

ORAL HEALTH RELATED QUALITY OF LIFE IN COMPLETE DENTURES

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ABSTRACT

Oral health related quality of life (OHRQoL) has been considered as an outcome measure to assess consequences of edentulism and available treatment options. The oral health impact profile (OHIP) is one of the most technically sophisticated instruments designed to measure OHRQoL.

Objective of the study was to assess the OHRQoL before and after the provision of complete denture. It was a case series study done at the Department of Prosthodontics, de, Montmorency College of Dentistry, Lahore from 15-07-2006 to 14-07-2007.

One hundred edentulous subjects were studied. All subjects completed the OHIP-14 questionnaire before and after provision of complete dentures. The responses were compared on Likert scale.

In majority of subjects, pre treatment responses in OHIP-14 questionnaire were at the higher end, indicating the negative impacts on the OHRQoL. The post provision responses showed a significant improvement.

The study suggested that provision of complete dentures in subjects having positive attitude towards the removable prostheses had positive impacts on OHRQoL.

Key words: Oral health impact profile (OHIP), Oral health related quality of life (OHRQoL), Complete dentures, Prosthodontics.

INTRODUCTION

QoL is defined as a subjective, phenomenological, multidimensional construct based on individual's internal frame of reference.¹

OHRQoL is part of the QoL that is affected by oral health and function.² This QoL is affected by oral health and the number of teeth.³ There are two different groups to assess the QoL (Disease Specific and Generic Measures).⁴ The use of patient based outcomes helps to evaluate the psycho-social consequences of oral disease.⁵

OHIP is one of the most sophisticated instruments to measure the OHRQoL, based on WHO classification of impairments, disabilities, handicap⁶ and has been used in testing oral disabilities.⁷

OHIP is a forty-nine items profile that describes the impact of oral health conditions in seven domains namely Functional Limitation, Physical Pain, Psychological Discomfort, Physical Disability, Psychological Disability, Social Disability and Handicap.⁸ Besides original English version of OHIP it has been translated into Chinese⁹, Sinhalese¹⁰ and German¹¹ languages,

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demonstrating cross-cultural equivalence.¹² Later on, Short form of OHIP-14 was developed, where the full battery of 49 questions is inappropriate.¹³

Complete dentures are the most common form of prosthetic rehabilitation for edentulism.¹⁴ In Pakistan, complete edentulism occupies an estimated 4.1 % of the population aged 65 years and above, with a projected increase to 9.3 % by 2030.¹⁵ OHRQoL has been considered as an outcome measure to assess the impact of edentulism and available treatments measured by OHIP.¹⁶

number of studies were conducted on patients treated with conventional complete dentures or implant retained complete dentures.¹⁷ One study comparing OHRQoL of older adults wearing complete and partial dentures confirmed that removable partial denture users experience more impaired OHRQoL than complete dentures wearers.¹⁸

MATERIALS AND METHODS

This study was done to assess the OHRQoL before and after the provision of complete denture in subjects requesting complete denture for the first time. It was conducted in the Department of Prosthodontics, de, Montmorency College of Dentistry, Lahore from 15th July 2006 - 14th July 2007. It was a purposive, non-probability sampling technique.

Completely edentulous males and females with age range of 50-60 years was the inclusion criteria. Persons with acute/chronic symptoms, temporo mandibular dysfunctions, systemic disease with oral manifestation, diagnosed psychological subjects were excluded from the study.

In the present study the participants were 100 edentulous adults who preferred conventional complete dentures. A verbal consent was taken from every participant. The subjects underwent a history and clinical examination. A self-administered questionnaire called OHIP-14 was used to measure the OHRQoL. The responses were recorded on Likert scale. Categories for each question were: Never, Hardly ever, Occasional, Fairly often, Very often & All the time. The codes for these categories range from 1 for never to 6 for all the time. The higher scores on the Likert scale indicated serious problem. The prosthodontic procedure was carried out by the experienced prosthodontist & all 100-study subjects again filled the OHIP-14 two months after the provision of new complete denture. Collected data was analyzed by using SPSS version.¹¹

RESULTS

TABLE 1: AGE DISTRIBUTION OF THE SUBJECTS (n = 100)

Age Range	Frequency	Percentage
50-55	55	55.0
56-60	45	45
Total	100	100.0

Mean ± S.D = 55.7 ± 4.25

TABLE 2: GENDER DISTRIBUTION. (n=100)

Gender	Frequency	Percentage
Male	46	46.0
Female	54	54.0
Total	100	100.0

TABLE 3: DOMAIN OF FUNCTIONAL LIMITATION

Question 1: Did you have trouble pronouncing any word because of problems with your teeth, mouth or dentures? (n = 100)

Responses	Before Frequency (%)	After Frequency (%)
Never	42 (42.0)	42 (42.0)
Hardly ever	23 (23.0)	54 (54.0)
Occasionally	19 (19.0)	4 (4.0)
Fairly often	10 (10.0)	0 (0.0)
Very often	3 (3.0)	0 (0.0)
All the time	3 (3.0)	0 (0.0)
Total	100 (100.0)	100 (100.0)

Chi-square = 38.263, P = 0.001

TABLE 4: DOMAIN OF FUNCTIONAL LIMITATION

Question 2: Have you felt that your sense of taste has worsened because of problems with your teeth, mouth or dentures? (n = 100)

Responses	Before Frequency (%)	After Frequency (%)
Never	47 (47.0)	41 (41.0)
Hardly ever	20 (20.0)	55 (55.0)
Occasionally	21 (21.0)	2 (2.0)
Fairly often	3 (3.0)	2 (2.0)
Very often	5 (5.0)	0 (0.0)
All the time	4 (4.0)	0 (0.0)
Total	100	100

Chi-square = 41.638, P = 0.001

TABLE 5: DOMAIN OF PAIN

Question 3: Have you had pain or ache in your mouth? (n = 100)

Responses	Before Frequency (%)	After Frequency (%)
Never	1 (1.0)	39 (39.0)
Hardly ever	48 (48.0)	55 (55.0)
Occasionally	19 (19.0)	6 (6.0)
Fairly often	20 (20.0)	0 (0.0)
Very often	8 (8.0)	0 (0.0)
All the time	5 (5.0)	0 (0.0)
Total	100	100

Chi-square = 76.333, P = 0.001

TABLE 6: DOMAIN OF PAIN

Question 4: Did you find it uncomfortable to eat any food because of problems with your teeth, mouth or dentures? (n = 100)

Responses	Before Frequency (%)	After Frequency (%)
Never	12 (12.0)	28 (28.0)
Hardly ever	27 (27.0)	60 (60.0)
Occasionally	26 (26.0)	10 (10.0)
Fairly often	8 (8.0)	1 (1.0)
Very often	12 (12.0)	1 (1.0)
All the time	15 (15.0)	0 (0.0)
Total	100	100

Chi-square = 55.780, P = 0.001

TABLE 7: DOMAIN OF PSYCHOLOGICAL DISCOMFORT

Question 5: Have you felt self conscious because of problems with your teeth, mouth or dentures? (n = 100)

Responses	Before Frequency (%)	After Frequency (%)
Never	16 (16.0)	46 (46.0)
Hardly ever	30 (30.0)	44 (44.0)
Occasionally	14 (14.0)	6 (6.0)
Fairly often	12 (12.0)	4 (4.0)
Very often	12 (12.0)	0 (0.0)
All the time	16 (16.0)	0 (0.0)
Total	100	100

Chi-square = 52.365, P = 0.001

TABLE 8: DOMAIN OF PSYCHOLOGICAL DISCOMFORT

Question 6: Have you felt tense because of problems with your teeth, mouth or dentures? (n = 100)

Responses	Before Frequency (%)	After Frequency (%)
Never	21 (21.0)	59 (59.0)
Hardly ever	28 (28.0)	32 (32.0)
Occasionally	15 (15.0)	7 (7.0)
Fairly often	12 (12.0)	2 (2.0)
Very often	12 (12.0)	0 (0.0)
All the time	12 (12.0)	0 (0.0)
Total	100	100

Chi-square = 52.369, P = 0.001

TABLE 9: DOMAIN OF PHYSICAL DISABILITY

Question 7: Has your diet been unsatisfactory because of problems with your teeth, mouth or dentures? (n = 100)

Responses	Before Frequency (%)	After Frequency (%)
Never	20 (20.0)	38 (38.0)
Hardly ever	21 (21.0)	51 (51.0)
Occasionally	21 (21.0)	8 (8.0)
Fairly often	10 (10.0)	2 (2.0)
Very often	18 (18.0)	1 (1.0)
All the time	10 (10.0)	0 (0.0)
Total	100	100

Chi-square = 54.458, P = 0.001

TABLE 10: DOMAIN OF PHYSICAL DISABILITY

Question 8: Have you had to interrupt meals because of problems with your teeth, mouth or dentures? n = 100

Responses	Before Frequency (%)	After Frequency (%)
Never	42 (42.0)	70 (70.0)
Hardly ever	29 (29.0)	27 (27.0)
Occasionally	13 (13.0)	2 (2.0)
Fairly often	6 (6.0)	1 (1.0)
Very often	8 (8.0)	0 (0.0)
All the time	2 (2.0)	0 (0.0)
Total	100	100

Chi-square = 28.710, P = 0.001

TABLE 11: DOMAIN OF PSYCHOLOGICAL DISABILITY

Question 9: Have you found it difficult to relax because of problems with your teeth, mouth or dentures? n = 100

Responses	Before Frequency (%)	After Frequency (%)
Never	29 (29.0)	58 (58.0)
Hardly ever	30 (30.0)	33 (33.0)
Occasionally	16 (16.0)	8 (8.0)
Fairly often	8 (8.0)	1 (1.0)
Very often	14 (14.0)	0 (0.0)
All the time	3 (3.0)	0 (0.0)
Total	100	100

Chi-square =34.921, P = 0.001

TABLE 12: DOMAIN OF PSYCHOLOGICAL DISABILITY

Question 10: Have you been a bit embarrassed because of the problems with your teeth, mouth or dentures? (n = 100)

Responses	Before Frequency (%)	After Frequency (%)
Never	36 (36.0)	65 (65.0)
Hardly ever	18 (18.0)	30 (30.0)
Occasionally	17 (17.0)	5 (5.0)
Fairly often	8 (8.0)	0 (0.0)
Very often	9 (9.0)	0 (0.0)
All the time	12 (12.0)	0 (0.0)
Total	100	100

Chi-square = 46.872, P = 0.001

TABLE 13: DOMAIN OF SOCIAL DISABILITY

Question 11: Have you been a bit irritable with other people because of the problems with your teeth, mouth or dentures? n = 100

Responses	Before Frequency (%)	After Frequency (%)
Never	52 (52.0)	66 (66.0)
Hardly ever	21 (21.0)	32 (32.0)
Occasionally	18 (18.0)	2 (2.0)
Fairly often	3 (3.0)	0 (0.0)
Very often	1 (1.0)	0 (0.0)
All the time	5 (5.0)	0 (0.0)
Total	100	100

Chi-square = 25.744, P = 0.001

TABLE 14: DOMAIN OF SOCIAL DISABILITY

Question 12: Have you had difficulty doing your usual job because of problems with your teeth, mouth or dentures? (n = 100)

Responses	Before Frequency (%)	After Frequency (%)
Never	38 (38.0)	57 (57.0)
Hardly ever	28 (28.0)	38 (38.0)
Occasionally	15 (15.0)	4 (4.0)
Fairly often	6 (6.0)	1 (1.0)
Very often	10 (10.0)	0 (0.0)
All the time	3 (3.0)	0 (0.0)
Total	100	100

Chi-square =28.255, P = 0.001

TABLE 15: DOMAIN OF HANDICAP

Question 13: Have you felt that life in general is more or less satisfying inspite of the problems with your teeth, mouth or dentures? (n = 100)

Responses	Before Frequency (%)	After Frequency (%)
Never	26 (26.0)	70 (70.0)
Hardly ever	34 (34.0)	29 (29.0)
Occasionally	20 (20.0)	1 (1.0)
Fairly often	10 (10.0)	0 (0.0)
Very often	6 (6.0)	0 (0.0)
All the time	4 (4.0)	0 (0.0)
Total	100	100

Chi-square =57.754, P = 0.001

TABLE 16: DOMAIN OF HANDICAP

Question14: Have you been totally unable to function because of problems with your teeth, mouth or dentures? (n = 100)

Responses	Before Frequency (%)	After Frequency (%)
Never	57 (57.0)	93 (93.0)
Hardly ever	23 (23.0)	7 (7.0)
Occasionally	6 (6.0)	0 (0.0)
Fairly often	7 (7.0)	0 (0.0)
Very often	5 (5.0)	0 (0.0)
All the time	2 (2.0)	0 (0.0)
Total	100	100

Chi-square =37.173, P = 0.001

DISCUSSION

The study reveals the OHRQoL of a group of hundred edentulous participants before and after the provision of complete dentures. The study population was homogenous in relation to age and gender, which is in agreement to Forgie and Scott.¹⁹

TABLE 3-4 (1) Represent the functional limitation domain of OHIP in which subjects perceived problem in pronunciation. It Shows a significant ($p > 0.01$) reduction in OHIP. Speech is a complex skill requiring prolong adaptation, thus lack of significant improvement may very well be due to a shorter review period.²⁰

Subjects also perceived taste problems. It Shows a significant ($p > 0.01$) reduction in OHIP. This finding is in agreement with the report of Allen and McMillan.²¹ Declined taste perception is caused by factors like atrophy of taste buds, dental and systemic deterioration and medications.²² Provision of new dentures improve the masticatory efficiency, leading to improved taste perception.²²

TABLE 5-6(2) Represent the physical pain domain in which subjects experienced painful aching. It showed a significant ($p > 0.01$) reduction in OHIP.

Similarly, subjects perceived difficulty in eating. It Shows a significant ($p > 0.01$) reduction in OHIP subscale scores. Respondent's OHRQoL suggested that physical pain was the most prevalent finding.²³ Participants have worn dentures in short reference period of 2 months, acute impacts were likely to be reported. This is in contrast with the particular group of patients who had major difficulties in denture wearing.¹⁷

TABLE 7-8(3) Represent psychological discomfort domain in which subjects perceived self-consciousness. It Showed significant ($p > 0.01$) improvement in QOL.

Similarly, subject felt tense. It Showed significant ($p > 0.01$) reduction in OHIP. Other studies also showed significant improvement in psychological discomfort.¹⁸

TABLES 9-10(4) Physical Disability Domain in which significant improvement in the responses related to diet and interrupted meal reported. Improvement in physical disability was also reported by Awad et al.²⁰

TABLES 11-12(5) Represent the psychological disability domain in which significant improvement in the responses related to relaxation and embarrassment post provision. Similar results have been reported by other studies.^{19,23-25}

TABLES 13-16(5): The post treatment responses concerning the social disabilities and handicaps were significantly lower.²⁶ Tooth loss from maxilla leads to phonetics problems. Tooth loss in the mandible does not cause disability to that extent.²⁷

The OHIP is based on Locker's¹² conceptual frameworks for measuring the oral health outcomes. Results demonstrate the potential benefit of using OHIP-14.²⁸

The sample size is relatively small and therefore data was interpreted carefully. It could be argued that a group of people being treated in dental schools are more likely to have particular difficulties in wearing complete dentures compared with those being treated in private dental practices. Subjects in dental school had been assessed as requiring routine dental care. For this reason there are no concerns that the group of patients were more difficult to manage.

No attempt was made to relate the clinical quality of the complete dentures with subjects' satisfaction. Associations have been found between new denture quality and satisfaction.²⁹ It was suggested that the habituation to denture might occur to overcome gradual deterioration of the prosthesis.³⁰

It does not seem likely that there is significant differences of OHRQoL between responders and non responders. Another limitation is that the effects of removable complete dentures on OHRQoL may be significantly different between upper and lower dentures.

CONCLUSION

The findings of the study provided clues about the OHRQoL of the edentulous respondents before and two months after the provision of complete dentures. The study found an impaired OHRQoL in edentulous respondents before the provision of complete dentures, suggested that tooth loss with increasing age is associated with more negative impacts which is significantly improved in respect to all seven domains of Oral Health

Impact Profile (OHIP) after the provision of complete dentures.

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