

Influence of clinical and radiographical features on complete denture acceptance in elderly

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Abstract:

One hundred forty nine edentulous patients who were included in this study seeking for a complete denture. Sixty five patients of them were seeking for a denture for the first time, 45 patients had a history of one set of denture, and 39 patients had a history of two sets of dentures. All the technical and the laboratory work for construction of the complete denture was followed under the supervision of one prosthodontist. The evaluation of the dentures regarding function, comfort, appearance and general satisfaction was done by the patients themselves. The results indicated that patients acceptability for wearing a new complete denture was increased in those with a history of previous denture.

Keywords:

Edentulous patients, radiograph, complete denture

Introduction:

The complete denture treatment is a challenging procedure, as it should meet the anatomical, biological, and psychological needs of the patient. However it must be emphasized that long term wear of dentures can lead to changes in oral tissues of varying signs, furthermore, these changes in wear and tear of denture supporting tissues must be reconciled with the possibility of similar or other tissue changes relating to dentures. To construct a prosthesis, a dentist should have an understanding of the components, structure, and qualities of the tissues that will support the proposed prosthesis⁽¹⁾.

Dentures are rigid pieces of acrylic resin which are shaped to fit the

soft tissue covering of the jaws and to be compatible with the functioning oral environment. No denture, regardless of how well it is constructed, can be better than the foundation on which it is placed⁽²⁾. In elderly, xerostomia & Sjögren Syndrome, tissue fragility, muscle weakness, osteoporosis, bone resorption, arthritis of TMJ, anxiety, depression and poor nutrition, have been reported as possible causes for denture failure^(3-7,18). These numerous problems of aging have led to the conclusion that denture failures increase markedly with age⁽⁸⁻¹⁰⁾. From a clinical point of view, denture failure has been defined as the inability to be used and accepted by the patient although technically considered well made dentures⁽¹¹⁾.

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Materials and methods:

The study include 149 edentulous patients with age range (50-80) years. Came to the College of Dentistry, Anbar University and other dental centers, and private clinics, who are seeking for a complete denture. Sixty five patients of them were not denture wearer, 45 patients of them had a history of one set of denture, and 39 patients of them had a history of two sets of dentures. Panoramic radiographs were taken for each patient to exclude presence of retained root, osteoporosis, any pathological lesions and for evaluation of bone resorption. The dentures were constructed under

supervision of a prosthodontist who follow the conventional techniques for making the dentures. Information concerning the patient's age, past history with dentures, & number of prior sets of dentures were recorded.

Subjects were asked to evaluate 10 different factors divided into the categories of function, comfort appearance & general satisfaction (figure 1). Each patient was asked to evaluate the denture through stating YES or NO for features involved in the question form. The patients were classified into 3 groups according to age. Group 1 from 50-59 years, group 2 from 60-69 years, while group 3 from 70-80 years.

<u>Category</u>	<u>Subcategory</u>	<u>Yes</u>	<u>No</u>
Function	Drink liquids (ability to drink liquid)		
	Chew food (mastication without fallen denture)		
	Cutting food like bread		
	Speak clearly (phonetic of words contain(s) letter		
Comfort	Upper and lower denture tightness		
	Presence of gag reflex		
Appearance	Shape of teeth (acceptance)		
	Shade of teeth (acceptance)		
	General appearance (acceptance)		
Over all satisfaction (agree)			

Figure (1): Categories evaluated on patients self assessment questionnaire

Results:

One hundred forty nine patients participated in this study. The total sample by age and sex is show in table

(1), the percentage of patients who are satisfied with their complete maxillary & mandibular dentures were tabulated according to the number of previous sets of dentures (table 2).

Table (1): Age and sex distribution of the sample

Age group	Male	Female	Total
50-59	29	19	48
60-69	42	23	65
70-80	20	16	36
Total	91	58	149

Table(2): Percentage of patients satisfaction with complete dentures in relation to number of previous sets of dentures

Categories	First set of dentures (65)	Second set of Dentures (45)	Third set of Dentures(39)
Function	64.4	80.2	86.6
Comfort	74.2	81.8	88.2
Appearance	81.4	82.4	91.4
Overall Satisfaction	75.8	86.1	88.3

The functions of chewing, biting, & speaking were the greatest complaints in all groups. The ratings given to appearance satisfaction were consistently higher than other categories. Patient receiving their first sets of dentures exhibited considerably lower

rates of acceptance than patient with previous denture.

Table(3) compares the same questionnaire results of satisfaction according to the patient age. Again, esthetics scored consistently higher than function & comfort.

Table (3): Percentage of patients satisfaction with complete dentures in relation to

Categories	Age of patient No. of patients (years)		
	50-59(group1) 48	60-69(group2) 65	70-80(group3) 36
Function	66.8	84.2	88.4
Comfort	72.6	82.8	86.2
Appearance	80.2	86.2	88.4
Overall Satisfaction	74.6	84.4	88.2

groups.

Discussion and conclusion:

A patient self-assessment questionnaire was used to allow patients an opportunity to reevaluation of their complete dentures ^(12,13). The result indicated that the critical factor for predicting denture success was whether the patient had ever received previous complete dentures. Patients with no previous experience with complete denture expressed a significant decrease in denture satisfaction compared with other complete denture wearers, this is in

agreement with other studies ^(14,15,16), because as patient acquire additional sets of dentures their neuromuscular control becomes more highly developed, their ability to stabilize new dentures in the mouth & function with them may be returned & reinforced more quickly than is possible for patient who undergo this process for the first time ⁽¹⁷⁾. In addition the patient may have more realistic esthetic & psychosocial expectations based on their past experience with dentures. These positive influences may mask or

overcome negative aspect of aging or systemic diseases⁽¹⁸⁾ such as tissue fragility, bone resorption, &xerostomia and from table(3) one can indicated that the overall satisfaction of the patients to a complete denture is increased with age, this could be due to the experience of the patient which had been gained from wearing an old denture to accept a new set of complete denture, also the desire of the patient to a complete denture increases with age from psychological point of view to overcome the aging problems such as esthetic and function.

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