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The Patient's and the Therapist's Evaluation of Complete Denture Therapy

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A B S T R A C T

A total of 222 patients were studied. In a questionnaire patients graded their complete dentures of different age and quality, depending on the level of satisfaction, using the modified analogue-visual scale from 1 to 5. The dentist assessed the same dentures, as well as the denture bearing area. The patients' assessments were surprisingly high, the grades were bigger than the therapist's ($p < 0.05$), but in disappointed patients the grades were smaller than the therapist's ($p < 0.05$). It seems that the dentist is more critical in assessments than the patient. No significant difference existed between chewing and denture stability and between stability and the comfort of wearing lower full denture ($p > 0.05$). Unstable denture aggravates chewing and causes pain and discomfort on the bearing area. It seems that subjective factors in patients, expectations of the denture or the number of previous dentures play a role in satisfaction, not only the quality of denture bearing area and the quality of a denture.

Introduction

The great majority of patients are satisfied with their complete dentures (CD)[1]. However, even if the dentures are constructed according to all accepted criteria, some patients will still be dissatisfied. The proportion of full denture patients who are dissatisfied with new and well-made prosthesis ranges between 10–15 % [2,3]. The degree of satisfaction decreases rapidly during the first couple of

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years after insertion[4] and ranges between 20 and 35 % [2–6]. However, many patients are even satisfied with inadequate complete dentures (CD)[7]. The evaluation of the patients' acceptance and satisfaction with CD therapy also depends on the collection and gradation of data[4]. The dentist's evaluation of complete dentures depends on certain medical and technical standards[8–17].

The aim of the study was to find out the patients' degree of satisfaction with their CDs of various age and quality and to compare it with the dentist's evaluation. We also studied if the patients' satisfaction with CDs is influenced by the state of the alveolar ridges.

Subjects and Methods

A total of 222 patients with complete upper and lower denture (CUD, CLD) were studied (73 males and 149 females, 39 – 89 years old). Patients graded the dentures, depending on the level of their satisfaction, according to a modified visual-analogue scale from 1 to 5. Subjects are used to grades from 1 to 5 frequently applied for achievement scores (schools and faculties) in Croatian society (1 = completely unsatisfactory, 2 = poorly satisfactory, 3 = satisfactory on average, 4 = very satisfactory, 5 = excellent).

Patients first graded their general satisfaction with the dentures, and then they graded separately retention of the dentures, mastication, comfort of wearing their dentures, etc. The survey was anonymous to assure objectivity of the assessments. One trained therapist evaluated both the dentures in general and their retention, aesthetics and stability of the dentures as well as the denture bearing area. Prior to the final assessment, Kappa test revealed sufficient consistency between three therapists, but it was decided that only one of them evaluates all the patients.

Statistical analysis was run on SPSS 3.0 computer program (mean, standard deviation, median, mode and frequencies). The homogeneity of population was tested using one sample Kolmogorov-Smirnov test. The difference between the patient's and the therapist's evaluation was tested by non-parametric Wilcoxon test. Any difference $p < 0.05$ was considered significant.

Results and Discussion

The patients' evaluation of their full dentures (grades from 1 to 5) is presented in Table 1 and the therapist's evaluation of the same dentures (grades from 1 to 5) is presented in Table 2.

The distribution of the grades was different from normal, as assessed by one sample Kolmogorov-Smirnov test ($p < 0.01$). The patients' grades in this study were completely asymmetrical (skewed) towards the highest scores. Lamb and Ellis[18], using the analogue-visual scale from 0 to 10 observed the distribution of the scores from their patients as a bimodal type, the scores grouped at 2.5 and 7.5, i.e. satisfied and dissatisfied patients.

The patients' satisfaction in this study was surprisingly high. More than half of the patients scored all the parameters as 5 (Table 1). The *best scores* were assigned to the comfort of wearing UCD – 88.7%, retention of UCD –78.4%, and to the aesthetics – 72.1%. The parameters with the *lowest scores* were retention of the LCD – 14.4% (score 1) and the comfort of wearing LCD – 11.7% (score 1). The number of completely dissatisfied patients, according to this study was only 7.2% (grade 1). The two worst scores (1 and 2) were reported by 16% of CD patients. This is slightly better satisfaction than in most of the other studies (number of dissatisfied patients varies between 20 and 35%[1–5]). However, our results are not

TABLE 1
THE PATIENTS' EVALUATION OF THEIR FULL DENTURES

GENERAL SATISFACTION			
Grade	Frequency	Percentage	Cumulative percentage
1	16	7,2	7,2
2	24	10,8	18,0
3	16	7,2	25,2
4	46	20,7	45,9
5	120	54,1	100,0
Total	222	100,0	100,0

1.0 _____ 16
2.0 _____ 24
3.0 _____ 16
4.0 _____ 46
5.0 _____ 120

x = 4.036; SD = 1.304; SE = 0.088;
Median = 5.0; Mod = 5.0

RETENTION OF UPPER FULL DENTURE			
Grade	Frequency	Percentage	Cumulative percentage
1.0	10	4.5	4.5
2.0	8	3.6	8.1
3.0	2	0.9	9.0
4.0	28	12.6	21.6
5.0	174	78.4	100.0
Total	222	100.0	100.0

1.0 ____ 10
2.0 ___ 8
3.0 __ 2
4.0 _____ 28
5.0 _____ 174

x= 4.568; SD= 1.012; SE= 0.068;
Median= 5.0; Mode 5.0

RETENTION OF LOWER FULL DENTURE			
Grade	Frequency	Percentage	Cumulative percentage
1.0	32	14.4	14.4
2.0	30	13.5	27.9
3.0	16	7.2	35.1
4.0	30	13.5	48.6
5.0	114	51.4	100.0
Total	222	100.0	100.0

1.0 _____ 32
2.0 _____ 30
3.0 _____ 16
4.0 _____ 30
5.0 _____ 114

x = 3.739; SD = 1.538; SE = 0.103;
Median = 5.0; Mode = 5.0

AESTHETICS			
Grade	Frequency	Percentage	Cumulative percentage
1	18	8.1	8.1
2	14	6.3	14.4
3	2	0.9	15.3
4	28	12.6	27.9
5	160	72.1	100.0
Total	222	100.0	100.0

1.0 _____ 18
2.0 _____ 14
3.0 __ 2
4.0 _____ 28
5.0 _____ 160

x = 4.342; SD = 1.266; SE = 0.085;
Median = 5.0; Mode = 5.0

CHEWING			
Grade	Frequency	Percentage	Cumulative percentage
1.0	20	9.0	9.0
2.0	26	11.7	20.7
3.0	8	3.6	24.3
4.0	21	9.5	33.8
5.0	147	66.2	100.0
Total	222	100.0	100.0

1.0 _____ 20
2.0 _____ 26
3.0 ___ 8
4.0 _____ 21
5.0 _____ 147

x = 4.122; SD = 1.404; SE = 0.094;
Median = 5.0; Mode = 5.0

COMFORT OF WEARING UPPER FULL DENTURE			
Grade	Frequency	Percentage	Cumulative percentage
1.0	10	4.5	4.5
2.0	4	1.8	6.3
4.0	11	5.0	11.3
5.0	197	88.7	100.0
Total	222	100.0	100.0

1.0 ____ 10
2.0 __ 4
4.0 ____ 11
5.0 _____ 197

x = 4.716; SD = 0.925; SE = 0.062;
Median = 5.0; Mode = 5.0

COMFORT OF WEARING LOWER FULL DENTURE			
Grade	Frequency	Percentage	Cumulative percentage
1.0	26	11.7	11.7
2.0	16	7.2	18.9
3.0	26	11.7	30.6
4.0	22	9.9	40.5
5.0	132	59.5	100.0
Total	222	100.0	100.0

1.0 _____ 26
2.0 _____ 16
3.0 _____ 26
4.0 _____ 22
5.0 _____ 132

x = 3.982; SD = 1.436; SE = 0.096;
Median = 5.0; Mode = 5.0

x = mean, SD = standard deviation, SE = standard error

TABLE 2
THE THERAPIST'S EVALUATION OF COMPLETE DENTURES

BOTH DENTURES GENERALLY

Grade	Frequency	Percantage	Cumulative Percantage
1.0	22	9.9	9.9
2.0	24	10.8	20.7
3.0	24	10.8	31.5
4.0	84	37.8	69.4
5.0	68	30.6	100.0
Total	222	100,0	100,0

1.0 _____ 22
2.0 _____ 24
3.0 _____ 24
4.0 _____ 84
5.0 _____ 68

x = 3.685; SD = 1.283; SE = 0.086; Median = 4.0; Mode = 4.0

RETENTION OF UPPER COMPLETE DENTURE

Grade	Frequency	Percantage	Cumulative Percantage
1.0	10	4.5	4.5
2.0	14	6.3	10.8
3.0	16	7.2	18.0
4.0	38	17.1	35.1
5.0	144	64.9	100.0
Total	222	100,0	100,0

1.0 ____ 10
2.0 _____ 14
3.0 _____ 16
4.0 _____ 38
5.0_____ 144

x = 4.315; SD = 1.133; SE = 0.076; Median = 5.0; Mode = 5.0

RETENTION OF LOWER COMPLETE DENTURE

Grade	Frequency	Percantage	Cumulative Percantage
1.0	48	21.6	21.6
2.0	36	16.2	37.8
3.0	24	10.8	48.6
4.0	30	13.5	62.2
5.0	84	37.8	100.0
Total	222	100,0	100,0

1.0 _____ 48
2.0 _____ 36
3.0 _____ 24
4.0 _____ 30
5.0 _____ 84

x = 3.297; SD = 1.612; SE = 0.108; Median = 4.0; Mode = 5.0

DENTURE AESTHETICS

Grade	Frequency	Percantage	Cumulative Percantage
1.0	20	9.0	9.0
2.0	24	10.8	19.8
3.0	22	9.9	29.7
4.0	57	25.7	55.4
5.0	99	44.6	100.0
Total	222	100.0	100.0

1.0 _____ 20
2.0 _____ 24
3.0 _____ 22
4.0 _____ 57
5.0 _____ 99

x = 3.860; SD = 1.333; SE = 0.089; Median = 4.0; Mode = 5.0

STABILITY OF UPPER FULL DENTURE

Grade	Frequency	Percantage	Cumulative Percantage
1.0	8	3.6	3.6
2.0	14	6.3	9.9
3.0	8	3.6	13.5
4.0	34	15.3	28.8
5.0	158	71.2	100.0
Total	222	100.0	100.0

1.0 ___ 8
2.0 _____ 14
3.0 ___ 8
4.0 _____ 34
5.0 _____ 158

x = 4.441; SD = 1.065; SE = 0.071;Median = 5.0; Mode = 5.0

STABILITY OF LOWER FULL DENTURE

Grade	Frequency	Percantage	Cumulative Percantage
1.0	20	9.0	9.0
2.0	26	11.7	20.7
3.0	14	6.3	27.0
4.0	39	17.6	44.6
5.0	123	55.4	100.0
Total	222	100.0	100.0

1.0 _____ 20
2.0 _____ 26
3.0 _____ 14
4.0 _____ 39
5.0 _____ 123

x = 3.986; SD = 1.380; SE = 0.093; Median = 5.0; Mode = 5.0

UPPER DENTURE BEARING AREA

Grade	Frequency	Percantage	Cumulative Percantage
1.0	17	7.7	7.7
2.0	21	9.5	17.1
3.0	23	10.4	27.5
4.0	85	38.3	65.8
5.0	76	34.2	100.0
Total	222	100.0	100.0

1.0 _____ 17
2.0 _____ 21
3.0 _____ 23
4.0 _____ 85
5.0 _____ 76

x = 3.820; SD = 1.220; SE = 0.082; Median = 4.0; Mode = 4.0

TABLE 2 CONTINUED

LOWER DENTURE BEARING AREA			
Grade	Frequency	Percantage	Cumulative Percantage
1.0	86	38.7	38.7
2.0	54	24.3	63.1
3.0	24	10.8	73.9
4.0	22	9.9	83.8
5.0	36	16.2	100.0
Total	222	100.0	100.0

1.0 _____ 86
2.0 _____ 54
3.0 _____ 24
4.0 _____ 22
5.0 _____ 36

x = 2.405; SD = 1.482; SE = 0.099; Median = 2.0; Mode = 1.0

x= mean, SD= standard deviation, SE= standard error

TABLE 3
THE SIGNIFICANCE LEVEL OF THE DIFFERENCE BETWEEN THE PATIENTS' AND THE DENTIST'S EVALUATIONS OF COMPLETE DENTURES (WILCOXON TEST)

Difference between patient's and the dentist's evaluation		
Variable	Z value	p
General assessment	– 4.2692	< 0.01**
Retention of upper full denture	– 3.1753	< 0.01**
Retention of lower full denture	– 4.4062	< 0.01**
Chewing (patient): stability of UCD (dentist)	– 3.1463	< 0.01**
Chewing (patient : stability of LCD (dentist)	– 1.1409	0.2539 NS
Aesthetics	– 4.1309	< 0.01**
Retention of lcd (patient): denture bearing area (dentist)	– 9.2153	< 0.01**
Retention of ucd (patient): denture bearing area (dentist)	– 6.9944	< 0.01**
Comfort of wearing ucd (patient: denture bearing area (dentist)	– 2.0290	0.0425*
Comfort of wearing lcd (patient): denture bearing area (dentist)	– 9.8993	< 0.01**
Comfort of wearing lcd (patient): stability of LCD (dentist)	–0.1647	0.8692 NS

** = significant at a 99% level; * significant at a 95% level of probability; NS = not significant.

completely comparable, as the scales of assessments were not the same[19]. The difference in scaling may also play a role. The most similar to our results is the observation by van der Waas[6], who reported that 55% of his patients were completely satisfied, 26% were are satisfied reasonably, and 15% were dissatisfied.

The trained therapist listed only 30.6% of complete dentures in the best category, which is significantly lower than the patients' evaluation (54%) ($p < 0.01$, Tables 1–3), while 37.8% were graded as 4 (Table 2). Patients were also more satisfied with aesthetic appearance than the therapist ($p < 0.01$, Tables 1–3). The difference between the therapist and the patients also existed for chewing ability (patient) and stability of UCD (therapist) and retention of LCD (patient) and the assessment of denture bearing area (therapist) ($p < 0.01$, Tables 1–3). It was interesting to note that the patients with the best denture bearing area gave the worst evaluations of the retention of LCD

and vice versa. Obviously, it is not acceptable denture bearing area, but neuromuscular acceptance and adaptation that play the main role in the patient's satisfaction with the retention of LCD.

No significant differences existed between chewing (patient) and stability of LCD (therapist), comfort of wearing LCD (patient) and stability of LCD (therapist) ($p > 0.05$, Tables 1–3), which point out that poor stability of LCD aggravates chewing ability and poor stability of LCD makes wearing of the denture uncomfortable, for the pain and injuries of the denture bearing area.

Generally, when compared to the most satisfied patients, the therapist evaluated the denture with lower grades and vice versa, compared with the least satisfied patients, the therapist graded the dentures better. If a patient is satisfied, he/she evaluates the dentures as the best without criticism, and if not satisfied than he/she gives the worst grades, probably worse than actually deserved.

Conclusions

Compared to the most satisfied patients, the therapist assessed the denture with smaller grades and vice versa. It seems that the patients exaggerated both, in positive and negative satisfaction. The patients' subjective factors, expectance from the denture, number of previous dentures or some other factors also play a role in the degree of their satisfaction, not only the quality of the denture bearing area and the quality of the denture itself.

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PROCJENA TOTALNE PROTEZE

S A Ž E T A K

U istraživanju su sudjelovala 222 pacijenta, nosilaca gornje i donje totalne proteze, koji su u anketnom listiću, pomoću modificirane analogno-vizualne skale ocijenili svoje proteze, različite starosti i kvalitete. Iste proteze, a također i protezno ležište ocijenio je i stomatolog. Ocjene pacijenata bile su iznenađujuće visoke, više od procjene stomatologa ($p < 0,05$), dok su u slučajevima nezadovoljnih pacijenata ocjene stomatologa bile više ($p < 0,05$). Izgleda da je stomatolog kritičniji od pacijenta u ocijenjivanju proteza. Nije bilo statistički značajne razlike između žvakanja i stabilnosti proteza i između stabilnosti i udobnosti (nežuljanja) ($p > 0,05$), jer nestabilna proteza otežava žvakanje te izaziva bolne senzacije ležišta. Mnogi subjektivni čimbenici kod pacijenta, očekivanja od proteza, broj prijašnjih proteza utječu na zadovoljstvo, a ne samo kvaliteta proteze i njenog ležišta.