

Quality Of Life and Satisfaction of Patients Wearing Full-Arch Implant-Supported Prosthesis: Observational, Analytic and Transversal Study

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Abstract

Few studies have assessed the real gain in satisfaction and quality of life of patients rehabilitated with full-arch implant-supported prosthesis. Here, a validated questionnaire (OHIP-14) was used to assess satisfaction and quality of life of patients using total upper and/or lower prosthesis who were rehabilitated with this type of prostheses. The sample consisted of 150 patients divided in three groups (Group 1 = lower protocol; Group 2 = upper protocol; and Group 3 = upper and lower protocol). Most of the answers were zero for all three groups. The intergroup analysis showed no significant difference in the total sum of questions. In the intragroup analysis, the total sum of questions was significantly smaller in the Upper and Lower Group. Time of use of fixed prosthesis accounts for over 30% of the variation in total OHIP-14. There was no influence of protocol location on OHIP-14 answers and, in general, the satisfaction of patients rehabilitated with implant-supported prosthesis is clear.

Keywords: Quality of Life; Prostheses and Implants; Patient Satisfaction.

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INTRODUCTION

Edentulism results, in most of the cases, in diminished phonetic and masticatory functions, which are usually accompanied by changes in psychological and social aspects of the patient's life [1]. For this reason, complete toothless patients can be considered orally mutilated, since the loss of dental elements causes complex alterations, mainly on the alveolar edge in its various degrees of resorption [2, 3].

Implantodontics has arisen from the need to replace lost natural teeth, as an attempt to meet the aesthetic and functional needs that conventional prostheses failed to meet. A better understanding of the Osseo integration process and advancements on surgical techniques have increased the success rate of rehabilitation over implants [1, 4, 5].

However, recent studies have shown the benefits of big rehabilitations to patients. Masticatory improvements are clear, but issues related to phonetics, hygiene and aesthetics can greatly vary from patient to patient [6]. Some patients request the removal of the prostheses over implants and replacement by conventional total prosthesis.⁷

With this in mind, this work aims to assess opinions and perceptions of patients rehabilitated with implant-supported total prostheses on their quality of life after rehabilitation using a validated questionnaire.

Proposition

This observational, analytic and transversal study aims to evaluate, by applying a validated questionnaire, the level of satisfaction and possible improvement on the quality of life of patients wearing conventional total prosthesis after the rehabilitation with protocols over implants. The study took into account length of time since rehabilitation, age, gender, and protocol location - upper, lower, or both.

MATERIALS AND METHODS

This work was submitted to Plataforma Brasil and was approved by the Ethics Committee of the School of Dentistry and Dental Research Center São Leopoldo Mandic under the process #011193/2015. The sample consisted of 150 adult and elderly patients treated at FUNORTE, advanced nucleus of Chapecó/SC.

The exclusion criteria were: patients who refused to participate in the study and/or to sign the

informed consent, and patients who failed to attend the follow up appointments.

This is an observational, analytic and transversal study. Data were collected through interviews, which applied the OHIP-14 Questionnaire, validated by the Brazilian version of the short-form of the Oral Health Impact Profile.

The study took place between 2015 and 2016. The questionnaire (OHIP-14) was applied by the researcher during the reassessment appointment, prior to the prosthesis maintenance, along with the completion of a clinical update form.

Data were analyzed with SPSS 21.0. (SPSS Inc., Chicago, USA).

Chi-squared test was applied to check for associations among the data and for possible influences of treatment on patients' satisfaction and quality of life (improvements in phonetic, masticatory and psychosocial aspects) ($p < 0.05$).

RESULTS

Table 1 shows the distribution of parameters for the sample studied.

Although women are more numerous in the sample, there was no significant difference in gender distribution among the three groups. Time of usage of conventional prostheses showed no difference among the groups, as well. However, patients in the lower protocol group are older than the other groups, in average. Also, time of usage of fixed prostheses was longer among upper protocol subjects, followed by lower protocol and double protocol (upper and lower).

OHIP-14's categories: functional limitation, pain, psychological distress, physical disability,

psychological disability, social disability, and deficiency were rated zero by the majority in the three groups. Only functional limitation showed significant difference. The sum of all answers (total OHIP) was significantly smaller for the double protocol group. The categories also failed to show significant difference among the groups. In fact, only two categories were rated "impactful" - "functional limitation" by one subject, and "psychological disability", by another subject. All other categories were rated as "with no impact" by all subjects within the three groups.

Figure 1 shows total OHIP-14 ratings, according to the following scores: 0 = very good; less than 10 = good; between 10 and 19 = bad; equal or larger than 20 = very bad.

Figure-1 shows a small number of "bad" ratings in the groups Lower Protocol (8.2%) and Upper Protocol (6.1%). There was no significant difference (Fisher's exact test, $p > 0.05$) between groups regarding total OHIP ratings.

To assess the combined influence of variables over OHIP-14 total sum, data were submitted to a linear regression analysis (*stepwise e forward*), as shown in Table-2.

According to the linear regression model, total OHIP = $2.133 + (1.009 \times \text{time of usage of fixed prosthesis})$.

The model is significant (ANOVA, $F=74.5$, $p < 0.0001$) with adjusted $R^2 = 0.335$, indicating that time of usage of fixed prosthesis accounts for more than 30% of the variation of total OHIP-14 answers. Age ($p = 0.746$), gender ($p = 0.305$), approximate time of usage of conventional prosthesis ($p = 0.8280$) and location of protocols ($p=0.055$) had no influence on total OHIP-14.

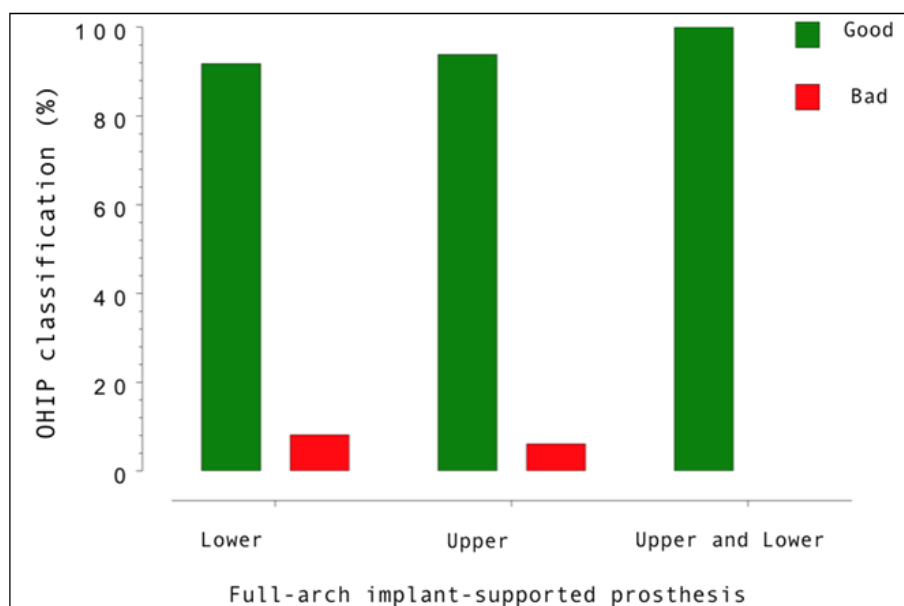
Table-1: Distribution of parameters gender, age and time of usage of prosthesis according to groups

	Lower Protocol (n = 50)	Upper Protocol (n = 50)	Upper and Lower Protocol(n = 50)	p
Female (n - %)	35 (71.4%)	34 (69.4%)	36 (73.5%)	0.9048*
Male (n - %)	14 (28.6%)	15 (30.6%)	13 (26.5%)	
Age - in years (median - 1° and 3° quartiles)	65 (53 - 73.5) a	51 (44.5 - 57.5) b	54 (46.5 - 60) b	<0.0001 [†]
Approximate time of usage of conventional prosthesis - in years (median - 1° and 3° quartiles)	25 (18 - 35) a	20 (15 - 30) a	25 (20 - 30) a	0.2467 [†]
Time of usage of fixed prosthesis - in years (median - 1° and 3° quartiles)	3 (2 - 3) a	3 (3 - 4) b	2 (1 - 3) c	<0.0001 [†]

Key: * - Chi-squared; [†] - Kruskal-Wallis (Dunn)

Table-2: Linear regression model

	Non-standardized coefficient	Standard error	t	p
Constant	2.133	0.355	6.014	<0.0001
Time of usage of the fixed prosthesis	1.009	0.117	8.629	<0.0001

**Fig-1: Ratio of total OHIP-14 ratings according to groups**

DISCUSSION

As implantodontics consolidates as a reliable and highly successful therapy, an increasing proportion of the population turn to implant-supported prostheses as a solution to teeth loss. This is particularly true for patients who experience discomfort with conventional total prostheses, both upper and lower [1].

However, although the patients are the main stakeholders in oral rehabilitations, there is a lack of studies addressing their perspective [8-10]. Hence, professionals, mainly clinicians, eventually attribute the treatment success only to osseointegration and its maintenance according to parameters established by Albrektsson [11].

Considering patients who have lived with conventional total prosthesis for many years, the gains with respect to stability and occlusion are virtually undeniable [12, 13]. However, other aspects that can only be weighted in by those wearing the prosthesis are often neglected, which can be a source of divergence between patients and professionals assessments [14].

As stated by Strassburger *et al.*, [15] the use of post-treatment assessment questionnaires may help to find the ideal prosthetic rehabilitation regarding patients' quality of life. The use of the Oral Health Impact Profile (OHIP) proposed by Slade & Spencer [16], initially consisting of 49 questions and later reduced to 14 questions (OHIP-14) by Allen & Locker [17] has been proven effective and of easy application [18, 19]. As highlighted by Fernnades [20], OHIP-14 is

considered a good indicator of the individuals perceptions on their own oral health and their expectations regarding treatment.

This study was conducted with patients rehabilitated with implant-supported fixed prosthesis. Most studies in the literature show that implant rehabilitations satisfactorily improve patients quality of life, mainly those who previously wore conventional removable prostheses [13, 21-26]. Corroborating with the findings of this study, where most of the answers were zero for the three groups.

In intragroup analyses, total sum of questions (total OHIP) was significantly lower on group three, where patients used the double protocol. In the intergroup analysis, there was no significant difference in the total sum of questions.

We can also observe that "time of usage of fixed prosthesis over implant" accounts for over 30% of variation of total OHIP-14, which is expected since several studies have shown that removable prostheses usually makes patients dissatisfied [11, 27-29]. Rehabilitation with fixed prostheses over implants improves patients health and, as a consequence, their quality of life [10, 11, 13, 30, 31].

Our findings are essential in providing information to professionals on the real impact of the treatment on patients satisfaction and quality of life.

CONCLUSION

We conclude that there is no influence of protocol location on OHIP-14 answers, and that patients rehabilitated with implant-supported fixed prostheses are clearly satisfied. Also, we found that "time of usage of fixed prosthesis" accounts for 30% of variation of total OHIP-14 answers.

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