

## ASSESSMENT OF THE QUALITY OF LIFE AND PATIENTS' SATISFACTION IN EGYPTIAN PATIENTS WEARING FACIAL PROSTHESES

Mohamed Y. Abdelfattah\* and Tareq Mohamed Nabil\*\*

### ABSTRACT

**Objectives:** The aim of this study was to assess patients' satisfaction and Quality of Life with facial prostheses through a special designed questionnaire.

**Material and Methods:** 120 patients using facial prostheses retained either by chemical adhesives or bone anchorage implant for at least 6 months were asked to answer a twenty questions questionnaire through a cross-sectional survey. This questionnaire covered the appearance, retention means and effectiveness, awareness, self-confidence, difficulty of placement and removal, cleaning, restriction of social actions, pain and inflammation of tissues, and advice of the method to other patients. Visual analogue scale (VAS) was used to show patient response. The mean of the answers was converted into a percentage to symbolize the satisfaction index.

**Results:** Wearing facial prostheses made most of patients happy (mean (SD) 9.4 (1.54)). The most satisfied patients was those who had facial prosthesis retained by implants ( $p = 0.025$ ), and additional self-awareness was experienced in those retained by adhesives ( $p = 0.012$ ). 72% of patients experienced no pain or troubles with the prosthesis during function. Both implant and adhesive retained prostheses have noticeable advantages without the presence of statistically considerable differences between them.

**Conclusions:** The results showed that use of extraoral prostheses retained by adhesive or by bone anchorage implant provided a high level of satisfaction among patients.

**KEYWORDS:** Facial prosthesis, patient satisfaction, quality of life.

### INTRODUCTION

Extraoral disfigurements as a result of surgery, trauma, or congenital malformation may encompass disturbing effects on the appearance, serviceable,

psychosocial and financial conditions of people.<sup>1-5</sup> Stigma causes depression, low self-confidence, and social isolation so it is considered an essential social health determinant.<sup>6</sup>

\* Lecturer of Prosthodontics, faculty of Dentistry, Tanta University, Egypt.

\*\* Lecturer of pediatric Dentistry, Preventive Dentistry and Dental Public Health, faculty of Dentistry, Suez Canal University, Egypt.

Rehabilitation of patient with facial deformity represents a complex situation for both the surgeon and the prosthodontist. Surgical and prosthetic rehabilitation have individual restrictions. Facial prostheses success relies on a variety of items such as stability, support, and retention. Retention techniques may be anatomical, mechanical, adhesives, and implants. Adhesives still one of the most accepted means of retention of facial prosthesis, a range of adhesives have been used to keep prostheses in place. They may be double-sided tapes, pastes, liquids and spray-on adhesives. Medical grade adhesives are considered the most widely used adhesives to retain facial prostheses.<sup>7</sup> The effectiveness and advantages of bone anchorage extra oral implant have been established by numerous studies.<sup>8,9,10</sup> conversely, few assessed the social effect.

Assessment of patient satisfaction is a vital instrument to represent the importance of social impact and increased quality of life (QOL). QOL is defined as a broad multidimensional concept that usually includes subjective evaluations of both positive and negative aspects of life.<sup>11</sup> since the 1980s, the factors of health-related quality of life have been appeared to include the features of general life excellences that clearly exposed their influences on physical and psychological health.<sup>12-15</sup> On the person rank, HRQOL comprises individual mental and physical health perception including any medical hazards, community support, and social and economic conditions. On the public rank, HRQOL includes resources of the national income, situation, guidelines that affect the functional status and health perceptions. HRQOL is recognized by Centers for disease control (CDC) as over time person's or the public's apparent mental and physical health.<sup>9</sup> Specific health, social service and commercial organizations in association with a broad ring of health associates, together with social developers, concentrate on wide field of community health policies and topics.<sup>16</sup>

The analysis of HRQOL grows to be a vital constituent of public health observation and is thought to be suitable display of unhappened demands. Self-evaluated health condition in addition is a more widespread interpreter of death and morbidity than other predictors of health. HRQOL can scientifically confirm the impact of health on quality of life.<sup>17-19</sup> The significance of creating further programs to enhance the quality of life and to improve patient satisfaction have been stressed by recent studies. The patients' QOL associated with prosthetic rehabilitation may recommend significant information that assist in treatment planning and evaluate results.<sup>20</sup>

Although numerous studies evaluated the Prosthodontic rehabilitation for patients with maxillary defects and its influences on health-related QOL, there are a small number of investigations studied the effect of facial prostheses wearing on the health-related QOL.<sup>21</sup> There is no well documented investigations assessing the effect of wearing facial prostheses on Egyptians health related QOL.

So, the aim of this study was to assess the effect of wearing facial prostheses on patient satisfaction and the perception of Quality Of Life and to compare between those retained by chemical adhesives and bone anchorage implant through the application of using the Short Form of (WHOQOL-BREF)

## MATERIALS AND METHODS

120 patients who received facial prostheses of the nose, ear, or orbit were selected, from the out patients of the Plastic and Reconstructive Surgery Units in Tanta University, Egypt, to contribute in a cross-sectional study. The causes of the defects were tumors, congenital deformities, burns or injuries of the craniofacial area. They were still using their prostheses for at least 6 months before surveying. Patients were categorized into two main groups; those who retain their prosthesis with chemical adhesives and those who had bone anchored implants. Patients

with any devastating condition were not included in the survey. The esthetic, retention means and effectiveness, awareness, self-confidence, difficulty of placement and removal, cleaning, restriction of social actions, pain and inflammation of tissues, and advice of the method to other patients were evaluated through the questionnaire developed by Marloes et al.<sup>22</sup> The questionnaire was divided into three sectors. Individual and community details and past medical history (Tables 1, 2 and 3) were collected in the first section. Table (4) showed the impact of patients' perception on their daily life, self-assurance and the performance of the prosthesis which were assessed in the second sector.

TABLE (1) Individual and community data.

Character	Total (n = 90)
Age (years):	
<20	5
20-39	35
40-59	35
60-79	15
Sex:	
Male	77
Female	13
Nationality:	
Egyptians	90
Other	0
social status:	
married	68
Single	12
Widowed	10
Divorced	0
Education:	
Primary	26
Secondary	55
Higher	9
Employment:	
Job	30
No job	60

The third sector included a visual analogue scale for seven questions (VAS) (1 = very dissatisfied; 10 = very satisfied). Table (5) represents the prostheses effect on patients' satisfaction, society relations and occupation. To increase the knowledge of patient's feelings, they were also allowed to write free notes on each question. Data was collected and transferred into specially designed forms suitable for computer feeding. Statistical analysis was done using SPSS. To evaluate the answers to the VAS a Mann Whitney U test was used. To analyze the response to the four item scale and the differences between the implant and adhesive-retained groups a Pearson's square test was used.

TABLE (2) Causes of facial defects in patients contributing in the study.

Reason for prosthesis	Total (n = 90)
Cancer	50
Congenital	15
Trauma	20
Burn	5

TABLE (3) Types and means of retention of facial prostheses

Anatomical site	Adhesive (n = 57)	Implant (n = 33)	Total (n = 90)
Ear	29	15	44
Orbit	12	11	23
Nose	11	5	16
Combined	5	2	7

## RESULTS

### Sample features

120 participants were asked to share in this study. Twenty-five (21%) did not reply and 5 (4%) refused to contribute, referring to lack of interest. Ninety (75%) patients decided to contribute in this study (table 1). Tables 2 and 3 reveal the past medical history. Fifty defects were as a result of tumors, fifteen were caused by congenital deformities, twenty were resulted by trauma and five by burns. Patients received auricular (44), orbital (23) and nasal (7) prostheses. Fifty seven prostheses were retained by adhesives and thirty three by implants.

### Questionnaire

Tables 4 and 5 show the influence of facial prostheses on the self-assurance, daily life activities, and serviceability. Patients were requested to detect their satisfaction degree with prosthesis wearing. Almost all the patients with mean (SD) 9.4 (1.54) were very content. Patients wearing facial prostheses retained by implant was more pleased than that with adhesive-retained prostheses ( $p = 0.025$ ). Auricular prosthesis Patients were more satisfied than those with nasal prostheses, without statistically significant difference. Table 4 showed the four item scale questions which were used to evaluate Patient Satisfaction. About 89 % answered yes to the question "Would you repeat preferring facial prosthesis in comparison to surgical rehabilitation?" (76%) of them noted that they have to apply facial prosthesis as the cancer treatment harmful effects did not give any alternative decision to them.

### Influence on normal life activities

Facial prosthesis scarcely affected daily life. 66% replied that their normal activities did not affected using prosthesis. On the other hand, a dissimilar termination regarding the VAS ("Did the prosthesis affect your personal/public/occupation situation? The patients reply ranged from: "no effect to a "great effect" on normal life activities,

with a mean score of 6 (VAS 1 - 10) and with a large SD. a broad range of response to the subject "Did your 'quality of life affected by facial prosthesis?" Their responses varied from 1 (disagree) to 10 (very satisfied) denotating that using prosthesis has a changeable effect on both the life quality and normal life activities (Mean (SD) 6.07(3.87)).

### Awareness of the prosthesis and its effect on Self-confidence

About 50% of the patients expressed consciousness of the prosthesis (Table 4) especially those who wear adhesive-retained prostheses ( $p = 0.012$ ). 75% didn't attempted to overlay the prosthesis, and nearly 82 % didn't take them off in community. Also they were inquired if other individuals could recognize the prosthesis. Almost 30% replied to this question with "somewhat" or "frequently" but the 75 % didn't feel that other individuals avoided eye contact. Patients wearing prostheses retained by implant have less eye contact problems than those retained by adhesives. When they were asked: "Do you feel that the prosthesis is a part of you?" 36 % patients replied "quite" and 24 % believed "a lot" with a superior results in Patients with prostheses retained by implant ( $p = 0.007$ ).

### Efficiency and serviceability

52% of patients were quite satisfied and 31% felt very content with the color of the prosthesis, and none were disappointed. 66% replied that they didn't find any difficulty with prosthesis cleaning. Smaller numbers of troubles were encountered in prosthesis retained by implant compared to those retained with adhesives. About 72% of the patients expressed that there was no pain with the use of the facial prosthesis, 24% recorded little pain, and only 4 % suffered from moderate pain (Table 4). In addition the patients were asked about the panic of prosthesis losing and climate effects on the prosthesis.<sup>23</sup> Generally, they were satisfied with their prosthesis, and were not worried about losing it (Table 4).

TABLE (4) Patients Responses.

Question	Response	Total (n = 90)	Adhesive group (n = 57)	Implant group (n = 33)	p value
1. Generally, are you happy with the prosthesis?	Not at all	4	4	0	0.600
	A little	6	5	1	
	Quite	41	31	10	
	Very much	39	17	22	
2. Is your partner, if present, happy with the prosthesis?	Not at all	2	1	1	0.019
	A little	5	5	0	
	Quite	45	35	10	
	Very much	38	16	22	
3. Would you again decide to receive a facial prosthesis?	Not at all	4	1	3	0.117
	A little	7	6	1	
	Quite	55	43	12	
	Very much	24	7	17	
4. Are you convinced that you have to wear a prosthesis?	Not at all	6	3	3	0.379
	A little	20	7	13	
	Quite	49	30	19	
	Very much	15	6	9	
5. Does your daily activities influenced by the prosthesis?	Not at all	59	31	28	0.762
	A little	13	11	2	
	Quite	16	13	3	
	Very much	2	2	0	
6. Do you think other individuals recognized your facial prosthesis?	Not at all	16	9	7	0.099
	A little	47	25	22	
	Quite	19	15	4	
	Very much	8	8	0	
7. Is it difficult to have eye contact with others?	Not at all	47	29	18	0.176
	A little	33	19	14	
	Quite	7	6	1	
	Very much	3	3	0	
8. Do you believe that other people evade direct looking at you?	Not at all	26	17	9	0.049
	A little	55	31	24	
	Quite	9	9	0	
	Very much	0	0	0	
9. Do you think other people are watching you when passing you by?	Not at all	35	23	12	0.432
	A little	39	21	18	
	Quite	12	10	2	
	Very much	4	3	1	
10. Are you trying to cover up the prosthesis?	Not at all	69 (76%)	44	25	0.119
	A little	9	7	2	
	Quite	6	2	4	
	Very much	6	4	2	

11. In a group, do you ever remove your prosthesis?	Not at all	68	45	23	0.049
	A little	19	11	8	
	Quite	3	1	2	
	Very much	0	0	0	
12. Do you remove the prosthesis for a period of time?	Not at all	47	28	19	0.437
	A little	21	14	7	
	Quite	19	12	7	
	Very much	3	3	0	
13. Are you all the time conscious of your prosthesis?	Not at all	2	0	2	0.012
	A little	33	18	15	
	Quite	20	14	6	
	Very much	35	25	10	
14. Do you feel that the prosthesis is a part of you?	Not at all	22 (24%)	15	7	0.007
	A little	30	22	8	
	Quite	33 (36%)	18	15	
	Very much	5	2	3	
15. Is it painful to wear the prosthesis?	Not at all	65(72%)	37	28	0.269
	A little	22(24%)	17	5	
	Quite	3(4%)	3	0	
	Very much	0	0	0	
16. Do you find difficulty during cleaning or using the prosthesis?	Not at all	60	35	25	0.398
	A little	23	17	6	
	Quite	5	3	2	
	Very much	2	2	0	
17. Are you scared about dropping of the facial prosthesis during the day?	Not at all	45	26	19	0.657
	A little	21	14	7	
	Quite	20	15	5	
	Very much	4	2	2	
18. Do you take into consideration the weather effect?	Not at all	44	27	17	0.692
	A little	21	13	8	
	Quite	21	14	7	
	Very much	4	3	1	
19. Do you evade different words or movements?	Not at all	55	38	17	0.498
	A little	19	11	8	
	Quite	15	8	7	
	Very much	1	0	1	
20. Are you convenient with the color of your prosthesis?	Not at all	0	0	0	0.178
	A little	15	12	3	
	Quite	47(52%)	29	18	
	Very much	28(31%)	16	12	

Table (5) Scores of Patients' satisfactions

VAS questions	Median	Mean (SD)
1. Degree of your satisfaction with using facial prosthesis.	8	9.46 (1.54)
2. Degree of your satisfaction without using facial prosthesis.	4	5.39 (3.08)
3. Degree of your satisfaction prior to having facial prosthesis.	4.5	5.71 (2.87)
4. Did your personal life affected by the prosthesis?	4	5.52 (3.37)
5. Did your community situation affected by the prosthesis?	5	5.68 (3.56)
6. Did your occupation?	3	5.27 (3.72)
7. Did your life quality affected by the prosthesis?	6	6.07 (3.87)

## DISCUSSION

Generally, most of patients were pleased with their facial prostheses. Patients with facial prostheses retained by implant were the most content ( $p = 0.025$ ) as their prostheses were not as much conscious ( $p = 0.012$ ) and were accepted to be a part of them ( $p = 0.007$ ), so they appeared to be more self-assured. Prostheses retained by implants, in addition, get advanced scores in the term of functional use, but these scores were not significant. No pain was expressed by seventy two percent of the patients with an implant-retained facial prosthesis. These results were against the conclusion of Younis et al,<sup>24</sup> who tested ear prostheses retained by the Branemark implant and found that patients were pleased with the esthetic, but they suffered from cutaneous inflammations and tenderness, soreness and discomfort at the implant site due to decrease in hygiene this negatively influenced their satisfaction.<sup>25</sup> Rather than the implant type, the site or size of the defect might affect the patient satisfaction. Conversely, it was not suitable to study these effects in this study.

The prostheses retained by implants were quite less than those retained with adhesives. More than half of patients (50/90) had tumors and most of them received radiation therapy that may result in

decreased osseointegration and osteoradionecrosis and implant failure.

In general satisfaction and healthy life style of the patients is predicted to be improved with the advancement in techniques of implantation, but this necessitates a good cooperation between the surgeon and the anaplastologist.<sup>26</sup> Not all lesions are appropriate for an implant-retained facial prosthesis. Significant factors such as the quantity and quality of supporting tissue remained after surgery, the location of the facial deformity, the radiotherapy effect, and patient's age and mental health should be considered in taking the decision.<sup>27</sup> However, the adhesive-retained facial prosthesis is considered an excellent, secure choice that can be used with those patients who have cancer.

### List of abbreviations

- 1- (VAS): Visual analogue scale.
- 2- QOL: Quality of life.
- 3- HRQOL: Health related quality of life.
- 4- (SD): standard deviation.
- 5- (CDC) : Centers for disease control.
- 6- WHOQOL: world health organization quality of life.



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