BRAZILIAN JOURNAL OF IMPLANTOLOGY AND HEALTH SCIENCES

ISSN 2674-8169

DENTISTS' PLANNING PREFERENCES FOR REMOVABLE DENTURES AND OBSERVED COMPLICATIONS IN THEIR PATIENTS: A QUESTIONNAIRE-BASED STUDY

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https://doi.org/10.36557/2674-8169.2024v6n9p1752-1771

Artigo recebido em 16 de Julho e publicado em 06 de Setembro de 2024.

ORIGINAL ARTICLE

ABSTRACT

Purpose: The aim of this study is to examine the practice preferences of general dentists regarding removable partial denture (RPD) treatment, to determine various complaints and problems observed in their patients, and to investigate the relationship of these cases with the experiences and institutional working methods of the dentists. **Study design**: A questionnaire-based study. **Materials and Methods**: A 13-question questionnaire was administered to 161 general dentists between October 1 and November 31, 2019. The questionnaire consists of questions regarding the dentists' RPD treatment practice preferences, complaints of the patients after the application of these dentures, and the complications that develop. **Results:** The most common complaints of patients using clasp-retained dentures were; loosening of the clasp (77.0%), caries in the abutment teeth (50.9%), clasp fracture (47.2%) and aesthetic problems (44.1%). The most common complaint in precision attachment dentures was determined to be loosening of the retainer element (70.2%). The most common complication in such dentures was reported as loosening of the retainer element (67.1%). When the professional experiences of the dentists are examined; the rate of gum problems in patients using clasp retained and precision attachment RPD by dentists with 10 years or less of experience was found to be significantly higher in both types of dentures compared to the patient rates of dentists with more than 10 years of experience (p=0.012). **Conclusion**: The findings obtained from the present study show that the majority of general dentists prefer clasp retained RPDs, and the most common problems encountered in these dentures are loosening of the retainer element, caries and mobility in the support teeth. In addition, it was observed that dentists with less experience and working in private clinics encountered more complaints and problems in patients who had RPD treatment.

Keywords: Dentist, removable partial denture, precision attachment, clasp retained, questionnaire.

INTRODUCTION

Removable partial dentures (RPDs) are a widely accepted treatment option that have been used for many years to replace partial missing teeth. These dentures aim to improve chewing function, speech, and aesthetic appearance by replacing missing teeth. RPDs are especially advantageous for the elderly and individuals with systemic diseases because they can be easily removed and cleaned by the patient (1-3). However, when RPD treatment is not performed correctly it can cause various problems in patients. These problems include discomfort and impacts in the mouth caused by denture mismatches, difficulty chewing, and aesthetic dissatisfaction. Therefore, this treatment method requires a certain level of knowledge and skill. However, the application of this treatment which requires experience by dentists who do not have sufficient experience may cause differences in the quality of treatment results (2-5). RPDs performed by dentists with less experience may increase the risk of complications and reduce patient satisfaction. Knowing dentists' preferences and approaches regarding RPD treatment will be useful for improving, standardizing and planning optimal treatment approaches in their clinical practices (3-7). Therefore, this questionnaire-based study aimed to examine dentists' treatment approaches and practice preferences regarding RPD treatment, to determine various complaints and problems observed in their patients and to investigate the relationship between these phenomena and the experiences of the dentists and their institutional working methods.

METHODS

This study was planned as a questionnaire-based study.

Participants and questionnaire

The study was conducted between October 1 and November 31, 2019, in Ankara with dentists who were willing to participate in the study. A total of 161 general dentists participated in the study. A questionnaire consisting of 13 questions was administered to the dentists (Table 1). For the first 9 questions, participants were asked to provide only a single response, whereas the last 4 questions were designed to accept multiple responses.

The questionnaire included questions regarding dentists' preferences for RPD planning, patients' complaints after the application of these dentures, and developing complications.

Statistical analysis

The sample size in the study was calculated using power analysis with G-Power (version 3.1.9.6, Franz Faul, Universitat Kiel, Germany). The effect size was taken as 0.44, type 1 error as 0.05, and test power as 0.95 (8). Accordingly, the total required sample size was determined to be at least 101 people.

All statistical analyses in the study were performed using SPSS 25.0 software (IBM SPSS, Chicago, IL, USA). Descriptive data were presented as numbers and percentages. Comparisons between groups for categorical variables were made using the Chi Square test. Results were evaluated at a 95% confidence interval and $p<0.05$ was considered significant. Bonferroni correction was applied where necessary.

RESULTS

The mean age of the participants was 39.8±12.8 (range: 23-69) years and 103 (64.0%) were male. The mean experience was 16.0±11.8 (range: 1-43) years. Of these, 68 (42.2%) had more than 20 years of professional experience, 24.8% (11-20) and 32.9% (0-10) years of experience. 105 (65.2%) worked in private clinics or dental offices, and 56 (34.8%) worked in the public sector (Table 1). 78.9% of the dentists preferred clasp as the retainer type, and 21.1% preferred precision attachment. In distal extension protheses, the most preferred clasp type was the circumferential (Ackers) clasp (63.4%). Others preferred 14.9% I bar, 21.7% T or Y bar clasp. (Table 1).

A total of 80.1% of dentists preferred to send impressions to the laboratory for RPD planning, and 19.9% preferred to send models. A total of 62.1% of dentists preferred unilateral removable dentures; 61% of their preferences were precision attachments (Table 1).

The problem that patients with precision attachment RPDs complained about the most was the loosening of the retainer element (70.2%), while the most common problem observed in these patients was reported as loosening of the retainer element (67.1%) (Table 1).

The problems that patients using clasp retainer RPDs complained about the most were; loosening of the clasp (77.0%), caries in the abutment teeth (50.9%), clasp fracture (47.2%) and aesthetic problems (44.1%). There are no patients who do not experience problems using clasp

retainer RPDs. The most common problems observed in these cases are clasp loosening (75.2%) and caries in the abutment teeth (68.3%) (Table 1). When the professional experience of the dentists was examined; the rate of those who preferred Akers type clasps in distal extension prostheses among dentists with more than 20 years of experience was found to be statistically significantly lower than that of less experienced groups. (52.9% vs. 75.0% & 67.9%) (p=0.045). The rate of patients with gum problems among the complaints of dentists with 10 years or less than of experience with precision-attachment RPD patients was found to be significantly higher than the rate of patients of the dentists with more experience (34.0% vs. 11.8% & 20%) (p=0.012). Among the complications observed in patients with precision attachment RPDs of dentists with more than 20 years of experience, the rate of patients with caries in the abutment teeth was found to be significantly lower than the rate of patients of the dentist with less than 20 years of experience (13.2% vs. 25.0% & 34.0%) (p=0.025). Among the complaints of patients using clasp retained RPDs of dentists with less than 10 years of experience, the rate of problem of loosening of the clasp was found to be significantly higher than the rate of patients of the dentists with more than 10 years of experience (88.7% vs. 72.1% & 70.0%) (p=0.047). The rate of patients with gum problems among the complications observed of dentists with 10 years or less than of experience with clasp-retained RPD patients was found to be significantly higher than the rate of patients of the dentists with more experience (56.6% vs. 30.9% & 35.0%) (p=0.012). When the working environment of dentists was evaluated, the rate of dentists with 10 years or less of experience working in the private sector was found to be significantly higher than that of dentists with more than 10 years of experience. p<0.001). The rate of sending impressions to the laboratory for RPD planning was found to be significantly higher among those working in public institutions compared to those working in private clinics (p=0.003). The rate of those who preferred clasp as the retainer type among those working in public institutions was found to be significantly higher than those working in private clinics (p=0.006). The rate of patients using precision attachment RPDs of privately employed dentists who complained about loosening of the retainer element (p<0.001) and mobilty of the abutment teeth (p=0.021) was found to be significantly higher among dentists working in private clinics compared to those working in public institutions. The rate of complications of gum problems (p=0.037) and caries in abutment teeth (p=0.021) in patients with precision attachment RPDs of privately employed dentists was significantly higher than in patients of dentists working in public institutions. The rate of patients with complaints of clasp loosening among patients of privately employed dentists using clasp-retained dentures was found to be significantly higher than in patients of dentists working in public institutions (p=0.016). The rate of patients with

clasp loosening among patients of privately employed dentists using clasp-retained dentures was found to be significantly higher than in patients of dentists working in public institutions ($p=0.020$). The rate of patients who preferred precision attachment in unilateral removable dentures among privately employed dentists was found to be significantly higher than in patients of dentists working in public institutions ($p<0.001$).

DISCUSSION

In Turkey's health system, dentists provide services in private clinics or public hospitals. In the present study, the rate of dentists with 10 years or less of experience working in the private sector was found to be significantly higher than that of dentists with more than 10 years of experience. This finding may be due to dentists prefering to work more comfortably and independently as or their desire to earn more money, etc. Dentists may prefer different types of dentures in partial edentulism cases. One of these dentures may be RPDs. RPDs are used to replace missing teeth and restore chewing function. Each dentist receives and applies RPDs training throughout their education. Dentists who perform RPD treatment must have the training and equipment to perform appropriate and sufficient interventions, especially in the event of complications (9-11). Cheung et al. (12) reported in their questionnaire study that dentists have been performing RPD treatment at an increasing rate since the early years of their profession. Sonnahalli et al. (13) reported that 71% of general dentists performed RPDs on their patients. In the present study, it was determined that all general dentists who participated in the questionnaire performed RPDs and it was evaluated that the dentists considered themselves competent in this regard. According to the results of the present study, 80.1% of the dentists directly sent impressions to the laboratory for metal base planning of RPDs. Similar findings were also reported in the study conducted by Haj-Ali et al. (14) in the United Arab Emirates. These findings may be due to the dentists not having suitable conditions, lack of materials or preventing loss of time. Another reason for this situation may be that some dentists make their plans on paper forms and send their instructions to the technician to the laboratory together with the impression. In another study, it was reported that the majority of the dentists (85.7%) sent their RPDs plans to the technician using a laboratory paper form (15). In the present study, it was also determined that the rate of direct impression sending to the laboratory for metal base planning was significantly higher among dentists working in public institutions than their colleagues working in the private sector. These findings may be due to the fact that dentists

working in public institutions cannot find sufficient contact persons to communicate with the laboratory, do not have suitable conditions, lack of materials or want to avoid wasting time.

In the present study, it was determined that 78.9% of the dentists preferred clasp as the retainer type and 21.1% preferred precision attachment. This situation may be due to the ease of application, cost effectiveness and habits supported by extensive training of dentists.

It was determined that the rate of those working in public institutions who preferred clasp as the retainer type was statistically significantly higher than those working in private clinics. When patients in Turkey apply to a private dental clinic to receive RPDs treatment, they have to pay the entire examination and treatment fees themselves. In public hospitals, these fees are covered by health insurance. This may explain why dentists working in public hospitals prefer this treatment option less due to factors such as avoiding additional costs, wasting time, and difficulties in applying precision attachments.

In the present study, it was observed that the most preferred clasp type in distal extension protheses was the circumferential (Akers) clasp with a rate of 63.4%. Sadig et al. (16) in Saudi Arabia reported similar results. In fact, according to literature, the type of retention that should be used in distal extension protheses should be I bar, T or Y bar (17). The reason why dentists prefer circumferential (Akers) clasp may be due to lack of knowledge or concerns about retention. In a study conducted by Shwarz and Barsby (18) including 794 dentists, it was reported that there were differences between what was taught in the relevant faculties and daily practice in terms of planning RPDs. In addition, the rate of those who preferred Akers type clasps in distal extension protheses among dentists with more than 20 years of experience was found to be statistically significantly lower than less experienced groups. This sitiation may be due to less experienced dentists having more retention concerns in RPDs and making mistakes in planning. It may also be due to the fact that experienced dentist prefer less visible types of clasps to increase patient satisfaction and better manage aesthetic concerns. In the present study, 62.1% of dentists preferred to perform unilateral removable dentures; 61% of their preferences were precision retainers. Precision attachment dentures may have been preferred more by dentists due to their superiority over clasp retainer dentures in terms of aesthetics, function and stability (19). In addition, among dentists with 10 years or less experience, the rate of those who preferred the precision attachment type among those who perform unilateral removable dentures was found to be significantly higher than among dentists with more experience. This can be explained by the fact that 90.6% of dentists with less than 10 years of experience work in the private sector, and patients can have more expensive treatments in private clinics. In

addition, the study found that among private dentists, the rate of those who prefer the precision retainer type among those who perform unilateral removable dentures was significantly higher than among dentists in public institutions. This result may suggest that dentists working in private institutions can perform more expensive treatments for their patients and that they attach more importance to dental aesthetics and patient comfort. In the present study, 78.9% of dentists preferred implant-supported fixed denture in molar tooth deficiency treatments. This high preference rate can be explained by various clinical and aesthetic advantages such as high patient satisfaction and patient comfort provided by implants (20). Precision-attachmented RPDs are attached to natural teeth or implants with special connection elements (attachments) (21). These connections increase the stability of the denture. These dentures usually have metal supports placed inside the denture and precision attachments integrated into the substructure of the denture. Retainers consist of male and female parts and work together to ensure that the denture fits securely. Precision attachments are advantageous in terms of aesthetics since they are not visible. They provide the denture with an appearance compatible with natural teeth. Precision-attachmented dentures allow functions such as chewing and speaking to be performed more effectively (22-24). In the present study, it was observed that the most common complaint of precision-attachmented RPD patients was the loosening of the retainer element (70.2%). In such patients, the most frequently observed complication (67.1%) by the dentist was found to be loosening of the retainer element. Similar results were found in the study conducted by Stalder et al. (25). This high rate of loosening of the retainer element may be due to application errors, material fatigue, incompatibility of teeth and denture, inadequate cleaning of the denture and long-term use (26,27).

The rate of patients with gum problems among the complaints of dentists with 10 years or less than of experience with precision-attachment RPD patients was found to be significantly higher than the rate of patients of the dentists with more experience. In addition, the rate of patients with in abutment teeth caries among the complications observed in dentists with 20 years or more experience with precision-attachment RPD patients was found to be significantly lower than the rate of patients dentists with less experience. The findings show that more experienced dentists (20+ years) experience gum and tooth caries problems less in precision-attachment RPD patients. This situation may be due to experienced dentists' effective patient education on prosthesis cleaning and oral hygiene, as well as their advanced clinical and treatment planning skills.

In the study, it was determined that the rates of private dentists complaining about the most common problem of precision attachment RPDs patients, loosening of the attachment element and mobilty of the abutment teeth, were significantly higher than those of dentists working in public institutions. The rates of patients of private dentists with the most frequently observed complications, gum problems and caries in the abutment teeth, were found to be significantly higher than those of patients of dentists working in public institutions. All these findings show that the rate of complications is higher in patients with precision attachment denture, especially among dentists working in private practice. In the Turkish healthcare system, while it can sometimes take months to get an appointment from a dentist working in the public sector, it is possible to get an appointment on the same day from a dentist working in the private sector (28). Clasp retained dentures are RPDs that replace missing teeth and are attached to natural teeth with metal clasps retainers (29). These dentures usually consist of artificial teeth placed on a metal framework. Metal clasps ensure that the denture is attached to natural teeth. However, since they can be visible during smiling or speaking, they can be disadvantageous in terms of aesthetics when used on the front teeth. They can also cause caries in abutment teeth (30). Clasp retainers provide stability to the denture. However, they may not provide as secure a fixation as precision retainers and the possibility of displacement of the denture may be higher (9-11,31). In the present study, it was observed that the most common problems complained by patients with RPDs with clasp retainers were; clasp loosening, caries in the abutment teeth, clasp fracture and aesthetic problems. In these cases, it was determined that the most common problems observed by the dentist were clasp loosening and caries in the abutment teeth. In the study, it was also found that, among the complaints of patients with RPDs clasp-retained by dentists with 10 years or less experience, the rate of patients with problems with loosening of the clasp and was significantly higher than the rate of patients dentists with more experience. The rate of patients with gum problems among the complications observed of dentists with 10 years or less than of experience with clasp-retained RPD patients was found to be significantly higher than the rate of patients of the dentists with more experience. All these findings may be due to less experienced dentists making planning and application falses in prosthetics, providing insufficient patient education. Dula et al. (32) argued in their study that regular check-up appointments and correct prosthetic planning play a crucial role in preventing changes in abutment teeth in clasp-retained dentures. Allen et al. (33) also suggested in their study that general dentists do not perform enough removable partial dentures during their training and do not receive adequate education in this area. In addition, Barreiro et al. (34) argued in their study that patients were not sufficiently informed about the care of removable prostheses, and

therefore patient education should be considered as the basis of treatment throughout dental education. These studies and our findings highlights the importance of continuous dental education and professional development. In the present study, it was also determined that the rate of patients with such denture patients complaining about loosening of the clasp was significantly higher among privately employed dentists than among patients of dentists working in public institutions; and the rate of complication of loosening of the clasp detected by the dentist was significantly higher than among patients of dentists working in public institutions. These findings show that loosening of the clasp is significantly more common among privately employed dentists. This situation may be related to the fact that patients of privately employed dentists are more stable, their patients reach their dentists more easily, or they treat more complicated cases, etc.

There were some limitations in the study. the present study was a questionnaire study targeting dentists. Questionnaires may be studies that make it difficult for participants to provide more detailed and in-depth information. Since the present study was conducted on a questionnaire basis, the data is based solely on the statements of the dentists. Since the questionnaire was conducted face-to-face, the participants may have tried to make themselves look good, and therefore their responses may not reflect the real situation. This may have caused the complications not to be analyzed completely correctly. However, since the lack of a requirement to state names in the questionnaires may have increased the possibility of dentists expressing the truth more comfortably, this negative effect may have remained at a minimum level.

CONCLUSIONS

The findings obtained from the present study show that the majority of general dentists prefer clasp-retained RPDs, and the most common problems encountered in these dentures are clasp loosening, clasp fracture and caries in the abutment teeth. The most common problems encountered in precision attachment dentures are loosening of the retainer element, caries and mobility in the abutment teeth. It was also observed that dentists with less experience and working in private clinics encountered more complaints and problems in patients who had RPD treatment. Under the guidance of these findings, dental education needs to be enriched not only with theoretical knowledge but also with practical application and patient education.

Additionally, to obtain more generalizable results, further studies involving larger populations are necessary to conduct multivariate analyses.

Conflict of Interest

The authors declare no conflicts of interest

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TABLES

Table 1. Distribution of dentists' answers to survey questions.

		n	**%**
n		161	100.0
Gender			
	Male	103	64.0
	Female	58	36.0
Experience (years)			
	0-10	53	32.9
	11-20	40	24.8
	20+	68	42.2

Working status		
Private	105	65.2
Public (Government-employed)	56	34.8
Sending a master model or impression to the laboratory for RPD metal substructure casting		
Model	32	19.9
Impression	129	80.1
Retention piece type preference		
Clasp	127	78.9
Precision retainer	34	21.1
Clasp type preferred in distal extension protheses		
I bar	24	14.9
Circumferential (Ackers) clasp	102	63.4
T or Y bar clasp	35	21.7
Situation of aplications unılateral removable denture	100	62.1
Retention type preference if aplications unılateral removable denture		
Precision retainer	61	61.0
Clasp	39	39.0
Treatment preference in a patient who has lost only his molars		
Tooth-supported fixed denture with a cantilever	13	8.1
Implant-supported fixed denture	127	78.9
RPD	21	13.0
The most complained problem of patients with RPD with precision attachment		
Fracture of the precision attachment	21	13.0
Gum problems	34	21.1
Caries in the abutment teeth	31	19.3
Loosening of the retainer element	113	70.2
Mobility of the support teeth	30	18.6
Aesthetics	7	4.3
The most observed problem in patients with RPD with precision retainer		
Fracture of the precision attachment	35	21.7
Gum problems	45	28.0
Caries in the abutment teeth	37	23.0
Loosening of the retainer element	108	67.1
Mobility of the support teeth	42	26.1
Aesthetics	14	8.7
The most complained problem of patients with RPDs with clasp retainers		
Clasp fracture	76	47.2
Gum problems	34	21.1
Caries in the abutment teeth	82	50.9
Loosening of the clasp	124	77.0
Mobility of the support teeth	44	27.3
Aesthetics	71	44.1
The most observed problem of patients with RPDs with clasp retainers		
Clasp fracture	80	49.7

Gum problems	65	40.4
Caries in the abutment teeth	110	68.3
Loosening of the clasp	121	75.2
Mobility of the support teeth	68	42.2
Aesthetics	75	46.6

Table 2. Comparison of dentists' answers to survey questions according to their professional experience.

	Experience (years)						**Total**	**p**
	0-10		**11-20**		**20+**			
	n	**%**	**n**	**%**	**n**	**%**	**n**	
n	53	100.0	40	100.0	68	100.0	161	
Gender								**<0.001**
Male	**45**	**84.9**	23	57.5	35	51.5	103	
Female	8	15.1	17	42.5	33	48.5	58	
Working status								**<0.001**
Private	**48**	**90.6**	26	65.0	31	45.6	105	
Public (Government-employed)	5	9.4	14	35.0	37	54.4	56	
Sending a master model or impression to the laboratory for RPD metal substructure casting								0.089
Model	15	28.3	4	10.0	13	19.1	32	
Impression	38	71.7	36	90.0	55	80.9	129	
Retention piece type preference								0.115
Clasp	37	69.8	32	80.0	58	85.3	127	
Precision retainer	16	30.2	8	20.0	10	14.7	34	
Clasp type preferred in distal extension protheses								**0.045**
I bar	9	17.0	**1**	**2.5**	14	20.6	24	
Circumferential (Ackers) clasp	36	67.9	30	75.0	**36**	**52.9**	102	
T or Y bar clasp	**8**	**15.1**	9	22.5	18	26.5	35	

Situation of aplications unılateral removable denture	35	66.0	21	52.5	44	64.7	100	0.348
Retention type preference if aplications unılateral removable denture								**0.029**
Precision attachment	27	50.9	13	32.5	21	30.9	61	
Clasp	8	15.1	8	20.0	23	33.8	39	
Treatment preference in a patient who has lost only his molars								0.698
Tooth-supported fixed denture with a cantilever	6	11.3	3	7.5	4	5.9	13	
Implant-supported fixed denture	39	73.6	31	77.5	57	83.8	127	
RPD	8	15.1	6	15.0	7	10.3	21	
The most complained problem of patients with RPD with precision attachment								
Fracture of the precision attachment	4	7.5	5	12.5	12	17.6	21	0.260
Gum problems	**18**	**34.0**	8	20.0	8	11.8	34	**0.012**
Caries in the abutment teeth	14	26.4	8	20.0	9	13.2	31	0.188
Loosening of the retainer element	39	73.6	32	80.0	42	61.8	113	0.109
Mobility of the support teeth	15	28.3	4	10.0	11	16.2	30	0.064
Aesthetics	3	5.7	1	2.5	3	4.4	7	0.760
The most observed problem in patients with RPD with precision retainer								
Fracture of the precision retainer	10	18.9	6	15.0	19	27.9	35	0.239
Gum problems	19	35.8	11	27.5	15	22.1	45	0.244
Caries in the abutment teeth	18	34.0	10	25.0	**9**	**13.2**	37	**0.025**
Loosening of the retainer element	39	73.6	28	70.0	41	60.3	108	0.274
Mobility of the support teeth	16	30.2	9	22.5	17	25.0	42	0.680
Aesthetics	6	11.3	5	12.5	3	4.4	14	0.251
The most complained problem of patients with RPDs with clasp retainers								
Clasp fracture	24	45.3	19	47.5	33	48.5	76	0.938
Gum problems	14	26.4	8	20.0	12	17.6	34	0.493
Caries in the abutment teeth	29	54.7	23	57.5	30	44.1	82	0.323
Loosening of the clasp	**47**	**88.7**	28	70.0	49	72.1	124	**0.047**
Mobilty of the support teeth	14	26.4	12	30.0	18	26.5	44	0.909
Aesthetics	23	43.4	15	37.5	33	48.5	71	0.533
The most observed problem of patients with RPDs with clasp retainers								
Clasp fracture	33	62.3	18	45.0	29	42.6	80	0.080
Gum problems	**30**	**56.6**	14	35.0	21	30.9	65	**0.012**
Caries in the abutment teeth	40	75.5	24	60.0	46	67.6	110	0.280

Loosening of the clasp	45	84.9	29	72.5	47	69.1	121	0.124
Mobilty of the support teeth	24	45.3	18	45.0	26	38.2	68	0.679
Aesthetics	24	45.3	21	52.5	30	44.1	75	0.682

Table 3. Comparison of dentists' answers to survey questions according to their working status.

	Working status				**Total**	**p**
	Private		**Public**			
	n	**%**	**n**	**%**	**n**	
n	105	100.0	56	100.0	161	
Gender						**0.001**
Male	**77**	**73.3**	26	46.4	103	
Female	28	26.7	30	53.6	58	
Sending a master model or impression to the laboratory for RPD metal substructure casting						**0.003**
Model	28	26.7	4	7.1	32	
Impression	77	73.3	**52**	**92.9**	129	
Retention piece type preference						**0.006**
Clasp	76	72.4	**51**	**91.1**	127	
Precision retainer	29	27.6	5	8.9	34	
Clasp type preferred in distal extension protheses						0.148
I bar	16	15.2	8	14.3	24	
Circumferential (Ackers) clasp	71	67.6	31	55.4	102	
T or Y bar clasp	18	17.1	17	30.4	35	
Situation of aplications unılateral removable denture	63	60.0	37	66.1	100	0.449
Retention type preference if aplications unılateral removable denture						**<0.001**

Precision attachment	**52**	**49.5**	9	16.1	61	
Clasp	11	10.5	28	50.0	39	
Treatment preference in a patient who has lost only his molars						0.060
Tooth-supported fixed denture with a cantilever	8	7.6	5	8.9	13	
Implant-supported fixed denture	88	83.8	39	69.6	127	
RPD	9	8.6	12	21.4	21	
The most complained problem of patients with RPD with precision attachment						
Fracture of the precision attachment	14	13.3	7	12.5	21	0.881
Gum problems	26	24.8	8	14.3	34	0.121
Caries in the abutment teeth	24	22.9	7	12.5	31	0.112
Loosening of the retainer element	**84**	**80.0**	29	51.8	113	**<0.001**
Mobility of the support teeth	**25**	**23.8**	5	8.9	30	**0.021**
Aesthetics	4	3.8	3	5.4	7	0.647
The most observed problem in patients with RPD with precision attachment -						
Fracture of the precision attachment	23	21.9	12	21.4	35	0.944
Gum problems	**35**	**33.3**	10	17.9	45	**0.037**
Caries in the abutment teeth	**30**	**28.6**	7	12.5	37	**0.021**
Loosening of the retainer element	75	71.4	33	58.9	108	0.108
Mobility of the support teeth	31	29.5	11	19.6	42	0.174
Aesthetics	10	9.5	4	7.1	14	0.610
The most complained problem of patients with RPDs with clasp retainers						
Clasp fracture	46	43.8	30	53.6	76	0.237
Gum problems	24	22.9	10	17.9	34	0.459
Caries in the abutment teeth	53	50.5	29	51.8	82	0.874
Loosening of the clasp	**87**	**82.9**	37	66.1	124	**0.016**
Mobilty of the support teeth	30	28.6	14	25.0	44	0.628
Aesthetics	48	45.7	23	41.1	71	0.572
The most observed problem of patients with RPDs with clasp retainers -						
Clasp fracture	53	50.5	27	48.2	80	0.785
Gum problems	44	41.9	21	37.5	65	0.587
Caries in the abutment teeth	67	63.8	43	76.8	110	0.092
Loosening of the clasp	**85**	**81.0**	36	64.3	121	**0.020**
Mobilty of the support teeth	46	43.8	22	39.3	68	0.580
Aesthetics	49	46.7	26	46.4	75	0.977