Short Communication

Multivariate Analysis of Patient Satisfaction Factors Affecting the Usage of Removable Partial Dentures

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The purpose of this retrospective cohort study was to investigate patient satisfaction factors that affect the usage of removable partial dentures (RPDs) using a multivariate analysis. Sixty-seven patients, who had RPDs inserted at the Tohoku University Hospital between 1996 and 2001, participated in this study. Data were collected from patients' clinical records and a questionnaire. Of the 15 factors examined, significant associations were found between RPD usage and pain, color of the artificial teeth, and arrangement of the artificial teeth. These findings suggest that RPD usage is related to patient satisfaction with esthetics and an absence of pain. *Int J Prosthodont 2008;21:499–500.*

Removable partial dentures (RPDs) serve as a prosthodontic treatment option for partially edentulous patients; however, the risk of low patient acceptance should be considered.[1] Satisfaction with RPDs has been associated with patient personality, physical adaptability, and social adaptation.[2–4] Thus it seems to have a multifactorial nature and is an important criterion that determines RPD usage. However, no multivariate analyses of the relationships between these aspects are available. Therefore, it is important to find out how RPD usage is correlated with patient satisfaction with RPDs.

The purpose of this retrospective cohort study was to identify, using a multivariate analysis, the satisfaction factors that affected the usage of RPDs.

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Materials and Methods

Subjects

The distribution of patients, gender, and number of RPDs is presented in Table 1.

The study population included 67 patients who were treated with 90 conventional clasp-retained RPDs made by undergraduate students under the supervision of clinical instructors at Tohoku University Dental Hospital between 1996 and 2001. Five years after the RPDs were delivered, the patients were re-evaluated by well-trained examiners. A long-term dental maintenance program was not routinely provided to these patients.

The authors received permission to conduct this study from the Ethics Committee of Tohoku University Graduate School. The study was undertaken with the understanding and consent of each subject.

Follow-up Examinations

Each follow-up examination, carried out between 2000 and 2006, consisted of a clinical examination of the RPD and patients' subjective assessment of their RPDs. Data were collected from patients' clinical records and a questionnaire concerning their assessment and use of the RPDs. All available patient records were reviewed to establish the status of RPD usage. The patients were required to fill out a questionnaire rating the level of their satisfaction with various aspects of their RPDs on a scale from 1 (unsatisfactory) to 5 (excellent).

Table 1 Distribution of Subjects in Study

Variables	Men	Women	Total
No. of patients	18	49	67
Age range (y)	46–81	45–84	45–84
Mean age (y) ± SD	66.9 ± 8.1	64.1 ± 9.2	66.0 ± 9.5
No. of RPDs (maxilla/mandible)	13/9	32/36	45/45

Table 2 Results of Evaluation of Analyzed Variables for Satisfaction in the Combined RPD Function and Structure Groups with Stepwise Regression Analysis

Satisfaction variable	*P*	Odds ratio	95% CI (lower–upper)
Pain while using RPD			
Lower	.006	1.965	1.215-3.175
Higher		1	Referent
Color of artificial teeth			
Lower	.021	2.921	1.175-7.256
Higher		1	Referent
Tooth arrangement			
Lower	.022	4.975	1.255-19.608
Higher		1	Referent

Status of RPD Usage

The status of RPD usage was categorized according to the following criteria: successful, ie, constant use of the original RPD for 5 years; or failed, ie, discontinued use of the RPD or use of a refabricated RPD within 5 years.

Patient Satisfaction Factors

Patient satisfaction with RPDs depends on the effectiveness of RPD structure and function. Thus the factors relating to satisfaction were categorized into 2 groups.

- Factors related to function: (*1*) speaking abilities, (*2*) facial expression, (*3*) stability, (*4*) fit, (*5*) ease of insertion and removal, (*6*) pain during use, (*7*) mastication ability with anterior teeth, (*8*) mastication ability with posterior teeth, (*9*) ease of mastication and swallowing, and (*10*) sense of taste.
- Factors related to structure: (*1*) color of artificial teeth, (*2*) shape of artificial teeth, (*3*) size, (*4*) arrangement of teeth, and (*5*) weight.

Statistical Methods

The data were analyzed with statistical software (SPSS 11.0, SPSS Inc). Stepwise logistic regression analysis was used to detect correlations between RPD usage, which was deemed either "successful" or "failed" (criterion variable), and 15 factors regarding satisfaction (explanatory variables).

Results

Fifty-five of the 90 RPDs were regarded as successful and 35 were regarded as failures. The results of stepwise logistic regression analysis regarding combined RPD functional and structural factors are listed in Table 2. There were statistically significant correlations between RPD usage and pain while using the RPD, color of the artificial teeth, and tooth arrangement. No statistically significant associations between RPD usage and the other investigated factors were found.

Discussion and Conclusion

Patient satisfaction has become an increasingly important factor in prosthetic treatment.[5] Multivariate analysis allowed observation of RPD usage (criterion variable) while controlling for the influence of confounding variables that might complicate prediction of the outcome of RPD treatment. As a result, 3 parameters related to satisfaction with RPD usage were identified: pain while using the RPD, which was included in the function group, and color and arrangement of the artificial teeth, which were included in the structure group. Pain is related to comfort, while color and arrangement are related to appearance. The results of multivariate analysis suggest that patient satisfaction with RPDs might be affected more by pain and esthetics than by other factors.

References

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