



MASTICATION, PHONETICS AND ESTHETICS AS A FINAL RESULT OF PARTIAL OR COMPLETE DENTURE TREATMENT

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ABSTRACT:

Three target groups- dentists/ dental students, dental technicians and patients were asked to fill in an anonymous questionnaire about their satisfaction of the final results after prosthetic treatment with removable dentures using a scale from 1 to 5 (1- completely dissatisfied, 2-dissatisfied, 3-indifferent, 4-satisfied, 5-completely satisfied).

The mean results (including colour, shape and size of artificial teeth, arrangement of front teeth, colour of artificial gums, phonetics, mastication, natural smile, enough space for tongue) for all three groups of respondents were compared. Dental technicians (4,34) are more satisfied than dentists/dental students (3,62) and patients (3,53).

A successful outcome of prosthetic treatment depends on one hand on the professional approach of the dental team and on the other hand on the patient's motivation and cooperation. The predictive final results and realistic expectations lead to satisfaction of all participants in the treatment process.

Key words: mastication, phonetics, esthetics, partial dentures, complete dentures, satisfaction

INTRODUCTION:

The satisfaction of the patients as far as removable dentures are concerned have been investigated in a lot of papers [1, 2, 3, 4] but the dentists or dental technicians opinion about the final treatment result haven't been.

The natural teeth in the dental arch and their associated parts could be replaced by artificial substitutes which could restore mastication and phonetics and improve esthetics at an acceptable level. But the whole treatment team's satisfaction of the final result depends on variety of factors.

Our purpose is to analyze the final result of prosthetic treatment with removable partial or complete acrylic dentures in terms of mastication, phonetics and esthetics according to dentists/dental students, dental technicians and patients.

MATERIALS AND METHODS:

A survey is conducted to find out what three target groups of respondents (dentists/dental students, dental technicians and patients) think about mastication, speech and esthetics as a final result of prosthetic treatment with removable partial and/or complete acrylic dentures.

Three types of anonymous questionnaires are composed with 20 individualized questions according to the respondents and comparable results. The total number of completed questionnaires is 180, distributed as follows: dentists/dental students-66 number, dental technicians- 48, patients-66.

A statistical data processing has been done by statistical software SPSS v16. using descriptive analysis (mean, standard deviation, index of Spearman, index of Pearson, Chi Square, statistical significance level at $p < 0,005$). The results were visualized using Word 2010.

RESULTS:

Age distribution among patients is as follows: 48,48 % - 60-74 years old, 30,30 %- 75-89 years old, 18,18 % - 45-59 years old and 3,03 % - under 44 years. 51,52 % of the patients are female and 48,48 % are male.

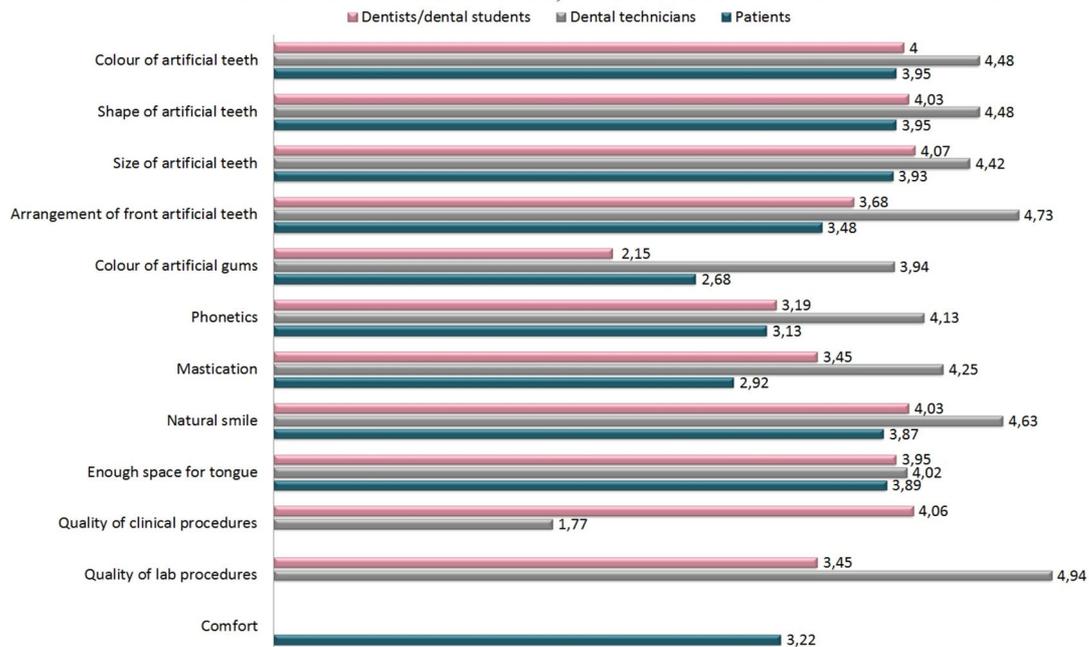
According to level of educations patients are grouped as follow: 62,12 % high school, 30,30 % university, 6,06 % college and 1,52 % elementary school.

Patients were treated with upper and/or lower complete denture/s (24,24 %), upper and/or lower partial acrylic denture/s (19,7 %), upper complete and lower partial acrylic denture (33,33 %) and upper partial acrylic denture and lower complete denture (22,73 %) during the following prosthetic treatment. Among all of them 53,03 % have had previous experience with removable dentures.

After the prosthetic treatment have been finished all the participants (dentists/dental students, dental technicians and patients) were asked to fill in the questionnaire, evaluating not only the final esthetic result, mastication and speech on a scale from 1 to 5 (1- completely dissatisfied, 2-dissatisfied, 3-indifferent, 4-satisfied, 5-completely satisfied), but also answering related questions.

The mean results for each group about mastication, phonetics and esthetics are shown on the following graph. Graph caption:(1- completely dissatisfied, 2-dissatisfied, 3-indifferent, 4-satisfied, 5-completely satisfied)

Evaluation of Esthetics, Mastication and Phonetics



Dentists'/dental students' satisfaction of final treatment results in terms of phonetics (3,19) and esthetics (3,66) exceed a little patients' satisfaction (phonetics - 3,13, esthetics - 3,64) except for the colour of artificial gums (dentists/dental students- 2,15; patients-2,68).

The evaluation of mastication differs significantly between the group of dentists/dental students - 3,45 and the group of patients - 2,92.

Dental technicians are satisfied with the final result as a whole (4.16). The only exception is the quality of clinical procedures which is evaluated quite critically by them- 1,77, unlike dentists who evaluate the quality of lab procedures higher - 3,45.

The mean results (including colour, shape and size of artificial teeth, arrangement of front teeth, colour of artificial gums, phonetics, mastication, natural smile, enough space for tongue) for all three groups of respondents were compared as follow dental technicians (4,34) > dentists/dental students (3,62) > patients (3,53).

DISCUSSION:

There is a significant correlation between dentists' positive evaluation of the quality of the dental technicians' work and dentists' satisfaction about shape of the artificial teeth ($\chi^2 = 0,525$, $p = 0,002$), phonetics ($\chi^2 = 0,561$, $p = 0,003$) and mastication ($\chi^2 = 0,517$, $p = 0,002$), natural smile ($\chi^2 = 0,656$, $p < 0,001$) and a strong correlation with satisfaction of colour ($\chi^2 = 0,711$, $p < 0,001$) and size of artificial teeth ($\chi^2 = 0,752$, $p < 0,001$) as well as arrangement of front teeth ($\chi^2 = 0,756$, $p < 0,001$). Very good technical fabrication of the removable dentures according to the dentists is a mandatory requirement for their satisfaction with the treatment outcome.

Also there is a strong correlation between dental technicians' positive evaluation of the clinical procedures and dental technicians' satisfaction about colour ($r = 0,580$, $p < 0,001$), shape ($r = 0,508$, $p < 0,001$) and size of artificial teeth ($r = 0,652$, $p < 0,001$), arrangement of front teeth ($r = 0,547$, $p < 0,001$), colour of artificial gums ($r = 0,622$, $p < 0,001$), phonetics ($r = 0,736$, $p < 0,001$), mastication ($r = 0,696$, $p < 0,001$) and natural smile ($r = 0,490$, $p < 0,001$).

Although the mean results of dental technicians' satisfaction of clinical work are generally low (1,77), the more the dental technicians evaluate clinical work higher, the more satisfied with the final results are.

Significant differences in the assessments of dentists and dental technicians for their part of the work can be avoided with more effective communication between them. The quality of work is increased when the communication is based on casts, impressions, written instructions and photographic documentation ($r = 0,351$, $p = 0,015$).

The statement that females tend to evaluate their dentures as less comfortable than man have been rejected by the results of our survey but the observations that elderly patients (60-74years old) are more satisfied of arrangement of front teeth completed to younger patients (45-59 years old) as well as elderly patients (60-74 and 75-89 years old) evaluate their dentures as more comfortable than younger patients (45-59years old) have been proven correct ($\chi^2 = 0,466$, $p = 0,032$) [5].

The more satisfying the natural smile is to the patient the more successful is the adaptation period ($\chi^2 = 0,355$, $p = 0,009$), which support the statement that unsatisfactory esthetics could lead to unsuccessful adaptation in 20% of cases with partial removable denture and 5% of cases with complete denture treatment [6, 7].

Patients with difficulties in phonetics are less optimistic about using their dentures ($r = -0,263$, $p = 0,033$), which have been established as a problem in 1/3 of cases with partial removable denture and 1/4 of cases with complete denture treatment [6, 7]. Speech problems are in moderate correlation with insufficient space for the tongue ($\chi^2 = 0,363$, $p = 0,041$).

CONCLUSION:

Dental technicians are more satisfied with the final results as a whole (4,34) compared to dentists/dental students (3,62) and patients (3,53).

Patients should be informed about all aspects of prosthetic treatment with removable dentures especially about

mastication efficiency which could be restored 60-85 % by removable partial acrylic dentures with wire wrought clasps and up to 50 % with removable complete acrylic dentures. [8] The dentures inevitably change the perceptions of the patients because the masticatory pressure is transferred in a different way through dentures-oral mucosa – alveolar bone.

A successful outcome of prosthetic treatment depends on one hand on the professional approach of the dental team and on the other hand on the patient's motivation and cooperation. The predictive final results and realistic expectations lead to satisfaction of all participants in the treatment process.

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