

## Patient Satisfaction with Dental Implant Treatment

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**Abstract:** This study aimed to evaluate the patients' satisfaction in regard to the appearance of their implant crown, the harmony with the natural teeth, the appearance and several other issues such as crown form and color. A 12-item multiple choice questionnaire which included the satisfaction with implant treatment, perception of various technical aspects of implant restoration and demographic information were distributed among patients. The satisfaction was rated on a 4-point scale in which 1 represented high dissatisfaction or strong disagreement and 4 high satisfaction or strong agreement.

**Key words:** Dental implant, satisfaction, crown, harmony, perception

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### INTRODUCTION

Patient-based assessment of the implant treatment has been extensively used in the literature to evaluate the benefit of implant-supported treatments and their perceived advantages compared to conventional prosthesis. Patient dissatisfaction has been reported to be as high as 17% which is mainly attributed to esthetic problems (Carlsson and Carlsson, 1994). Moreover, it has been demonstrated that esthetic preferences of patients are different than those of dentists (Newton *et al.*, 2003). Thus future studies should be designed in a way that patient oriented outcome assessment better reflect patients' concerns.

The development and validation of scales for measuring patient satisfaction with health care services is a common subject in the medical and dental literature. Various self-administered questionnaire with different items and scales are developed to evaluate dental patient satisfaction (Pusic *et al.*, 2013; Ware *et al.* 1983; Wolf *et al.*, 1978). These scales include access, convenience, cost, pain, quality of care, major sources of satisfaction and dissatisfaction with dental care providers and services. A questionnaire was produced with Chapko *et al.* (1985) to analyze patients satisfaction consisting of 42 items divided into 13 subscales to obtain feedback on patient satisfaction with dental care in general.

This study aimed to assess the patients satisfaction in regard to the appearance of their implant crown, the harmony with the natural teeth, the appearance and several other issues such as crown form and color.

### MATERIALS AND METHODS

This cross sectional study investigated the patient satisfaction regarding dental implants and associated fixed restorations on maxillary anterior teeth, provided by prosthodontists. All patients who had been treated with at least one dental implant in the anterior maxillary region were included in the study.

A 12-item multiple choice questionnaire was distributed to 100 subjects. The questionnaire included the satisfaction with implant treatment, perception of various technical aspects of implant restoration and demographic information. Items included the appearance of the implant restoration, appearance of the gingival, overall appearance of the implant restoration when smiling, function, oral health, complications, information the patients received about their treatment prior to their treatment, cost and time until completion of treatment. The satisfaction was rated on a 4-point Likert scale ranging from 1-4 in which 1 represented high dissatisfaction or strong disagreement and 4 high satisfaction or strong agreement.

Statistical analyses were preformed, utilizing SPSS Version 20. Descriptive statistics of demographic data were tested and frequencies were obtained to describe the response distribution of the questionnaire and the dental record abstracted items.

### RESULTS AND DISCUSSION

A total of 65 questionnaires were collected. The questions that were not answered were treated as missing values in the analyses. The 57% of the subjects were

Table 1: Distribution of patients' responses (1 = high dissatisfaction or strong disagreement, 2 = dissatisfaction or disagreement, 3 = satisfaction or agreement and 4 = high satisfaction or strong agreement)

Question	1	2	3	4
In general, how satisfied are you with your implant restoration?	1 (1.53)	1 (1.53)	7 (10.76)	56 (86.15)
How satisfied are you with the shape of your restoration ?	0	0	13 (20)	52 (80)
How satisfied are you with the position of the restoration in relation to other teeth?	4 (6.15)	3 (4.61)	10 (15.38)	48 (73.84)
Is a dark metal shade seen through the gum portion of the restoration?	0	3 (4.61)	11 (16.92)	51 (78.46)
Has your gum shrunk around the implant restoration?	0	8 (12.30)	13 (20)	44 (67.69)
Is the gum between the implant and the teeth dark?	0	4 (6.15)	24 (36.92)	37 (56.92)
How do you feel about the appearance of the restoration when smiling?	1 (1.53)	6 (9.23)	10 (15.38)	48 (73.84)
Is the appearance of your restoration as attractive as the natural teeth?	3 (4.61)	1 (1.53)	9 (13.84)	52 (80)
How do feel about the function (speech and ability to chew) of your restoration ?	1 (1.53)	1 (1.53)	13 (20)	55 (84.61)
How do feel about the freshness of your breath?	0	0	17 (26.15)	48 (73.84)
How do feel about the health of the gums around the restoration?	1 (1.53)	1 (1.53)	13 (20)	56 (86.15)
How do you feel about the information you had about the treatment before receiving the implant restoration?	3 (4.61)	5 (7.69)	12 (18.46)	45 (69.20)
Considering your current level of satisfaction, would you select an implant treatment if you had to do it again?	0	0	6 (9.23)	59 (90.76)

women (n = 37) and 43% men (n = 28) with the mean age of 51 years old. In general, 86.15% of the patients were highly satisfied with their implant restoration, 73.84% were highly satisfied with the implant restoration when smiling, and 80% perceived their implant restoration as attractive as their natural teeth. The 84.61% were highly satisfied with the function of their implant restoration (speech, chewing ability, comfort). 86.15% of the subjects were satisfied with the oral health around their implant restoration and >73.84% were highly satisfied with their freshness of breath. Moreover, 90.76% of the patients would select an implant restoration if they had to do it again or would recommend it to a friend.

Although, dental implants have demonstrated high success rates in the treatment of edentulous patients, it is important to evaluate the treatment from the patients' standpoint in order to minimize the potential areas of dissatisfaction in future treatment. The purpose of this study was to determine the overall satisfaction with dental implant treatment and patient perceptions of treatment outcome (Table 1).

The 80% of the subjects were highly satisfied with the shape of their implant restoration. These results are in agreement with previous studies. Chang *et al.* (1999) conducted a survey where the patients were asked to mark their assessment on a 100-mm line having end phrases "not at all satisfied" on the left and "completely satisfied" on the right, evaluating the appearance of their implant-supported single tooth replacement. The subjects' overall satisfaction which was then measured to the nearest mm was reported as a percentage and it had a mean value of 94%. Avivi and Zarb (1996) used a questionnaire with a 5-point scale to evaluate the esthetic outcome and reported that 88% of their patients were satisfied. Carlsson and Carlsson (1994) examined patient satisfaction using a questionnaire which was administered during patient recalls and reported that 83% expressed satisfaction with their implant prostheses.

The preservation of the papilla is an important issue, which influences the appearance of the soft tissues around the implant restoration (Ziahosseini *et al.*, 2014; Singh *et al.*, 2013). The 56.92% of the subjects did have such problems; however, it seems that the problem did not affect the overall satisfaction with the appearance of the implant restoration.

Communication between the dentist and the patient is very important in order to achieve optimal esthetic and health results (Bachmann *et al.*, 2013; Woelber *et al.*, 2012). In this study, 69.2% of the patients were highly satisfied with the amount of information received prior to treatment, 18.46% were satisfied. This finding suggests that it is important to prepare the patients what to expect during each phase and from the final result of the treatment and discuss with them treatment limitations that may apply to them. Information about the appearance of the final restoration may also be presented to the patient, prior to the beginning of the treatment by means of a diagnostic wax-up. This can provide feedback and allow the patient to approve the planned outcome, prior to committing to the treatment (Coachman *et al.*, 2010). By considering the patients' concerns and perceptions during initial the treatment-planning phase, the rehabilitative dentist may increase the probability of successful outcomes.

## CONCLUSION

Factors such as function (speech, chewing capacity, comfort), appearance when smiling or amount of information received by the patient prior to the beginning of the treatment are significant in the patients satisfaction.

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