

Satisfaction and Quality of Life in Patients with Dental Implants

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ABSTRACT

Satisfaction and quality of life are important factors in assessing the outcome of dental therapy. **Method:** Minimal risk, retrospective, years 2022 -2023. Sample 36 patients with the use of dental implants contacted by telephone, voluntary participation and signing of the informed consent. Variables studied: demographic data of each patient, assessing the degree of satisfaction with implant placement in the preoperative, postoperative and rehabilitation phases by means of a survey (OIIP -15 questions) on a Likert scale from 1 to 5: 1 very satisfied, 2. satisfied, 3. partially satisfied 4. Dissatisfied and 5 very dissatisfied. Quality of life assessment by survey (OHIP-14 questions): 1. Never, 2. Rarely, 3. Sometimes, 4. Repeatedly, 5. Always. Descriptive statistics with absolute and relative frequencies; inferential statistics using medians and interquartile range with Fisher's test and chi-square. **Results:** Mean age 65.8 ± 9.7 years, Healthy (ASAI) (55.6%). Patients very satisfied (75-100%) with dental implant treatment (OIIP-15) and never presented an alteration in their quality of life (OHIP-14) during the two years of study, both in terms of functionality and socialization (61.1%-100%). The rehabilitation of the patients, with significant difference Hybrid Prosthesis ($p=0.039$), overdenture ($p=0.046$), single crowns ($p=0.011$), fixed prosthesis ($P=0.003$). **Conclusion:** Adults of legal age, healthy or with controlled systemic diseases, are satisfied with the use of dental implants during two years of use and have a good quality of life.

Keywords: Dental Implants, Quality of life, Rehabilitation, Satisfaction.

INTRODUCTION

It is increasingly recognized that the impact on quality of life, of the disease, its treatment and its consequences, should be considered when evaluating the state of health and the results of dental clinical treatment international studies have shown a survival rate of dental implants of more than 90%, at intervals of 10 years of use (1). Survival (the time an implant remains in situ) and implant success (absence of biological complications) are important factors in assessing the outcome of implant therapy. However, these factors are not the only determinants; Patients' satisfaction and quality of life also play a very important role in daily dental practice (2,3) Much more relevant to the success of the implant is whether the hard and soft tissues around the implants are free of inflammation; as well as the functional and aesthetic results of the implant-supported restorations (4,5).

Kim Hsung, et al; 2018 (6). In a retrospective study, satisfaction in fully edentulous patients immediately after oral implant placement was evaluated, related to rehabilitation, and the cumulative survival rate. The satisfaction items valued chewing ability, aesthetic appearance and general satisfaction. Each survey question was scored on a 5-point Likert scale: 1-very satisfied, 2-satisfied, 3-partially satisfied, 4-dissatisfied, and 5-very dissatisfied. The survey was conducted through a face-to-face interview by trained personnel, to analyze the risk factors for implant failure with time-to-event data, a Cox proportional hazards model was used, Bayesian hierarchical analysis was applied to the Cox model because the sample of completely edentulous jaws was relatively small and we wanted to control the variation of independent variables among patients. The methods applied in this study could be considered an alternative procedure by which a sufficient level of confidence, a maximum of 7 years, of 97.9 %, can be accepted. It also shows that the risk of implant failure was associated only with implant length. A high degree of patient satisfaction was achieved, in terms of chewing capacity and anesthetics, with the immediate or delayed loading protocols.

Dong H, et al; 2019 (3), assessed patients oral *satisfaction* related to oral implant placement based on the "Oral Health Impact Profile" implant survival questionnaire including name, sex, age, education level, telephone number, and their satisfaction score based on a visual analog scale from 1 to 5 according to the "Oral Health Impact Profile" questionnaire (OIIP-15). The Oral Implant Impact Profile on Quality of Life (OHIP-14) was reorganized to contain 14 questions. Statistical analysis of the data was summarized and analyzed using SPSS software (version 19); IBM Corporation, Armonk, NY, USA). It was shown that in patients with dental implants, the factors that most influenced patient satisfaction, success rate and implant survival time were tooth loss and degree of bone regeneration. *Cepeda B, et al. IADR. Shanghai China 2019 (4).* In a retrospective study, the effect of two prophylactic protocols on quality of life was compared by means of the survey (OHIP-14) and the degree of satisfaction with the survey (OIIP-15), in patients undergoing any dental implant surgery procedure. The sample was divided into two groups: *case group*: antibiotic prophylaxis based on the smear of oral secretions and antibiogram, 8 days pre-operating, to identify the oral mucosal bacteria and the antimicrobial most effectively in each patient. The *control group* prophylaxis with prescription of Amoxicillin 1gr, 1 hour before the procedure. The OHIP survey showed that the patients in the case group did not present any complications two years after implant surgery and are satisfied with their quality of life. In the control group, the most frequent complications were oral pain, problems pronouncing words, chewing, alterations in taste perception, emotional concern about their prostheses, and not being satisfied with their quality of life.

IMPORTANCE AND JUSTIFICATION

For all of the above, it is important to know the degree of patient satisfaction in the performance of all oral functions and its repercussions on quality of life, during 2 years of use of dental implants to identify the causes and procedures used, which will improve their effectiveness with clinical controls at least 2 per month and improve practices in these areas resulting in more harmonious and comfortable treatments for future patients treated with dental implants. Totally edentulous patients chewing, malnutrition, and quality of life is greatly affected. With the increase in the proportion of the elderly population, there is a need for treatment that involves conventional complete prostheses (7).

Objective: To assess the level of satisfaction in patients with the use of dental implants and different types of rehabilitation for two years (2022-2023) through the survey (OIIP-15) in 4 surgical times: pre-surgery, post-surgery, crown placement and post-surgery clinical controls, and quality of life with the survey (OHIP-14) modified on a Likert scale from 1 to 5.

METHOD

Retrospective cross-sectional research between January 2022 and December 2023. Approved by the Institutional Ethics Committee as "Minimal Risk Research". Medical records de patients with compliance with the inclusion criteria 36. From the medical records, the demographic data of each patient, name, age, gender; clinical data: number of implants, type of rehabilitation, health status (ASAI-ASAIL). The patients were contacted by telephone in which the reason for the call was explained and the informed consent of the present research was read for acceptance and signature. The degree of satisfaction was evaluated through the survey (OIIP-15) consisting of 15 questions. were rated on the Likert scale from 1 to 5 points: 1. very satisfied, 2. satisfied, 3. partially satisfied, 4. dissatisfied and 5 very dissatisfied. Quality of life through the survey (OHIP-14) consisting of 14 questions with a score of 5 points: 1. Never, 2. Rarely, 3. Sometimes, 4. Repeatedly, 5. Always. Descriptive statistics were performed on all variables using absolute and relative frequencies; inferential statistics using medians and interquartile range with the Fisher Test and Chi-square. The correlation between the 2 surveys (OIIP-15) and (OIHP-14) with the variables sex, type of rehabilitation and health status (ASAI - ASAIL) was performed with the Mann-Whitney U test. The correlation between the two surveys (OIIP-15) and (OIHP-14) with the Spearman test; with a 95% confidence level using Stata 14 software.

RESULTADOS

Mean age of the 36 patients was 63.4 years with a range between (53.7 and 79.1 years), 20 women (58.3%), 16 men (41.7. Healthy (ASA I 55.6%), with the presence of pre-existing diseases medically controlled (ASA II 44.4%). Number of implants per procedure (5.1 ± 3.3). Use of hybrid prostheses (13.9%), single crowns (66.7%), fixed prostheses (22.2%) and overdentures (5.6%).

The results of the degree of *satisfaction* with the treatment received in the four phases of treatment: pre-surgery, post-surgery, crown placement and post-surgery clinical controls; through the survey (OIIP-15) in the 15 questions, it was shown that most patients are very satisfied, range between (75%-100%).

During the two years of study, most of the patients never presented any alteration in *their quality of life*, both in questions related to the aspect of functionality (61.1%) in the aesthetic aspect (86.1%) and socialization with people (91.7%-100%). according to the survey (OHIP-14). The comparison between degree of satisfaction (OIIP-15) and quality of life through (OHIP-14) showed that most patients are very satisfied or satisfied (range 44.4% - 100.0%) and have good quality of life (range 61.1% - 100%).

Descriptive Analysis of Satisfaction (OIIP) in the 15 questions with a rating of 1 to 5 Likert Scale showed a positive trend, reflected in the medians that are mostly positive responses rating on the Likert scale 1 (very satisfied). However, in some items, such as in the question (OIIP) P2: How did you do with pain during the implant operation. There is greater variability, suggesting that satisfaction with pain during the surgical procedure may be less satisfactory due to the different thresholds in each patient for pain. The analysis showed that the mean rating of the 15 questions (OIIP-15) presented a value of 1 on the Likert scale (very satisfied) and for questions P2, P7, P11 and P14 (OIIP-15) the rating ranged from 1 very satisfied to 5 very dissatisfied (Figure 1).

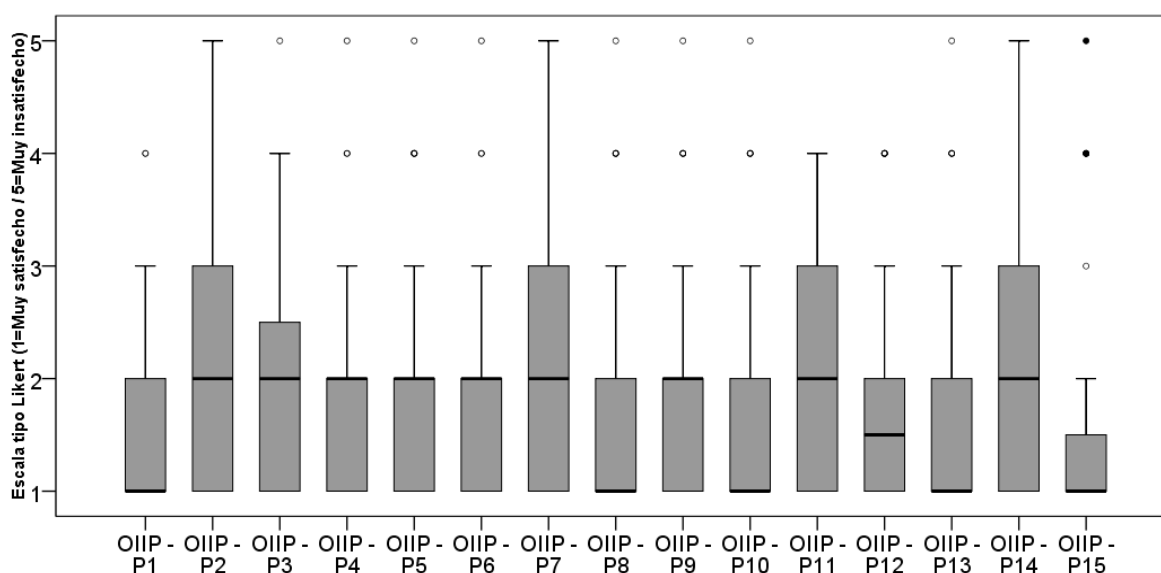


Figure 1: OIIP Descriptive analysis satisfaction Analysis Likert Scale from 1 to 5

Q1How do you feel about the explanation given by the treating dentist before starting the implant treatment?, Q2How did you do with the pain during the implant operation?, Q3How did you do with the postoperative pain?, Q4How do you feel about the duration of the operative time?, P5How was your reaction with the edema (inflammation) of soft tissues?, Q6How do you feel about the duration of wound healing?, Q7How do you feel about waiting for crown placement? Q8How do you feel about the color of the crown on the implant?, Q9How do you feel about the implants compared to your natural teeth?, Q10How have you been doing with maintaining oral hygiene after treatment?, Q11How do you feel about the cost of implant treatment?, Q12How do you feel about your ability to chew?, Q13 Do you feel comfortable with the implanted teeth?, Q14 How do you feel about the impaction (accumulation) of food on the crown placed?, Q15 How do you feel about the quality of the surgical procedure of the treating dentist?

The descriptive analysis of the quality of life in the 14 questions of the survey (OHIP -14) showed that there was a lot of dispersion (Figure 2) and the mean of the 14 questions with ratings of 1 never. In questions P1, P3, P4 and P6 there was a dispersion between 1 (never) and 2 (rarely), in question P3 the dispersion was 3 (occasionally). with median scores on the Likert scale of 5 Interquartile Range (IQR) (5-5) (Figure 2)

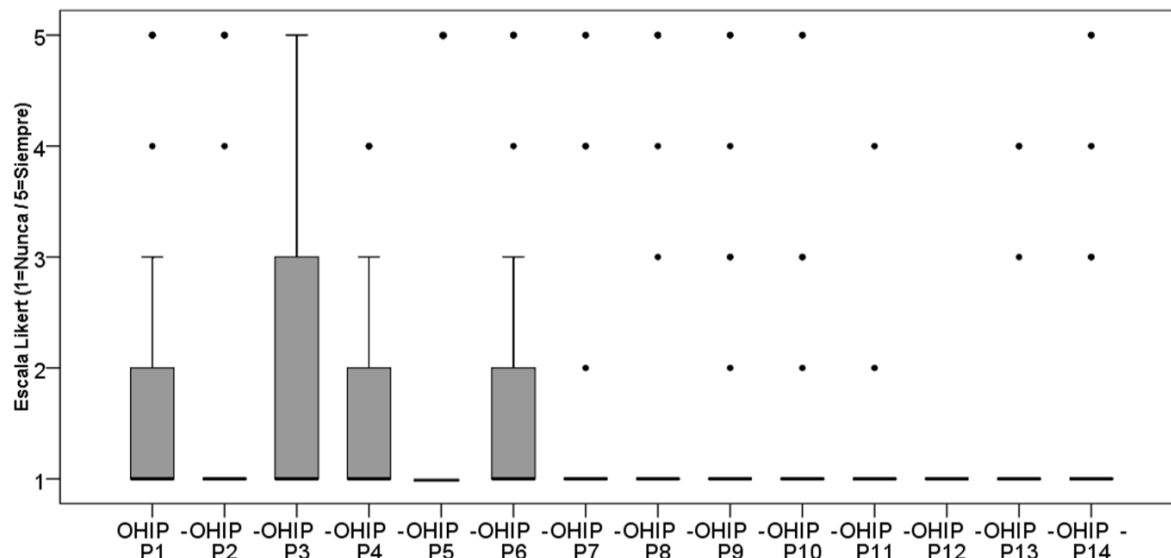


Figure 2: OHIP Quality of Life Descriptive Analysis Likert Scale from 1 to 5

Q1, Have you noticed that any of your teeth don't look right? Q2 Have you felt that your appearance has been affected by problems with your teeth? Q3 Have you had sensitive teeth due to heat, food, or cold liquids? Q4 Have you felt any painful areas in your mouth? Q5 Do you feel self-conscious about the way your teeth look? Q6 Have you felt discomfort about the appearance of one or more of your teeth? Q7 Have you felt that your perception of flavors in food has decreased due to problems with your teeth? Q8 Have you avoided smiling because of problems with your teeth? Q9 Have you found it difficult to relax because of problems with your teeth? Q10 Have you been embarrassed by the way your teeth look? Q11 Has your relationship with friends, partner and family been affected by the appearance of your teeth? Q12 Have you had difficulties at work because of the appearance of your teeth? Q13 Have you had difficulty enjoying the company of other people because of the appearance of your teeth? Q14 Have you felt that your life in general was less satisfying because of the appearance of your teeth?

The comparative inferential statistics between the two surveys (OIIP-OHIP) with the variables of sex, systemic status and type of rehabilitation, showed that the results of the two questionnaires (OIIP-15 and OHIP-14) with sex and health status (ASA I) (ASA II) in each of the questions did not present statistically significant differences ($p > 0.05$).

The comparison between degrees of satisfaction (OIIP-15) showed that most patients are very satisfied or satisfied (range 44.4% - 100.0%) and Quality of life (OIHP-14) have good quality of life (range 61.1% - 100%). In the present study, 5 techniques were used for the rehabilitation of the patients, with significant differences between them: Hybrid Prosthesis ($p = 0.039$), overdenture ($p = 0.046$), single crowns ($p = 0.011$), fixed prosthesis ($P = 0.003$). This suggests that the quality of treatment and care provided by the dentist has significant positive effects on the

quality of life of patients both in the aspect of functionality and in the aspect of social relationships.

DISCUSSION

In the present study, most of the participants were older adults with a mean age (SD) of 63.4 ± 9.7 years, they are satisfied with the treatment received and have a good quality of life. This coincides with the study by Dong H, et al in 2019 (3), where the age of the patients ranged from under 30 years old to over 45 years old (50.94%), they were grouped according to age, demonstrating that satisfaction (OIIP) and good quality of life (OHIP) were present in all age groups. Concluding that age is not a variable that affects satisfaction and quality of life.

In the present research, it was demonstrated in all satisfaction (OIIP) and quality of life (OHIP) questions that there is no relationship with gender; which coincides with the Rutkowski H, *et al*; 2022 (4) study where gender was not correlated with the quality of life of patients (4).

In the present study, most patients were healthy (ASA I 55.6%) and patients with pre-existing diseases who were systemically controlled by medicine (ASA II 44.4%), with no impact on their satisfaction and quality of life. In the literature review, no studies were found that addressed the state of systemic health.

In the present study, the mean number of implants per procedure was (SD) (5.1 ± 3.3) implants per procedure. When compared to the study by Rutkowski H, *et al* 2022 with 58 patients undergoing dental implant placement and also presented satisfaction and good quality of life (4)

In the present research, the survey conducted by E. *Bramante, et al* 2013 (5) was used, where the Oral Health Impact Profile survey was reduced to contain only 14 questions (OHIP-14), which allows for clear and coherent results and the full cooperation of patients (5).

The total results obtained in the present study on the degree of satisfaction with the treatments received using the survey (OIIP), showed a significant high degree of satisfaction ($p=0.005$), which suggests that the treatments in the postgraduate program of the University Foundation (UNICIEO) in the oral and reconstructive implantology clinics met the expectations of the patients. This also coincides with Anneloes E *et al* 2019 using the Fifteen-Item Questionnaire (OIIP-Q) for the evaluation of patient satisfaction (11).

In the present research, the OIIP P7 questions How do you feel about waiting for crown placement and OIIP P11 question How do you feel about the cost of implant treatment? obtained the lowest rating. This coincides with the Di Francesco *et al* 2021, study, which also showed lower scores in questions related to the functionality of the implants received compared to their natural teeth (13).

In the present study, the highest satisfaction was observed in the items related to the dentist's explanation, pain during and after surgery, and the quality of the surgical procedure, which coincides with various studies (10-17) where a very high degree of satisfaction (OIIP) was demonstrated with the implant-supported restorations. both from a functional and aesthetic

point of view. All patients were very satisfied with their phonetics and most with the comfort when chewing, the ease of cleaning and the stability of the restoration.

In the present study, 5 techniques were used for the rehabilitation of the patients, with significant differences between them: Hybrid Prosthesis ($p=0.039$), overdenture ($p=0.046$), single crowns ($p=0.011$), fixed prosthesis ($P=0.003$). This suggests that the quality of treatment and care provided by the dentist has significant positive effects on the quality of life of patients both in the aspect of functionality and in the aspect of social relationships.

CONCLUSION

Patients with the use of dental implants and the use of different types of rehabilitation for two years showed a tendency to be very satisfied or satisfied with the dental implant treatment and the type of rehabilitation assessed by the survey (OIIP-15); which was reflected in a good quality of life both in the aspects of functionality, aesthetics and socialization valued through the survey (OHIP-14).

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