

Relationship of Life Satisfaction and Satisfaction with Fixed Implant-Supported Prostheses in the Elderly

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Abstract

Background and Aim: The quality of dental treatment is one of the factors that affects life satisfaction in the elderly. Patients expect optimal function, esthetics, and speech from their prosthesis, while durability and technical considerations are also important for clinicians. In addition, social and psychological factors as well as costs can affect patient satisfaction. This study aimed to evaluate the relationship of life satisfaction with satisfaction with implant treatment.

Materials and Methods: In this cross-sectional study, a total of 67 partially edentulous patients (molars and premolars) who had undergone prosthetic treatment 2-6 months earlier were recruited by convenience sampling in Isfahan, Iran. Data were collected by a questionnaire and analyzed using SPSS version 24 via t-test, ANOVA, and Pearson's correlation test.

Results: The mean score of satisfaction with implant treatment was 33.70 ± 5.15 while the mean score of satisfaction with old age was 24.28 ± 4.75 out of 45. There was a significant correlation ($r=0.748$) between life satisfaction and satisfaction with implant treatment ($P=0.001$). Patients with higher level of education were more satisfied with their treatment ($r=0.407$, $P=0.023$). There was a significant difference between satisfaction with single crowns and bridges, and the use of single crowns was associated with greater level of satisfaction with treatment ($P=0.004$).

Conclusion: Satisfaction with implant treatment is significantly correlated with life satisfaction among the elderly. Gender and surgical history were not correlated with treatment satisfaction, but higher educational level and having a single crown were associated with greater patient satisfaction.

Key Words: Patient Satisfaction, Dental Care for Aged, Quality of Life, Dental Prosthesis, Implant-Supported

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Introduction

Aging is a global phenomenon that manifests itself as a social challenge in developing countries (1). The objectives of dental treatments include restoring the function and integrity of the tooth and providing comfort,

esthetics, speech, and oral health. These objectives are achieved by restoring the teeth or replacing the lost teeth. In case of tooth loss, different treatments such as fixed and removable prostheses may be performed, which can eventually affect patients' life satisfaction

(2). Fixed prosthetic treatments require patient cooperation and their understanding of the treatment conditions because these treatments need special care by the patient, and the patients should cooperate with their dentist after treatment to maintain the health of their tissues and increase the durability of treatment (3).

During the treatment course, some psychological changes have been noticed in patients, requiring psychological care and counseling. Thus, the psychological balance and social interactions of patients should be considered by dentists⁴. The patients' personality traits can dramatically affect their satisfaction with treatment because sometimes despite an undesirable treatment in the opinion of specialists, patients express their satisfaction with the treatment owing to their high psychogenic tolerance as a result of high psychological capacity (3-5).

This study aimed to evaluate the relationship of life satisfaction with satisfaction with implant treatment.

Materials and Methods

In this cross-sectional study, the minimum sample size was 67 patients, based on an effect size of 35% (d) for overall patient satisfaction, 95% confidence interval, 80% study power, and 5% level of significance.

The population of this descriptive-analytical cross-sectional study included patients referring to the dental clinics of Isfahan from 2019 to 2020. The inclusion criteria included successful implant treatment based on the criteria presented by Karthik et al, (6) age over 60 years, and missing maxillary and mandibular premolars and molars requiring fixed implant prosthesis. The exclusion criteria consisted of diseases such as mental disorders that might interfere with the completion of questionnaire, implant failure at any stage before the onset of prosthetic treatment due to lack of osseointegration, fixture mobility, pre-implantitis, presence of crown with poor marginal adaptation, improper occlusion, porcelain chipping, color mismatch, and gingival

inflammation. The study sample included 45 (67.2%) males and 22 (32.8%) females.

Data were collected using the Life Satisfaction in the Elderly scale (7), the validity of which has been confirmed by Tagharrobi et al, in 2017 in the Iranian population (8). A questionnaire on satisfaction with implant treatment was also used, the reliability and validity of which was confirmed by Yaghini, in 2010 (3). The study protocol was approved by the Ethics committee of Isfahan University of Medical Sciences (Ethical code:IR.MUI.RESEARCH.REC.1398.766).

Data collection

A total of 67 semi-edentulous patients (patients who had lost their both maxillary and mandibular premolars and molars) who had undergone implant surgery over the past 2-6 months were recruited by convenience sampling. After explaining the objectives of the study for the patients and instructing them on how to answer the questions, written informed consent was obtained from them, and the questionnaires were administered among them. Data were collected by the questionnaire on satisfaction with the fixed implant-supported prosthesis and Life Satisfaction in the Elderly scale and then analyzed using SPSS version 24 via t-test, ANOVA, and Pearson's correlation test. The significance level in this study was considered at 0.05.

Results

Of 67 patients, 34 (50.7%) had single crowns and 33 (49.3%) had bridges. Furthermore, 26 (38.8%) had a history of implant surgery and 41 (61.2%) had no history of implant surgery. Regarding the level of education, 7 (10.4%) were illiterate, 15 (22.4%) had elementary education, 29 (43.3%) had high-school diploma, 12 (17.9%) had a Bachelor's degree, and 4 (6%) had a Master's degree.

The results showed the total score of patient satisfaction with implant was 33.70 ± 5.15 out of 45, which was a relatively high score. The results of the Pearson's correlation test showed a significant correlation ($r=0.748$) between life satisfaction and satisfaction with implant treatment ($P=0.001$). Furthermore, the

Spearman's correlation coefficient indicated a significant correlation between the educational level and satisfaction with implant treatment ($r=0.407$, $P=0.023$). The mean satisfaction scores with implant and life satisfaction based on gender, type of prosthesis, and history of implant surgery are shown in Table 1. Moreover, the results of independent t-test revealed no significant difference between males and females in satisfaction with implant ($P=0.82$) or life satisfaction ($P=0.861$). Independent t-test also showed no significant difference in the mean score of satisfaction with implant between patients with and without a history of fixed prosthesis treatment ($P=0.124$). However, independent t-test showed a significant difference in the mean score of satisfaction with implant between the patients with single crowns and those with bridges ($P=0.004$), and the use of single prosthesis resulted in greater satisfaction with treatment. The results of the Spearman's correlation coefficient indicated a significant correlation between educational level and life satisfaction ($r=0.575$, $P=0.001$).

Discussion

This study showed a positive correlation between satisfaction with fixed implant prosthesis and life satisfaction, which confirmed the main hypothesis of the study and was in line with the results of Fernandes et al, (9) and Eitner et al (10). The results of this study indicated a relatively high score for patient satisfaction with implant treatment, which was in agreement with the results of a study by Olerud et al (11).

Pjetursson et al. (12) evaluated patient satisfaction after implant treatment in a 10-year prospective cohort study and reported that more than 90% of patients were completely satisfied with implant treatment both functionally and esthetically. Among the studies conducted in Iran, the results of Yaghini et al. (3) were in line with the present results, both reporting a high satisfaction rate. Furthermore, the results of the current study were in agreement with those of Da Cunha et al, (13). on comparison of patient expectations from

chewing, speech, esthetics, and comfort before and after treatment.

The present study showed a positive relationship between satisfaction with fixed implant treatment and educational level. A higher level of education can moderate the patients' expectations and provide more realistic views. This result is in contrast to the results of Canallatos et al, (14) who found no relationship between educational level and satisfaction with fixed implant prosthesis. The current study showed no significant difference between males and females in satisfaction with fixed implant treatment; gender was found to have no determining role in satisfaction with implant therapy, which was in line with the results of Yaghini et al, (3) and in contrast with the findings of Canallatos et al (14). In agreement with our study, Bonafé et al. (15) indicated that people who underwent dental treatment had improved self-confidence.

In this study, satisfaction with implant prosthesis was lower in females than males. Moreover, Da Cunha et al. (13) reported lower satisfaction with esthetics, speech, and comfort in females than what they had expected before treatment, which was in contrast to the results of the present study. The results of correlation analysis indicated a significant positive correlation between life satisfaction and educational level. Independent t-test showed no significant difference between males and females in life satisfaction scores. Any former experience of dental treatment can affect the individuals' satisfaction with treatments performed afterwards. However, independent t-test showed no significant difference in satisfaction with implant treatment between patients with and without a history of fixed prosthesis treatment.

The results of independent t-test also indicated a significant difference between patients using single crowns and those using bridges and the use of single prosthesis resulted in greater satisfaction with treatment. Unlike the present study, Yaghini et al. (3) showed no significant difference between patients using single crowns and those using bridges.

Table 1. Satisfaction scores based on different variables

Variables	Life satisfaction		Satisfaction with implant	
	Mean	Std. deviation	Mean	Std. deviation
Gender	Male	24.35	5.33	33.6
	Female	24.13	3.39	33.9
Prosthesis	Single	25.11	4.71	35.47
	Bridge	23.42	4.7	31.87
History of implant treatment	Yes	25.23	4.73	34.92
	No	23.68	4.71	32.92

Conclusion

This study showed a significant correlation between satisfaction with fixed implant prosthesis and life satisfaction in the elderly. It seems that the use of a single crown brings about more treatment satisfaction than a bridge, owing to better bonding and easier cleaning. However, further research is needed to confirm this issue. The educational level was positively correlated with satisfaction with fixed prosthesis and life satisfaction.

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