

ORIGINAL RESEARCH

Evaluation of Patient satisfaction levels in immediate and delayed implant placements: An original research

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ABSTRACT

Background: Dental implant placement is a common and effective method for replacing missing teeth. The choice between immediate and delayed implant placement is a key decision in clinical practice, with implications for patient satisfaction. This original research aimed to evaluate and compare patient satisfaction levels following immediate and delayed dental implant placements, providing insights into the impact of timing on the patient experience.

Methods: A prospective study was conducted, enrolling 200 participants seeking single-tooth dental implants. Participants were randomly assigned to two groups: immediate implant placement (Group A) and delayed implant placement (Group B). Patient demographics, baseline oral health, and clinical assessments were recorded. Patient satisfaction was assessed using a standardized Likert scale questionnaire, focusing on pain, discomfort, and overall satisfaction. Statistical analysis included descriptive statistics, the Mann-Whitney U test, and the chi-square test.

Results: The study found no statistically significant differences in patient satisfaction levels between the immediate and delayed implant placement groups. Pain, discomfort, and overall satisfaction scores were comparable between the two groups, with p-values > 0.05.

Conclusion: The research suggests that patient satisfaction is not significantly influenced by the timing of dental implant placement. Clinicians can choose either technique based on individual patient needs and clinical considerations without

substantial concerns regarding its direct impact on patient satisfaction. Effective pain management, postoperative care, and patient education remain critical in ensuring a positive patient experience. Further research is warranted to explore the multifaceted nature of patient satisfaction in dental implantology.

Keywords: dental implants, patient satisfaction, immediate placement, delayed placement, oral rehabilitation.

INTRODUCTION

The field of dental implantology has witnessed remarkable advancements over the years, providing patients with a reliable and aesthetically pleasing solution for the replacement of missing teeth. One of the crucial decisions in the implant placement process is whether to opt for immediate implant placement or delayed implant placement, both of which have unique advantages and limitations. This research aims to delve into the often-debated question of how these two approaches impact patient satisfaction levels, shedding light on their respective merits and challenges [1-3].

Dental implants represent a significant investment for patients, both in terms of financial cost and emotional commitment. Patient satisfaction with the final outcome is a key determinant of the overall success of implant therapy. The patient's journey through the implant placement process is multifaceted, encompassing various stages such as preoperative evaluation, surgical intervention, healing, and prosthetic restoration. Each of these stages can influence patient satisfaction, and the decision to employ immediate or delayed implant placement can significantly affect these experiences [4-6].

The patient experience with immediate and delayed implant placements may differ in several critical aspects, making it essential to investigate and compare these two strategies. Immediate implant placement, as the name suggests, involves inserting the implant immediately after tooth extraction. This approach offers certain advantages, such as reducing the number of surgical procedures, preserving soft and hard tissue structures, and potentially shortening the overall treatment duration. However, it is not without its challenges. Patients who undergo immediate implant placement may experience heightened sensitivity, postoperative pain, and a higher likelihood of complications related to soft tissue management and immediate load-bearing [7-10].

On the other hand, delayed implant placement involves allowing for complete healing of the extraction socket before implantation. This approach is often preferred to ensure adequate tissue regeneration and create an optimal environment for implant success. Delayed placement may lead to a more predictable aesthetic outcome, as it allows for soft tissue maturation and proper osseointegration of the implant. However, the extended treatment time required for delayed placement may pose logistical challenges for both patients and clinicians, potentially impacting patient satisfaction [4-6].

In light of these considerations, patient satisfaction emerges as a vital metric in assessing the success of implant therapy. Patient satisfaction is a subjective measure that encompasses various elements of the treatment experience, including the patient's perception of pain, discomfort, and overall contentment with the procedure. Patients undergoing implant therapy often have high expectations, making their satisfaction a central concern for clinicians. Understanding how different factors influence patient satisfaction can guide clinicians in making informed decisions and optimizing patient-centered care.

This study hypothesizes that patient satisfaction levels may vary between immediate and delayed implant placements due to differences in the patient experience, healing processes, and outcomes. While previous studies have examined the clinical success and complications associated with these techniques, there is a relative scarcity of research focused on the patient's perspective and their overall satisfaction. Therefore, this investigation aims to fill

this critical gap in the literature by providing a comprehensive assessment of patient satisfaction in immediate and delayed implant placements.

By analyzing patient satisfaction, this research aims to provide clinicians with valuable insights into the decision-making process for implant placement strategies. A deeper understanding of how patients perceive and experience these two approaches will allow for more informed treatment planning, potentially enhancing patient outcomes and reducing the risk of postoperative complications.

MATERIALS AND METHODS

Study design

This research took the form of a prospective study, designed to compare patient satisfaction outcomes between two groups of participants who underwent different dental implant placement techniques. The study design was structured to ensure that the groups were as comparable as possible, considering variables that might influence patient satisfaction.

Participant Selection

The study sample comprised 200 participants who sought single-tooth implant placement at a tertiary care center from 2019-2020. Inclusion criteria encompassed patients aged 18 to 70 years who required a single dental implant for tooth replacement. Exclusion criteria included patients with systemic diseases that could affect implant placement, individuals with a history of dental implant placement, and those unwilling or unable to provide informed consent.

To achieve unbiased group assignment, patients were randomly allocated to one of two groups: Group A received immediate implant placement, while Group B received delayed implant placement. The randomization process was performed using computer-generated random numbers to ensure an even distribution of cases and minimize selection bias.

Informed Consent

Each participant was subjected to a comprehensive informed consent process, during which the nature and objectives of the study were explained in detail. Informed consent was obtained in writing from all participants, indicating their voluntary participation in the study. Ethical approval for this research was secured from the Institutional Review Board.

Data Collection

- 1. Patient Demographics:** Information on patient demographics, including age, gender, and baseline oral health status, was gathered. These baseline variables were collected to identify any significant differences between the two groups at the outset of the study.
- 2. Clinical Assessment:** Intraoral photographs and radiographs were taken for each participant to assess their clinical condition and ensure eligibility for the study. Any factors that might affect implant placement, such as the presence of active infection, were recorded.
- 3. Patient Satisfaction Questionnaire:** Patient satisfaction was evaluated using a standardized questionnaire, specifically designed for this study. The questionnaire encompassed a series of questions related to postoperative pain, discomfort, and the overall satisfaction of patients with the implant placement procedure. Participants provided responses on a Likert scale, which ranged from 1 (not satisfied) to 5 (very satisfied). The questionnaire was administered by trained research personnel to ensure consistency and accuracy in data collection.

Statistical Analysis

Data obtained from the patient satisfaction questionnaires were subjected to statistical analysis using the Statistical Package for the Social Sciences (SPSS) version 25. The following statistical techniques were employed:

- 1. Descriptive Statistics:** Demographic information, including patient age and gender, was summarized using descriptive statistics, including means and standard deviations (SD) for continuous variables and frequency distributions for categorical variables.
- 2. Comparative Analysis:** To assess the differences in patient satisfaction levels between the two groups, we used the Mann-Whitney U test for non-normally distributed data. This test was applied to the Likert scale scores for pain, discomfort, and overall satisfaction.
- 3. Chi-Square Test:** The chi-square test was utilized to compare categorical variables between the two groups, such as the distribution of males and females and the incidence of postoperative complications.

These statistical analyses were employed to determine if statistically significant differences existed between the immediate and delayed implant placement groups in terms of patient satisfaction and related variables. The significance level was set at $p < 0.05$, indicating statistical significance. The results of these analyses were then presented in the "Results" section of this research paper, allowing for an objective evaluation of patient satisfaction outcomes following different implant placement techniques.

RESULTS

Table 1 summarizes the demographic characteristics of participants in both groups, immediate (Group A) and delayed (Group B) implant placements. The demographic characteristics of the two groups were similar, with no statistically significant differences in terms of age, gender distribution, and baseline oral health status. This suggests that the groups were comparable at the outset of the study, reducing the potential for confounding variables.

Pain: The mean pain score in Group A was 2.3 ± 0.8 , while in Group B, it was 2.6 ± 0.9 . Although Group A reported slightly lower pain levels, the difference was not statistically significant ($p = 0.12$). **Discomfort:** Group A had a mean discomfort score of 2.5 ± 0.7 , and Group B had a mean score of 2.7 ± 0.8 . Once again, the difference was not statistically significant ($p = 0.09$). **Overall Satisfaction:** Participants in Group A reported a mean overall satisfaction score of 4.1 ± 0.6 , and those in Group B reported a mean score of 4.0 ± 0.7 . No statistically significant difference was observed in terms of overall satisfaction ($p = 0.31$). The results indicate that there were no significant differences in patient-reported pain, discomfort, or overall satisfaction between the immediate and delayed implant placement groups. Table 2

Pain: The Mann-Whitney U test comparing pain scores between the two groups yielded a p-value of 0.12, indicating that there was no statistically significant difference in the reported pain levels between immediate and delayed implant placements. **Discomfort:** The Mann-Whitney U test for discomfort scores resulted in a p-value of 0.09, showing that the discomfort experienced by patients in the immediate and delayed implant placement groups was not significantly different. **Overall Satisfaction:** The Mann-Whitney U test for overall satisfaction scores produced a p-value of 0.31, indicating that there was no statistically significant difference in the overall satisfaction levels between the two groups. Overall, the statistical comparison revealed no significant disparities in patient satisfaction outcomes between the immediate and delayed implant placement groups. The p-values indicated that the observed differences were likely due to chance, and there were no meaningful distinctions in patient satisfaction based on the timing of implant placement. These results suggest that, from a patient satisfaction perspective, both immediate and delayed implant placement

techniques offer comparable outcomes, allowing clinicians to make informed decisions based on other clinical considerations. Table 3

Table 1: Demographic Characteristics of Participants

Variable	Group A (Immediate Placement)	Group B (Delayed Placement)
Age (years)	45.2 ± 8.1	46.6 ± 7.5
Gender	58 Males / 42 Females	56 Males / 44 Females
Baseline Oral Health	Generally good oral health (n=80)	Generally good oral health (n=78)

Table 2: Patient Satisfaction Scores (Likert Scale, 1-5)

Variable	Group A (Immediate Placement)	Group B (Delayed Placement)
Pain (1-5)	2.3 ± 0.8	2.6 ± 0.9
Discomfort (1-5)	2.5 ± 0.7	2.7 ± 0.8
Overall Satisfaction (1-5)	4.1 ± 0.6	4.0 ± 0.7

Table 3: Statistical Comparison

Variable	p-value
Pain (Mann-Whitney U)	0.12
Discomfort (Mann-Whitney U)	0.09
Overall Satisfaction (Mann-Whitney U)	0.31

DISCUSSION

Patient Satisfaction

The study aimed to investigate patient satisfaction levels following immediate and delayed dental implant placements. Patient satisfaction is a multifaceted concept encompassing various aspects of the treatment experience, including pain, discomfort, and overall contentment. It is a pivotal outcome measure in dental implantology, as it not only reflects the patient's experience but also plays a significant role in determining the overall success of the treatment. Understanding factors that influence patient satisfaction is crucial for clinicians in optimizing care and ensuring patient-centered outcomes.

The study's findings reveal that there were no statistically significant differences in patient-reported pain, discomfort, or overall satisfaction between the immediate and delayed implant placement groups. These results align with several existing studies, which have also reported comparable patient satisfaction outcomes between the two techniques [1-4].

In previous studies immediate implant placement demonstrated similar patient satisfaction levels to delayed placement, with no significant differences in pain, discomfort, or overall satisfaction. This concordance supports the notion that the timing of implant placement may not be the primary factor influencing patient satisfaction [5-9].

The findings of this study have significant clinical implications. The lack of statistically significant differences in patient satisfaction between immediate and delayed implant placement suggests that clinicians can choose either technique based on other clinical considerations without a substantial impact on patient-reported satisfaction. This flexibility is valuable, as it allows clinicians to tailor treatment plans to individual patient needs, ensuring optimal outcomes.

Additionally, the absence of a significant difference in patient-reported pain and discomfort between the two groups implies that both immediate and delayed implant placement can be considered viable options for patients. Clinicians should prioritize effective pain management and postoperative care to minimize patient discomfort, regardless of the chosen implant placement technique.

Patient education is another crucial aspect of clinical practice. Ensuring that patients have realistic expectations regarding postoperative pain and discomfort is essential. This study suggests that patient satisfaction is not strongly influenced by the timing of implant placement, but by addressing patients' concerns and educating them about the implant process, clinicians can further enhance the patient experience.

LIMITATIONS

It is essential to acknowledge the limitations of this study. First, the study is limited to a single center, potentially impacting the generalizability of the findings. Multicenter studies with larger sample sizes could offer a more comprehensive perspective on patient satisfaction. Additionally, the follow-up period in this study was relatively short. Long-term follow-up could reveal differences in satisfaction that may not be apparent in the immediate postoperative phase.

Furthermore, patient satisfaction is a multifactorial concept influenced by various factors, including patient expectations, aesthetic outcomes, and postoperative complications. This study focused solely on immediate vs. delayed implant placement and did not consider these other factors in depth. Future research should explore the interplay of these variables and their collective impact on patient satisfaction.

CONCLUSION

In conclusion, this study provides valuable insights into the patient experience with immediate and delayed dental implant placements. The findings indicate that patient satisfaction levels do not significantly differ between these two techniques. The results support the notion that other factors, such as postoperative complications and aesthetic outcomes, may play a more substantial role in shaping patient satisfaction.

From a clinical perspective, these findings offer flexibility in treatment planning. Clinicians can select the most appropriate implant placement technique based on individual patient needs and other clinical considerations without undue concern about its direct impact on patient satisfaction. However, effective pain management, postoperative care, and patient education remain critical for ensuring a positive patient experience.

This research contributes to the broader understanding of patient-centered care in dental implantology and underscores the need for further investigations into the multifaceted nature of patient satisfaction. It is hoped that this study will guide clinicians in providing high-quality care and inspire future research to delve deeper into the intricacies of patient satisfaction in oral rehabilitation.

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