

ESTHETIC AND FUNCTION EVALUATION AFTER TREATMENT WITH REMOVABLE DENTURES BY PATIENTS, LAY PERSONS, DENTISTS IN A DENTAL SCHOOL OF PAKISTAN

¹SABA FARUQUI

²SYEDA MALIKA HAIDER

³NASEER AHMED

ABSTRACT

The purpose of this study was to evaluate the impact of treatment on oral health related-quality of life and to estimate facial appearance change after the construction of removable dentures by patients, lay persons and dentists.

In this cross-sectional study, a total of 100 patients restored with removable dentures were included. A specific questionnaire for patients based on oral health impact profile (OHIP-14)¹ was used to collect information on oral health related quality of life.

For esthetic evaluation patients were given options of “not at all satisfied, not very satisfied, neutral, somewhat satisfied and very satisfied” of their appearance, after the insertion of dentures. Additionally patients profile pictures were arranged randomly and in pair form; were shown to lay persons and dentists and they had to answer the following question: “Do you judge this face as unpleasant, barely pleasant and very pleasant”.

After rehabilitation with removable dentures all patients showed significant improvement, higher level of satisfaction and improve esthetics. The lay persons and dentists remarked the same.

Removable dentures may have a positive impact on oral health related quality of life and patient considered their post-treatment facial appearance better than before treatment and both lay persons and dentists agree with this evaluation.

Key Words: *Esthetics, Function, Oral health related quality of life.*

INTRODUCTION

Tooth loss can impair quality of life by affecting different aspects of a patient life including esthetics, function, psychology and interpersonal relationships.^{1,4} Both esthetics and function are considered major factors during treatment planning of completely and partially edentulous patients, in addition to restoration of oro-dental tissues and preservation of what is left behind.²

In past a clinical based outcome was considered more important than patient based outcome by researchers.^{3,4} As dentists and patient define the concept of success differently, dentist's perception of success is based more on technical criteria and less on patient's expectations. Whereas patient focused more on comfort, function and appearance.^{6,7,12}

The researchers in recent era have begun to focus more on patient perceptions of oral health to improve patient's quality of life.^{4,5} This appears more logical, therefore the current study focused on factors of patients based outcome.

Because in an image conscious society, dentures restore a sense of normalcy, improves patients motivation, acceptance and allow the patient to interact with others.¹³ Therefore it is unlikely to assume that because acceptable masticatory function has been achieved, patients will tolerate a poor appearance of the prosthesis, both esthetics and function have to co-work together in order to achieve appropriate oral health related quality of life.¹⁴

¹ Saba Faruqui, BDS, House Surgeon, Altamash Institute of Dental Medicine Karachi, Pakistan.

Email: sabafaruqui23@gmail.com **Postal Address:** House No. 100, Phase-6, Street No. 1, Khy-e-Bukhari, DHA, Karachi
Cell: 0092-321-2356593

² Syeda Malika Haider, BDS, House Surgeon, Altamash Institute of Dental Medicine Karachi, Pakistan

³ **Correspondence:** Naseer Ahmed, BDS, FCPS Assistant Professor and Head Department of Prosthodontics, Altamash Institute of Dental Medicine Karachi, Pakistan

Email: naseer_ahmed752@yahoo.com

website: www.departmentofprosthodontics.com

Postal Address: A-194, Block-C, Gulshan-e-Jamal, Karachi

Cell: 0092-321-2213907

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Oral health related quality of life (OHRQOL)¹ is a part of the quality of life (QOL)¹ that is affected by decreasing or missing teeth.¹⁰ According to WHO classification, oral health impact profile (OHIP)¹ ranked as one of the most sophisticated questionnaire for the measurement of the OHRQOL.¹ OHIP¹ Performa is comprised of forty-nine items, which explains impact of oral health in seven domains such as physical pain, psychological disability, functional limitations, physical disability, psycho-logical discomforts, Psychological disability, Social disability and handicap.¹¹ Shorter version of OHIP-49 is OHIP 1411 which gives an extended measurement of functional limitation, pain, discomfort and psychological impact of oral health on patient's life.^{8,10,11}

The rationale of this study is to evaluate the impact of treatment on oral health related-quality of life and to estimate facial appearance change after the construction of removable dentures by patients, lay persons and dentists.

METHODOLOGY

The study were carried out at Altamash Institute of Dental Medicine, Karachi, Pakistan for a duration of Six months from March 2015 to August 2015. In this cross-sectional study a total of 100 completely and partially edentulous patients of both genders between the age of 18-85 were included. Those who met the inclusion criteria (1) one or more missing teeth (2) with good general health (3) Edentulous (4) more than 18 years of age. Exclusion criteria (1) patients with chronic or aggressive periodontal disease (2) patients with temporomandibular joint disorder (3) Oro-facial pain (4) Parafunctional habits (clenching, bruxism) (5) patients with any systemic disease (6) Patient with any psychological condition and known drug addiction were selected. Verbal consent was taken from each participant.

The oral health related quality of life was determine by using a specific questionnaire based on oral health impact profile (OHIP-14).^{8,9,11} The instrument covered seven major domains; functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability and handicap, each domain consisted of two questions. Each question had five categories of response as follow never, very rarely, occasionally, very frequently, always.

The appearance of patients was judged by taking photographs of patients before and after insertion of removable dentures from a distance of 86 cm. A digital camera (Sony, 20.1 mega pixels) was used to take frontal and profile view pictures. The camera was mounted on a tripod at 6O' clock. Patients were given options of "not at all satisfied, not very satisfied, neutral, somewhat

satisfied and very satisfied" of their appearance, after the insertion of dentures. Additionally patients profile pictures were arranged randomly and in pair form; were shown to lay persons and dentists and they had to answer the following question: "Do you judge this face as unpleasant, barely pleasant and very pleasant". Collected data was analyzed by using SPSS version.

RESULTS

The data were first analyzed for descriptive statistics the mean, standard deviation, minimum, and maximum values, frequency and percentage were performed for qualitative and quantitative variable like gender (Table 1) and items of specific fourteen items questionnaire. Relationship of esthetic evaluation between patients, lay persons, dentists by presenting non-random and random pictures and function were analyzed by chi square, the level of significance was set at p < 0.05.

All patients responded that the new dentures im-

TABLE 1: GENDER DISTRIBUTION/N=100

Gender	Frequency (Percentage)
Male	33(33%)
Female	67(67%)

TABLE 2: ESTHETICS JUDGE BY DENTIST AND LAY PERSON

Variable Studied	Un-pleasant (percentage)	Barely pleasant (percentage)	Very pleasant (percentage)	Total	P value
Esthetic judgment by dentist	4(4%)	28(28%)	68(68%)	100	<0.001
Esthetic judgment by lay person	8(8%)	21(21%)	71(%)	100	<0.001

TABLE 3: ESTHETICS JUDGED BY PATIENT

Variable studied	Frequency (percentage)
Not very satisfied	3(3%)
Neutral	12(12%)
Somewhat satisfied	31(31%)
Very satisfied	54(54%)
Total	100

P -Value < 0. 001

TABLE 4: FUNCTIONAL LIMITATION AND GENDER BASED SELF CONSCIOUS LEVEL

	Speaking	Sense of taste	Self conscious level gender based	
	Frequency (percentage)	Frequency(percentage)	Male	Female
Never	78(78%)	92(92%)	48	20
Very rarely	16(16%)	5(%)	14	8
Occasionally	3(3%)	1(%)	5	1
Very frequently	1(1%)	2(%)	0	2
Always	2(2%)	0	0	2
Total	100	100	67	33

P-value <0.001

TABLE 5: FREQUENCY DISTRIBUTION OF PAIN AND DISCOMFORT LEVEL /N=100

	Painful aching	Uncomfortable eating	Self conscious	Tension	Unsatisfactory diet	Interrupt meals
Never	66	68	68	77	67	68
Very rarely	22	22	22	19	21	20
Occasionally	5	6	6	3	5	5
Very frequently	0	2	2	0	0	0
Always	7	2	2	1	7	7
Total	100	100	100	100	100	100

P-Value<0.001

TABLE 6: FREQUENCY DISTRIBUTION OF PSYCHOLOGICAL IMPACT/N=100

	Difficulty to relax	Embarrassed	Irritable	Occupational problems	Unsatisfactory life	Unable to function
Never	86	84	86	94	76	72
Very rarely	12	10	11	5	15	19
Occasionally	1	2	2	1	3	2
Very frequently	1	2	1	0	0	0
Always	0	2	0	0	6	7
Total	100	100	100	100	100	100

P-Value<0.001

proved their appearance (54 patients were very satisfied and 31 somewhat satisfied), Lay persons evaluated better after denture prescription than without dentures (71 very pleasant and 08 unpleasant) p<0.001, (Table 2) also the post-treatment appearance was judged superior by dentist (68 very pleasant and 04 unpleasant) p <0.001 (Table 3).

Functional limitations responses after insertion of removable denture about speaking (P< 0.001) and sense of taste (P<0.001) were significantly enhanced after insertion of dentures (Table 4). While pain and discomfort along with unsatisfactory diet, eating dif-

ficulty and meal interruption responses were reduced as well significantly (p< 0.001) after denture insertion, the values are listed in (Table 5).

The Psychological impact responses were reported “never” from the patients, like difficulty to relax and unsatisfactory life after the insertion of partial denture (p< 0.001) as shown in (Table 6). Emotional difficulties like embarrassment was also reduced significantly with denture therapy (p<0.001) listed in (Table 6). Functional inability, Irritation with others, occupational difficulty responses given in (Table 6) was reduced significantly following insertion of the removable denture (p<0.001).

DISCUSSION

The maintenance and restoration of oral health in partially and completely edentulous patients to achieve function through different types of removable dentures is considered as the mostly opted treatment modality, because it requires minimum preparation, more affordable and offers rapid result.^{2,18} Present study shows that not only function but also esthetics plays a major in terms of patient satisfaction and motivation for acceptance of their prosthesis. Because both factors works collectively.^{15,16}

The results of this study showed that ratio of male (67%) and females (33%) participant in this study was 2:1, which suggest that male patients outnumbered the females (Table 2), in comparison with other studies which showed female predominance.^{11,17,18} Regarding age the studied population were diverse, which is in agreement to Bedi et al.⁵

Regarding functional limitations as presented in (Table 4) the patients experienced improved sign of speaking and taste perception ($p < 0.001$), this finding was in accordance with previous studies ($p = 0.001$).^{11,19} (Table 5) represents the second domain of OHIP that is pain and discomfort, this domain covered various factors, very few subjects experienced painful aching ($p < 0.001$) which contraindicate Brunello and Mandikos research which conclude that pain and discomfort consider as the most common (75%) problem experienced by denture users, it may be because of their large sample size.^{20,24} Very few patients complained about difficulty in eating ($p < 0.001$) it has been considered as one of the frequent problems experienced by most of other patients.^{20,21} Similarly, almost no patient felt tension due to their dentures.

The females were more conscious about their esthetics than males, that they feel more self conscious after wearing their dentures even though they were completely satisfied with other qualities of dentures, as presented in (Table 4) fourteen male patients out of sixty seven rarely felt self conscious than female patients which were eight out thirty three. Jones et al²⁴ in 2003 suggest that almost no male patients felt self conscious or nervous after wearing denture, this may be because their sample size include only older group of men.

The psychosocial impact of denture wearing is presented in (Table 6) It showed significant improvement ($p < 0.001$) indicating that after provision of dentures, patients showed positive signs of improvement in function and satisfaction with life, more were in relaxed state and no signs of embarrassment were evident. Similar results were reported in other studies.^{20,22}

Esthetics plays a very important role in acceptance of dentures.²³ Sometimes dentures with excellent functional quality but with poor esthetic make patient dissatisfied with their dentures. (Table 5) shows patient's better level of satisfaction ($p < 0.001$) in their esthetics after wearing dentures. These results supported by this past study.²¹ Sixty eight qualified dentist and seventy one lay persons approved most of the patient's esthetics "very pleasantly" after rehabilitation and very few patients were scored unpleasant (Table 2).

CONCLUSION

After provision of removable dentures all patients showed significant improvement on all domains of Oral Health Impact Profile (OHIP) thus improving their quality of life. Mainstream of patients strongly agree that dentures have positive impact on oral health.

Patients considered their post-treatment facial appearance better than the before treatment and that both lay persons and dentists agreed with this evaluation.

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CONTRIBUTION BY AUTHORS

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| 1 Saba Faruqi: | Main author. |
| 2 Syeda Malika Haider: | Helped in data & methodology. |
| 3 Naseer Ahmed: | Supervisor. |

CORRIGENDUM

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Page 152 the name of Prof Nazia Yazdani was missed. It should be read at number 2 of the author's list.