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An Awareness Based Evaluation of Success of Dental Implant Treatment as Observed with and Without Dental Assistants: An Original Research Study

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(Received: 07 October 2023 **Revised: 12 November** Accepted: 06 December) **KEYWORDS ABSTRACT:** Background and Aim: Implant therapy is highly crucial and requires special measures for its Survey, long term success. Any delinquency in maintenance can leads to eventual failure of Questionnaire, implants. It is therefore highly imperative to explore this in detail. The sole endeavor of this Dental Implants, Private Dentists, study was to evaluate the success of dental implant treatment as observed with and without Success, Failure dental assistants. Materials and Methods: Total 50 general dental practitioners were approached for this study via email in age range of 40-65 years. A preformed set of questions or questionnaire was prepared and provided to the dentists for their honest response. The study has 5 questions related to implant success as related to the assistance by dental assistant. Because implant surgeries assisted with trained dental assistants are highly précised, the end results and overall long term success of implant liable to change accordingly. The samples were factually selected by purposive sampling method. P values less than 0.05 was taken as significant. Statistical Analysis and Results: Results showed that out of the total studied 50 general practitioners (practicing dentists), 25 found in the age group of 40-50 years. 7 were 61-65 years of age. P value was calculated to be significant (0.001). 75% of general dental practitioners were agreed when asked 'Do you believe that dental assistants are mandatorily needed during implant surgery'. The measured p value was highly significant here (0.010). Pearson Chi-Square test conducted for all 5 studied questions wherein question number 2,3,5 confirmed significant responses. Conclusion: Within the limitations of the study, authors concluded that participating practitioners confirmed fair and positive attitude towards assisted dental implant surgeries. All of the studied general dental practitioners had positive outlook towards assisted implants surgeries as related to their long term success. Nonetheless, findings and outcomes of this study should be clinically correlated and validated before utilizing in the clinical setups.

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Introduction

Loss of teeth usually results in the decreased overall chewing and masticatory efficiency of patient.¹⁻² This event also imparts a distressing role in the quality of life and life expectancy of patients. Many researchers have also stated that teeth loss also results in the lowered self confidence with compromised esthetic and social acceptance.³⁻⁴ Dental implants are considered better, latest, and newest approach of teeth replacement. However, its high cost is a major drawback.⁵⁻⁸ Oral cleanliness, mucosal hemorrhage, probing pocket depth, bleeding on probing, radiographic alterations, and crevicular fluid assessments are used to assess implant success and failure rates.⁹⁻¹² Two major factors that decide implant success are abutment use and loading protocols. Implant success also directly related with the involvement of dental assistance during surgery. Literature search has explored only few studies regarding it.¹³⁻¹⁶ However, as a general conception practitioners believe that assisted surgeries shows high success rates than non-assisted surgeries. This necessitates the conduction of an imperative study which further highlights the role of assisted implant surgeries. Therefore, the sole endeavor of this paper was to genuinely evaluate the success of dental implant treatment as observed with and without dental assistants.

Materials and Methods

The study was designed on survey basis wherein authors decided to estimate the overall success of implants placed at private dental clinics by general dental practitioners. Total 50 general dental practitioners were approached for this study via email. The contact details of general dental practitioners were obtained from the city dental association office. This study was completed on 50 general dental practitioners with age 40-65 years. Firstly, 100 general dental practitioners were approached for the study. After explain the methodology and other details of the study, this number was reduced to 50 exactly. A preformed set of questions or questionnaire was prepared and provided to the dentists for their truthful response. Out of 50 general dental practitioners, 31 practitioners were male and 19 were female. All dentists were informed in detail about the study and written consent was taken

from each of them. The study has 5 questions related to implant success as related to the assistance by dental assistant. In the recent literature there are very less information regarding the implant success as related to the availability of assistant. Since implant surgeries assisted with trained dental assistants are highly précised, the end results and overall long term success of implant also altered accordingly. This was the apparent need for the study on which authors designed this study. Author had decided to perform and execute this study on survey basis since literature has well evidenced that survey based research papers are highly valuable in obtaining comprehensive information about individual and group responses and practices. Additionally, questionnaire based studies are imperative for evaluating the relative awareness of a targeted population for a particular entity. Immediately before the implementation of the study, authors had explained the subjective significance of this study to all selected general dental practitioners. The samples were literally selected by purposive sampling method. The privacy and other important rights of the dentists along with their freedom of expression were not disclosed elsewhere. The obtained data was processed by suitable statistical tests to obtain p values, mean and other statistical parameters. P values less than 0.05 was taken as significant.

Statistical Analysis and Results

All the relevant data were arranged logically and subjected to best statistical analysis using SPSS statistical package for the Social Sciences version 22.0 for Windows. Out of the total studied 50 general practitioners (practicing dentists), 25 found in the age group of 40-50 years. Similarly 18 general practitioners (practicing dentists) were noticed in the 51-60 years age range. 7 were 61-65 years of age. P value was calculated to be significant (0.001). In general, our study had consisted of 31 male and 19 female subjects (Table 1-2 & Graph 1). Table 3 depicts about the Questionnaire Responses Assessment with Related 75% of general Statistical Inferences. dental practitioners were agreed when asked 'Do you believe that dental assistants are mandatorily needed during implant surgery'. 85% of general dental practitioners were agreed when asked 'Do you think that long term

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implant success depends upon the availability of dental assistants'. 80% of general dental practitioners were agreed when asked 'Do you wish to recommend the usage of dental assistants during implant surgeries'. The measured p value was highly significant here (0.010).

Table 4 depicts about fundamental statistical description with level of significance evaluation using "Pearson Chi-Square" test (for all 5 studied questions). Question number 2,3,5 showed significant responses.

Table 1: Dentists Distribution according To Gender: Statistical Evaluation Using Student's t-test

Student's t-test						
Gender	Number [n]	Mean	SD	P value		
Male	31	2.24	1.890	0.621		
Female	19	2.29	1.532	0.031		
*p<0.05 significant						

Table 2: Dentists Distribution According To Age Groups: Evaluation of Level Of Significance Using ANOVA Test

Dentists distribution according to age groups						
Age Group	Age Range	n	Mean	SD	P value	
Ι	40-50 Yrs	25	2.34	1.678	0.001*	*Significant
II	51-60 Yrs	18	2.09	1.346		
III	61-65 Yrs	7	2.12	2.675]	
*p<0.05 significant						





Table 3: Questionnaire Responses Assessment with Related Statistical Inferences

Questionnai re	Variables	Responses of Practitioners [% Yes]	Responses of Practitioners [% No]	p Value
1	Do you believe that dental assistants are mandatorily needed during implant surgery?	75%	25%	0.010*

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2	Do you think that long term implant success depends upon the availability of	85%	15%			
3	Do you wish to recommend the usage of dental assistants during implant surgeries?	80%	20%			
4	Do you believe that assisted implant surgeries are more comfortable for patients?	55%	45%			
5	Do you think that assisted implant surgeries are more time consuming and cumbersome?	30%	70%			
*p<0.05 significant						

Table 4: Fundamental statistical description with level of significance evaluation using "Pearson Chi-Square" test (for all 5 studied questions)

Question No.	Mean	Std. Deviation	Std. Error	95% CI	Pearson Chi-Square Value	df	Level of Significance (p value)
1	2.43	0.563	0.325	1.96	2.345	1.0	0.092
2	2.65	0.434	0.456	1.96	2.124	2.0	0.010*
3	2.76	1.346	0.877	1.96	2.786	1.0	0.020*
4	2.23	0.786	0.356	1.96	1.556	1.0	0.080
5	2.34	0.345	0.667	1.96	2.550	3.0	0.001*
							*p<0.05 significant

Discussion

Literature is packed of the studies on success and failure rates of dental implants. Many researchers have conducted several in-vivo studies to find out actual rate of success for different implant systems, for different populations of ordinal setups. Since implant surgery is highly prone to be infected by bacterial encroachment, strict sterilization must be maintained throughout the surgery. A clinician must be well aware of the pros and cons of the system being employed. Studies have proven that even a minute infection can leads to failure of implant treatment. Gil-Montoya studied about the Oral health in the elderly patient and its impact on general health. They also stressed upon the accurate surgery and efficient sterilization during implant installation.¹⁷ Koutouzis explored about the relations of Implant-abutment connection as causative factor to peri-implant diseases. They confirmed that peri-implant diseases impart significant role in overall success rate.¹⁸

Tettamanti and colleagues reviewed imperative aspects of immediate loading implants. Their results were highly comparable and predictive.¹⁹ Lagunov conducted a meta analysis on assessment of biologic implant success parameters in type 2 diabetic glycemic control patients. They later on compared the findings with outcomes of health patients. They stated and concluded that long term implant success depends on biologic conditions of the subject.²⁰ Weng and coworkers tested the influence of microgap location and configuration on peri-implant bone morphology in nonsubmerged implants. They also confirmed the vital role of periimplant health for success of implant.²¹ Several other researchers also discussed the similar role and contribution of assisted implant surgeries.²²⁻²⁸

Conclusion

Here in this study, the participating practitioners confirmed fair and positive attitude towards assisted

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