Assessment of The Satisfaction Tendency Toward Different Prosthodontic Treatments' Modalities

Monia MN Kandil *

B.D.S., M.Sc., Ph.D - Lecturer: Prosthetic Department, College of Dentistry/ University of Mosul.

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 once, as well as the uncomfortable feelings.

KEY WORDS

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

CITE THIS ARTCLE:

Kandil M. Assessment of the satisfaction tendency toward different prosthodontic treatments' modalities. *Iraqi Dental Journal* 2015; 37(1):6-12 . http://www.iraqidentaljournal.com

تقييم قناعة تقبل العلاج لنماذج من التعويضات الصناعية المختلفة

منية قنديل

مدرس - دكتوراه - قسم التعويضات الاصطناعية - كلية طب الاسنان - جامعة الموصل

المستخلص

الأهداف: لتقييم ومقارنة قابلية الاقتناع بالطقم مابين ولكل من مرتدي الأطقم المتحركة الكاملة والجزئية، مع تنوع الطرق العلاجية المقدمة. المواد والطرق المستخدمة: شملت الدراسة ثمان وعشرون مريضا" تنطبق عليهم الشروط الموضوعة مسبقا"، حيث طلب منهم الإجابة عن الأسئلة التي تحدد مدى اقتناعهم بالأطقم الصناعية الجديدة التي سلمت لهم كل بحسب حالته وحاجاته (طقم متحرك كامل، طقم متحرك جزئي تقليدي بقاعدة معدنية، طقم متحرك جزئي بقاعدة معدنية ومشابك راتنجية مرنة، وأخيرا طقم جزئي متحرك يثبت بواسطة الوصلات المرنة خارج التاج). النتائج: إن كلا من البيانات والقيم المحسوبة لأسئلة مقياس الاقتناع بالطقم، قد تم تجميعها وتصنيفها وإحصاءها لمعرفة أكثر المجاميع اقتناعا"، والذي تبين انه يعود بشكل عام لمجموعة المرضى ذوي الأطقم الجزئية المتحركة المزودة بمشابك راتنجية مرنة. ولكن الاختلاف المعنوي الملحوظ والذي تم إيضاحه عن طريق استخدام برنامج مان-وتني للتحليل الإحصائي، يعود لجزيئية الاقتناع بما يضيفه الطقم من جمالية خاصة لمجموعة المرضى ذوي الأطقم المتحركة المثبتة بواسطة الوصلات المرنة خارج التاج، ثم يليه مرضى الطقم الكامل ومرضى الطقم المتحرك المزود بالمشابك الراتنجية المرنة (وبنفس المعدل)؛ وهذا ما يؤيده آراء المحيطين بالمرضى وعائلاتهم. أضف لذلك أن مرضى الطقم الجزئي المزود بالوصلات المرنة قد حققوا أعلى. النسب بثبات الطقم. الاستنتاجات: إن نتائج هذه الدراسة تعكس أهمية التركيز على تقديم تعويضات صناعية محدثة: كالأطقم ذات المشابك الراتنجية المرنة التي ترفع من مستوى اقتناع المريض بالطقم من الناحية الجمالية، خصوصا لو استخدم مشبك بنفس لون أسنان المريض، بالإضافة لبقية المواصفات من تلاؤم وثبات للطقم. كما وان إضافة المفاصل المرنة خارج التاج للطقم الجزئي يزيد من جمالية الطقم وثباته وفعاليته وظيفيا. أما ما يخص مرضى الأطقم الكاملة فمن البديهي أنهم يعانون من مشكلة ثبات الطقم نسبة لمرضى الأطقم الجزئية مما يؤثر سلبا على اقتناعهم بشكل شامل للطقم.

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 varyingly 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

*: E- mail: munia_kandile@yahoo.com

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)**.

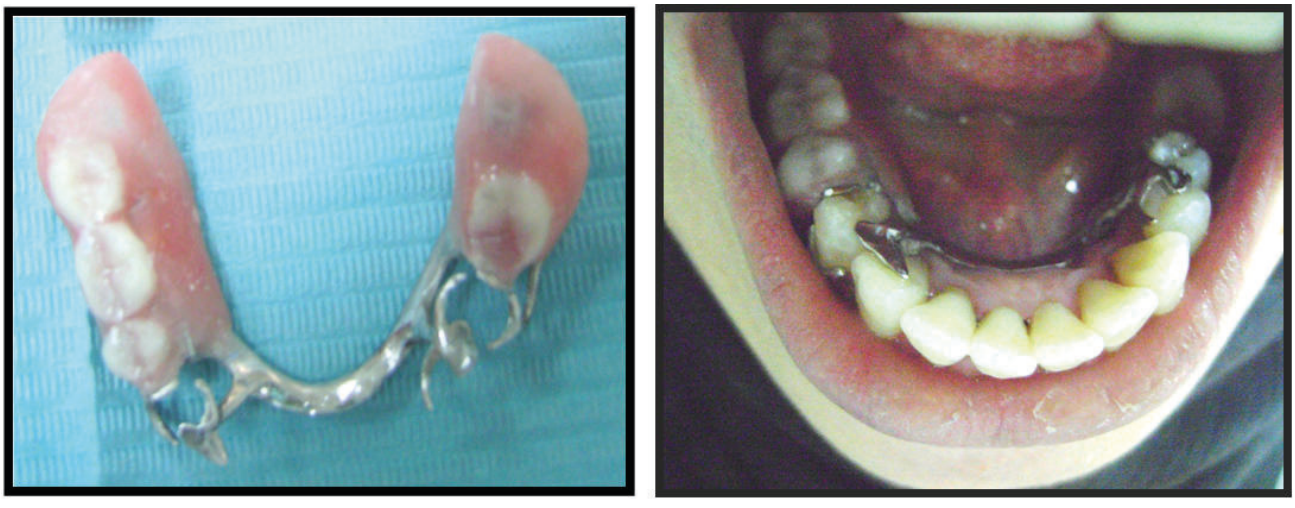
Group III: Partially edentulous (Kennedy Class I) that undergone prosthodontic treatment with lower RPD retained by esthetic Valplast clasps, they aged (45–60) years; **Figure 3 (A & B)**.

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].

-A- -B-

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

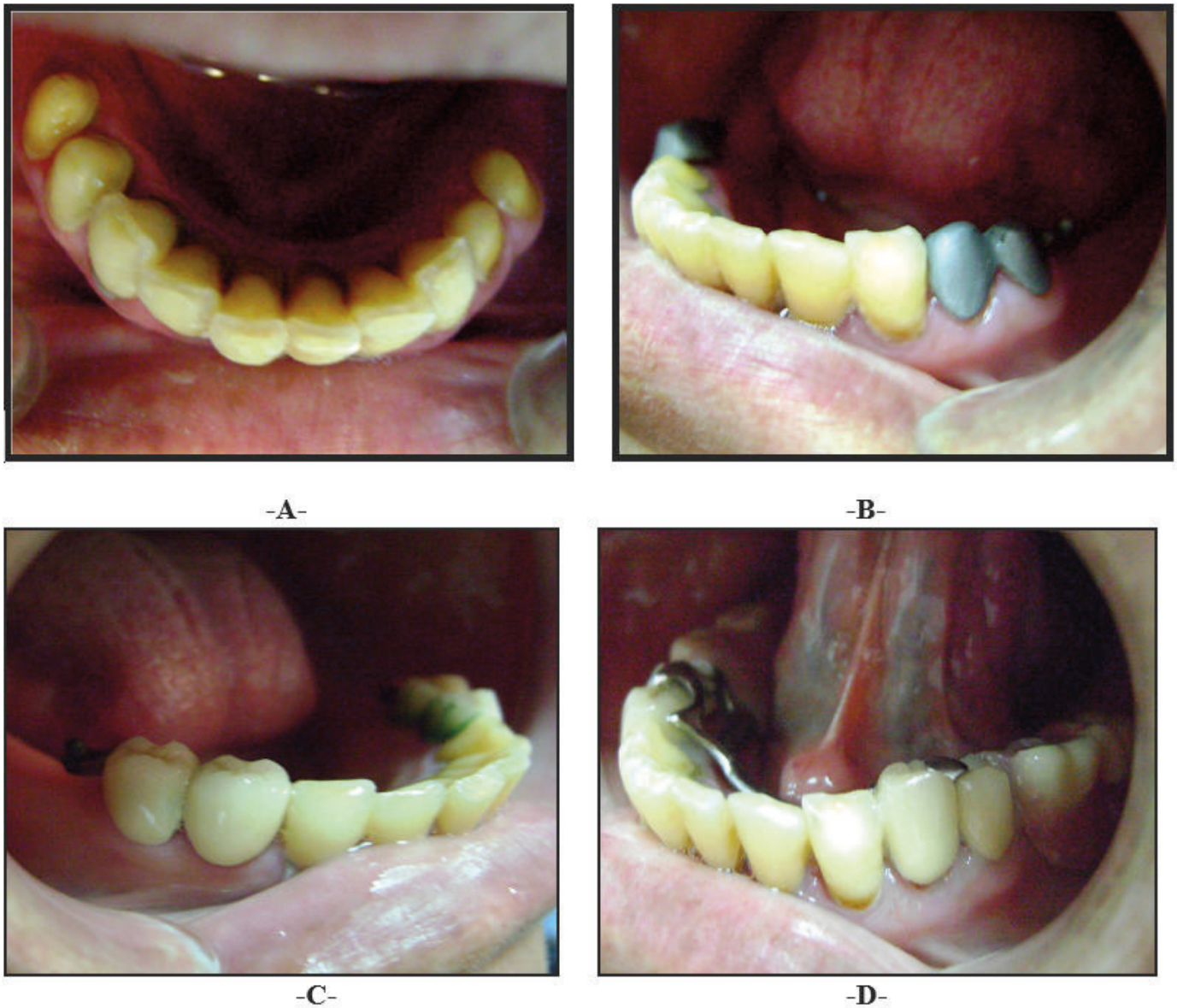


-A- -B-

Figure (2): Partially edentulous patient, who received conventional metal frame-work RPD.

-A- -B-

Figure (3): Partially edentulous patient, who received RPD retained via flexible Valplast clasps.



-A- -B-

-C- -D-

Figure (4): Partially edentulous patient, who received RPD retained and supported with extra-coronal attachments.

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 points.

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.

Groups	*Questions*	*Answer "a"*	*Answer "b"*	*Answer "c"*	*Answer "d"*	*Total score*
Group I	q 1	4	9	2	2	130
	q 2	20	6	0	0	
	q 3	4	6	6	1	
	q 4	8	9	2	1	
	q 5	16	9	2	0	
	q 6	20	6	0	0	
Group II	q 1	16	6	2	0	138
	q 2	4	6	8	0	
	q 3	16	6	2	0	
	q 4	16	6	2	0	
	q 5	24	3	0	0	
	q 6	8	9	4	0	
Group III	q 1	16	6	2	0	151
	q 2	20	6	0	0	
	q 3	16	6	2	0	
	q 4	12	9	2	0	
	q 5	24	3	0	0	
	q 6	24	3	0	0	
Group IV	q 1	8	9	4	0	144
	q 2	24	3	0	0	
	q 3	20	6	0	0	
	q 4	12	6	4	0	
	q 5	16	9	0	0	
	q 6	12	9	2	0	

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.

*Group I vs. II	q1	q2	q3	q4	q5	q6
Mann-Whitney U	11.500	6.500	10.500	16.500	17.000	12.000
Asymp. Sig. (2-tailed)	.081	.014**	.061	.275	.227	.080

***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.

*Group I vs. III	q1	q2	q3	q4	q5	q6
Mann-Whitney U	11.500	24.500	10.500	19.000	17.000	21.000
Asymp. Sig. (2-tailed)	.081	1.000	.061	.453	.227	.530

***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.

*Group I vs. IV	q1	q2	q3	q4	q5	q6
Mann-Whitney U	17.500	21.000	6.500	21.000	23.000	16.500
Asymp. Sig. (2-tailed)	.347	.530	.015**	.638	.827	.244

*** 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 significancy 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 clasp [13, 14].

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

*Group II vs. III	q1	q2	q3	q4	q5	q6
Mann-Whitney U	24.500	6.500	24.500	21.500	24.500	9.500
Asymp. Sig. (2-tailed)	1.000	.014**	1.000	.674	1.000	.031**

** Group II: Patients were received the conventional 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 such treatment modality (extra-coronal resilient attachments) can be used with a greater freedom in designs that favorable and unique esthetically for each case [15].

Table (6): Mann-Whitney Test, to compare between Group II patient's satisfaction tendency, with Group IV patients

*Group II vs. IV	q1	q2	q3	q4	q5	q6
Mann-Whitney U	17.000	5.000	20.000	20.000	17.500	19.500
Asymp. Sig. (2-tailed)	.304	.007**	.496	.532	.254	.493

*** Group II: Patients were received the conventional metal framework partial denture; Group IV: Patients were received dentures retained by extra-coronal attachments; ; ** P<0.05.**

Table (7) showed no significant difference at any question, between the patients who received removable partial dentures with thermoplastic Valplast clasp, or patients who received removable partial dentures 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].

Table (7): Mann-Whitney Test, to compare between Group III patient's satisfaction tendency, with Group IV patients.

*Group III vs. IV	q1	q2	q3	q4	q5	q6
Mann-Whitney U	17.000	21.000	20.000	22.500	17.500	13.500
Asymp. Sig. (2-tailed)	.304	.530	.496	.784	.254	.096

*** Group III: Patients were received the partial denture with Valplast esthetic clasps; Group IV: Patients were received dentures retained by extra-coronal attachments.**

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; and try to save the remaining teeth with wearers of partially removable partial dentures (RPDs) via such modalities, before turning to completely edentulous patients, with compromised treatment satisfaction.

The significant difference was focused on the second question that related to the satisfaction with the appearance of the prosthesis. It was an important factor affect the positive tendency of the patients toward the denture, through improving their self-esteem. This was clearly revealed with the patients who received RPD with attachments; followed by the group who received complete dentures, and RPD with Valplast color like tooth clasp, supported by the family and friends positive opinions.

A significant difference related to the retention of the prosthesis, was seen at an optimum level with the group who received RPD with resilient extra-coronal attachments, especially when compared with the removable complete denture wearers, as well as esthetic enhancement ability.

Generally, the most group that was satisfied with their prostheses and achieved the highest collective score was the third group, in which the patients were received RPD with Valplast (like tooth color) clasps, it was especial in different ways.

REFERENCES

1. Narain U, Garg R, Sameer A, Narain P (2009) *A Prospective Study Of The Quality Of Removable Prostheses And Patients' Satisfaction In Post-Prosthetic Phase*. In J Dent Sc; 9 (1): 5.
2. Kaplan R, Saccuzzo D (2005) *Psychological Testing-Principles, Applications, and Issues*. 6th Ed., Thomson Wadsworth; Pp: 138-40, 475-507.
3. Davis D, Fiske J, Scott B, Radford DR (2000) *The emotional effects of tooth loss: a preliminary quantitative study.* Br Dent J; 188: 503-8.
4. Hichey J, Zarb G, Bolender C (1990) *Prosthodontic treatment for edentulous patients*. 9th Ed, India/ CBS publisher; Pp: 300.
5. Basker R, Davenport J (2002) *Prosthetic Treatment of the Edentulous Patient.* 4th Ed., Blackwell Munksgaard puplisher; Pp: 1- 37.
6. Steele JG, Treasure E, Pitts NB Morris J, Bradnock G (2000) *Total tooth loss in the united Kingdom in 1998 and its implications for the future.* Br Dent J; 189:598-601.
7. Zarb G, Bolender C, Carlsson G (1997) *Boucher's Prosthodontic Treatment for Edentulous Patients*. 11th edition, Mosby; P: 57.
8. Kandil M (2012) *Evaluation of the Supporting Structures for Three Modalities of Bilateral Distal Extension Partial Dentures*. PH.D. Thesis; Faculty of Oral and Dental Medicine/Cairo University.
9. Celebić A, Knezović-Zlatarić (2003) *A comparison of patient's satisfaction between complete and partial removable denture wearers.* J Dent; 31(7): 445-51.
10. Soliman G (2007) *Bilateral Versus Unilateral Stabilization Using Extra-coronal Attachment for Kennedy Class II "Stress Analysis Study"*. M.Sc. Thesis; Faculty of Oral and Dental Medicine, Cairo University.
11. Deluca A (2007) *The unique thermoplastic injected partial-Flexite. Dent Lab Summer; 1: 48-50.*

12. Negrutiu M, Sinescu C, Sticlaru C, Davidescu A and Romanu M (2007) *The analysis of removable partial dentures with clasp made from thermoplastic and chemoplastic materials: A biomechanical approach of the interface between clasp and denture.* Europ Cells and Mater; 13: 20-26.
13. Qasim M (2009) *A Comparison between Flexible and Conventional Removable Partial Denture.* Hi.D. Thesis; College of Dentistry, Mosul University.
14. Goiato M, Santos D, Haddad M and Pesqueira A (2010) *Effect of accelerated aging on the micro-hardness and color stability of flexible resins for dentures.* Braz Dent J; 24: 1-9.
15. Jenkins G (1999) *Precision Attachments: A Link to Successful Restorative Treatment.* Quintessence Publishing Co., Inc., Chicago; Pp: 9-21, 55-73.
16. DiTolla M (2004) *Valplast Flexible esthetic partial dentures, hair-side perspective.* Clinc techn and proced; 5: 1-5.
17. Shakal E (2001) *Comparative evaluation of RPI and extracoronal attachment designs used for mandibular distal extension prosthesis using clinical- radiographic and stress analysis.* Egypt Dent Assoc; 47: 3-8.
18. Rhein 83 technical manual (2002-2003) *Attachments and Prefabricated Castable Components.* Rhein- Bolonga, Italy. Pp: 5-15, 37.

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.