

# SURVEYING OF COMPLETE AND PARTIAL DENTURE WEARING PROBLEMS: STATISTICAL STUDY

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## ABSTRACT

Dental laboratories are commonly confronted with individuals seeking alterations on their complete or partial dentures. Some of these problems may not be related procedure followed to produce such dentures in the dental laboratories, rather they may be the result of improper use or even unrevealed certain dental history by the patient due to lack of knowledge or just as a matter of careless.

Identifying the most common problems may help both technicians and patients avoiding repeating of casting procedure and costs as well as unnecessary efforts. The most common problem exhibited by wearers of complete and partial denture are loose dentures and lack of retention. Gum diseases are only found in patients wearing complete dentures (4.3%).

## Introduction

Dentures are used when an individual is missing his/her natural teeth. It is just as important to take care of dentures as it is to take care of natural teeth, since problems such as gingivitis can still occur<sup>(1)</sup>.

Dental diseases, if untreated, can lead to severe infections. Other more serious diseases can even be detected by an oral examination, like diabetes, cancer, bulimia, AIDS, periodontal disease and even nutritional disorders. This makes the cost to an employer greater than the cost of offering dental benefits<sup>(2)</sup>.

Most patients who have complete dentures are dissatisfied with the limited retention and stability of their prostheses<sup>(3)</sup>. Bone loss and deterioration of the alveolar ridge in the maxilla and the mandible can lead to atrophy and lack of support for complete dentures<sup>(4)</sup>.

The area of bony support for a denture base is 1.8 times greater in the maxilla than it is in the mandible. The force on the mandible during mastication is greater than on the maxilla, creating a unique and considerable problem in overdenture design<sup>(5,6)</sup>

Changes in muscle attachments may result in loss of facial form, decreased or impaired function, and compromised esthetics and phonetics<sup>(4)</sup>. Changes occur in the residual ridge after tooth extraction with the size of the bony ridge decreasing as resorption continues, initially for up to two years. The resorption rate is the greatest in the anterior maxilla and mandible, with the resorption beginning on the buccal or labial surface of bone. The resorption rate is three to four times greater in the mandible than in the maxillary ridge<sup>(5)</sup>.

In data compiled by Carlsson and Persson, the rate of residual bone resorption was 0.5 mm per year starting after the second year<sup>(5)</sup>. Clinical research in 1975 by Crum and Rooney over a five-year period indicated that bone loss in the edentulous mandible in denture wearers was reduced by an average of 0.1-0.3

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mm a year<sup>(4,7)</sup>. Over a five-year period the bone loss averages 5.0 mm. In the same period, vertical bone loss in patients wearing overdentures was 0.6 mm<sup>(4,7)</sup>. Alveolar bone resorbs at a faster rate without the support of natural dentition. Retained roots maintain alveolar bone, which will support an overdenture and prevent rapid bone loss<sup>(7)</sup>.

Rissin and House analyzed the masticatory performance of three dental patient groups: those with natural dentition, those wearing complete dentures, and those wearing overdentures. Food was chewed by each patient, then passed through a No. 12 sieve. The chewing efficiency of patients with natural dentition was measured at 90%, complete denture wearers 59%, and patients with overdentures 79%<sup>(7,8)</sup>. Chewing efficiency with a root-supported overdenture was 34% higher in patients who previously wore a complete denture. This increase in function, retention, and stability leads to better esthetics and phonetics in denture wearers. These factors elevate patients' self-esteem and increase their confidence level<sup>(7-9)</sup>.

## Patients and Methods

A questionnaire form was designed to determine the most common problems associated with complete and partial denture wearers. The questionnaire involve information about sex, age, type of denture (complete or partial), and problem of the denture.

During the period February the 1<sup>st</sup> 2005 until October the 31<sup>st</sup> 2005, a total of 164 questionnaire form were collected.

Statistical methods<sup>(10)</sup> such as descriptive and inferential were used to analyze the data reported in these questionnaire forms.

## Results

The collected forms involved 164 patients, 127 (77.44%) male and 37 (22.56%) female. The male to female ratio is 3.43:1.

The age distribution for the total patients ranged between 24 to 69 years, with mean age equals to 46.12 years and standard deviation equals to 9.84 years (Figure 1).

The two-sample t-test revealed that there is no significant difference between males mean age (46.72 years) and females mean age (44.1 years) (p-value > 0.05) (Figure 2).

The number of partial denture wearers was found to be 130 (79.27%) and that of complete denture wearers was found to be 34 (20.73%).

The ratio of partial to complete denture wearers is 3.82:1, which means that partial dentures are more common dental phenomenon than complete dentures.

The distribution of partial and complete denture problems as mentioned by the wearers are listed in table 1.

## Discussion

Some people have many difficulties with their natural teeth and believe that having them pulled and getting dentures will solve all their problems<sup>(11)</sup>.

It is necessary for immediate dentures to be relined or remade, usually within six months. Because this is due to shrinkage of the gums, not problems with the way the dentures are made.

The average denture usually requires a laboratory reline or remake at least once in every four years, due to functional wear and/or continued bone resorption. This bone resorption will continue throughout the patient's lifetime, making subsequent denture construction more difficult, less satisfying, and

less comfortable for the patient than their previous denture experience<sup>(11)</sup>.

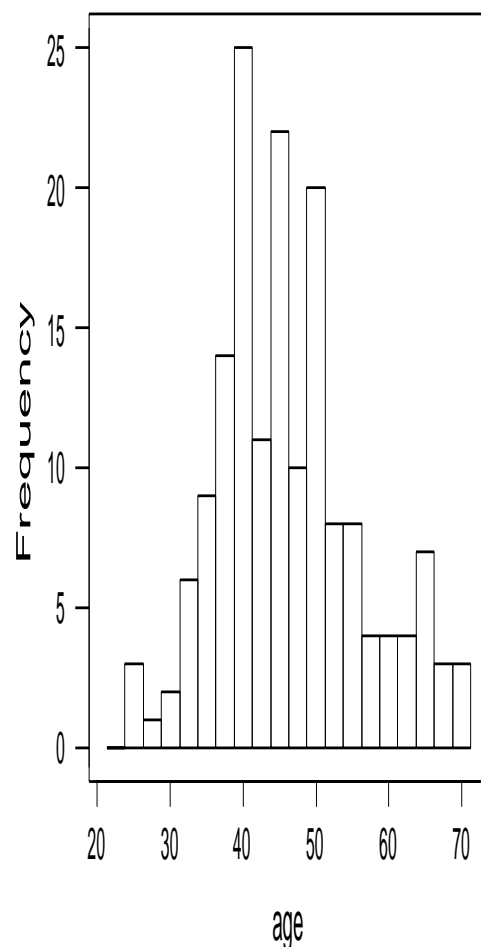
Due to the varying rates of bone resorption and jaw alignment situations, there is no guarantee that a patient will successfully and comfortably wear even a well-constructed denture<sup>(11)</sup>.

Dentures should not be considered a replacement for teeth. They are a replacement for no teeth. Dentures are prosthetic appliances, not real teeth, made to imitate the function of teeth as closely as possible. However, most people end up with about 20% efficiency of their natural teeth<sup>(11)</sup>.

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**Fig.1. Histogram of the age of partial and complete denture wearers.**

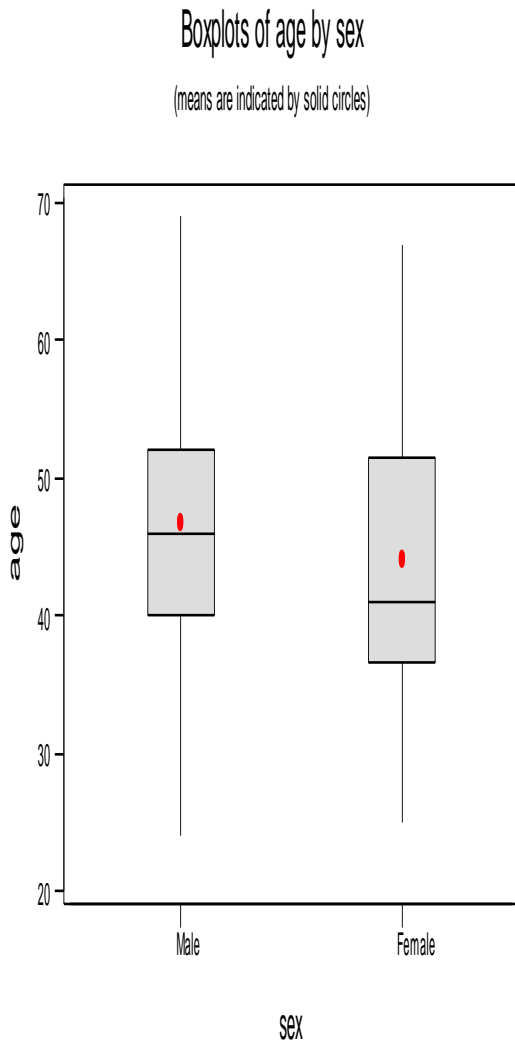


Fig.2. Boxplots of the age with respect to sex.

Table 1. Wearers problem of their complete and partial denture.

Problem	Partial dentures		Complete dentures		Total	
	No.	%	No.	%	No.	%
Speaking and eating difficulty	3	8.82	5	3.85	8	4.88
Food under denture	6	17.65	26	20.00	32	19.51
Loose dentures	10	29.41	37	28.46	47	28.66
Lack of retention	8	23.53	37	28.46	45	27.44
Feeling of fullness	1	2.94	16	12.31	17	10.37
Poor ridge relationship	6	17.65	2	1.54	8	4.88
Gum disease	0	0.00	7	5.38	7	4.26
<b>Total</b>	<b>34</b>	<b>100.00</b>	<b>130</b>	<b>100.00</b>	<b>164</b>	<b>100.00</b>

## استقصاء مشاكل اطقم الاسنان الكاملة والجزئية الناجمة عن الاستخدام: دراسة احصائية

عباس ابراهيم حسين

### الخلاصة:

غالبا ما تواجه مختبرات صناعة الاسنان مشاكل لاشخاص يسعون لاجراء تعديلات على اطقم اسنانهم الكلية او الجزئية. وان بعض هذه المشاكل ليست ناجمة عن اسلوب معين تم استخدامه مختبريا لانتاج هذه الاطقم، بل ان هذه المشاكل ربما تكون ناجمة عن سوء استخدام اطقم الاسنان من قبل الشخص نفسه، او ربما كانت بسبب عدم ذكر المستخدم لامراض معينة يعاني منها بسبب عدم المعرفة الكافي او عدم الاكتراث الامر الذي يتسبب في تقادم مشاكل اطقم الاسنان.

ان معرفة المشاكل الاكثر شيوعا والتي تنتج عن استخدام اطقم الاسنان الكاملة والجزئية، سيكون مفيدا للفنيين المشرفين على هذه العملية من ناحية ومن ناحية اخرى فانها ستعود بالفائدة على المستخدم لانه لن يضطر الى اعادة تصنيع الطقم الذي يستخدمه مبكرا. لقد وجد ان أكثر هذه المشاكل شيوعا هي كبر وعدم موافقة الاطقم للانطباق. اما مشاكل الاطقم الناتجة عن امراض اللثة فقد وجد انها تشكل 4.3% عند مستخدمي الاطقم الكلية فقط.