

Original Article

# Evaluation of Patient's Satisfaction with Implant Supported Prosthesis in Rizgary Hospital from 2015-2019

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## Abstract

**Objective:** This study aims to evaluate patient satisfaction when treated with implant-supported restorations at Dental Implant Unit-Maxillofacial Surgery Department/Rizgary Teaching Hospital in Erbil-Iraq from 2015-2019.

**Methods:** Eighty patients with implant-supported prostheses were randomly selected to participate in the study. A case sheet was created for each of them. The case sheet consisted of two parts. The first part consisted of clinical evaluation recordings: mobility, suppuration, and bleeding on probing the implant-supported prosthesis, which the examiner did. While the second part of the case sheet was a questionnaire that the patient answered. There were five questions in the questionnaire: 1- the ability to chew foods, 2- the appearance of the prosthesis, 3- the comfort of the implant-supported prosthesis, 4- speaking ability, and 5- overall satisfaction with the outcome of the treatment. The degree of satisfaction was assessed by the scale from (1-5) with 1: corresponding to Not satisfied at all, 2: Not satisfied, 3: Partially satisfied, 4: Satisfied, and 5: Highly satisfied.

**Results:** Majority (75%) of the sample were either satisfied (30%) or highly satisfied (45%) with the outcome of treatment (overall satisfaction). Nearly the same percentages were obtained regarding the satisfaction with the ability to chew foods, the appearance of the prosthesis, comfort, and speaking ability with the implant-supported prosthesis. In addition, there were strong correlations between mobility and suppuration of the implant-supported prostheses and the patient's satisfaction.

**Conclusions:** Within the limitation of this study, it has been concluded that patients treated with implant-supported prostheses were highly satisfied with the treatment. Data on patient satisfaction is an important source of information that can guide dentists to provide treatment that will meet patients' expectations more.

**Keywords:** *Implant-supported restorations, Patient satisfaction, Clinical evaluation, Questionnaire.*

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## Introduction

When implants were first introduced into dental sciences, restoring function and aesthetic of the edentulous space was its main aim by providing support to the prostheses. Which in turn affects the overall patient's health being and quality of life<sup>(1)</sup>.

Implant-supported restorations show a high success rate<sup>(2)</sup>. Therefore, reconstruction by implant-supported single-unit crowns or fixed bridges seems a logical tool to compensate partially edentulous patients<sup>(3-5)</sup>. However, results based on patient satisfaction are an important aspect in determining treatment success<sup>(6,7)</sup>.

There are many studies and lots of concentration on the techniques, materials, and technologies used for dental implants while evaluation of the treatment by the dentist is often not in line with the patient's expectations and satisfaction, including the function, aesthetics, and psychosocial adaptation. Satisfaction is an important element in the evaluation of the treatment itself<sup>(8)</sup>.

Despite their high survival rates, patients' concerns have been reported periodically for implant-supported fixed bridges, resulting in low patient comfort<sup>(9)</sup>; at the same time, several reports on the satisfaction of partially-edentulous patients treated with dental implants generally report high degrees of satisfaction<sup>(6,7,10,11)</sup>.

Many studies performed reported the opinion of the patients through questionnaires concerning satisfaction and oral function. The outcome of these studies showed that edentulous subjects who received the implant-supported prosthesis reported significant improvement in their oral health-related quality of life. They also concluded that the great majority of the patients have been satisfied with their complete or partial jaw-anchored restoration because oral function and well-being have improved significantly<sup>(12-15)</sup>.

The aim of this study was to evaluate the patient's satisfaction treated with implant-supported restorations at Dental Implant Unit-Maxillofacial Surgery Department/ Rizgary Teaching Hospital in Erbil-Iraq from the years of 2015-2019.

## Materials and methods

The study included eighty patients randomly selected from the archives of Dental Implant Unit-Maxillofacial Surgery Department/Rizgary Teaching Hospital at

Erbil-Iraq that managed with implant-supported prostheses throughout the years of 2015-2019.

Patients were contacted and asked to visit the department to answer the questionnaire and clinically check their implant-supported prostheses. All subjects were informed about the objectives and characteristics of the study, both verbally and in writing. Those who agreed to participate signed an informed consent statement prior to creating a case sheet for them.

The case sheet consisted of two parts. In the first part, besides general information of the patient like name, age, the number and location of the implants as well as the type of the prostheses if it is porcelain fused to metal or zirconia, there was a clinical evaluation recording of mobility, suppuration and bleeding on probing of the implant-supported prosthesis which the Author examined. Only five patients were examined per day out of that Eighty patients.

The second part of the case sheet was a questionnaire that the patient answered. The five main points that were assessed:

1. How would you evaluate your ability to chew foods?
2. Are you satisfied with the appearance of your prosthesis?
3. How would you evaluate the comfort of your implant-supported prosthesis?
4. How would you evaluate your speaking ability with your implant-supported prosthesis?
5. How would you evaluate your overall satisfaction with the outcome of your treatment?

The degree of satisfaction was assessed by a scale from (1-5) with 1: corresponding to Not satisfied at all, 2: Not satisfied, 3: Partially satisfied, 4: Satisfied, and 5: Highly satisfied.

Data were analyzed using the Statistical Package for Social Sciences (SPSS, version 25). The Chi-square test of association was used to compare proportions. Fisher's exact test was used when the expected frequency (value) was less than 5 of more than 20% of the table's cells. A  $p$ -value of  $\leq 0.05$  was considered statistically significant.

## Results

Eighty patients who had been treated previously with implant-supported prostheses were assessed in this study. Their mean age was 46.31 SD±10.22 years, ranging from 23-68 years. The median was 46.5 years. The largest proportion of the patients, 42.5%, were aged ≥ 50 years. More than half (55%) of the patients were females, as shown in Table 1. In general, the majority, 75% of the sample, were either satisfied 30% or highly satisfied 45% with the treatment outcome (overall satisfaction). In comparison, 20% of the patients were partially satisfied, 2.5% were unsatisfied, and 2.5% were unsatisfied at all. Nearly the same percentages were obtained regarding the satisfaction with the ability to chew foods, appearance of the prosthesis, comfort, and speaking ability with the implant-supported prosthesis, as shown in Table 2.

The majority, 70% of the sample, were satisfied with the outcome, 17.5% were moderately satisfied, and 12.5% were unsatisfied, as shown in Figure 1.

It is evident in Table 3 that the majority of females, 81.8%, were either satisfied or highly satisfied with the outcomes compared with 55.6% of males  $p = 0.021$ . No significant association was detected between the level of satisfaction with the other factors like age ( $p = 0.054$ ), the number of implants  $p = 0.867$ , and position of teeth  $p = 0.309$ .

Table 4 shows that two patients had developed mobility, and both of them 100% were unsatisfied compared with 10.3% of those who didn't develop mobility  $p = 0.014$ . All 100% of patients who developed suppuration were unsatisfied compared with 7.9% of patients with no suppuration  $p < 0.001$ . Two thirds 66.7% of patients who developed bleeding on probing were unsatisfied, compared with 2.9% of patients who didn't develop bleeding on probing  $p < 0.001$ .

All the patients were treated with porcelain fused to metal prostheses.

Table 1: Age and gender distribution of the studied sample.

Age (years)	No.	(%)
< 40	16	20.0
40-49	30	37.5
≥ 50	34	42.5
Mean (±SD)	46.31	±10.22
Gender		
Male	36	45.0
Female	44	55.0
Total	80	100

Table 2: Degree of satisfaction with the implant-supported prosthesis as assessed by the studied indicators.

Indicators of satisfaction	Degree of satisfaction*				
	1	2	3	4	5
	No. %	No. %	No. %	No. %	No. %
How would you evaluate your ability to chew foods?	2 2.5	2 2.5	10 12.5	24 30	42 52.5
Are you satisfied with the appearance of your prosthesis?	2 2.5	6 7.5	16 20	24 30	32 40
How would you evaluate the comfort of your implant-supported prosthesis?	2 2.5	6 7.5	10 12.5	22 27.5	40 50
How would you evaluate your speaking ability with your implant supported prosthesis?	0 0	6 7.5	8 10	20 25	46 57.5
How would you evaluate your overall satisfaction with the outcome of your treatment?	2 2.5	2 2.5	16 20	24 30	36 45

\*1: Not satisfied at all 2: Not satisfied 3: Partially satisfied 4: Satisfied 5: Highly satisfied

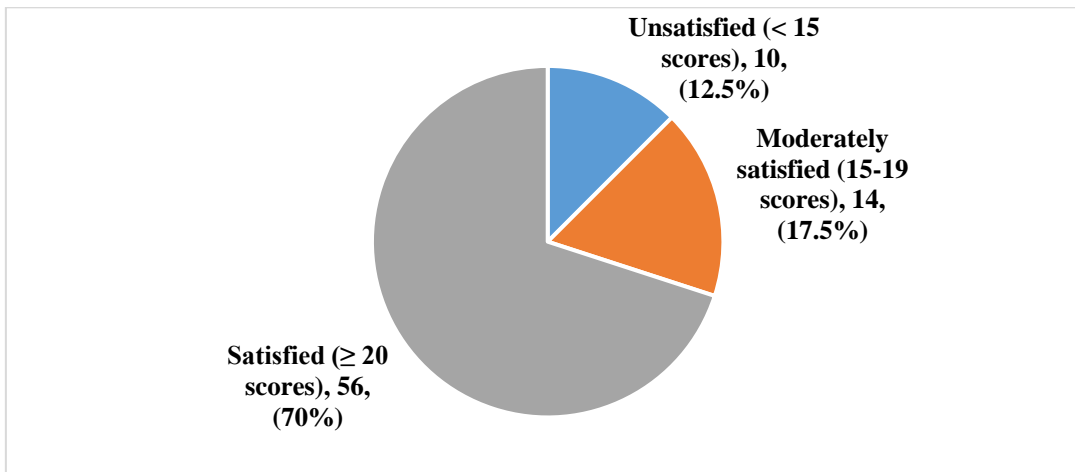


Figure 1: Level of satisfaction with the implants, as assessed by the satisfaction scale.

Table 3: Level of satisfaction by the studied factors.

	Level of satisfaction						p
	Unsatisfied (< 15)		Moderately satisfied		Satisfied (≥ 20)		
	No.	%	No.	%	No.	%	
<b>Age</b>							
< 40	2	12.5	2	12.5	12	75.0	
40-49	2	6.7	2	6.7	26	86.7	
≥ 50	6	17.6	10	29.4	18	52.9	0.054*
<b>Gender</b>							
Male	8	22.2	8	22.2	20	55.6	
Female	2	4.5	6	13.6	36	81.8	0.021†
<b>No. of implants</b>							
1-3	6	11.1	10	18.5	38	70.4	
≥ 4	4	15.4	4	15.4	18	69.2	0.867*
<b>Position of teeth</b>							
Anterior	2	16.7	2	16.7	8	66.7	
Posterior	4	8.7	6	13.0	36	78.3	
Both	4	18.2	6	27.3	12	54.5	0.309*
<b>Total</b>	<b>10</b>	<b>12.5</b>	<b>14</b>	<b>17.5</b>	<b>56</b>	<b>70</b>	

\*By Fisher's exact test. †By Chi-square test.

Table 4. Level of satisfaction by complications.

	Level of satisfaction						p
	Unsatisfied (< 15)		Moderately satisfied		Satisfied (≥ 20)		
	No.	%	No.	%	No.	%	
<b>Mobility</b>							
Yes	2	100	0	0	0	0	
No	8	10.3	14	17.9	56	71.8	0.014*
<b>Suppuration</b>							
Yes	4	100	0	0	0	0	
No	6	7.9	14	18.4	56	73.7	<0.001*
<b>Bleeding on probing</b>							
Yes	8	66.7	4	33.3	0	0	
No	2	2.9	10	14.7	56	82.4	<0.001*
<b>Total</b>	<b>10</b>	<b>12.5</b>	<b>14</b>	<b>17.5</b>	<b>56</b>	<b>70</b>	

## Discussions

The restorations supported by dental implants and their success in oral rehabilitation are well discussed in the literature. However, studies on dental implants generally focus on their success and failure from a biological point of view, whereas not the same concentration and investigations have been carried out on patient satisfaction according to treatment results<sup>(16)</sup>, the degree of patient satisfaction is the result of a complex interrelationship between psychosocial and physiological factors<sup>(17-19)</sup>.

In this study, patient satisfaction with implant-supported prostheses was assessed based on chewing function, speaking, esthetics, comfort, and overall satisfaction by a questioner. In addition, it was co-related to clinical evaluation of mobility suppuration and bleeding on probing. The findings showed that the majority of the patients were satisfied with the treatment. Previous studies have made a similar evaluation using a variety of questionnaires and scales<sup>(1,6,7, 20)</sup>.

High levels of patient satisfaction have been noted, with statistically significant differences between genders, while some studies showed different findings<sup>(19,21)</sup>. No significant association was detected between the level of satisfaction with the other factors like age, number of implants, and position of teeth. Similar findings showed in the literature<sup>(21-23)</sup>.

In the present study, it was found that there was a correlation between the clinical evaluation findings: mobility, suppuration, and bleeding on probing and the patient's satisfaction level, unlike similar studies that did not include clinical evaluations<sup>(15,22)</sup>. The data showed a complete correlation between the patient's satisfaction and the implant-supported prostheses and suppuration mobility. All those patients who developed these two clinical signs were not satisfied with the treatment. Also, it was revealed that two-thirds 66.7% of patients who developed bleeding on probing were unsatisfied compared to those that their implant-supported prostheses didn't bleed on probing; the majority of the latter were satisfied.

Despite the material of the prostheses that were porcelain fused to metal for all patients, most of the patients were satisfied with the aesthetic of their treatment. This result was similar to previous studies<sup>(8,24,25)</sup> that evaluated patient satisfaction with porcelain from metal prostheses. They concluded that patients who had metal-ceramic bridges assessed the condition of the gingiva better than patients who had resin veneers bridges. The previous studies also showed that dental porcelain is less susceptible to the accumulation of bacterial plaque than resin and even hard tooth

structures. However, another reason that is thought to be behind the results of the present study is that the patient's low expectation regarding the esthetic of the prosthesis as they were more concerned with its function rather than its esthetic. This may be due to the low socio-economic level of the patients, and most of the cases were posterior teeth.

## Conclusions

This research showed that the treatment of dental implants meets the patient's needs in case of teeth loss as most of the patients were satisfied with the function, aesthetic, phonation, and overall comfort of the existing implant-supported prostheses. In addition, it could be observed that clinical evaluations like mobility, suppuration, and bleeding on probing were significantly associated with the patient's satisfaction. Therefore, data on patient satisfaction is an important source of information that can guide dentists to provide treatment that will meet patients' expectations more.

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