

# REMOVABLE PARTIAL DENTURES: PATIENT SATISFACTION WITH ASSOCIATED DEMOGRAPHIC AND BIOMECHANICAL FACTORS

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## ABSTRACT

*The study was done to evaluate the factors which influence the patients satisfaction with removable partial denture and was conducted at Out Patient Department of Prosthodontics, at Liaquat University Hospital Hyderabad and Jamshoro, from March 2011 to October 2011. Sixty six patients of both genders were included. Before providing partial dentures, patient's demographics were recorded along with oral hygiene. One week after the insertion of new dentures the patients were recalled to grade their dentures. They first graded their dentures in total and then they graded separately as denture retention, stability, aesthetics, speech, pain, communication with people, mastication and comfort. More than 55% of the patients were comfortable with their dentures. In terms of retention, stability, speech, taste, chewing and communication 65 to 80 % patients showed their satisfaction. Satisfaction rate for appearance was recorded 48 % to 21%. While 86.7% subjects remained painless. 60% of subjects did not feel denture as a foreign body, while 53.3% felt they will recommend the treatment to others.*

**Conclusion:** *Patients were generally satisfied with their removable partial dentures.*

**Keywords:** *Patients' satisfaction, removable partial dentures.*

## INTRODUCTION

Missing teeth is one of the common problems seen in dental clinics.<sup>1</sup> The main causes of the tooth loss may be either dental caries or periodontal disease.<sup>2</sup> Dental caries is considered the major cause of tooth loss in younger adult, while periodontal disease which cause tooth loss over age 40 years.<sup>3</sup> Dental caries and periodontal disease are caused by microorganisms, but there are other factors cause teeth loss such as gender, poor oral hygiene, trauma, radiography, smoking, alcohol intake and lifestyle habits which lead to tooth extraction.<sup>3</sup> The loss of teeth adversely effect in

Oral Health Related Quality of Life by affecting the speech, mastication, esthetics, teeth shifting, bone loss and bite problems.<sup>4</sup>

Missing teeth are replaced by fixed partial denture (FPD), implant or removable partial denture (RPD) to restore function and aesthetics.<sup>5,6</sup>

Fixed partial denture improve esthetics and function but it is very destructive for tooth structure and cause gingival inflammation due to subgingival margin of the abutments teeth, which may lead to problem with the endodontic status of the abutment tooth.<sup>7,8</sup> Implant restoration improve esthetics and function

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and offers advantages over conventional bridges, but implant failure have been reported.<sup>8,9</sup> After implant failure, some patients opt for fixed partial denture or well constructed removable partial denture.<sup>10,11,12</sup> Moreover the cost of the implant is also major factor for the patients not to accept implant as feasible mode of management. Removable partial denture is useful in large partially edentulous span case which offers function and esthetics, RPD considered retentive prosthesis due to presence of clasps which have the ability to resist denture dislodgement.<sup>13,14,15</sup> Because of the higher cost of the treatment and lack of insurance for various reasons, partial dentures continue to be widely used as a treatment of choice for the replacement of missing teeth.<sup>16</sup>

Patients evaluate their prosthesis in form of personal satisfaction. Comfort, stability and design of dentures are the main factors which provide satisfaction to the patients.<sup>17</sup> The therapist skill and the denture quality are important factors for final satisfaction of the patients with removable denture, but they are not the only reason for satisfaction.<sup>5</sup> Psychological factor is considered to influence the denture success.<sup>18</sup> Many denture wearers have realistic expectation about the functional and esthetic values of dentures but more attention is focused on psychological reaction of patients.<sup>18,19</sup> Patients attitude toward dentures is the most important factor for patient acceptance to dentures<sup>19,20,21</sup> and improve later adjustment of new denture.<sup>20</sup> It is generally noted that patients are more satisfied with their partial denture when their age is below 60 years.<sup>5</sup> A study reported that patients' dissatisfaction with removable partial denture associated with biomechanical factors of RPDs including retention, stability and ability to chewing and speaking<sup>17</sup>, as well as, some of main disadvantages of removable partial dentures (e.g. risk to local damage of the remaining teeth, plaque accumulation, etc.) have a great impact on the patient satisfaction with their prosthesis.<sup>20</sup> Numbers of studies were conducted on patient's satisfaction following implant treatment<sup>22</sup>, new conventional complete dentures<sup>23</sup> and partial dentures<sup>17</sup> to evaluate the patient's satisfaction with the final prosthesis; similarly, the aim of this study was to evaluate the factors which influence the patients satisfaction with removable partial denture.

## METHODOLOGY

This descriptive study was conducted in Out Patient Department of Prosthodontic at Liaquat University Hospital Hyderabad and Jamshoro, from March 2011 to October 2011. Sixty six partially edentulous patients of both genders between the ages of 20-50 years that required removable partial denture were selected through non probability purposive sampling technique. The patients with tempromandibular dysfunction syndrome and poor oral health were not considered suitable.

A written informed consent was taken from all participants. A questionnaire devised for the purpose of the study was completed by the patients. It consisted of two parts, in the first part, patient was required to answer questions on gender, age, marital status, oral hygiene and the ordinal number of dentures. In the second part the patients were recalled after one week of insertion of dentures and asked to grade partial dentures, according to the level of their satisfaction ranging from strong dissatisfaction to strong satisfaction. The term patient satisfaction was used in this manuscript for the level of satisfaction of denture wearer to the prosthesis (partial denture) provided to them, in terms of retention, stability, aesthetics, speech, pain, communication (with people), mastication and comfort.

## RESULTS

Age distribution in study subject is shown in Table 1 and Fig 1. Gender distribution can be seen in Fig 2. Status of oral hygiene, general satisfaction, frequency of retention and stability is visible in Table 2, while Table 3 shows the effects on speech, chewing, taste, comfort and appearance. Frequency of pain, foreign body feeling, ease in communication and satisfaction about cosmetics is shown in Table 4.

TABLE 1: AGE DISTRIBUTION OF STUDY PARTICIPANTS  
(n = 60)

Mean	38.78
Median	38.5
Mode	41.0
Standard Deviation	5.04
Range	28 – 48
Minimum	28
Maximum	48

TABLE 2: STATUS OF ORAL HYGIENE,  
GENERAL SATISFACTION, FREQUENCY OF  
RETENTION AND STABILITY

(n = 60)

	Frequ- ency	Percent- age
<b>ORAL HYGIENE</b>		
Good	54	90%
Poor	06	10%
<b>GENERAL SATISFACTION</b>		
Strongly Dissatisfied	06	10%
Dissatisfied	03	05%
Not sure	03	05%
Satisfied	15	25%
Strongly Satisfied	33	55%
<b>RETENTION</b>		
Strongly Dissatisfied	02	3.3%
Dissatisfied	04	6.7%
Not sure	02	3.3%
Satisfied	05	8.3%
Strongly Satisfied	47	78.3%
<b>STABILITY</b>		
Strongly Dissatisfied	02	3.3%
Dissatisfied	05	8.3%
Not sure	01	1.7%
Satisfied	05	8.3%
Strongly Satisfied	47	78.3%

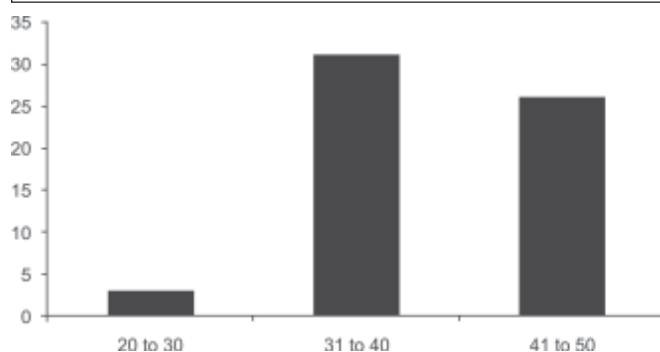


Fig 1: Different Age Groups (n = 60)

Kruskal-wallis test had to be applied to compare categories of ranks for testing the significance of the differences and it was compared if any significant differences in the level of satisfaction exist between patients of different age, gender, marital status and oral hygiene habits. Comparing the difference between male and female patients, Kruskal-Wallis test revealed that there was no significant difference between genders ( $p > 0.05$ ). There was also no significant difference for the assessed variables (general satisfac-

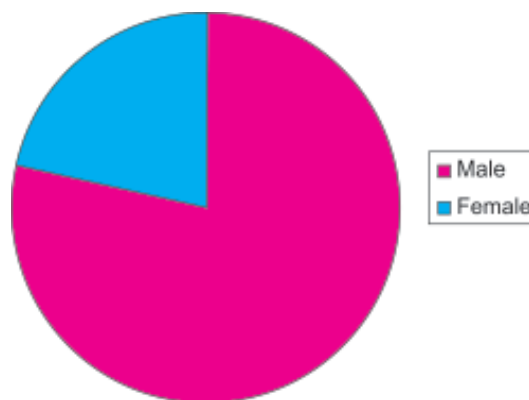


Fig 2: Gender Distribution (n = 60)

TABLE 3: EFFECT ON SPEECH, CHEWING,  
TASTE, COMFORT AND APPEARANCE

(n = 60)

	Frequ- ency	Percent- age
<b>SPEECH</b>		
Strongly Dissatisfied	02	3.3%
Dissatisfied	05	8.3%
Satisfied	03	5.0%
Strongly Satisfied	50	83.3%
<b>CHEWING</b>		
Strongly Dissatisfied	03	5.0%
Dissatisfied	04	6.7%
Not sure	01	1.7%
Satisfied	04	6.7%
Strongly Satisfied	48	80%
<b>TASTE EFFECT</b>		
Dissatisfied	01	1.7%
Not sure	15	25.0%
Satisfied	44	73.3%
<b>COMFORT</b>		
Strongly Dissatisfied	05	8.3%
Dissatisfied	03	5.0%
Not sure	05	8.3%
Satisfied	14	23.3%
Strongly Satisfied	33	55.0%
<b>APPEARANCE</b>		
Dissatisfied	06	10.0%
Not sure	12	20.0%
Satisfied	13	21.7%
Strongly Satisfied	29	48.3%

tion, aesthetics, mastication, comfort, retention etc.) as well as between age groups ( $p > 0.05$ ). However, difference between the oral hygiene of patients and their satisfaction with dentures ( $p < 0.05$ ). (Table #2)

TABLE 4: FREQUENCY OF PAIN, FOREIGN BODY, COMMUNICATION AND RESULTS  
(n = 60)

	Frequency	Percentage
<b>PAIN</b>		
Dissatisfied	03	5.0%
Not sure	01	1.7%
Satisfied	04	6.7%
Strongly Satisfied	52	86.7%
<b>FOREIGN BODY</b>		
Strongly Dissatisfied	01	1.7%
Dissatisfied	03	5.0%
Not sure	17	28.3%
Satisfied	36	60.0%
Strongly Satisfied	03	5.0%
<b>COMMUNICATION</b>		
Strongly Dissatisfied	03	5.0%
Dissatisfied	03	5.0%
Not sure	05	8.3%
Satisfied	10	16.7%
Strongly Satisfied	39	65.0%
<b>RESULTS</b>		
Strongly Dissatisfied	05	8.3%
Dissatisfied	03	5.0%
Not sure	05	8.3%
Satisfied	15	25.0%
Strongly Satisfied	32	53.3%

## DISCUSSION

Different factors may influence patient satisfaction with their dentures. Apart from psychological factors, other factors include quality of the denture bearing area, quality of the oral mucosa, influence of the surrounding muscles on denture flanges, viscosity of saliva, patient's age and ability to get used to a denture, status of abutments, status of other teeth in the mouth, relation between horizontal and vertical dimension of occlusion, hygiene habits, diet, position of patient's teeth in the mouth etc.

The influence of the patient's age, gender, oral hygiene status, marital status etc on the patient's satisfaction has been examined in several studies.<sup>5,21</sup> Results of this study are in agreement with similar studies on the patient's satisfaction with removable partial denture.<sup>5,21</sup>

Comparing the results of this study with those of similar studies, no significant difference was found between patients of different age groups ( $p > 0.05$ ). There was no significant differences between men and women in the level of satisfaction with their partial dentures in general, aesthetics, speech, etc. ( $p > 0.05$ ), which is in agreement with Knezovic-Zlataric and coauthors<sup>5</sup>, while in another study Knezovic-Zlataric et al.<sup>21</sup> found that there was significant differences for the mastication between male and female patients.

There was significant difference between the oral hygiene of patients and their satisfaction with dentures ( $p < 0.05$ ) similar to the findings of Lee.<sup>24</sup>

With regard to the general satisfaction and the comfort of patients, thirty-three (55%) of patients were strongly satisfied, compared to Sharafat's<sup>19</sup> result. In terms of retention and stability forty-seven (78.3%) of patients of this study were strongly satisfied with the retention and stability of the present study when compared with sharafat's<sup>19</sup> result 86.2%.

As for speech, eating and taste effect with dentures: fifty (83.3%), forty-eight (80.0%), forty-four (73.3%) respectively were strongly satisfied with these items, while in sharafat's<sup>19</sup> result 80.6% of patients were satisfied during speech, 58.2% were satisfied in chewing and 62.6% satisfied with taste effect.

For appearance, twenty-nine (48.3%) of patients of the present study were strongly satisfied, while in another result<sup>19</sup> 65.5% were satisfied with appearance. About the satisfaction with the denture as a foreign body, thirty-six (60.0%) of patients were satisfied and three (5.0%) strongly satisfied, while in another study<sup>19</sup> 71.5% felt denture as a part of themselves.

Thirty-nine (65.0%) of patients had no communication problem, compared to other study<sup>19</sup> 62.6% found it easy to communicate with others. Thirty-two (53.3%) of patients felt they would strongly recommend denture treatment to others.

## CONCLUSION

More than fifty percent patients were strongly satisfied with their dentures. There was no significant difference for the assessed variables (general satisfac-

tion, aesthetics, mastication, comfort, retention etc.) between patients of different age and gender but there was significant difference between the oral hygiene of patients and their satisfaction with removable dentures. As regards quality of dentures (bio-mechanically and esthetically), highest percentage of patients were satisfied with the appearance, retention and stability. They showed positive attitude toward removable partial denture.

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