

Original Article

Factors determining the success of Denture Therapy- A Clinical Study

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ABSTRACT:

Background: Various factors affect success of complete denture therapy. These factors include retention, the shape and degree of resorption of alveolar ridges, and the quality and quantity of alveolar bone. The present study was conducted to assess the factors determining the successful denture therapy. **Materials & Methods:** The present study was conducted on 340 complete denture wearers of both genders. In all patients, maxillary and mandibular denture-bearing area independently and quality of the dentures were assessed. A rating scale of 1–5 was used, where 1 showed poor quality and 5 had excellent quality. **Results-** Out of 340 patients, males were 180 and females were 160. The difference was non-significant (P= 0.5). Maximum patients had score of 3 (180) followed by 2 (100) in maxillary denture bearing area. In mandibular denture wearing area, 160 patients had score 3 followed by score 2 (80). Quality of denture had score 4 in 220 patients. The difference was significant (P= 0.01). Maximum patients had score 4 (260) regarding retention, score 4 (24) in terms of aesthetics, score 3 (220) regarding speech and score 4 (150) in terms of chewing. The difference was significant (P< 0.05). **Conclusion-** Patients had higher retention, quality of denture and maxillary denture bearing area. All these factors determining the success of complete denture therapy.

Key words-Alveolar bone, Mandibular denture, Retention

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INTRODUCTION

Complete denture is to replace the missing teeth. However, various factors affects its outcome. These factors include adhesion and cohesion, viscosity and flow of saliva, the shape and degree of resorption of alveolar ridges, and the quality and quantity of alveolar bone as well as mineral density, resiliency of soft tissue, relationship between the upper and lower alveolar ridges, neuromuscular coordination, status of oral mucosa, depth of vestibular sulcus, and presence of hypertrophy of the tongue.¹

The construction of a good complete set of dentures depends on technical, biological, and physiological interactions between the patient and dentist. The great majority of patients are satisfied with their complete dentures. However, even if the dentures are constructed to

all accepted criteria, some patients will still be dissatisfied with their prosthetic treatment and new dentures.²

Conventional complete dentures improve patients' satisfaction and quality of life. This is still valid regardless of the technique used for their fabrication. Patients wearing lower conventional complete denture reported inferior oral health-related quality of life, functional outcomes and satisfaction with treatment when compared with patients with fitted implant supported prostheses.³

However, some studies reported that patients with mandibular implant supported overdenture had similar impacts on quality of life and satisfaction with treatment when compared with conventional lower complete dentures. Furthermore, no differences in quality of life and satisfaction are present when conventional maxillary complete dentures were compared with maxillary implant

supported dentures.⁴ The present study was conducted to assess the factors determining the successful denture therapy.

MATERIALS & METHODS

The present study was conducted in the department of Prosthodontics. It comprised of 340 complete denture wearers of both genders. All were informed regarding the study and written consent was obtained. Ethical clearance was obtained before the study.

General information such as name, age, gender etc. was recorded.

In all patients, maxillary and mandibular denture-bearing area independently and quality of the dentures were assessed. A rating scale of 1–5 was used, where 1 showed poor quality and 5 had excellent quality. The quality of fit, extension, vertical relation, and occlusion were also analyzed. Patients were required to rate their complete dentures, depending on the level of satisfaction of retention, aesthetics, speech ability, chewing ability, and comfort of wearing maxillary and mandibular complete dentures. Results were tabulated and subjected to statistical analysis using chi-square test. P value less than 0.05 was considered significant.

RESULTS

Table I shows that out of 340 patients, males were 180 and females were 160. The difference was non-significant (P=0.5). Graph I shows that maximum patients had score of 3 (180) followed by 2 (100) in maxillary denture bearing area. In mandibular denture wearing area, 160 patients had score 3 followed by score 2 (80). Quality of denture had score 4 in 220 patients. The difference was significant (P= 0.01). Graph II shows that maximum patients had score 4 (260) regarding retention, score 4 (24) in terms of aesthetics, score 3 (220) regarding speech and score 4 (150) in terms of chewing. The difference was significant (P< 0.05).

DISCUSSION

Psychological factors have a recognized role in determining patient satisfaction and compliance with dental status and treatment. The evaluation of personality characteristics might be useful in predicting patient behavior and may have an effect on the provision of therapy.

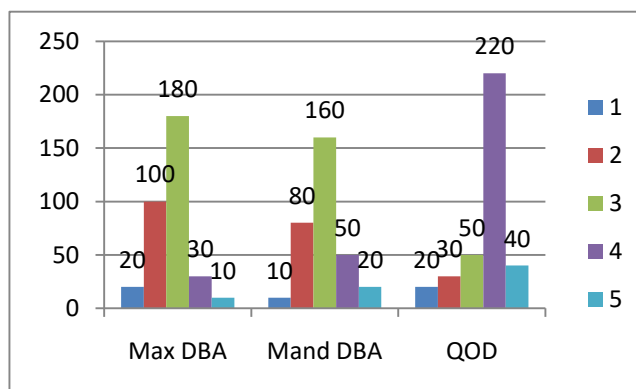
A study by Asja et al⁵ showed that only 7.2% of the patients were absolutely not satisfied with their dentures. Patients with a low level of education were more satisfied in general with their aesthetic appearance. Patients with better self-perception of their affective status and quality of life showed higher levels of general satisfaction. Patients with better self-perception of their economic status showed lower levels of satisfaction. Younger patients wearing dentures for the first time, with short periods of being edentulous, and with better quality maxillary denture-bearing areas were more satisfied with the retention of maxillary CDs. In contrast, younger patients with first-time dentures, a short

period of being edentulous, and with better quality mandibular denture-bearing areas gave lower ratings to the retention and comfort of wearing mandibular dentures.⁶

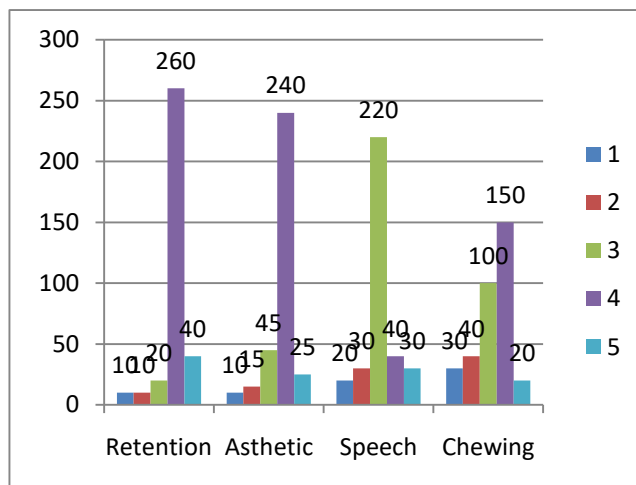
Table I: Distribution of patients

Total- 340		
Males	Females	P value
180	160	0.5

Graph I: Quality of dentures and denture-bearing areas



Graph II: Patient rating of CD



In our study, out of 340 patients, males were 180 and females were 160. Maximum patients had score of 3 (180) followed by 2 (100) in maxillary denture bearing area. In mandibular denture wearing area, 160 patients had score 3 followed by score 2 (80). Quality of denture had score 4 in 220 patients. This is in agreement with Awad et al.⁷ Support is the principle that describes how well the underlying mucosa (oral tissues, including gums) keeps the denture from moving vertically towards the arch in question during chewing, and thus being excessively depressed and moving deeper into the arch. Retention is the principle that describes how well the denture is prevented from moving

vertically in the opposite direction of insertion. The better the topographical mimicry of the intaglio (interior) surface of the denture base to the surface of the underlying mucosa, the better the retention will be as surface tension, suction and friction will aid in keeping the denture base from breaking intimate contact with the mucosal surface.⁸

Raed et al⁹ in their study involved fifty-six patients with fitted upper and lower removable CDs were recruited for this study. Clinical success of CDs was assessed according to specific clinical criteria. The dental impact on daily living questionnaire (DIDL) was used to measure satisfaction with CDs and their impact on daily living. Females were more satisfied with appearance and less satisfied with eating and scored higher on neuroticism, and lower on extraversion and openness personality domains ($p < 0.05$). Older patients were more satisfied with appearance and less satisfied with oral comfort and general performance ($p < 0.05$). Neuroticism, extraversion, openness and agreeableness personality profiles could predict and had significant relationship with CDs impacts on daily living and satisfaction with CDs.

CONCLUSION

Patients had higher retention, quality of denture and maxillary denture bearing area. All these factors determining the success of complete denture therapy.

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