ORAL HEALTH RELATED QUALITY OF LIFE BY MEANS OF FUNCTIONAL CHANGES IN GERIATRIC ORAL HEALTH ASSESSMENT INDEX (GOHAI) BEFORE AND AFTER INSERTION OF NEW CONVENTIONAL COMPLETE DENTURES IN COMPLETELY EDENTULOUS PATIENTS.

Gotam Das[1], Khezran Qamar[2], Muhammad Haseeb Rana[3], Shabir Ahmed[4], Zaheer Hussain Chachar[5], Kinza Mushtaque[6]

1. BDS, FCPS
   Assistant Professor
   Department of Prosthodontics
   College of Dentistry King Khalid
   University,
   Abha Kingdom of Saudi Arabia.
2. BDS, FCPS
   Associate Professor
   Department of Prosthodontics
   Lahore Medical & Dental College,
   Lahore.
3. BDS, FCPS
   Assistant Professor
   Department of Prosthodontics
   College of Dentistry King Khalid
   University
   Abha Kingdom of Saudi Arabia.
4. BDS, FCPS
   Assistant Professor
   Department of Prosthodontics
   Bibi Asifa Dental College, Larkana.
5. BDS, FCPS
   Assistant Professor
   Department of Periodontology
   College of Dentistry, Zia-u-Din
   University, Karachi.
6. BDS
   Lecturer
   Department of Oral Maxillofacial
   Surgery
   Bibi Aseefa Dental College, Larkana.

Correspondence Address:
Dr. Shabir Ahmad
Department of Prosthodontics
Bibi Asifa Dental College, Larkana.
Near Oil Depot Muhalla Rahmat Pur
Larkana Sindh.
ahmedshabir80@gmail.com

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ABSTRACT: The oral health-related quality of life determines the quantity to which oral health disrupts the regular life and common functioning of an individual. To evaluate the oral health problems of older adults, Geriatric Oral Health Assessment Index (GOHAI) can be used. GOHAI was developed by Atchinson and Dolan[3] before and after complete denture therapy". **Study Design:** Cross sectional study. **Setting:** Department of Prosthodontics, Lahore Medical and Dental College, Lahore. **Period:** February 18, 2018 to August 17, 2018. **Material & Methods:** Patients will be selected for the study according to the criteria. Patient history and clinical examination was undertaken. Upper and lower complete dentures was made-up for 30 patients (both male and female) using standardized clinical and laboratory methods. Conventional procedures were applied to complete denture construction. Complete dentures were constructed in the similar dental laboratory within the institution by compression moulding method. Laboratory and clinical remount procedures, beside with occlusal corrections were carried out using a semi-adjustable articulator. The GOHAI questionnaire was completed on two different appointments. First questionnaire was documented before denture insertion and second questionnaire was recorded after complete denture insertion. **Results:** Before treatment mean GOHAI score was 20.46 ± 2.85 and after treatment mean GOHAI score was improved and was 26.32 ± 2.34. The mean GOHAI score was statistically improved p-value < 0.001. For male patients, before treatment mean GOHAI score was 21.61 ± 2.59 and after treatment mean GOHAI score was improved and was 26.31±2.14. The mean GOHAI score was statistically improved in male patient, p-value < 0.001. For female, before treatment mean GOHAI score was 19.34 ± 2.70 and after treatment mean GOHAI score was improved and was 26.44 ± 2.49. The mean GOHAI score was statistically improved in female patients, p-value < 0.001. **Conclusion:** According to patient's information enhancement in functional changes after placement of complete dentures.

Key words: Geriatric Oral Health Assessment Index (GOHAI), Oral Health Impact Profile (OHIP), Quality of Life (QOL).

INTRODUCTION

Dentofacial problems have several effects on patients' satisfaction by means of their dentition as they influence aesthetics, performance and functions.[1] Tooth loss involve the usual functional activities ensuing in a variety of reactions in edentulous patients. The dentition is one of the mainly significant elements in any judgement regarding a person's appearance.[2,3] Loss of teeth can be a troubling emotional incident for several people which may be psychologically depressing.[4]

The significant goals of dental care is serving patients in their effort to an acceptable level of satisfaction with their oral cavity and dentition.[5] A variety of factors such as chewing ability, taste, pain, speech and aesthetics affect diverse characteristics of quality of life (QoL) as well as satisfaction with dentition.[1] It is predictable that presence of at least 20 functional teeth is enough to assure satisfaction as well as to maintain an adequate capability of chewing.[4]

Common treatment planning for edentulous

patients is conventional complete dentures. It is widely accepted being relatively cheap, aesthetically satisfactory and easy to clean.[2] The prognosis of conventional complete dentures is unpredictable depending upon the patient's adaptive capacity.[6] Removable prosthesis still at their best but have various functional limitations on patients. The provision of new complete dentures should be assessed by patient's point of vision.[7]

The quality of life can be judged by assessing individual's subjective feelings of pleasure or dissatisfaction regarding different life concerns.[7] The oral health associated quality of life (OHRQoL) procedures to which oral health disrupts the normal life and social functioning of a person.[8] Difficulties of phonetic, esthetic, mastication or disability as a consequence of tooth loss creates harmful impact on quality of life.[9] Prosthodontic treatment should have the practical and psychological adaptation by the patient to progress in better quality of life.[10] Before after therapy patient based evaluation tool aid the clinicians to improve the quality of life.[11]

Complete dentures are the most frequent form of prosthetic treatment for edentulism. In Pakistan, complete edentulism occurs an estimated 4.1 % of the population aged 65 years and over, with a predictable increase to 9.3 % by 2030.[12] QHRQoL has been considered to evaluate the impact of edentulism and available therapies measured by OHIP.[13] Comparing OHRQoL of elder adults wearing complete and partial dentures established that removable partial denture patients experience more impaired OHRQoL than complete dentures wearers.[14]

A number of OHRQoL tools have been used to evaluate the prosthodontic therapies. These OHRQoL gadgets have been revealed to work very well in relating the impact of edentulism and treatment on numerous domains.[14] The Geriatric Oral Health Assessment Index (GOHAI) is an instance of patients based measurement of oral health problems generally affecting older adults.[15] Objective of this study was to evaluate the changes in GOHAI before and after placement of conventional complete dentures in edentulous patients.

MATERIALS AND METHODS

Permission was taken from the hospital ethical committee and informed consent was taken from the patients. Patients of 60-84 age group are included in this study. The patient must be completely edentulous. Patients having no history of denture wearing i.e. new complete denture wearers. Patients fulfilling the inclusion criteria were chosen from the department of Prosthodontics, Lahore Medical and Dental College, Lahore. Patient history and clinical examination were undertaken then patients selected for the study according to the criteria. Maxillary and Mandibular complete dentures fabricated for 30 patients (both male and female) through standardized clinical and laboratory procedures. Conventional procedures were employed to complete denture construction. All the complete dentures were processed in the same dental laboratory within the institution by compression moulding method. Laboratory and clinical remount procedures, along with occlusal corrections were completed using a semi-adjustable articulator. The GOHAI questionnaire was completed on two different phases. One questionnaire will be recorded prior denture insertion. One questionnaire will be recorded after complete denture insertion.

While the items were scored on a 5-point scale, the GOHAI was administered using a three-point scale (always, sometimes, never). GOHAI scale scores at baseline and 1 month were calculated as a simple summation of the 11 items (response set is always, very often, often = 1, sometimes, seldom = 2, never = 3) after reversing the response set of three items (item 3: swallow comfortably; item 5: eat anything without feeling discomfort; item 7: happy with looks). A simple summative score ranging from 11 to 33 will be calculated for every patient, with a higher score indicating better self-reported oral health. Means, median values, standard deviations and change scores will calculate for the GOHAI. Change in GOHAI score will be calculated as the follow-up score minus the score at baseline.[7] The data

will be analyzed by using Wilcoxon signed-rank test. All the data analysis will be carried out using SPSS version 21. A probability value, p value of less than 0.05 will be considered statistically significant.

RESULTS

In current study the mean age of subjects was 71.78 ± 7.60 with minimum and maximum age of 60 years and 84 years. Table-I

There were 24(43.6%) patients who were 60-70 years of age, 20(35.71%) were 71-80 years old and 11(19.64%) patients were > 80 years age. Table-II

The average age of man patients was 68.5 ± 6.54 years and average age of women patients was 75 ± 7.25 years. Table-III

Before treatment mean GOHAI score was 20.46 ± 2.85 and after treatment mean GOHAI score was improved and was 26.32 ± 2.34. The mean GOHAI score was statistically improved p-value < 0.001. Table-IV

For male patients, before treatment mean GOHAI score was 21.61 ± 2.59 and after treatment mean GOHAI score was improved and was 26.31±2.14. The mean GOHAI score was statistically improved in male patient, p-value < 0.001. For female, before treatment mean GOHAI score was 19.34 ± 2.70 and after treatment mean GOHAI score was improved and was 26.44 ± 2.49. The mean GOHAI score was statistically improved in female patients, p-value < 0.001. Table-V

	Age (Years)
Mean	71.78
Std. Deviation	7.60
Range	24.00
Minimum	60.00
Maximum	84.00

Table-I. Descriptive statistics of age (Years)

	Frequency	Percent
60-70	24	43.6
71-80	20	36.4
> 80	11	20.0
Total	55	100.0

Table-II. Frequency distribution of age groups

	Gender	
	Male	Female
N	26	29
Mean	68.50	75.00
Std. Deviation	6.543	7.245

Table-III. Comparison of age in relation to gender

	Pre Score	Post Score
Mean	20.46	26.32
Std. Deviation	2.86	2.34
Range	13.00	7.00
Minimum	15.00	22.00
Maximum	28.00	29.00
p-value	< 0.001	

Table-IV. Comparison of gohai score pre and after treatment

		Mean	Std. Deviation	P-Value
Gohai Score (Male)	Pre Score	21.61	2.59	
	Post Score	26.31	2.14	< 0.001
Gohai Score (Female)	Pre Score	19.34	2.70	
	Post Score	26.44	2.49	

Table-V. Comparison of gohai score pre and after treatment in male patients

DISCUSSION

Prosthodontist poses great challenges in successful treating edentulous patients. Rehabilitation for edentulous patients has been described as a combination of function, comfort, esthetics phonetics. It is not beyond the dentist's ability to provide comfort and function in an increasing percentage of the edentulous patients. Ratio in treating edentulous patients successfully has increased due to developments in new materials and techniques. Successful denture esthetics would compensate for lost alveolar bone, properly positioned anterior teeth for lip support, and re-establishing the correct vertical dimension of occlusion with proper tooth selection are important aspects of denture esthetics. Esthetically satisfactory prostheses add in increased psychological success factors.[16,17,18]

In complete denture insertion satisfaction of patients is one of the difficult aspects. A good denture appearance is basically subjective

appreciation of tooth length, width, shape, shade and their correlation with gingiva, lips, commissars and also facial features.[19] In the present study, 55 edentulous subjects; 29 male and 26 female patients were selected. Complete denture fabricated under slandered conditions. In current study GOHAI score was 21.61 and after treatment mean GOHAI score was improved and was 26.31 after complete denture insertion are same as Shigli K.[20,21,22,23]

Silva MES[4] investigated that after insertion of the complete removable prostheses improved the quality of life. These results are consistent with the present study.

Inuki M[10], Butt A[19], Allen PF[25], Peterson PE[24] and Ellis JS[21] they found that there is a difference in score of GOHAI which is much lower than current study.

Moriya S[9] reported that positive correlation was found between same score of GOHAI as that of present study. In contrast to present study Forgie AH[22] and Ellis JS[21] found that there is much lower score of GOHAI than present study.

Following the current study a guideline was proposed for edentulous patients to after providing complete denture; they improve quality of life by improving functional and esthetic.

CONCLUSION
From the results of current study the following conclusion were drawn:
1. Patients reported improvement in function and esthetic after provision of complete dentures.
2. It is concluded that the most patients after getting prosthetic treatment were satisfied and it is an important predictor in the assessment of quality of life.
3. The quality of life among complete denture wearers in the both arches was better as compared to the quality of life among non-denture wearers.
4. Prosthetic replacement by complete denture helps the individuals to maintain better oral health.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Gotam Das	Manuscript writing.	
2	Khezran Qamar	Manuscript writing.	
3	M. Haseeb Rana	Data collection.	
4	Shabir Ahmed	Data collection.	
5	Zaheer Hussain Chachar	Proof reading.	
6	Kinza Mushtaque	Literature review.	