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A Survey-Based Assessment of Knowledge and Practices Regarding Implant Prosthesis Insertion Protocols in Dental Practice

[1]Dr. Santosh Dixit, HOD, Department of Prosthodontics, Crown & Bridge, Pandit Deendayal Upadhyay Dental College & Hospital, Solapur, Maharashtra

[2]Dr. Prajakta Ghule, Post Graduate Student, Department of Prosthodontics, Crown & Bridge, Pandit Deendayal Upadhyay Dental College & Hospital, Solapur, Maharashtra

[3]Dr. Varun Deshpande, Professor, Department of Prosthodontics, Crown & Bridge, Pandit Deendayal Upadhyay Dental College & Hospital, Solapur, Maharashtra

[4]Dr. Vikram Rathod, Reader, Department of Prosthodontics, Crown & Bridge, Pandit Deendayal Upadhyay Dental College & Hospital, Solapur, Maharashtra

[5]Dr. Shubham Jadhav, Post Graduate Student, Department of Prosthodontics, Crown & Bridge, Pandit Deendayal Upadhyay Dental College & Hospital, Solapur, Maharashtra

[6]Dr. Diksha Fegde, Post Graduate Student, Department of Prosthodontics, Crown & Bridge, Pandit Deendayal Upadhyay Dental College & Hospital, Solapur, Maharashtra

Corresponding Author: Dr. Vikram Rathod, Reader, Department of Prosthodontics, Crown & Bridge, Pandit Deendayal Upadhyay Dental College & Hospital, Solapur, Maharashtra.

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Abstract

Background: Dental implants are a preferred treatment modality for missing teeth due to their durability and functionality. However, their success largely depends on adherence to correct prosthesis insertion protocols.

Objective: This study aims to evaluate the awareness and practice of dental implant prosthesis insertion protocols among dental professionals at varying levels of experience.

Methods: A cross-sectional online survey was conducted among 117 participants, including dental postgraduates, practitioners, and faculty. The questionnaire assessed knowledge and preferences related to implant systems, abutment types, prosthesis types, cementation materials, and insertion protocols. Statistical analysis was performed using OpenEpi software with a significance level set at $p \leq 0.05$.

Results: While the majority demonstrated awareness of implant protocols, significant differences existed between professional groups regarding preferred prosthesis types, cementation materials, and protocol adherence. Faculty and practitioners showed higher awareness compared to postgraduates. Glass ionomer cement was the most preferred cementing agent. Preferences in loading

protocols, screw access filling materials, and follow-up patterns also varied.

Conclusion: The study highlights a need for standardized education and training to bridge knowledge gaps, especially among early-career dental professionals. Structured curricular changes and continuing education programs are recommended to ensure optimal patient outcomes.

Keywords: dental implants, insertion protocol, implant prosthesis, cementation, awareness, prosthodontics

Introduction

Implant dentistry has witnessed significant advancements in design, materials, and techniques since the advent of screw-retained prostheses for completely edentulous arches. With the increasing acceptance and demand for implant-supported restorations, the focus has shifted toward enhancing aesthetics, improving retrievability, and simplifying restorative procedures. Both screw-retained and cement-retained prostheses are widely used, with implant manufacturers offering diverse components to meet clinical needs.

Screw-retained prostheses offer the distinct advantage of retrievability, which facilitates easy maintenance and management of complications. In contrast, cement-retained prostheses initially relied on temporary cements to preserve retrievability. However, as clinical outcomes have improved, manufacturers now recommend a wide range of cements—from temporary zinc oxide-based formulations to permanent resin-based systems.

Multiple factors affect the retention of cement-retained implant restorations, including the number and geometry of abutments, abutment taper, surface area, luting agent, occlusal loading, cement space, screw access filling material, and the definitive prosthesis material. Despite extensive research on the bonding of ceramic and metal restorations to natural teeth, limited literature exists regarding the long-term retention of implant crowns cemented to ceramic or metallic abutments. Moreover, in vitro results often fail to correlate with clinical behavior, and high retention values do not necessarily predict superior performance.

Cement selection in implant prosthodontics is often based on individual clinician preference, ease of use, and manufacturer recommendations rather than standardized guidelines. Furthermore, the definition of “adequate retention” in implant therapy remains unclear, and inconsistent data in the literature have contributed to confusion regarding optimal cementation protocols. Given these concerns, this survey was conducted to assess the level of awareness and the current practices related to implant prosthesis insertion protocols among dental professionals. The study aims to highlight prevailing trends, knowledge gaps, and the need for standardized protocols in implant prosthetic cementation.

Study Design and Methodology

The present study is a cross-sectional survey conducted online to determine the dental cementation protocols that are recommended and taught, shedding light on prevailing practices and standards in the field. The survey aimed to gather comprehensive insights into the insertion protocols used in dental implantology.

The survey comprised a total of 14 questions. These questions covered various aspects of dental implant prosthesis insertion protocols, focusing on the techniques, materials, and practices employed by dental professionals. Additionally, one question pertained to the participants' names, while two questions addressed their professions and years of experience in clinical practice.

A total of 117 participants were included, divided into three groups: 41 dental post-graduate students, 41 dental practitioners, and 35 dental practitioners & faculty. The diversity and range of participants' experience provided a

robust dataset to analyze current trends and practices in dental cementation protocols. The data collected from this survey will help identify areas needing improvement and provide guidance for future educational and training initiatives in implant dentistry.

This study utilized a cross-sectional survey design to assess the knowledge, preferences, and practices regarding dental implant treatments among dental professionals. The study population consisted of dental post-graduate students, dental practitioners, and dental practitioners who also serve as faculty members

Data Collection

Data were collected using a structured questionnaire designed to capture the following information:

1. Demographic and Professional Information
   - Designation (Dental post-graduate, Dental practitioner, Dental practitioners & faculty)
   - Work experience (Less than 5 years, 5-10 years, More than 10 years)
2. Knowledge and Awareness
   - Awareness of different treatment options for replacing missing teeth
   - Sources of knowledge about implant dentistry
   - Awareness of various implant systems
   - Knowledge of different types of abutments
3. Preferences and Practices
   - Preferred type of implant prosthesis (Screw retained, Cement retained, SCRP)
   - Awareness and practices related to insertion protocols for cement-retained implant prostheses
   - Preferred materials for cementation of cement-retained crowns
   - Preferred torquing/loading protocols
   - Preferred materials for filling screw access
   - Preference for bone level vs. tissue level implants
4. Clinical Outcomes
   - Frequency of encountering screw loosening in screw-retained prostheses
   - Frequency of encountering prosthesis dislodgment in cement-retained prostheses
   - Frequency and regularity of follow-ups with implant case patients

Statistical analysis

The data were analyzed using descriptive and inferential statistics. Frequencies and percentages were used to describe the distribution of responses. Analysis was conducted using Open epi software (version 3.04). Chi-square tests were employed to identify significant differences between the three groups (dental post-graduate students, dental practitioners, and dental practitioners & faculty) with a significance level set at $p \leq 0.05$. The analyses were performed using statistical software.

Result

The results of the study are presented in detailed tables and narratives, outlining the distribution of subjects according to their designation and work experience, their awareness and preferences regarding dental implant treatments, and the clinical outcomes associated with their practices. The statistical significance of differences between groups is highlighted where applicable.

Summary of table 1 there were total of 117 participants, 41 dental post-graduate students, 41 dental practitioners and 35 dental practitioners & teaching faculty in the study. There were 45 participants with less than 5 years of experience, 37 participants with 5-10 years of experience and 35 participants with more than 10 years of experience.

Summary of questions responded in details by participants.

Out of 117 participants, total of 83 opted for dental implant as a treatment option to replace the missing teeth

and was most commonly reported by dental practitioners & faculty. And least commonly by the dental post-graduates. RPD as a known treatment option to replace the missing teeth was most commonly reported by 20 dental practitioner and least commonly as 13 dental post-graduate. Reponses to the dental bridge as a choice to replace missing teeth did not differ significantly between three groups as total of 65 participants were aware as a replacement option.

Institute curriculum was the most common source of knowledge reported by 26 dental post-graduates and 16 dental practitioner groups whereas courses/fellowships by the 7 dental practitioner & 14 from faculty group. Whereas total of 27 opted for online courses/webinars and workshops.

Very less only about 8 of post-graduate subjects were aware of Camlog and 11 for Noris implant systems as compared to the other two groups (p=0.001).

There was a non-significant difference in the preference for screw retained prosthesis and scrp among the three groups; however, preference for use of cement retained prosthesis differ significantly among the three groups with dental practitioners preferring the cement retained prosthesis more as compared to the other two groups.

Majority of the dental practitioners alone (92.7%) and dental practitioners & faculty (82.9%) were aware of the insertion protocol for cement-retained implant prosthesis and cement retained with screw access hole in comparison to 68.3% of the dental post-graduates. There was a significant difference between the three groups.

There was a non-significant difference in the response to the material of choice for cementation of cement-retained crowns between three groups for ZoE cement, resin-modified GIC, zinc phosphate, polycarboxylate, and acrylic urethane cement. However, the responses to the GIC cement differed significantly among the three groups. Majority of the dental practitioners alone (85.4%) and dental practitioners & faculty (91.4%) were reported GIC as the material of choice in comparison to 68.3% of the dental post-graduates.

There was a non-significant difference in the torquing protocol/ loading protocol reported by the three groups. A total of 7 dental postgraduates prefer hand torquing, 23 prefer sequential torquing of screw with wrench and 11 prefer torque applied with wrench.

Composite was the most commonly reported material of choice to fill screw access by total of 88 participants out of which 27 were post graduates, 34 were practitioners and 27 were faculty followed by GIC and RMGIC.

The majority of the subjects from each group reported that they fill the complete screw access reportedly total of 76, 27 filled partially and 14 left open.

The majority of the subjects total of 97 from each group reported that they prefer bone level implants and there was a non-significant difference.

There was a non-significant difference between three groups in terms of awareness of different types of abutments such as straight abutment, angulated abutment, castable abutment, multiunit abutment and pre-milled abutment.

There was a non-significant difference in the incidence of screw-loosening in screw-retained prosthesis reported by the three groups. Majority of them either encountered screw-loosening rarely or within 5-10 years reported by 59 participants.

There was a significant difference in the incidence of prosthesis dislodgment in cement retained crowns reported by the three groups. Majority of dental practitioners alone about 30 and 28 faculty encountered prosthesis dislodgment in cement retained rarely; whereas dental post-graduates encountered prosthesis

dislodgment in cement retained rarely or within 1-5 years for about 13 participants.

There was a significant difference in the reported follow ups of implant cases between the three groups. Majority of dental practitioners alone about 60 of them and dental practitioners alone about 25 of them & 24 post-graduates reported regular follow up; whereas dental practitioners 61% and 31% faculty reported regular infrequent follow up.

Discussion

This study aimed to explore the current knowledge, practices, and preferences regarding dental implant prostheses among different groups of dental professionals. The findings provide valuable insights into the varying levels of awareness and approaches to implant dentistry across dental post-graduates, dental practitioners, and dental practitioners & faculty.

The distribution of participants was well-balanced, with 35% being dental post-graduates, 35% dental practitioners, and 30% dental practitioners & faculty. The work experience varied, with 38.5% having less than 5 years, 31.5% having 5-10 years, and 30% having more than 10 years of experience. This diverse sample allows for a comprehensive understanding of the perspectives across different stages of professional development.

Dental implants were the most preferred option for replacing missing teeth, especially among dental practitioners & faculty (85.7%), followed by dental practitioners (73.2%) and dental post-graduates (56.1%), with a significant difference (p=0.017). Removable partial dentures (RPD) were also more commonly preferred by dental practitioners (61%) compared to post-graduates (31.7%), indicating a significant difference (p=0.017). The preference for dental bridges did not differ significantly between groups (p=0.199). These findings highlight the increasing acceptance and reliance on dental implants as the treatment of choice among experienced practitioners, while post-graduates may still be exploring various options.

The majority of dental post-graduates (63.4%) and dental practitioners (39%) reported acquiring knowledge from the institute curriculum, while dental practitioners & faculty (40%) favored courses/fellowships. Online courses/webinars/workshops were also a common source, particularly for dental practitioners (26.8%). However, there was no significant difference in the knowledge acquisition methods among the groups (p=0.099). This suggests a diverse range of educational sources being utilized across all professional stages.

Awareness of various implant systems was generally high across all groups. Osstem implants were the most recognized (80.3%), followed by Straumann (65.8%), Adin (57.3%), and Wancore (62.4%). Notably, dental post-graduates had significantly lower awareness of Camlog (14.6%) and Noris (26.8%) systems compared to other groups (p=0.001). This indicates a potential gap in the exposure to a wider range of implant systems during the early stages of dental education.

Screw-retained prostheses were the preferred choice across all groups (61.5%), with no significant difference in preferences (p=0.66). However, the preference for cement-retained prostheses varied significantly, with dental practitioners showing a higher preference (34.1%) compared to post-graduates (7.3%) and faculty (25.7%) (p=0.012). This could be attributed to the practical experiences and specific clinical scenarios encountered by practitioners that influence their choice.

A significant difference was found in the awareness of insertion protocols for cement-retained implant prostheses, with dental practitioners (92.7%) and faculty (82.9%) being more knowledgeable compared to post-graduates (68.3%) (p=0.018). This underscores the

importance of clinical experience and continued education in mastering these protocols.

Glass ionomer cement (GIC) was the preferred material for cementation among all groups, with dental practitioners (85.4%) and faculty (91.4%) reporting higher usage compared to post-graduates (68.3%) (p=0.025). This significant difference highlights the reliance on GIC due to its favorable properties and ease of use in clinical practice.

There was no significant difference in the torquing protocols followed by the three groups (p=0.167). Most participants reported using sequential torquing with a wrench (45.3%) or applying torque with a wrench (41%), reflecting a consistent approach to ensuring stability and longevity of the implant prosthesis.

Composite was the most commonly used material to fill screw access (75.2%), followed by GIC (39.3%) and resin-modified GIC (35%), with no significant differences between groups. This uniformity suggests a standard preference for materials that offer good sealing properties and ease of manipulation.

The majority of respondents from all groups reported filling the screw access completely (65%), with no significant difference between groups (p=0.607). This practice is crucial for preventing microleakage and maintaining the integrity of the restoration.

Bone-level implants were preferred by the majority of participants (82.9%), with no significant difference between groups (p=0.469). This preference aligns with the clinical benefits of bone-level implants in terms of aesthetics and peri-implant tissue health.

Awareness of different abutment types was generally high, with angulated abutments being the most recognized (83.8%). There was no significant difference in awareness between groups (p>0.05), indicating a comprehensive understanding of abutment options across all professional levels.

Most participants reported encountering screw loosening rarely (50.4%) or within 5-10 years (32.5%), with no significant difference between groups (p=0.094). However, there was a significant difference in the incidence of prosthesis dislodgment in cement-retained crowns, with post-graduates encountering it more frequently within 1-5 years (p<0.001). This finding highlights the need for improved training and techniques in cementation protocols to reduce prosthesis failures.

Regular follow-up of implant patients was reported by a majority of dental practitioners (61%) and post-graduates (58.5%), with a significant difference between groups (p=0.045). Dental practitioners & faculty reported less frequent follow-ups (31.4%), possibly due to the busy schedules of faculty members. Regular follow-up is critical for monitoring implant health and addressing any complications early.

Conclusion

The study reveals significant differences in knowledge, preferences, and practices related to dental implant prostheses among dental post-graduates, practitioners, and faculty. These findings underscore the importance of comprehensive education and continuous professional development to ensure high standards in implant dentistry. Addressing the identified gaps and enhancing training programs can further improve patient outcomes and the overall quality of implant care.

Ethical Considerations

The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Informed consent was obtained from all participants prior to their participation in the study. The confidentiality and anonymity of the participants were maintained throughout the study.

References

1. Brånemark PI, Hansson BO, Adell R, et al. Osseointegrated implants in the treatment of the edentulous jaw. Scand J Plast Reconstr Surg. 1977;11:1–32.
2. Adell R, Lekholm U, Rockler B, Brånemark PI. A 15-year study of osseointegrated implants in the treatment of the edentulous jaw. Int J Oral Surg. 1981; 10:387–416.
3. Albrektsson T, Dahl E, Enbom L, et al. Osseointegrated oral implants. A Swedish multicenter study. J Periodontol. 1988;59(5):287–96.
4. Akça K, Iplikçioglu H, Cehreli MC. Comparison of uniaxial resistance forces of cements used with implant-supported crowns. Int J Oral Maxillofac Implants. 2002;17(4):536–42.
5. Mansour A, Ercoli C, Graser G, et al. Comparative evaluation of casting retention using ITI solid abutment with six cements. Clin Oral Implants Res. 2002;13(3):343–8.
6. Sheets JL, Wilcox C, Wilwerding T. Cement selection for cement-retained crown technique with dental implants. J Prosthodont. 2008;17(2):92–6.
7. Tarica DY, Alvarado VM, Truong ST. Survey of US dental schools on cementation protocols for implant crown restorations. J Prosthet Dent. 2010;103(2):68–79.

Legend Table

Table 1: Distribution of the subjects according to their designation

Designation	N	%
Dental post-graduate	41	35
Dental practitioner	41	35
faculty	35	30

Table 2: Distribution of the subjects according to their work experience

Experience	N	%
Less than 5 years	45	38.5
5-10 years	37	31.5
More than 10 years	35	30

Questions asked to participants –

What are different treatment options you are aware of to replace missing teeth?	Option	Dental post-graduate	Dental practitioner	faculty	Total	p-value
	Dental implant	23 (56.1%)	30 (73.2%)	30 (85.7%)	83 (70.9%)	0.017*
	Dental bridge	20 (48.8%)	28 (68.3%)	20 (57.1%)	68 (58.1%)	0.199
	RPD	13 (31.7%)	25 (61%)	20 (57.1%)	58 (49.6%)	0.017*

How did you acquire knowledge about implant dentistry?	Group		Courses / fellowships	Institute curriculum	Online courses/ webinars/ workshops	p-value
	Dental post-graduate	n	7	26	8	0.099
		%	17.10%	63.40%	19.50%	
	Dental Practitioner	n	14	16	11	
		%	34.10%	39.00%	26.80%	
	faculty	n	14	13	8	
		%	40.00%	37.10%	22.90%	
	Total	n	35	55	27	
		%	29.90%	47.00%	23.10%	

Which different implant system are you aware of?	Option	Dental post-graduate	Dental practitioner	faculty	Total	p-value
	Osstem	32 (78%)	34 (82.9%)	28 (80%)	94 (80.3%)	0.855
	Straumann	28 (68.3%)	25 (61%)	24 (68.6%)	77 (65.8%)	0.720
	Adin	23 (56.1%)	22 (53.7%)	22 (62.9%)	67 (57.3%)	0.709
	Wancore	26 (63.4%)	23 (56.1%)	24 (68.6%)	73 (62.4%)	0.527
	Nobel biocare	21 (51.2%)	22 (62.9%)	19 (54.3%)	62 (53%)	0.960
	Biohorizon	17 (41.5%)	14 (34.1%)	14 (40%)	45 (38.5%)	0.774
	Camlog	6 (14.6%)	17 (41.5%)	19 (54.3%)	42 (35.9%)	0.001*
	Bicon	13 (31.7%)	19 (46.3%)	13 (37.1%)	45 (38.5%)	0.388
	Implant swiss	17 (41.5%)	19 (46.3%)	20 (57.1%)	56 (47.9%)	0.383
	Bioline	19 (46.3%)	21 (51.2%)	15 (42.9%)	55 (47%)	0.763
	Noris	11 (26.8%)	10 (24.4%)	22 (62.9%)	43 (36.8%)	0.001*

Which type of implant prosthesis do you prefer?	Option	Dental post-graduate	Dental practitioner	faculty	Total	p-value
	Screw retained	23 (56.1%)	26 (63.4%)	23 (65.7%)	72 (61.5%)	0.66
	Cement retained	3 (7.3%)	14 (34.1%)	9 (25.7%)	26 (22.2%)	0.012*
	Scrp	22 (53.7%)	24 (58.5%)	22 (62.9%)	68 (58.1%)	0.719

Are you aware about insertion protocol for cement retained implant prosthesis and cement retained with	Group		No	Yes	p-value
	Dental post-graduate	n	13	28	0.018*
		%	31.70%	68.30%	
	Dental Practitioner	n	3	38	

screw access hole?		%	7.30%	92.70%	
	faculty	n	6	29	
		%	17.10%	82.90%	
	Total	n	22	95	
		%	18.80%	81.20%	

Which is material of your choice for cementation of cement retained crown?	Option	Dental post-graduate	Dental practitioner	faculty	Total	p-value
	Zinc oxide eug enol	9 (22%)	5 (12.2%)	5 (14.3%)	19 (16.2%)	0.455
	GIC	28 (68.3%)	35 (85.4%)	32 (91.4%)	95 (81.2%)	0.025*
	Resin mod gic	22 (53.7%)	23 (56.1%)	18 (51.4%)	63 (53.8%)	0.920
	Zinc phosphate	11 (26.8%)	8 (19.5%)	8 (22.9%)	27 (23.1%)	0.734
	Polycarboxylate	7 (17.1%)	3 (7.3%)	7 (20%)	17 (14.5%)	0.250
	Acrylic urathane	5 (12.2%)	8 (19.5%)	6 (17.1%)	19 (16.2%)	0.658

Chi-square test; * indicates a significant difference at p≤0.05

What torquing protocol/ loading protocol do you follow ?	Group		Hand torquing	Sequential torquing of screw with wrench	Torque applied with wrench	p-value
	Dental post-graduate	n	7	23	11	0.167
		%	17.10%	56.10%	26.80%	
	Dental Practitioner	n	6	14	21	
		%	14.60%	34.10%	51.20%	
	faculty	n	3	16	16	
		%	8.60%	45.70%	45.70%	
	Total	n	16	53	48	
		%	13.70%	45.30%	41.00%	

What material do you use to fill screw access?	Option	Dental post-graduate	Dental practitioner	faculty	Total	p-value
	Composite	27 (65.9%)	34 (82.9%)	27 (77.1%)	88 (75.2%)	0.192
	GIC	18 (43.9%)	15 (36.6%)	13 (37.1%)	46 (39.3%)	0.756
	Zinc phosphate	5 (12.2%)	3 (7.3%)	3 (8.6%)	11 (9.4%)	0.736
	RMGIC	12 (29.3%)	18 (43.9%)	11 (31.4%)	41 (35%)	0.33

	Group		Complete	Partial	Left open	p-value
How much do you fill screw	Dental post-graduate	n	24	10	7	0.607
		%	58.50%	24.40%	17.10%	

access?	Dental Practitioner	n	30	8	3	
		%	73.20%	19.50%	7.30%	
	faculty	n	22	9	4	
		%	62.90%	25.70%	11.40%	
	Total	n	76	27	14	
		%	65.00%	23.10%	12.00%	

Which implants do you prefer?	Group		Bone level	Tissue level	p-value
	Dental post-graduate	n	34	7	0.469
		%	82.90%	17.10%	
	Dental Practitioner	n	36	5	
		%	87.80%	12.20%	
	faculty	n	27	8	
		%	77.10%	22.90%	
	Total	n	97	20	
		%	82.90%	17.10%	

Which different types of abutment are you aware of?	Option	Dental post-graduate	Dental practitioner	faculty	Total	p-value
	Straight	31 (75.6%)	36 (87.8%)	25 (71.4%)	92 (78.6%)	0.187
	Angulated	34 (82.9%)	35 (85.4%)	29 (82.9%)	98 (83.8%)	0.942
	Castable	29 (70.7%)	25 (61%)	24 (68.6%)	78 (66.7%)	0.619
	Multiunit	32 (78%)	26 (63.4%)	20 (57.1%)	78 (66.7%)	0.134
	Pre-milled	22 (53.7%)	23 (56.1%)	27 (77.1%)	72 (61.5%)	0.075

How often do you encounter screw loosening in screw retained prosthesis?	Group		Rare	Very often	Within 1-5 year	Within 5-10 years(operated by PG & follow up by successor PG)	p-value
	Dental post-graduate	n	16	4	8	13	0.094
		%	39.00%	9.80%	19.50%	31.70%	
	Dental Practitioner	n	23	2	5	11	
		%	56.10%	4.90%	12.20%	26.80%	
	faculty	n	20	1	0	14	
		%	57.10%	2.90%	0.00%	40.00%	

	Total	n	59	7	13	38	
		%	50.40%	6.00%	11.10%	32.50%	

How often do you encounter prosthesis dislodgment in cement retained?	Group		Rare	Very often	Within 1-5 year	Within 5-10 years (operated by PG & follow up by successor PG)	p-value
	Dental post-graduate	n	13	4	13	11	<0.001*
		%	31.70%	9.80%	31.70%	26.80%	
	Dental Practitioner	n	30	1	5	5	
		%	73.20%	2.40%	12.20%	12.20%	
	faculty	n	28	0	2	5	
		%	80.00%	0.00%	5.70%	14.30%	
	Total	n	71	5	20	21	
		%	60.70%	4.30%	17.10%	17.90%	

Do you take regular follow up of your implant case patients?	Group		No	Sometimes	Yes	p-value
	Dental post-graduate	n	4	13	24	0.045*
		%	9.80%	31.70%	58.50%	
	Dental Practitioner	n	1	15	25	
		%	2.40%	36.60%	61.00%	
	faculty	n	3	21	11	
		%	8.60%	60.00%	31.40%	
	Total	n	8	49	60	
		%	6.80%	41.90%	51.30%	

Chi-square test; * indicates a significant difference at p≤0.05