EVALUATION OF QUALITY OF LIFE IN PATIENTS WITH A FACIAL PROSTHESIS.

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ABSTRACT

Introduction: This study aimed to assess the quality of life of patients with facial prostheses after head and neck surgery. **Materials and Methods**: Sixty-four patients who had received an extraoral or facial prosthesis over the previous five years and had been using it for at least six months after the treatment were interviewed. A validated questionnaire, the University of Washington Quality of Life Questionnaire version 4, (UoW- QOL v4), was used and the patients' sociodemographic profiles were obtained. Data was analysed using SPSS ver. 22. **Results**: A total of 64 patients, with a mean age of 38.1 years, were included, 41 (64.1%) of whom were male and 23 (35.9%) were female. The most significant problems encountered by the patients were appearance (14.1%), mood (11%) and recreation (7.8%). The majority stated that their overall quality of life was 'fair' or 'good' (84.4%). Pain (90.6%), activity (87.5%), and appearance (78.1%) were the issues most frequently reported by patients. **Conclusion**: The quality-of-life scores, as assessed using the (UoW-QOL v4) scale, were fair or good in patients with facial prostheses. Pain, activity, and appearance were regarded as the most important issues affecting their quality of life.

Keywords: Evaluation, Head and neck cancer, Maxillofacial prosthesis, Quality of life, UoW-QOL v4.

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Keywords: Evaluation, Head and neck cancer, Maxillofacial prosthesis, Quality of life, UoW- QOL v4.

INTRODUCTION

In overcoming weaknesses with surgical reconstructions, prosthetic rehabilitation requires different approaches. This is the most cost-effective process, allowing short periodic cleansing and the reconstruction of the affected area within a predictable execution period.[1] Due to various specific psychophysical patient conditions, facial reconstruction using prosthetic rehabilitation is an alternative to surgical reconstruction.[2]

Patients with facial deformities have been shown to have low self-esteem, which may affect their quality of life.[3] Patient functions and self-esteem were reported to improve with the aid of prosthetic rehabilitation.[4] The effects of the surgery, which include morphological and functional disturbances, were among the criteria to be considered in determining the need for a therapeutic approach in

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patients with post-surgery facial defects.[5] Surgical reconstruction itself is generally more difficult and does not always produce the desired result.[6]

Problems with the retention of the prosthesis, colour inconsistency, and skin reactions to adhesives and soft tissue layers are among the difficulties reported when facial prostheses are used.[7] It was reported that within the first three years of service, patient satisfaction with external prostheses decreased.[8] This was probably due to colour changes and the pigmentation of the prostheses, which compromised their aesthetic qualities.[9]

Ocular prostheses (Figure 1) are made using Polymethylmethacrylate (PMMA), while skin-like prostheses are made from a silicon material. Traditionally, skin adhesives, solvents, eyeglasses, the use of hard and soft tissue undercuts, and other modalities have been used to help in retaining prostheses. Unfortunately, these methods have been associated with weaknesses, for instance, problems with retention, stability, adverse tissue reactions, discolouration and prosthesis deterioration, inconvenience of use or application, poor hygiene, discomfort, and lack of acceptance.[10]

Facial prostheses are responsible for

Figure 1: Ocular prostheses.

improving the quality of life of a patient after surgical management of head and neck cancer.[5] The majority of clinical studies on facial prostheses have reported only biological outcomes. Hence, an evaluation of the effects of prostheses on the quality of life of patients with facial prostheses, using questionnaires developed specifically for this group of patients, may provide important data on treatment outcomes from the patients' perspectives.[11] It is important to assess the satisfaction levels and changes in a patient's life that have occurred due to surgery and the rehabilitation process to ensure the prostheses made genuine improvements to overall patient well-being.[5,12] Hence, this study was conducted to assess the quality of life of patients who had been wearing a facial prosthesis for at least six months but not longer than five years.

METHODOLOGY

A cross-sectional study was conducted among the patients who were using ocular, nasal, or auricular prostheses and who had been rehabilitated at the maxillofacial prosthodontics clinic at Hospital Universiti Sains Malaysia (USM).

The sampling method used in this study was simple random sampling. The reference population was patients who had received facial prostheses at Hospital USM between 2012 and 2018. The sampling was preceded by a review of those patients who had received an extraoral or facial prosthesis over the previous five years and used it for at least six months after the treatment. Sixty-four clinical records were identified. The telephone numbers of patients were recorded and oral consent was taken before they were included in the study.

Patients who were mentally unstable or suffering from dementia, or who had received an intraoral prosthesis, were excluded

from this study.

The data collection involved phone call interviews using a validated questionnaire, the Proforma Questionnaire from the University of Washington Quality of Life Questionnaire version 4, (UoW- QOL v4). The interview sessions took around 20 minutes to complete, on average.

The interview was divided into two parts. The first part referred to the general information about the patients, such as gender, types of prostheses, and the causes of the condition. The second part collected specific data and contained 15 objective questions, including information about the pain, appearance, activity, recreation, speech, chewing, swallowing, shoulder pain, taste, saliva, mood, anxiety, and employment, which were assessed and scored by the patients. The patient had to provide a score from 0-100, whereby 0 was the worst/ poorest score and 100 was the highest/ excellent score. Scores of 80 and above were considered the highest scores, according to Becker *et al*.[13]

Data entry and analysis were done and processed using SPSS software version 24.0. Descriptive statistics were used to summarise and represent the participants' socio-demographic data. Categorical data was represented by frequency and percentage while numerical data was represented by mean and standard deviation.

RESULTS

A total of 100 patients with facial prostheses were available at Hospital USM. Sixty-four patients who fulfilled the inclusion and exclusion criteria were recruited for the study and completed the questionnaire.

Demographic Characteristics

The results showed the respondents have a mean (SD) age of 38.13 (21.5) and there were more males (n= 41; 64.1%) than females (n=23;35.9%). The majority of reasons why the patients wore facial prostheses were head and neck pathology (n=34; 53.1%), followed by accidents (n=28;43.8%) and congenital conditions (n=2;3.1%).

Types of facial prosthesis

From the data obtained, 61 (95.3%) out of 64 patients were wearing ocular prostheses, 39 (60.9%) of whom were male (Table I). Only 3 (4.7%) patients were wearing auricular prostheses, 2 (3.1%) of whom were male. None of the respondents were wearing nasal or maxillary prostheses.

Assessment of quality of life

Table II represents the summary of three components. Part A concerned the patients' relative feelings a month before their prosthesis's replacement, part B concerned their health-related quality of life during the previous seven days and part C presented the overall quality of life. These were scaled from 0 to 100 to facilitate the presentation, with key results using the same 0 to 100 scale. The findings for part A showed that 51 respondents (79.7%) quoted their health-related quality of life as 'much better' and 13 respondents (20.3%) quoted it as 'somewhat better'. For part B, 50 respondents cited their health-related quality of life during the previous seven days as 'fair' or 'good', while 54 respondents reported their overall quality of life as 'fair' or 'good' for part C.

Table I: Types of facial prostheses (n=64)

Variables	Types of facial prostheses, n (%)			
	Nasal	Auricular	Ocular	Maxillary
Male	0	2 (3.1)	39 (60.9)	0
Female	0	1 (1.6)	22 (34.4)	0
Total	0	3 (4.7)	61 (95.3)	0

Table II: Evaluation of the quality of life

UoW-QOL	Question score								
	0	20	25	40	50	60	75	80	100
A. Health-related QOL compared to the month before the repalcement	0		0		0		13		51
B. Health-related QOL during the past 7 days	0	0		23		27		11	3
C. Overal QOL during the past 7 days	0	0		27		27		7	3

UoW-QOL: University of Washington Quality of Life

Percentage of patients choosing each domain

Table III shows which domains had been the most important during the previous seven days. Patients were asked to choose up to three domains. Pain (90.6%), activity (87.5%), and appearance (78.1%) were the issues most frequently reported by the patients in this study, followed by recreation (20.3%), anxiety (14.1%), and mood (7.8%). The domains of swallowing, chewing, speech, taste, shoulder pain, and saliva were not chosen by any respondents. This was perhaps because the respondents were wearing extraoral prostheses, which did not interfere with these functions.

Significant problems with each UoW-QOL domain

As shown in Table III, the three domains producing the most significant effects were appearance (14.1%), mood (11%), and recreation (9.7%). The data also suggested that significant problems existed with other domains but these affected a smaller percentage. Examples of these domains were pain (1.6%), activity (6.3%), and anxiety (3.1%). For the domains of swallowing, chewing, speech, shoulder pain, taste, and saliva, no significant problems were recorded.

DISCUSSION

The results of the present study reveal that the quality of life of patients with facial prostheses is 'fair' or 'good'. Pain, activity, and appearance were considered the major issues affecting their quality of life.

This study was conducted using a validated UoW-QOL v4, as this was able to provide clinical information briefly and simply.[14] The UoW-QOL has been translated into, and validated in, various languages by the Merseyside Regional Head and Neck Cancer Centre (2019). These include Brazilian,[15] Spanish,[16] Greek,[17] Turkish,[18] and many more. In

Table III: Percentage of patients choosing each domain and had significant problem on each UoW-QOL domain (n=64)

UoW-QOL	Patients choosing the domain, n (%)	Rank order	Patients with significant problems, n (%)
Pain	58 (90.6)	1	1 (1.6)
Activity	56 (87.5)	2	4 (6.3)
Appearance	50 (78.1)	3	9 (14.1)
Recreation	13 (20.3)	4	5 (7.8)
Anxiety	9 (14.1)	5	2 (3.1)
Mood	5 (7.8)	6	7 (11.0)
Swallowing	0 (0)	7	0 (0)
Chewing	0 (0)	7	0 (0)
Speech	0 (0)	7	0 (0)
Taste	0 (0)	7	0 (0)
Shoulder	0 (0)	7	0 (0)
Saliva	0 (0)	7	0 (0)

this study, the researchers used the translated and validated UoW-QOL questionnaire in Malay, which was sourced from the Merseyside Regional Head and Neck Cancer Centre official website.[19] A self-administration mode similar to the study published by Kazi *et al.* (2008) was adopted since it avoids potential interview bias and is quick, simple, and convenient for patients to complete.[20]

This study comprised 64 respondents, the majority of whom were male (64.1%). This was consistent with the findings of most studies of patients with a facial prosthesis because the incidences of head and neck cancers are around three times higher in males.[20] Moreover, about three-quarters (73%) of all road traffic accidents occur among young males under the age of 25. They are almost three times as likely to be involved in a road traffic collision compared to young females.[22] The incidence of head and neck cancers in children was reported as having a male-to-female ratio of 1.78:1.[23] The current study reported patients had a mean age of 38.1 years, which differed slightly from the average, as head and neck cancers are known to have a higher incidence in individuals over 45 years old.[24] This was probably due to the inclusion criteria, which not only consisted of patients wearing facial prostheses due to head and neck cancers (53.1%) but also accidents (43.8%) and congenital conditions (3.1%).

Of the patients interviewed, 84.4% quoted their overall quality of life as 'fair' or 'good'. This result matches very closely to a study conducted by Kazi *et al.* (2008) in the United Kingdom, in which 43.7% of their respondents reported their quality of life as 'very good' and 28.1% reported it as 'good'.[20] The slight variation between these two studies in terms of the results obtained was probably because the United Kingdom was ranked second in a study comparing the healthcare systems of seven industrialised countries.[25]

Pain (90.6%), activity (87.5%), and appearance (78.1%) were the issues that most affected patients, as reported in this series of interviews. The pain domain score is consistent with a study by Iriya P. *et al.* (2017), which reported pain as one of the most important issues experienced by patients.[26] This was because the head and neck region is highly susceptible to pain, due to extensive innervation and the proximity of anatomical structures.[27]

The findings of the current study showed that the most significant problems encountered by the patients were appearance (14.1%), mood (11%) and recreation (7.8%). The finding for the recreation domain in this study is consistent with the study by Rogers *et al.* (2003), which reported patients with larger defects gave lower scores for activity, recreation, and physical function. On the other hand, the results for the mood and recreation domains are consistent with a study conducted by Dzebo S. *et al.* (2017), which pointed out that mood (53%), anxiety (43%), and recreation (39%) were the most significant problems encountered by patients.[28] These variations between the results obtained were possibly due to several associated factors such as gender, schooling, family income, and age.[15]

The UoW-QOL scale is brief and simple.[20] The researchers found that it can easily be used to assess patients with a facial prosthesis. It helps the clinician with useful data and can guide the clinician in decision-making based on patient feedback.[29] On the other hand, the UoW-QOL scale is based completely on the patient's perspective, which may cause inaccuracy in the results.[20] After conducting the study using the UoW-QOL questionnaire, the researchers would like to suggest improving the questionnaire by having an open-ended text that would allow patients to share their thoughts, and allow the researchers to recognise healthcare problems

that require attention but which may not have been identified beforehand.

CONCLUSION

The quality of life of patients with facial prostheses assessed using the UoW-QOL v4 scale was scored as 'fair' or 'good'. Pain, activity, and appearance were considered the major issues affecting their quality of life. To overcome the weaknesses of facial prostheses, proper instructions and sufficient information about the prostheses should be given to patients. Routine psychological consultations should also be offered to patients with facial prostheses.

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ETHICAL CONSIDERATIONS

The ethical clearance for this study was from the Human Research Ethics Committee of USM (JEPeM) (USM/JEPeM/19010035).

DECLARATION OF CONFLICT OF INTEREST

The authors have no conflict of interest to declare.

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