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### Original Article

## Evaluation of Knowledge and Awareness about Mandibular Implant Overdentures among Completely Edentulous Patients: A Questionnaire Based Original Study

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#### ABSTRACT:

**Background and Aim:** With the recent boom in dental implantology, implant supported or retained overdentures are not an uncommon treatment modality for completely edentulous patients. Still the relative numbers of these cases are drastically lower than the expected levels. This is particularly true for rural population. This study was conducted to evaluate the knowledge and awareness about mandibular implant overdentures among institutionalized completely edentulous patients in northern Indian region. **Materials & Methods:** A questionnaire-based survey comprised of 100 patients was completed. Total 100 Patients those visiting for complete denture fabrication were selected. A preformed questionnaire containing 10 questions about knowledge and awareness about mandibular implant overdentures was distributed among patients in their first visit of complete denture fabrication. This study comprised of patients who truthfully responded to this questionnaire. Response was recorded and data was processed statistically to estimate awareness level. **Results:** Statistical evaluation using statistical software Statistical Package for the Social Sciences (SPSS). The resultant data was subjected to suitable statistical tests to draw concrete inferences. Outcomes in the questionnaire showed that age group of 45-50 years had 3 males and 2 females, 51-55 years had 8 males and 4 females, 56-60 years had 12 males and 7 females and 61-65 years had 19 males and 12 females. Only 15 patients were fully aware of mandibular implant overdentures. The difference was significant for fourth age group. P value less than 0.05 was considered as significant. **Conclusion:** In the studied completely edentulous patients, the relative level of knowledge and awareness regarding mandibular implant overdentures was nearly at poor level. Majority of them do not even know about dental implantology. For those who were aware, the most common source of information was doctor. Furthermore, most of the patients were in misconception that mandibular implant overdenture surgeries possibly have harmful effects on eyes and ear.

**Key words:** Implantology, Overdentures, Edentulous, Questionnaire

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#### INTRODUCTION

With the ever increasing advancements in medical technology, there is a definite increase in average human life expectancy, meaning that patients now have higher chances of becoming totally edentulous. Such patients usually seek for denture therapy which merely offers required stability and support for the dentures. Soon after delivery of the denture, patients have to visit the dentist for its adjustments.<sup>1</sup> These adjustments are solely related to the

looseness of the dentures in majority of the cases. Literature has well evidenced that with longer usage of the dentures, the residual alveolar ridges become progressively more atrophied.<sup>2</sup> This deterioration is significantly worse when the patient wears a mandibular complete denture. This is primarily because of obstruction of tongue and interferences of lingual frenum. With the advent of dental implant therapy, completely edentulous patients have got a new hope. Dental implant supported and retained

completed dentures provide patients with better stability and increased chewing efficiency. Nevertheless, it is not true for every patient. The reasons could be of miscellaneous origin like certain unfavorable oral conditions, economical concerns, when support for the prosthesis is not sufficient.<sup>3</sup> Even though dental implant supported and retained completed dentures have gained much popularity in the recent time. Many of the researchers have shown its high success rate and longevity. This could be attributed to various factors like patient’s attitude and acceptance. However, literature searches have not revealed much data regarding knowledge and awareness of mandibular implant overdentures in completely edentulous patients in Indian scenarios.<sup>4</sup> Most of the survey and satisfaction based studies were comparing conventional complete denture with implant overdentures.<sup>5</sup> The results of most researches were in favor of implant overdentures in terms of satisfaction. This actually led to the actual need of the study. Therefore, authors have planned to conduct this study to evaluate the knowledge and awareness about mandibular implant overdentures among completely edentulous patients in northern Indian region. Here authors have reasonably attempted to explore the existing outcomes by processing patient’s responses generated through pre-framed questionnaire.

**MATERIALS & METHODS**

The present study included total 100 completely edentulous patients those seeking for complete dentures. Patients suffering from any physical or psychological diseases were excluded from the study. All completely edentulous patients those seeking for complete denture were asked to participate in the study. The methodology and planned way of study’s execution were explained to the patients. All were also informed about the significance and clinical relevance of the study. Written consents were obtained from all 100 willing patients. A self prepared, close ended questionnaire was provided to patients. It comprised of 10 questions regarding the knowledge and awareness about mandibular implant overdentures. We have decided to complete the study using questionnaire for the reason that questionnaire based studies are extremely useful to obtain comprehensive data about personal and group perceptions and opinions. Furthermore, they can be performed simultaneously on a larger population to finalize their

common opinion. The secrecy and other rights of the participants were completely ensured. Characteristically we attempted to complete the questionnaire in the very first appointment of the patients. It was done to further ensure unbiased responses of the patients. Results thus obtained was tabulated and subjected to statistical analysis using chi-square test. The recorded data was subjected to basic statistical tests to attain p values and other inferences. P values less than 0.05 was considered significant (P<0.05).

**STATISTICAL ANALYSIS AND RESULTS**

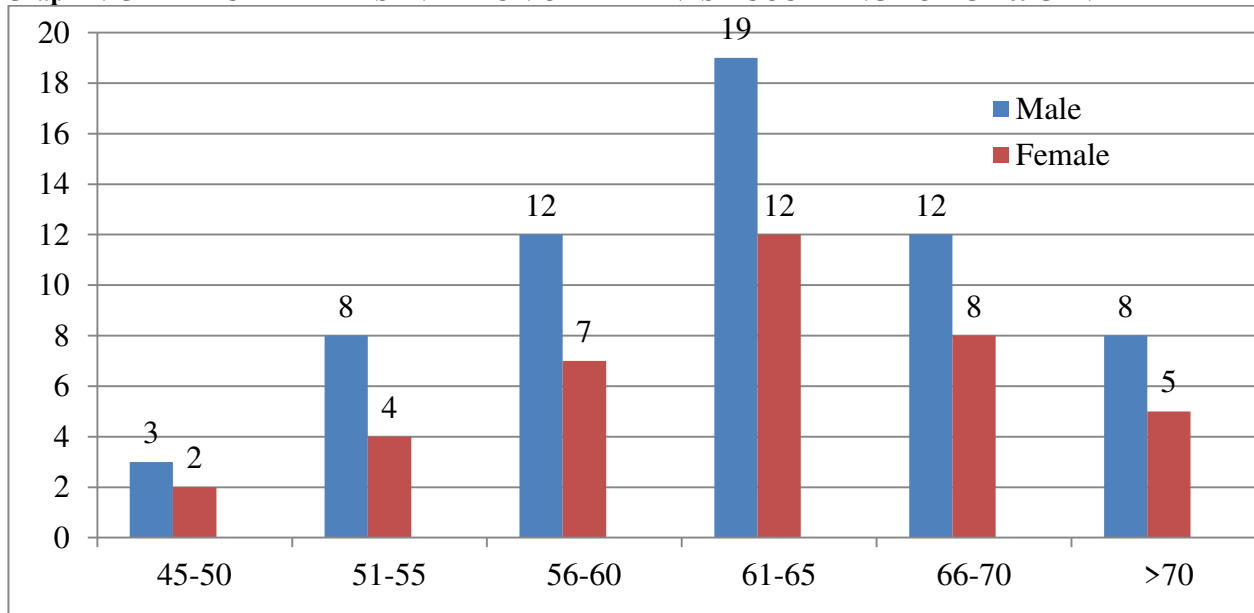
All the studied parameters and records were assembled and sent for statistical analysis using statistical software Statistical Package for the Social Sciences version 21 (IBM Inc., Armonk, New York, USA). The resultant data was subjected to relevant statistical tests to obtain p values and other inferences like Pearson Chi Square values. Table 1 and Graph 1 shows that patients were divided into 6 age groups of 45-50 years, 51-55 years, 56-60 years, 61-65 years, 66-70 years, >70 years respectively. Minimum number of patients was noticed in first and second age groups. Maximum patients were belonging to the age group of 61-65 years. Total 19 male and 12 female patents were there in this group [31 % of total subjects]. P value was significant (p<0.05 significant). Table 2 shows that only 15 patients were aware about dental implantology and mandibular implant overdenture therapy. Majority of patients [n=88] think that cost is the main reason for rejection of mandibular implant overdenture therapy. Additionally, most of the patients were in misconception that mandibular implant overdenture surgeries possibly have deleterious effects on eyes and ear [n=78]. 32 patients expressed their scare about surgery involved in mandibular implant overdenture therapy. Almost all of the patients [n=98] believe that cost must be lowered down so as to cater economically weak population. Roughly half of the studies population was ready to advice mandibular implant overdenture to their friends and relatives. P values were 0.01, 0.00 and 0.01for question no. 5, 6 and 7 respectively. Therefore e high degree of significance (p<0.05 significant) was seen in responses of these questions. Values of Pearson Chi Square Tests (Pearson  $\chi^2$ ) for each response were also included in Table 2.

**Table 1: AGE & GENDER WISE DISTRIBUTION OF PATIENTS**

Age Group	Year Range	Male	Female	Total	P value
1	45-50	3	2	5 [5 %]	0.010
2	51-55	8	4	12 [12 %]	0.500
3	56-60	12	7	19 [19 %]	0.800
4	61-65	19	12	31 [31 %]	0.010*
5	66-70	12	8	20 [20 %]	0.700
6	>70	8	5	13 [13 %]	0.300
Total	-	62	38	100	*Significant

\*p<0.05 Significant

**Graph 1: GRAPHICAL REPRESENTATION OF PATIENTS ACCORDING TO AGE & GENDER**



**Table 2: EVALUATION OF QUESTIONNAIRE RESPONSES WITH RELATED STATISTICAL OUTCOMES**

Questionnaire	Variables	No. of Respondents	Chi Square Test (Pearson $\chi^2$ )	P value
1	Are you aware about dental implants and mandibular implant overdenture therapy ?	Yes = 15 No = 85	0.02	0.92
2	Did you know about it from doctor ?	Yes = 52 No = 48	0.12	0.08
3	Did you know about it from your friends/relatives/media or other sources?	Yes = 48 No = 52	0.04	0.16
4	Are you willing for mandibular implant overdenture therapy ?	Yes = 18 No = 82	0.65	0.92
5	Do you think that cost is the main reason for rejection of mandibular implant overdenture therapy ?	Yes = 88 No = 12	0.24	0.01*
6	Do you think that cost must be lowered down so as to cater economically weak populace ?	Yes = 98 No = 2	0.01	0.00*
7	Have you ever personally met those people who have got mandibular implant overdenture therapy ?	Yes = 5 No = 95	0.58	0.01*
8	Would you like to advice your friends, relatives for mandibular implant overdenture therapy ?	Yes = 51 No = 49	0.44	0.60
9	Are you afraid of surgery involved in mandibular implant overdenture therapy ?	Yes = 32 No = 68	0.08	0.22
10	Do you think that mandibular implant overdenture surgery could have deleterious side effects on eyes, ear etc ?	Yes = 78 No = 22	0.01	0.42

\*p<0.05 Significant

## DISCUSSION

This study was conducted to evaluate the existing knowledge and awareness about mandibular implant overdentures among institutionalized completely edentulous patients. We studied total 100 patients and mostly of them were from rural areas. The results were quite appalling as the overall level of awareness was poor and majority of the patients have not heard the 'implant' term before. As we all know that rehabilitation of completely edentulous patients with a lower overdenture is very effective in managing the problems those raised from the conventional dentures. A study conducted by Grogono and co-workers has showed that the patients who underwent implant therapy had a significant increase in their level of self confidence.<sup>6</sup> Their oral health status has also improved. Moreover the patients were ready to advice this treatment to their siblings and friends. Also we can say that the relative awareness regarding the implant procedure and its success is still inadequate in the developing countries. This fact was further authenticated by Chowdhary and colleagues.<sup>7</sup> They performed a survey based study in the Indian urban population. They pointed out that only 23% of the Indian urban populations were aware of dental implants. There results were in accordance with the study results of ours. In the subsequent years many researchers have performed the implant awareness studies in relation to overdentures. They were primarily the studies conducted by Zimmer et al, Berge et al and Tepper et al.<sup>8-10</sup> They concluded the awareness of mandibular implant overdentures as 77%, 70.1%, and 72%, respectively. The reason could be explained on the basis of low socioeconomic status and poor education level amongst the studied population. Literature search has resulted in various studies evaluating awareness level retarding implant overdentures. The study conducted by Kranjcic and colleagues showed the awareness level to be 59%.<sup>11</sup> They further explored the awareness levels based on based on age, education level, and gender. They found that patients were complaining mainly about looseness of the lower denture. This was in agreement with the study results of ours. Raghoebar and co-workers also studied retention, esthetic satisfaction, comfort, and ability to eat and speak.<sup>12</sup> There results were quite contrasting with the study results of ours. Later on Begum and associates also assess the awareness about mandibular implant overdentures among the edentulous patients.<sup>13</sup> They showed that less than one fourth of the edentulous populations are aware of implant supported overdentures. Our study results were in accordance with inferences of Begum and associates. Therefore keeping all these facts in mind, we expect general dentists to routinely organize awareness camps and with distribution of pamphlets and media coverage.

## CONCLUSION

Our study results undoubtedly showed the present status of knowledge and awareness about mandibular implant overdenture in studied patients. In general, it was nearly at poor level. Approximately 85 subjects do not even know about dental implants. For those who were aware, the most common source of information was doctor. In addition, 78 patients were in misconception that mandibular implant overdenture surgeries possibly have harmful effects on eyes and ear. With the above conclusions it's obvious that the studies patients are severely lacking the overall knowledge of dental implant and other related treatments like implant overdenture. Therefore, dentists must be suitably counseling the patients regarding the importance of dental implant and implant overdenture. Nevertheless, we expect some other large scale studies to be conducted that could further set certain standard norms.

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