

ASSESSMENT AND PRACTICE OF FIXED PROSTHETIC RESTORATION IN THE CITY OF ANTANANARIVO, MADAGASCAR

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Abstract

The aim of this cross-sectional descriptive study was to describe the attitude and practice of odontostomatologists towards fixed prosthetics.

A survey based on a questionnaire containing 6 items concerning socio-demographic and clinical characteristics, attitude, practice of standard guidelines on pre-prosthetic preparation and on impression taking was carried out among 114 odontostomatologists in practice in the urban commune of Antananarivo Madagascar in 2023, practicing fixed prosthetic restoration. Univariate and bivariate analyses were performed using SPSS 25.0 software. The Chi² test was used to compare proportions. The difference is significant for $p < 0.05$ with a confidence level of 95%.

The sex ratio was 1.59; 77.2% worked in private practices; 59.6% worked less than 8 hours a day; 62.3% treated fewer than 10 patients a day. All (100%) of those surveyed offered their patients a prosthetic restoration. When preparing abutment teeth, 34.2% took a preoperative radiograph, 12.3% used a retraction cord, 75.4% used diamond burs. For the impression, 55.3% used alginate, 92.1% always disinfected it. The use of standard guidelines for fixed prosthetic restorations was influenced by gender ($p=0.029$), post-graduate training ($p=0.001$), place of practice ($p=0.006$), number of years in practice ($p=0.01$).

A more in-depth and wider-ranging study of odontostomatologists practising throughout Madagascar would be desirable to fully identify the reality of their practice.

Key words: Assesment Practice, odontostomatologist, fixed prosthesis, Antananarivo Madagascar

INTRODUCTION

Dentures are synthetic replacements for missing natural teeth. Some types of dentures are designed to replace a few missing teeth. Other types of dentures replace all the teeth, gingiva and even surrounding tissues [1].

Joint prostheses or fixed prostheses are a range of therapeutic methods designed to replace missing teeth and/or reconstruct decayed teeth to restore function and aesthetics in a context of optimal bio-integration. It can be dental or implant-supported [2].

It is the treatment of choice for the reconstruction of decayed, discolored or missingteeth, particularlywhencomfort and esthetics are paramount [3].

In fact, it provides the patient with a sense of well-being and good masticatory efficiency. Its natural appearance and irremovable character help patients regain their self-esteem in the case of anterior edentulous teeth [4].

The different types of fixed dental prostheses are :

- dental crowns, to cover damaged teeth.
- dental bridge; used to replace one or more lost teeth, and can be adapted to a number of different situations.
- implant-supported dentures; this is a type of prosthesis that uses permanent dental implants to hold replacement teeth in place [5].

To ensure the longevity of the fixed prosthesis, which is the most delicate of all prostheses, perfect mastery of the clinical and laboratory sequences is essential, something not all odontostomatologists (OS) and prosthetists can achieve. Many errors can be accumulated during the production of a fixed

prosthesis, with inevitable repercussions on the durability of the dento-prosthetic element, including the loss of dental abutments [5,6].

Treatments must meet patients' needs, which are essentially aesthetic or functional in nature, and are very often linked to socio-cultural factors. The main complaints mentioned by patients were occlusal (31.6%), followed by pulpal (27.8%) and finally aesthetic and periodontal (15.6%) [7].

In Madagascar, data on fixed prosthesis are scarce/limited, hence the interest of this work whose objectives were to:

- describe the attitude and practice of odontostomatologists (OS) regarding fixed prostheses;
- analyze the relationship between sociodemographic and clinical profiles and the attitude and practice of OSs towards fixed prosthetics.

METHODS

This is a descriptive cross-sectional study of odontostomatologists(OS) working in the city of Antananarivo (Antananarivo Urban District called CUA), in the Analamanga Region, Madagascar.

The study ran from December 2022 to April 2023.

As study population, we chose dental surgeons practicing in the city of Antananarivo, in private, inter-company, public and military dental practices. Dental surgeons practising for more than 05 years and registered with the National Order of odontostomatologists were included in our study. OS not practising fixed prosthetic restoration and those who were absent and uncooperative during the survey were excluded.

Sampling was carried out exhaustively.

The independent variables were inspired by Ghoneim's model [8].

These variables were :

- sociodemographic variables: gender, total years of practice, postgraduate training, place of work;
 - clinical characteristics: number of hours worked per day, number of patients seen per day.
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The dependent variables focused on the attitude and practice of OS on the standard guideline to be followed in fixed prosthetic practice.

The surveys were carried out at the dental surgery. Initially, we contacted the SOs and explained to them the purpose of our study, and the value of their cooperation in our study. After obtaining their informed consent, we proceeded to fill in their respective survey forms.

After the survey, the questionnaires were counted manually.

Data were processed and analyzed using Statistical Package for the Social Sciences (SPSS) 25.0. Univariate and bivariate analyses were performed to examine frequency distribution and association between independent and dependent variables, respectively. The Chi² test was used to compare percentages. The difference is significant for $p < 0.05$ at the 95% confidence level.

RESULTS

Of the two hundred and twenty-three (223) OS practicing in the CUA, 114 met our inclusion criteria.

➤ **Socio-demographic characteristics (Table I)**

Among the study population, 61.4% were male, with a sex ratio of 1.59, and 57% had been working for more than 15 years.

Nine point six percent (9.6%) of the study population worked in public dental practices, 77.2% in private practices, 7.9% in inter-company centers and 5.3% in military dental practices.

Of these, 35% had specialised after obtaining their state doctorate diploma.

➤ **Clinical characteristics (Table II)**

In terms of total hours worked per day, 59.6% worked less than 08 hours. The number of OS treating fewer than 10 patients per day was 62.3%.

➤ **OSattitude**

All the surgeons advised their patients to have a fixed coronal restoration.

➤ **OS practice in fixed prosthesis design**

• Pre-prosthetic check-up

Forty point four percent (40.4%) of OS always used a mouth model before making a fixed prosthesis; 42.1% rarely used it and 17.5% never used it (**Table III**). For dental technicians who had attended post-graduate training courses after their thesis, 57.5% always used a mouth model, 25% used it rarely and 17.5% never used it. In contrast, 31.1% of OS who had not attended training courses after their thesis always used a mouth model, 51.4% rarely used it and 17.6% never used it. The difference is statistically significant ($p=0.012$). (**Table IV**)

Thirty-four point two percent (34.2%) of OS always took radiographs of the abutment teeth; 43% rarely did so and 22.8% of OS never did so (**Table III**). Sixty percent (60%) of dental technicians who had undergone post-graduate training did so always, 22.5% rarely and 17.5% never. And for OS who had not undergone training after their thesis, 20.3% always took a preoperative X-ray, 54.1% rarely did so, and 25.7% never did.

The difference is highly statistically significant ($p=.0.001$). (**Table IV**)

For the pulp vitality test on abutment teeth, 96.5% of OS did so, while 3.5% did not (**Table III**).

• Preparing abutment teeth

The retracting cord was always used by 12.3% of OS, 7% rarely and 80.7% never (**Table VI**). No OS working between 5 and 10 years used the retracting cord, 6.3% of OS working between 10 and 15 years always used it, and 18.5% of OS working more than 15 years. The difference is highly statistically significant ($p=0.001$). (**table V**)

In terms of the type of burr used for dental preparation, 7.9% used tungsten carbide burs, 75.4% used diamond burs and 16.7% used both types of burs at the same time (**Table VI**). In terms of the type of burr used for dental

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preparation, 7.9% used tungsten carbide burs, 75.4% used diamond burs and 16.7% used both types of burs at the same time (**Table VI**).

For those OS who took a diploma course after their thesis, 15% used tungsten carbide burs, 60% used diamond burs and 25% used both types of burs. OS who did not follow diploma courses afterwards used tungsten carbide burs for 4.1% of them, 83.8% used diamond burs and 12.2% used both types of burs. The difference is statistically significant ($p= 0.015$). (**Table VII**)

For those OS who took a diploma course after their thesis, 15% used tungsten carbide burs, 60% used diamond burs and 25% used both types of burs. OS who did not follow diploma courses afterwards used tungsten carbide burs for 4.1% of them, 83.8% used diamond burs and 12.2% used both types of burs. The difference is statistically significant ($p= 0.015$). (**Table VII**)

As for the type of burr used, 63.6% of OS working in the public sector used diamond burs and 27.3% tungsten carbide burs. OS in the private sector used diamond burs for 80.7% and 2.3% used tungsten carbides. For OS working in inter-company centers, 55.6% used diamond burs and 22.2% used tungsten carbides. Among military OS, 50% used diamond burs and 33.3% tungsten carbide burs. The difference is highly statistically significant ($p=.0.006$). (**Table VIII**)

- Impression taking

Fifty-five point three percent (55.3%) of OS surveyed used alginate as impression material, 43.9% used silicone and 0.9% used other materials. (**Table IX**) Fifty-two point nine percent (52.9%) of the male gender used silicone versus 47.1% for alginate. For the female gender, 29.5% used silicone versus 68.2% who used alginate. The difference is statistically significant ($p= 0.029$). (**Table X**) Fifty-seven point five percent (57.5%) of OS with diploma training used silicone and 40% used alginate. OS who had not completed a diploma course after their thesis used alginate as an impression material for 63.5% of them, and 36.5% used silicone. The difference is statistically significant ($p= 0.029$). (**Table XI**)

All the dental surgeons used inter-occlusal registration for the replacement of several teeth; 41.2% did so with silicone and 58.8% with wax (**Table IX**).

As for the type of material used for inter-occlusal registration, silicone was used by 55% of OSs who had undergone diploma training after their thesis, while 45% used wax. But for OSs who had not undergone post-graduate training after their thesis, 33.8% used silicone for inter-occlusal registration and 66.2% used wax. The difference is statistically significant ($p= 0.028$). (**Table XI**)

Disinfection of the final impression was always carried out by 92.1% of dental technicians, 6.1% rarely did so, and 1.8% of dental technicians never disinfected the final impression before processing it or sending it to the laboratory. (**Table XII**) All OS in the public sector always did so, 95.5% in the private sector, 55.6% in inter-company centers and 83.3% in the military. The difference is highly statistically significant ($p= 0.009$). (**Table XIII**)

- Temporary crown

Fifty-six point one percent (56.1%) of dental technicians always used a provisional crown after the impression, 31.6% rarely and 12.3% never (**Table XII**).

In the public sector, 72.7% of OS always used a provisional crown after the impression, 54.4% of OS in the private sector, 55.6% in inter-company centers and 50% in the military. The difference is statistically significant ($p= 0.04$). (**Table XIII**)

DISCUSSION

We conducted a descriptive cross-sectional study to assess the knowledge, attitude and practice of fixed dental prosthesis in a sample of 114 OS working in the capital of Madagascar (Antananarivo). Our sample was representative of OS in Antananarivo in terms of age range and practice status. We used a face-to-face interview with the OS, which resulted in a fairly high participation rate of 51.12% of OS. In fact, this rate is lower than that of Chisini's study in Brazil, where the rate was 68% [9].

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Of the OS surveyed, 61.4% were male. This differs from the study by Andrianasolo [10], who found 55% of the OS in Mahajanga to be female.

Fifty-nine point six percent (59.6%) of the operatives said they worked less than 8 hours a day, which corresponds to article 8, which states that the legal work schedule is 113.33 hours per month, equivalent to eight working hours per working day (continuous day system), with the exception of specific jobs (such as night watchman or concierge), with a break between 12 and 1pm [11].

The use of mouth models is essential for proper diagnosis and treatment planning. Our study showed that 40.6% of OS always performed a mouth model before starting a fixed prosthesis. This is slightly higher than the study by Alhoumaid et al on the knowledge, attitude and practice in fixed prosthetics of OS in Quassim in 2019, which showed that 37.2% of practitioners used mouth models routinely [12].

Radiographic root studies of abutment teeth in fixed coronal restorations are necessary to obtain detailed knowledge of the extent of bone support and root morphology of each abutment tooth to establish a comprehensive treatment plan [13]. In our study, only 34.2% of OS always radiographed the abutment teeth prior to preparation. This is similar to the study by Mohamed et al (2010) in Karthoum, which was 35.57% [14].

Assessing pulp health and evaluating pulp prognosis are essential prerequisites for restorations on pulpless teeth. The question often asked before restoring pulpless teeth is whether the tooth can be restored at all. This often boils down to whether the tooth can be kept alive, or whether it should be depulped [15]. Our study showed that 96.5% of OS always tested the pulp vitality of abutment teeth. This result is considerably higher than Mohamed's figure of 46% [14].

With regard to the use of the retraction cord, our survey revealed that only 12.3% of OSs in our study always used it. This is considerably lower than Moldi's study, which showed that 72.8% used the gingival retraction cord before taking the final impression; marginal fit being one of the vital factors dictating the

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prognosis of fixed prosthetics, it is essential to record the prepared and unprepared surfaces of the abutment with absolute precision [16].

The success of a fixed prosthesis depends on compliance with mechanical, aesthetic and periodontal requirements. A study by Médina et al on the practice of fixed prosthodontics in Ouagadougou in 2018 showed that the preparation of abutment teeth, the first link in the prosthetic chain, is the second greatest difficulty encountered by practitioners in their daily work (39.4%) but above all the leading cause of failure in fixed prosthetic restorations (54.5%) [7]. This study showed that 7.9% of OS used tungsten burs, 75.4% diamond burs and 16.7% both types of burs. Alhoumaïdan's study showed that diamond burs were mainly used during preparation (53.8%), while 46.2% used both tungsten and diamond burs during preparation [12].

As impression materials, 55.3% of the dental surgeons in this study used alginate, and 43.9% silicone. This differs from Moldi's study in India (2013), the aim of which was to assess dental practice regarding impression taking for prosthetic treatment, where in the urban area, 41.43% of OS used alginate impression materials and 58.57% of participants preferred silicone impression materials [16].

Concerning the use of occlusal registration, 100% of our study population always did so. Wax was the most used material at 58.8%, followed by silicone at 41.2%. Alhoumaïdan's study showed that 83.4% of OS in Quassim always took bite registration for multiple tooth replacement, and wax was the most used material for bite registration at 61.7% [12]. A study by Maru et al on the trend in the selection, use and techniques of inter-occlusal registration among private OS in India showed that 79% of OS use inter-occlusal registration materials for the fabrication of crowns and bridges. The most commonly used inter-occlusal registration material was wax (54.6%) [17].

The temporary crown restores the anatomical shape of the prepared teeth. It prefigures the final result and, above all, ensures that the patient's socio-professional life is not hampered during the final prosthetic phase [18]. The study

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by Alhoumaïdan (2018) had shown that 45.5% of OS in Quassim were still using provisional restorations [12]. In our present study, the provisional crown was still used by 56.1% of OS surveyed.

The risk of contamination of nursing staff and laboratory personnel via impressions exists, and must be properly managed. A study carried out in Dakar on the typology of microorganisms present on fixed prosthetic impressions in dental surgeries showed that almost all impressions (94.3%) were rinsed after insertion under a trickle of tap water. 25.7% were decontaminated. Chlorinated compounds were the decontamination solutions used exclusively, i.e. 100% [19]. In our study, 92.1% of OS disinfected their impressions, but the decontamination solution was not specified.

However, a study carried out in Khartoum showed that 73.6% did not disinfect the impression before sending it to the dental laboratory [14].

CONCLUSION

The standard guideline to be followed in the practice of fixed prosthetic restoration has yet to be fully adopted by OSs in the Malagasy capital. A more in-depth and wide-ranging study of dental surgeons practicing throughout Madagascar would be desirable to fully identify the reality of their practice.

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Table I: OS distribution by socio-demographic characteristics (N= 114)

Social characteristics	Number (n)	Proportion (%)
Gender		
Male	70	61,4
Female	44	38,6
Year of exercise		
05 to 10 years	17	14,9
11 to 15 years	32	28,1
16 years and over	65	57
Place of work		
Public	11	9,6
Private	88	77,2
Inter-company	9	7,9
Military camp	6	5,3
Continuing training		
Yes	40	35
No	74	65

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Table II: OS distribution by clinical characteristics (N=114)

Clinical characteristics	Number (n)	Proportion (%)
Total working hours per day (h)		
≤ 8	68	59,6
> 8	46	40,4
Total	114	100
Number of patients treated per day		
≤ 10	71	62,3
> 10	43	37,7
Total	114	100

Table III: OS response rates for pre-prosthetic preparations (N=114)

	Number (n)	Proportion (%)
Using a mouth model		
Always	46	40,4
Rare	48	42,1
Never	20	17,5
Total	114	100
Preoperative radiography of abutment teeth		
Always	39	34,2
Rare	49	43
Never	26	22,8
Total	114	100
Pulp vitality test on abutment teeth		
Yes	110	96,5
No	4	3,5
Total	114	100

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Table IV: Distribution of OS according to pre-prosthetic preparation and post-thesis continuing training

Pre-prosthetic preparation		Post-thesis training			p
		Yes	No	Total	
		n (%)	n (%)	n (%)	
Mouth model use	Always	23 (57,5)	23 (31,1)	46 (40,4)	0,012*
	Rare	10 (25)	38 (51,4)	48 (42,1)	
	Never	7 (17,5)	13 (17,6)	20 (17,5)	
	Total	40 (100)	74 (100)	114 (100)	
Radiography of abutmentteeth	Always	24 (60)	15 (20,3)	39 (34,2)	0,001**
	Rare	9 (22,5)	40 (54,1)	49 (43)	
	Never	7 (17,5)	19 (25,7)	26 (22,8)	
	Total	40 (100)	74 (100)	114 (100)	
Pulp vitality test	Yes	38 (95)	72 (97,3)	110 (96,5)	0,525
	No	2 (5)	2 (2,7)	4 (3,5)	
	Total	40 (100)	74 (100)	114 (100)	

*p= 0,012 (< 0,05) significant

**p= 0,001 (< 0,01) very significatif

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Table V: Distribution of OS according to pre-prostheticpreparation and year of practice

Pre-prostheticpreparation		Year of practice				p
		05 to 10 years	11 to 15 years	16 years and over	Total	
		n (%)	n (%)	n (%)	n (%)	
Mouth model use	Always	8 (47,1)	11 (34,4)	27 (41,5)	46 (40,4)	0,873
	Rare	6 (35,3)	14 (43,8)	28 (43,1)	48 (42,1)	
	Never	3 (17,6)	7 (21,9)	10 (15,4)	20 (17,5)	
	Total	17 (100)	32 (100)	65 (100)	114 (100)	
Radiography of abutmentteeth	Always	7 (41,2)	7 (21,8)	25 (38,5)	39 (34,2)	0,059
	Rare	10 (58,8)	14 (43,8)	25 (38,5)	49 (43)	
	Never	-	11 (34,4)	15 (23)	26 (22,8)	
	Total	17 (100)	32 (100)	65 (100)	114 (100)	
Pulp vitality test	Yes	16 (94,1)	29 (90,6)	65 (100)	110 (96,5)	0,052
	Non	1 (5,9)	3 (9,4)	-	4 (3,5)	
	Total	17 (100)	32 (100)	65 (100)	114 (100)	
Using the retractablecord	Always	-	2 (6,3)	12 (18,5)	14 (12,3)	0,001**
	Rare	6 (35,3)	-	2 (3,1)	8 (7)	
	Never	11 (64,7)	30 (93,8)	51 (78,5)	92 (80,7)	
	Total	17 (100)	32 (100)	65 (100)	114 (100)	

**p= 0,001 (< 0,01) verysignificant

Table VI: OS response rate for preparation of abutmenttooth(s)(N=114)

	Number (n)	Proportion (%)
Using the retractablecord		
Always	14	12,3
Rare	8	7
Never	92	80,7
Total	114	100
Types of burred		
Tungstencarbide	9	7,9
Diamond	86	75,4
Both	19	16,7
Total	114	100

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Table VII: Distribution of OS according to preparation of abutmentteeth and post-thesis training

Abutmentteethpreparation		Post-thesis training			p
		Yes n (%)	No n (%)	Total n (%)	
Types of burred	Tungstencarbide	6 (15)	3 (4,1)	9 (7,9)	0,015
	Diamond	24 (60)	62 (83,8)	86 (75,4)	
	Both	10 (25)	9 (12,2)	19 (16,7)	
	Total	40 (100)	74 (100)	114 (100)	
Impression material type	Alginate	16 (40)	47 (63,5)	63 (55,2)	0,029
	Silicone	23 (57,5)	27 (36,5)	50 (43,9)	
	Others	1 (2,5)	-	1 (0,9)	
	Total	40 (100)	74 (100)	114 (100)	
Inter-occlusal registration	Yes	40 (100)	74 (100)	114 (100)	-
	No	-	-	-	
	Total	40 (100)	74 (100)	114 (100)	
Type of material used for inter-occlusal registration	Silicone	22 (55)	25 (33,8)	47 (41,2)	0,028
	Wax	18 (45)	49 (66,2)	67 (58,8)	
	Total	40 (100)	74 (100)	114 (100)	

*p= 0,015 (< 0,05) significant

*p= 0,029 (< 0,05) significant

*p= 0,028 (< 0,05) significant

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Table VIII: Distribution of OS according to abutment preparation and place of practice

Preparation of abutment teeth		Place of practice					p
		Public	Private	Inter-company	Military camp	Total	
		n (%)	n (%)	n (%)	n (%)	n (%)	
Types of burred	Tungstencarbide	3 (27,3)	2 (2,3)	2 (22,2)	2 (33,3)	9 (7,9)	0,006
	Diamond	7 (63,6)	71 (80,7)	5 (55,6)	3 (50,0)	86 (75,4)	
	Both	1 (9,1)	15 (17)	2 (22,2)	1 (16,7)	19 (16,7)	
	Total	11 (100)	88 (100)	9 (100)	6 (100)	114 (100)	
Impression material type	Alginate	6 (54,5)	49 (55,7)	7 (77,8)	1 (16,1)	63 (55,3)	0,440
	Silicone	5 (45,5)	38 (43,2)	2 (22,2)	5 (83,3)	50 (43,9)	
	Others	-	1 (1,1)	-	-	1 (0,9)	
	Total	11 (100)	88 (100)	9 (100)	6 (100)	114 (100)	
Inter-occlusal registration	Yes	11 (100)	88 (100)	9 (100)	6 (100)	114 (100)	-
	No	-	-	-	-	-	
	Total	11 (100)	88 (100)	9 (100)	6 (100)	114 (100)	
Type of material used for inter-occlusal registration	Silicone	6 (54,5)	36 (40,9)	1 (11,1)	4 (66,7)	47 (41,2)	0,123
	Wax	5 (45,5)	52 (59,1)	8 (88,9)	2 (33,3)	67 (58,8)	
	Total	11 (100)	88 (100)	9 (100)	6 (100)	114 (100)	

*p= 0,006 (< 0,01) very significant

p= 0,440 (> 0,05) not significant

p= -

p= 0,123 (> 0,005) not significant

Table IX: OS response rates for impression taking (N=114)

	Number(n)	Proportion (%)
Impression material type		
Alginate	63	55,3
Silicone	50	43,9
Others	1	0,9
Total	114	100
Inter-occlusal registration		
Yes	114	100
No	-	-
Total	114	100
Type of material used for inter-occlusal registration		
Silicone	47	41,2
Wax	67	58,8
Total	114	100

Table X: Distribution of OS by impression and gender

Impression		Gender			p
		Male	Female	Total	
		n (%)	n (%)	n (%)	
Impression material type	Silicone	37 (52,9)	13 (29,5)	50 (43,9)	0,029
	Alginate	33 (47,1)	30 (68,2)	63 (55,3)	
	Others	-	1 (2,3)	1 (0,9)	
	Total	70 (100)	44 (100)	114 (100)	
Inter-occlusal registration	Yes	70 (100)	44 (100)	114 (100)	-
	No	-	-	-	
	Total	70 (100)	44 (100)	114 (100)	
Type of material used for inter-occlusal registration	Silicone	31 (44,3)	16 (36,4)	47 (41,2)	0,403
	Wax	39 (55,7)	28 (63,6)	67 (58,8)	
	Total	70 (100)	44 (100)	114 (100)	

*p= 0,029 (< 0,05) significant

p= -

p= 0,177 (> 0,05) not significant

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Table XI: Distribution of OSs according to impression and post-thesis training

Impression		Post-thesis training			p
		Yes	No	Total	
		n (%)	n (%)	n (%)	
Impression material type	Alginate	16 (40)	47 (63,5)	63 (55,2)	0,029
	Silicone	23 (57,5)	27 (36,5)	50 (43,9)	
	Others	1 (2,5)	-	1 (0,9)	
	Total	40 (100)	74 (100)	114 (100)	
Inter-occlusal registration	Yes	40 (100)	74 (100)	114 (100)	-
	No	-	-	-	
	Total	40 (100)	74 (100)	114 (100)	
Type of material used for inter-occlusal registration	Silicone	22 (55)	25 (33,8)	47 (41,2)	0,028
	Wax	18 (45)	49 (66,2)	67 (58,8)	
	Total	40 (100)	74 (100)	114 (100)	

*p= 0,029 (< 0,05) significant

*p= 0,028 (< 0,05) significant

Table XII: OS response rate for impression and abutment management after preparation (N=114)

	Number (n)	Proportion (%)
Impression disinfection		
Always	105	92,1
Rare	7	6,1
Never	2	1,8
Total	114	100
Temporary crowns use		
Always	64	56,1
Rare	36	31,6
Never	14	12,3
Total	114	100

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Table XIII: Distribution of OSs on impression and abutment management afterpreparation and place of practice

		Place of practice					p
		Public	Private	Inter-compan y	Military camp	Total	
		n (%)	n (%)	n (%)	n (%)	n (%)	
Impression disinfection	Always	11 (100)	84 (95,5)	5 (55,6)	5 (83,3)	105 (92,1)	0,003* *
	Rare	-	3 (3,4)	3 (33,3)	1 (16,7)	7 (6,1)	
	Never	-	1 (1,1)	1 (11,1)	-	2 (1,8)	
	Total	11 (100)	88 (100)	9 (100)	6 (100)	114 (100)	
Temporary crowns use	Always	8 (72,7)	48 (54,5)	5 (55,6)	3 (50)	64 (56,1)	0,040*
	Rare	2 (18,2)	32 (36,4)	-	2 (33,3)	36 (31,6)	
	Never	1 (9,1)	8 (9,1)	4 (44,4)	1 (16,7)	14 (12,3)	
	Total	11 (100)	88 (100)	9 (100)	6 (100)	114 (100)	

*p= 0,04 (< 0,05) significant

**p= 0,009 (< 0,01) verysignificant