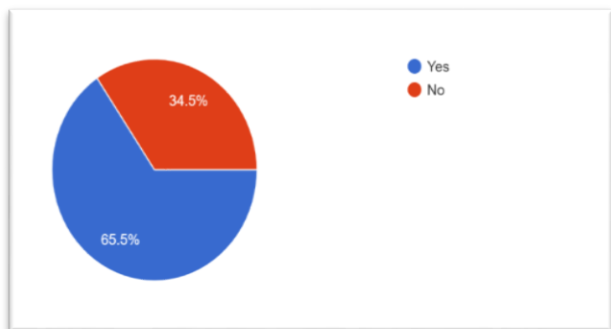


Fig 2. The pie diagram shows the number of dentists who are aware of bicortical placement concept in dentistry. Here 65.5 percent of the sample size were aware of the concept and 34.5 percent were not.

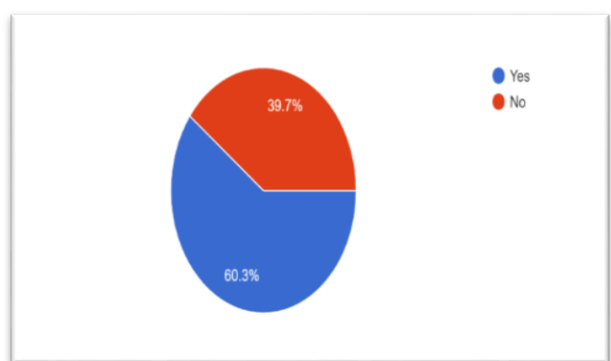


Fig.3 The pie diagram shows the awareness among the dentists of the conditions in which bicortical implants are placed in. Here 60.3 percent of the dentists were aware of the conditions in which bicortical implants are placed in and 39.7 percent were not aware of the conditions.

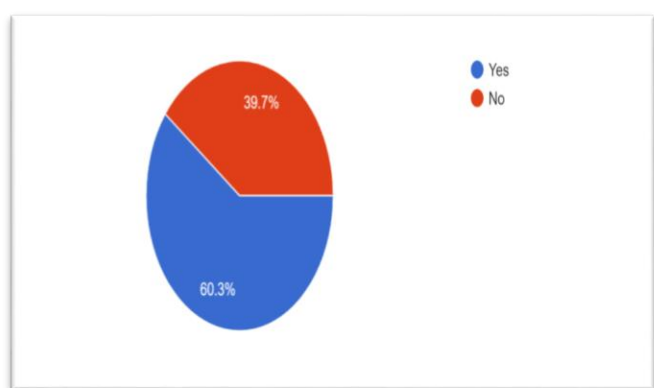


Fig 4. The pie diagram shows the number of dentists who agree that the Bicortical concept is an alternative method for the replacement of teeth in the maxillary posterior segment without bone grafting. Here 60.3 percent agrees that Bicortical concept can be an alternative however 39.7 percent disagree.

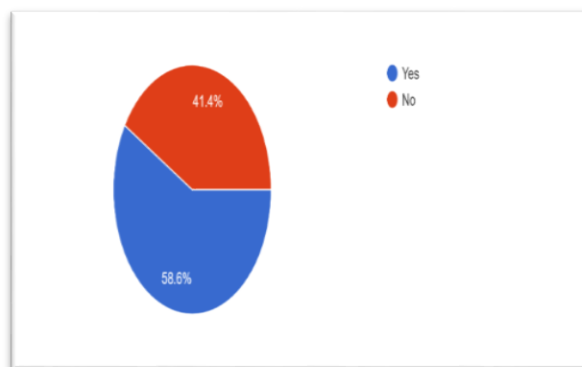


Fig 5. The pie diagram shows the number of dentists who are aware of advantages of bicortical implant placement over conventional Implants. Here 58.6 percent dentists are aware of advantages over the conventional while 41.4 percent are not aware of the same.

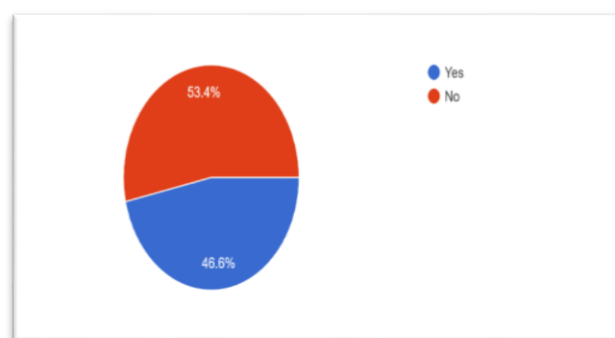


Fig 6. The pie diagram shows the number of dentists who are aware of the clinical steps involved in placing bicortical implants. Here 46.6 percent of the dentists are aware of the clinical steps involved in the placement of bicortical implants and 53.4 percent are unaware of the same.

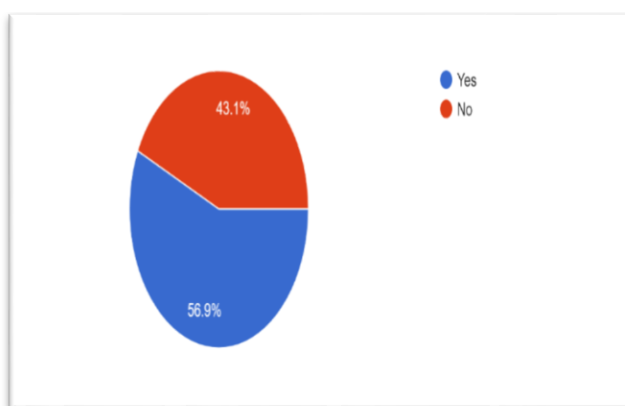


Fig 7. The pie diagram shows the number of dentists who are aware or not of the different concepts of placing implants in compromised completely edentulous arches. Here 56.9 percent are aware of different concepts of implant placement and 43.1 percent are not.

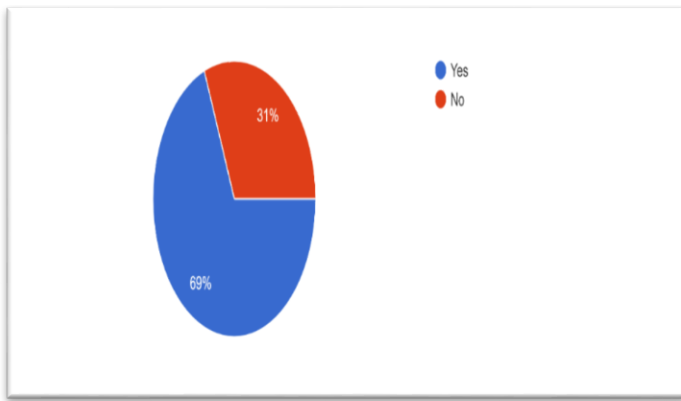


Fig 8. The pie diagram shows if Bicortical implants can be used in partially edentulous patients also. Here 69 percent of the dentists agree that bicortical implants can be placed in partially edentulous patients and 31 percent disagrees.

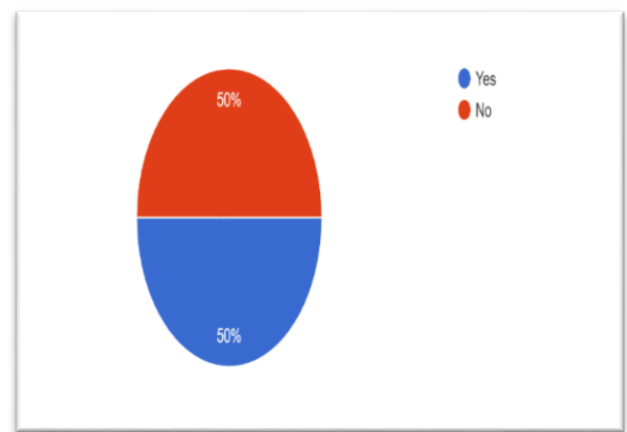


Fig 11. The pie diagram shows the number of dentists who know bicortical implants can be immediately loaded. Here 50 percent know that they can immediately load whereas 50 percent don't know regarding the same.

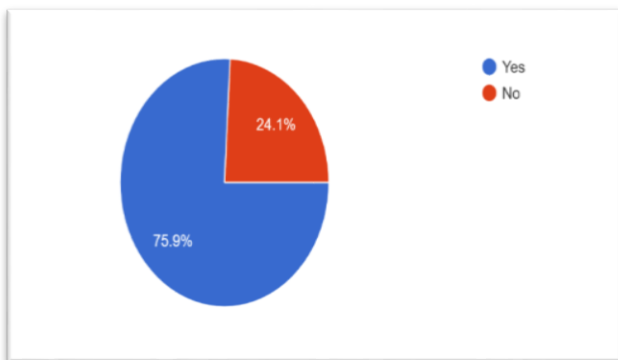


Fig 9. The pie diagram shows whether Bicortical implants will provide enough support to the prosthesis. 75.9 percent agrees that bicortical implants provide enough support for prosthesis and 24.1 percent disagree with the same.

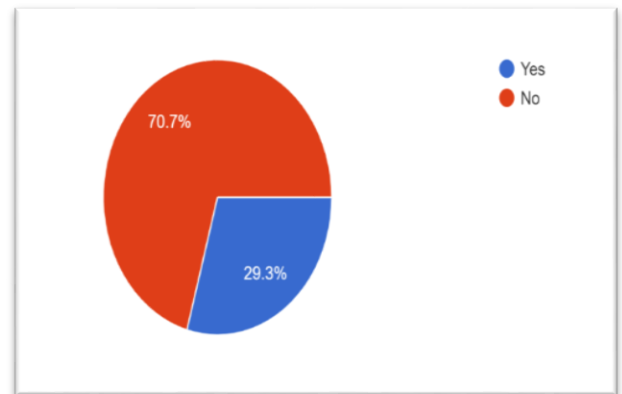


Fig 12. The pie diagram shows the number of dentists who have placed bicortical implants. Here only 29.3 percent have placed bicortical implant whereas 70.7 percent have not placed bicortical implants.

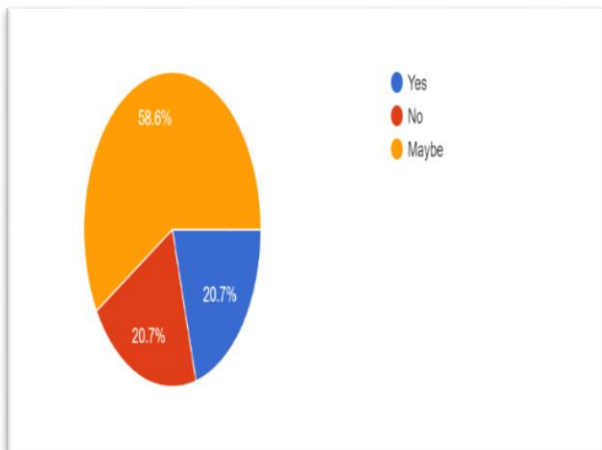


Fig 10. The pie diagram shows the number of dentists who agree or disagree with bone loss over a period of time by force acting on bicortical implants. Here 20.7 percent agrees that there will be bone loss and 20.7 percent disagree that there will be bone loss whereas 58.6 are not sure of the same.

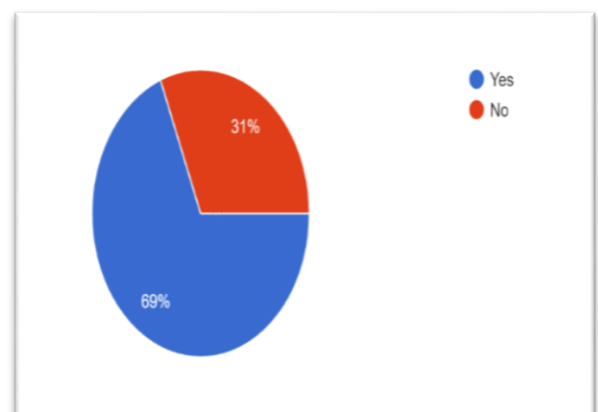


Fig 13. The pie diagram shows the number of dentists who support Bicortical implant placement. Here 69 percent of dentists supports bicortical implant placement whereas 31 percent does not support the same.

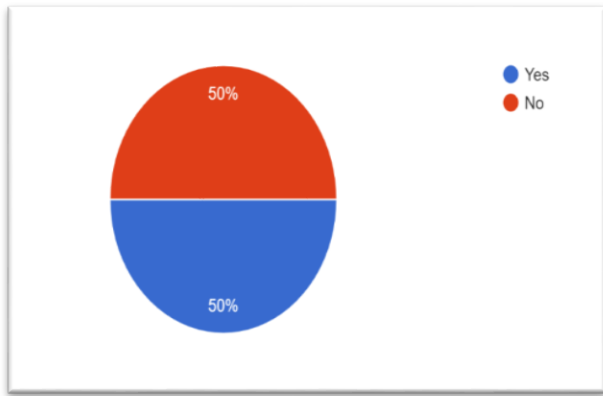


Fig.14. The pie diagram shows the number of dentists who are aware of different implant systems that provide bicortical implants. Here 50 percent are aware while 50 percent are not aware of the same

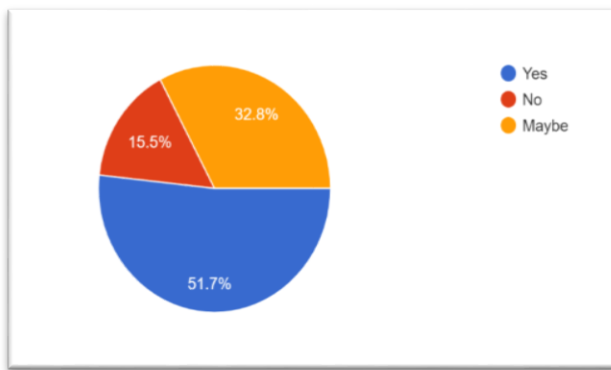


Fig 15. The pie diagram shows the number of dentists who think bicortical implant placement can be viable treatment option for immediately loaded

CONCLUSION

Within the limitations of the study, we can conclude that general practitioners in the Maharashtra population were aware of the tilted implants and their uses and advantages over other techniques. The general practitioners are aware but practically they prosthesis in upcoming future. Here 51.7 percent agrees that it can be a viable option and 15.5 percent thinks it is not a viable option whereas 32.8 are not sure.

7. REFERENCES

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9. Do you think Bicortical implants will provide enough support to the prosthesis?
10. Do you think force acting on the Bicortical implants will lead to bone loss over the period of time?
11. Are you aware of the fact that bicortical implants can be immediately loaded?
12. Have you ever placed Bicortical implants?
13. Do you support bicortical implant placement?
14. Do you know about Implants system which provide bicortical implants?
15. Do you think Bicortical implant placement can be viable treatment option for immediately loaded prosthesis in upcoming future?

ANNEXURE I

A questionnaire given is as follows:

Clinicians Experience: Less than 5 years, 5-10 years, More than 10 years.

1. Do you Practice Dental Implantology?
2. Are you aware of the Bicortical placement concept in implant dentistry?
3. Are you aware of what all circumstances/ conditions Bicortical implanted are placed?
4. Do you know that the Bicortical concept is an alternative method for the replacement of teeth in the maxillary posterior segment without bone grafting?
5. Are you aware of Bicortical implant placement “ advantages over conventional implants?
6. Are you aware of the steps and clinical procedures involved in placing Bicortical implants?
7. Do you know any other concepts of placing implants in compromised completely edentulous arches?
8. Do you think Bicortical implants can be used in partially edentulous patients also?

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