Assessment of The Satisfaction Tendency Toward Different Prosthodontic Treatments’ Modalities

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ABSTRACT

Aims: To evaluate and compare the denture satisfaction tendencies for and between the completely and partially edentulous patients, with different treatment’s modalities.

Materials and Methods: The study was conducted to include twenty eight patients were fit to the criteria of the research, asked to answer some questions reflect their satisfaction with the newly received dentures, which were delivered to patients according to their conditions and needs (complete removable denture, conventional metal frame RPD, RPD with flexible Valplast clasps, and RPD with attachments).

Results: The data collected from these patients was grouped and the questioners values were calculated to estimate the most satisfied group, which was seen with the group received RPD had Valplast esthetic clasps; But the significant difference analyzed by Mann-Whitney Test, was focused on the satisfaction of prostheses’ appearance, that was clearly revealed for the patients who received RPD with resilient attachments; followed by the group who received complete dentures, and RPD with Valplast clasp (at the same level), supported by the family and friends positive opinions. Also the same group that received RPD with attachments achieved optimum level in prosthesis’ satisfaction for retention.

Conclusions: The results of this research directed the attention to the recent treatment modalities in construction dentures, like using flexible esthetic Valplast material and attachments; the patients that received RPD with tooth like color Valplast clasps appeared to be more satisfied with their prostheses, mostly this was related to the comfortability, esthetic and retention traits, followed with group that received RPD with attachments that showed significant differences in esthetic and retention scores than other groups. While the Complete denture wearers were the less satisfied group, related obviously to the difficulty to gain the retention in relation to the partial ones, as well as the uncomfortable feelings.

KEY WORDS

Denture satisfaction; Satisfaction scale; Valplast clasp; extra-coronal attachment; Removable partial denture (RPD)satisfaction

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INTRODUCTION

The rehabilitation of the edentulous mouth provides one of the most perplexing challenges in dentistry (1,2).

The loss of all teeth is a traumatic event in a person’s life (3), that is frequently accompanied by adverse functional and cosmetic consequences, which are varilyngly perceived by the affected patient (4).

The change to the oral environment is so great when a large foreign body “denture” is inserted into the mouth that a substantial positive effort commonly has to be made to come to terms with it. The wearing of it must be under the complete control of the patient. If not the patient’s main response to this, is felling of
strangeness and the adaptation to the dentures will not be occur, so the treatment is likely to fail \(^{(5)}\).

In future, and because of most prosthodontic treatment will be centered on older people, it becomes more complex. The dentists will continue to need all skills that can be gained \(^{(6)}\).

To assist dentists in recognizing such problems, various questionnaires have been designed to measure characteristics of personality and the levels of the satisfaction \(^{(5)}\).

The aim of this research is to evaluate and compare the denture satisfaction tendencies for and between the completely and partially edentulous patients, with different treatment’s modalities. **MATERIALS AND METHODS**

Twenty eight patients were diagnosed and selected according to the criteria of the study, by using the basic method of dental examination. \(^{(7)}\)

The collected sample was grouped to four groups, each one had seven members, dentures were made for each one and delivered according to this categorization:

- **Group I:** Completely Edentulous Group (males and females), were taken from the community, their age (45–65) years of old, who received a removable complete denture, seen in **Figure 1 (A & B)**.
- **Group II:** Partially edentulous group (Kennedy Class I), who received lower conventional metal base RPD, aged between (45–60) years; **Figure 2 (A & B)**.
- **Group III:** Partially edentulous (Kennedy Class I) that undergone prosthodontic treatment with lower RPD retained by esthetic Valplast clasps, they aged (45–60) years; **Figure 3 (A & B)**.
- **Group IV:** Kennedy Class I, Partially edentulous group who treated with RPD supported by resilient extracoronal/ OT nylon caps attachments, their age (48–60) years; seen in ; **Figure 4 (A – D)**.

Each member asked to answer some inventories to determine his satisfaction with the prosthesis that delivered to him (Appendix 1) \(^{(5)}\), that transferred to Arabic language to facilitate the patient’s understanding to the questioner \(^{(8)}\).

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**Figure (1):** completely edentulous patient, who received complete removable denture.

**Figure (2):** Partially edentulous patient, who received conventional metal frame-work RPD.
RESULTS AND DISCUSSION
Twenty eight patients were involved in this research, with age ranged between 40-65 years (average: 54.2 years of old). The data collected from these patients was grouped and the questioners values were calculated to
estimate the most satisfied group with their treatment option.

The patient-denture satisfaction index in Arabic version\(^8\), was introduced to completely and partially edentulous patients, who received the prostheses suitable for their condition.

This questionnaire consists of sex questions about general denture satisfaction. Each question could be answered in four grades that represent the degree of satisfaction with the dentures. The four answers of each question were scored as follows:
- Answer “a”, the patient is totally satisfied = 4 points.
- Answer “b”, the patient is fairly satisfied = 3 points.
- Answer “c”, the patient is fairly dissatisfied = 2 points.
- Answer “d”, the patient is totally dissatisfied = 1 point.

The satisfaction grades for the patients in each group were collected, added and classified in Table (1); also the total satisfaction index score was calculated for each group to explain the tendency of patients for each treatment modality in this research\(^5\).

Table (1): The denture satisfaction grading for the questions’ answer, in each group.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Questions</th>
<th>Answer “a”</th>
<th>Answer “b”</th>
<th>Answer “c”</th>
<th>Answer “d”</th>
<th>Total score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I</td>
<td>q 1</td>
<td>4</td>
<td>9</td>
<td>2</td>
<td>2</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>q 2</td>
<td>20</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>q 3</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>q 4</td>
<td>8</td>
<td>9</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>q 5</td>
<td>16</td>
<td>9</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>q 6</td>
<td>20</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Group II</td>
<td>q 1</td>
<td>16</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>138</td>
</tr>
<tr>
<td></td>
<td>q 2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>q 3</td>
<td>16</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>q 4</td>
<td>16</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>q 5</td>
<td>24</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>q 6</td>
<td>8</td>
<td>9</td>
<td>4</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Group III</td>
<td>q 1</td>
<td>16</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>151</td>
</tr>
<tr>
<td></td>
<td>q 2</td>
<td>20</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>q 3</td>
<td>16</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>q 4</td>
<td>12</td>
<td>9</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>q 5</td>
<td>24</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>q 6</td>
<td>24</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Group IV</td>
<td>q 1</td>
<td>8</td>
<td>9</td>
<td>4</td>
<td>0</td>
<td>144</td>
</tr>
<tr>
<td></td>
<td>q 2</td>
<td>24</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>q 3</td>
<td>20</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>q 4</td>
<td>12</td>
<td>6</td>
<td>4</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>q 5</td>
<td>16</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>q 6</td>
<td>12</td>
<td>9</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Answer “a”: the patient is totally satisfied; Answer “b”: the patient is fairly satisfied; Answer “c”: the patient is fairly dissatisfied; Answer “d”, the patient is totally dissatisfied; q: question.

Table (1) observed that the patients with Group III appeared to be more satisfied with their prostheses more than other groups, mostly this was related to good esthetic values and other functional traits. Followed with Group IV, related to retention and esthetic properties inherited by this treatment modality. The less satisfied group was the group who received the complete dentures, related obviously to difficulty in gaining the retention for such dentures compared to the partial once, especially during chewing the food. This is may be due to the ability of patients to stabilize the new complete removable dentures as they acquired additional sets of dentures, cause neuromuscular control to become more complex\(^1\).

A Mann-Whitney Test was used as statistical analysis method to compare each question score,
between the four groups when \( P < 0.05 \).

Table (2), showed a significant difference within the denture’s appearance satisfaction, between group I and II. Group I patients were accommodate positively to their prostheses, more than patients of group II, that the last ones not very interested “how the denture appeared”, since it’s a partial denture not a complete one. This was agreed by Basker and Davenport (5).

Table (2): Mann-Whitney Test, to compare between Group I patient’s satisfaction tendency, with Group II patients.

<table>
<thead>
<tr>
<th>*Group I vs. II</th>
<th>q1</th>
<th>q2</th>
<th>q3</th>
<th>q4</th>
<th>q5</th>
<th>q6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>11.50</td>
<td>6.500</td>
<td>10.50</td>
<td>16.50</td>
<td>17.00</td>
<td>12.00</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.081</td>
<td>.014**</td>
<td>.061</td>
<td>.275</td>
<td>.227</td>
<td>.080</td>
</tr>
</tbody>
</table>

*Group I: The group that its patients were received the complete removable dentures; Group II: The group that its patients were received the conventional metal framework partial denture; ** \( P < 0.05 \).

According to Čelebić’s and Knezović-Zlatarić (9): A majority of Complete denture and RPD wearers were satisfied with their dentures. Whenever the self-esteem was improved, so no significant difference appeared between the question’s of the scale, when a comparison was taken place between group I and III, as seen in Table (3), because both groups reach the same level of satisfaction, according to their needs.

Table (3): Mann-Whitney Test, to compare between Group I patient’s satisfaction tendency, with Group III patients.

<table>
<thead>
<tr>
<th>*Group I vs. III</th>
<th>q1</th>
<th>q2</th>
<th>q3</th>
<th>q4</th>
<th>q5</th>
<th>q6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>11.50</td>
<td>24.50</td>
<td>10.50</td>
<td>19.00</td>
<td>17.00</td>
<td>21.00</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.081</td>
<td>1.000</td>
<td>.061</td>
<td>.453</td>
<td>.227</td>
<td>.530</td>
</tr>
</tbody>
</table>

*Group I: The group that its patients were received the complete removable dentures; Group III: Group that its patients were received the partial denture with Valplast esthetic clasps.

The retention of the RPD retained by attachments, play a significant role in the satisfaction, when a comparison between group I and IV was taken place, the group IV patients were completely satisfied with the retention of their prostheses, (Table 4). This may be related to the popular using of resilient attachments with OT nylon caps that is more economic, easily replaced and it provides different degrees of retention (10).

Table (4): Mann-Whitney Test, to compare between Group I patient’s satisfaction tendency, with Group IV patients.

<table>
<thead>
<tr>
<th>*Group I vs. IV</th>
<th>q1</th>
<th>q2</th>
<th>q3</th>
<th>q4</th>
<th>q5</th>
<th>q6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>17.50</td>
<td>21.00</td>
<td>6.500</td>
<td>21.00</td>
<td>23.00</td>
<td>16.50</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.347</td>
<td>.530</td>
<td>.015**</td>
<td>.638</td>
<td>.827</td>
<td>.244</td>
</tr>
</tbody>
</table>

* Group I: The group that its patients were received the complete removable dentures; Group IV: Group its patients were received dentures retained by extra-coronal attachments; ; ** \( P < 0.05 \).

Valplast esthetic clasps when added to the metal frame-work RPD, instead of the conventional metal clasps, they enhance the tendency of patients to satisfied more about their prostheses (from the aspect of esthetic and appearance), this was showed with a significant value related to the second question at Table (5). This result was supported by the significance related to the sixth question at the same table, that revealed the positive opinions of the relatives and friends with the prostheses. The Valplast thermoplastic clasps were introduced in this study, have other advantages more than the esthetic view, including: The biocompatibility, nearly unbreakable and can be built with different shapes and contours (11, 12), this make it the most favorable alternation to the casted metal clasps (13, 14).

Table (5): Mann-Whitney Test, to compare between Group II patient’s satisfaction tendency, with Group III patients.

<table>
<thead>
<tr>
<th>*Group II vs. III</th>
<th>q1</th>
<th>q2</th>
<th>q3</th>
<th>q4</th>
<th>q5</th>
<th>q6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann–Whitney U</td>
<td>24.50</td>
<td>6.500</td>
<td>24.50</td>
<td>21.50</td>
<td>24.50</td>
<td>9.500</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>1.000</td>
<td>.014**</td>
<td>1.000</td>
<td>.674</td>
<td>1.000</td>
<td>.031**</td>
</tr>
</tbody>
</table>

* Group II: Patients were received the complete metal framework partial denture; Group III: Patients were received the partial denture with Valplast esthetic clasps; ; ** \( P < 0.05 \).
The esthetic positive values were detected with group III more than group II, but it’s optimized with group IV patients, that this point had the highest scores between all groups (Table 6). This is because the removable complete denture wearers, as well as group who received complete dentures, and RPD with extra-coronal attachments. This was thought to be related to the balanced esthetical and biological advantages, that can be gained from such both treatment modalities (12,16-18).

**REFERENCES**


APPENDIX (1): PATIENT DENTURE SATISFACTION INDEX

Are you satisfied and comfortable with your denture?
Yes, it’s comfortable and satisfactory in all aspects.
Yes, it’s satisfactory in most ways but have some faults.
No, it has several faults but I can wear it.
No, it’s uncomfortable with many faults, I can’t wear it.

Are you satisfied with the appearance of your denture?
Yes, it has a pleasant, natural appearance.
Yes, it has a nice appearance but, I would change some things if I could.
No, it’s not what I would like, but I wear it.
No, it doesn’t look real or are ugly looking.

Are you satisfied with how well your denture stays in place?
No, the denture is so loose I don’t like to wear it.
No, the denture often comes loose while I am eating or speaking but, I can wear it.
Yes, the denture stays in place most the time.
Yes, the denture always stays in place.

Are you satisfied with how well you chew food with your denture?
Yes, I am able to chew all foods.
Yes, I am able to chew all but a few foods.
No, I am not able to chew food very well.
No, I am able to chew food with the denture.

Are you satisfied with how well you speak with your denture?
Yes, I have no trouble speaking.
Yes, once in a while I have a few problems speaking.
No, speaking is always a little difficult.
No, speaking is always very difficult.

Are you satisfied with how well other people (family and friends) like your denture?
Yes, all comments have been very favorable.
Yes, I have received no unfavorable comments.
No, I have received some unfavorable comments.
No, all comments have been unfavorable.