Short Communication

Correlations Between Self-Ratings of Denture Function and Oral Health–Related Quality of Life in Different Age Groups

Alexander J. Hassel, Dr Med Dent[a]/Claudia Rolko, Dr Dipl-Psych[b]/Anne-Christiane Grossmann, Dr Med Dent[a]/Brigitte Ohlmann, Dr Med Dent[a]/Peter Rammelsberg, Prof Dr Med Dent[c]

This study aimed to assess the correlation between self-rated denture function and oral health–related quality of life (OHRQoL) in different age groups. Subjects' OHRQoL was measured using the Oral Health Impact Profile, and self-ratings of denture function were assessed on a Likert-type scale for patients with fixed and removable partial dentures in 3 age groups (N = 253). For subjects with fixed partial dentures, all correlations were significant for the younger patients but not for higher age groups, whereas the opposite was true for subjects with removable partial dentures. The importance of self-perception of denture function in OHRQoL is different in various groups of patients, depending on age and dental status. *Int J Prosthodont 2007;20:242–244.*

Oral health–related quality of life (OHRQoL) is an important objective in any patient-oriented approach toward oral health.[1] Dental status and prosthetic treatment have been identified as factors that influence OHRQoL.[2,3] However, there is a lack of information about the correlation between self-rated denture function and OHRQoL. A better understanding of patients' opinions regarding which characteristics correlate with better health and OHRQoL would help match evaluation, treatment planning, and treatment to patients' needs and concerns. This correlation was investigated, and to account for the wide age range of prosthetic patients, the effect of age on this correlation was assessed.

[a]*Assistant Professor, Department of Prosthodontics, University of Heidelberg, Germany.*
[b]*Researcher, Department of Clinical and Cognitive Neuroscience, University of Heidelberg; Central Institute of Mental Health, Mannheim, Germany.*
[c]*Director, Department of Prosthodontics, University of Heidelberg, Germany.*

Correspondence to: *Dr Alexander Hassel, Poliklinik für Zahnärztliche Prothetik, Im Neuenheimer Feld 400, 69120 Heidelberg, Germany. Fax: +49 6221 565371. E-mail: alexander.hassel@med.uni-heidelberg.de*

Materials and Methods

Participants

A cohort of patients treated in clinical courses at the University of Heidelberg (N = 286) were asked to participate in the study. Thirty-three subjects refused, 14 did not wear dentures, and 3 were excluded because their questionnaires were missing data. Thus, 253 patients wearing either fixed partial dentures (FPDs) or removable partial dentures (RPDs) were included in the study (mean age: 57.7 years, range: 20 to 85 years; 113 women and 140 men).

Questionnaires

The Oral Health Impact Profile (OHIP-G) was used to measure OHRQoL.[2] A sum score with a possible range of 0 (best) to 196 (worst) was calculated (OHIP-SUM).

The participants were split into 2 groups based on whether they wore FPDs or RPDs. Self-ratings of denture function were assessed on a 10-point Likert-type numeric rating scale, from 0 ("worst possible") to 10 ("best possible"). All participants were asked to assess chewing function, esthetics, and speaking ability. In addition, RPD patients were asked to assess the retention and fit of the denture.

Statistics

Bivariate correlations between OHIP-SUM and the self-ratings of denture function were calculated using nonparametric correlation (Spearman). For analysis of the effect of age on the correlation, the participants were divided into 3 age groups: less than 55 years old (age group 1), 55 to 75 years old (age group 2), and over 75 years old (age group 3). Because of the nonnormal distribution of the main variables, it was not possible to perform multivariate analysis. Further, as a result of the multiple bivariate testing, the level of probability for statistical significance was set at $\alpha = .01$.

Results

The OHIP-SUM and self-ratings of denture function for the different age groups are shown in Table 1.

The results of the bivariate correlation are shown in Table 2. In age group 1 with regard to FPDs, all ratings for chewing function, esthetics, and speaking ability correlated significantly with OHIP-SUM. In the other age groups, there was no significant correlation between the ratings for FPDs and OHIP-SUM.

In contrast, for age group 1 with regard to RPDs, there was no significant correlation. Further, again in contrast with FPDs, there was a significant correlation for the other age groups between all assessed RPD functions and OHIP-SUM, with a significance as high as $r = -.628$ ($P < .001$) for chewing function of RPDs in age group 3.

Table 1 OHIP-SUM and Self-Ratings of Denture Function for Different Age Groups

OHIP-SUM/ self-rating	Age group 1 (n = 96)	Age group 2 (n = 114)	Age group 3 (n = 43)
FPD			
OHIP-SUM			
25% quartile	13	6	4
Median	25	20	5
75% quartile	44	32	16
Chewing function			
Mean	8.14	8.71	9.57
SD	2.83	2.36	0.79
Range	1–10	1–10	8–10
Esthetics			
Mean	6.78	8.1	7.71
SD	3.14	2.45	1.98
Range	1–10	1–10	5–10
Speech			
Mean	8.48	9.49	9.86
SD	2.80	1.14	0.38
Range	1–10	5–10	9–10
RPD			
OHIP-SUM			
25% quartile	23.5	12	10.5
Median	49	26	25
75% quartile	83	44	66.75
Chewing function			
Mean	5.38	6.75	7.39
SD	3.12	3.07	3.24
Range	1–10	1–10	1–10
Esthetics			
Mean	6.33	7.28	8
SD	3.23	2.78	2.14
Range	1–10	1–10	2–10
Speech			
Mean	7.05	7.76	7.97
SD	2.89	2.64	2.61
Range	1–10	1–10	1–10
Retention			
Mean	5.1	5.64	6.47
SD	3.27	3.31	3.59
Range	1–10	1–10	1–10
Fit			
Mean	5.29	6.45	6.61
SD	3.22	3.2	3.42
Range	1–10	1–10	1–10

Discussion

At present, the OHIP is the only instrument in German with proven validity and reliability for assessing OHRQoL. The study may be limited by the inherent shortcomings of this measurement tool; however, the OHIP does appear to be a valid instrument at this time. For age group 3, there were only 7 participants in the FPD group, and the range of denture ratings in this group was very narrow and showed only very good ratings. The results from this group are therefore of minor significance.

Although expected, a positive correlation between OHRQoL and satisfaction with denture function was not consistent throughout the groups. Locker and Gibson found even discordance with regard to global satisfaction with oral health and OHRQoL.[4] It was suggested that this could be a result of patients' expectations and experiences with health and health care, which may be affected, for example, by sociodemographic or psychosocial factors.[5] Therefore, the opposite findings for age group 1 between the FPD and RPD groups could be a result of the different attitudes toward the oral situation of younger patients wearing RPDs, and probably of different experiences of oral health compared with the FPD group. Obviously, for these patients, who also have poor OHIP scores, limitations in denture function were not additionally compromising and good denture ratings did not improve their quality of life. Further, for older patients the self-ratings of RPD function were found to be strongly correlated with OHRQoL, possibly because RPDs are generally replacing more teeth than FPDs, and therefore poor satisfaction with denture function could have a more severe impact.

Table 2 Correlation Between Denture Function and OHIP-SUM*

Age group/ self-rating	FPD n	FPD Spearman	FPD *P*	RPD n	RPD Spearman	RPD *P*
Up to 54 years						
Chewing function	74	–.347	.002	21	–.221	.337
Esthetics	74	–.405	< .001	21	–.173	.454
Speech	75	–.391	.001	21	–.237	.301
Retention				21	–.345	.125
Fit				21	–.382	.089
55 to 75 years						
Chewing function	59	.035	.793	55	–.587	< .001
Esthetics	59	–.229	.081	54	–.410	.002
Speech	59	–.236	.73	55	–.602	< .001
Retention				55	–.563	< .001
Fit				55	–.534	< .001
76 years or older						
Chewing function	7	.427	.339	35	–.628	< .001
Esthetics	7	.296	.519	35	–.480	.004
Speech	7	.103	.826	36	–.578	< .001
Retention				36	–.625	< .001
Fit				36	–.594	< .001

*n varies because of missing data.

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