The Role of Technicians and Dentists in Dental Implants for Patients

Mohammed.T.Alamoudi[1], Suha.S.Alshammari[2], Khadeja.A.Bukhari[3], Hani.D.Alharbi[4], Rania.H.Jambi[5], Fatimah.H.Alhashim[6], Nahla.N.Rabaan[6], Ahmed.S.Ba-ata[7], Abdullah.A.Turkistani[8], Reem.M.Al-Osaimi[9]

Dentist resident at Hajj Street PHC[1]
General dentist at East Nakhb PHC[2]
General dentist - Taif health cluster[3]
Dentist- Almaqrah PHC[4]
Dental assistant – Branch of the ministry of health – Eastern region[5]
Dental assistant – Eastern health cluster[6]
General Dentist - Eastern health cluster[7]
Dentist- Alzahir PHC[8]
General dentist- Umm Al-Qura University[9]

Abstracts

Effective communication among members of the dental team is essential for the delivery of high-quality dental care. However, an in-depth understanding of issues concerning the interrelationship between dental clinicians and laboratory technicians has not been previously undertaken. Therefore, the aim of the study was to explore factors influencing the interrelationship between dental clinicians and laboratory technicians. This present study evaluates the scenario in the dentistry department of Kind Saud University, Saudi Arabia. Study is based on primary data and basic form of descriptive statistics is being used.

Keywords: Dentists, Dental Technicians, Implants.

1. Introduction

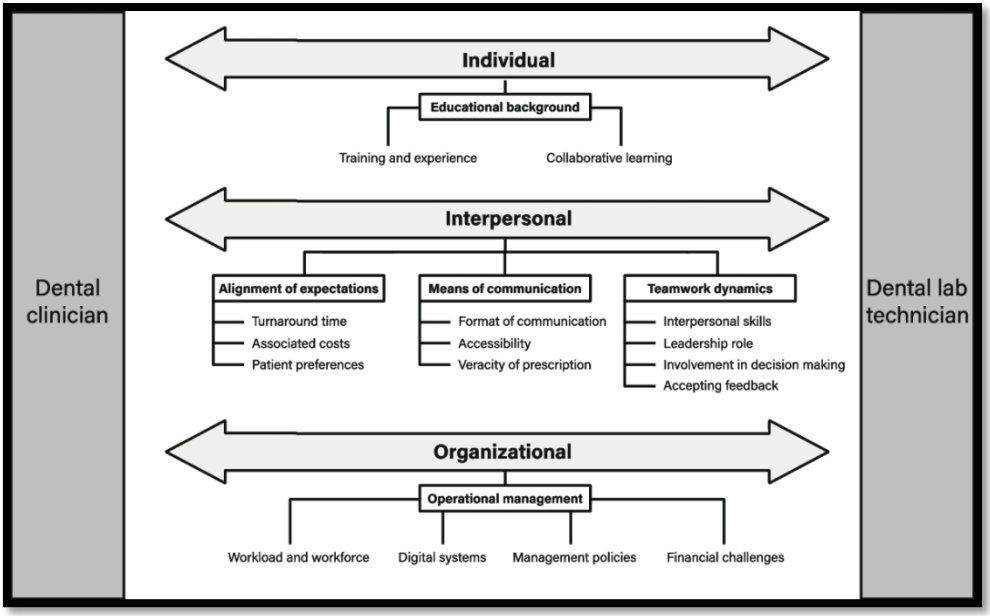
In the present times the dental implants are the most common type of procedures, i.e. for the sake of body beautification, dentures, alignment, etc. The accessibility of steady jetty for prosthetic tooth substitution has apparently extended the scope for way better treatment alternatives. Within the show situation, the victory of inserts is a vital point of interest for dental specialists when looking into the treatment result with patients. Writing look appears that there has been an increment in request for dental inserts, which is the core of dentistry within the 21st century. When arranging prosthetic recovery, embed bolstered FDP or implant-supported single crown (SC) taken after by conventional end-abutment tooth-supported settled dental prosthesis (FDP) are the primary treatment alternatives. Cantilever tooth-supported FDP, combined tooth-implant-supported FDP or resin-bonded bridges are a moment line of alternative. Utilizing dental inserts

in rehabilitating the somewhat edentulous patients is an acknowledged modern clinical strategy that's anticipated to have long-term victory. Screw maintenance and cementation are two strategies of holding a settled implant-supported rebuilding. The inclination of the clinics is at first the strategy chosen. The more well-known screw-retained prosthesis customarily streamlined intermittent recovery of the superstructures and inserts for repairs, cleanliness and fixing of projection screw. The victory of an embed prosthesis depends on the combined endeavors by the dental specialist and dental specialist (DT). Both dental specialist and the DT ought to take obligation to guarantee best care for the persistent. The working relationship of dental specialists with DT begins from the understudy days within the dental school. In any case, the nonappearance of communication between dental practitioner and DT has moreover been detailed as a major issue in giving ideal understanding administrations counting the embed medicines.

Recognizing the importance of communication that's significant for a legitimately executed prosthesis, the American Dental Affiliation issued an upgraded rule to progress the relationship between the dental specialist and DT. These rules will moreover increment the proficiency and the quality of care. The work authorization shapes contain particular data asked by the research facility so superior communication can happen between the individuals of the group. The data asked for the most part incorporate the patient's statistic subtle elements, critical dates, depiction of the work fundamental and a graph of the plan, materials to be utilized, shade of the prosthesis, data with respect to customization, sort of occlusal plot, permit number, signature and phone number of the dental practitioner or pro making the ask. Assortments of complications are related with DIP.

Although these complications hardly result within the add up to disappointment of treatment, the administration can be unacceptable, expensive and time devouring for the clinician, understanding and professional. Prosthodontic complications can be for the most part categorized as mechanical, natural and stylish. Mechanical complications influence the basic keenness of the projection, embed or superstructure. Mechanical complications commonly detailed incorporate maintenance misfortune, break of the system or veneering fabric, screw extricating and break, and embed break. The appearance of the rebuilding is influenced by stylish complications and may be related with the Plunge itself or the delicate tissues encompassing it. Dental practitioners as well as the DT who gives embed treatment ought to be careful of these potential mechanical complications and the procedures by which they can be anticipated and overseen.

This present study is conducted to evaluate the component of dentistry and related items i.e., role of dentists and dental technicians, related complications, issues, concerns, etc. the study was based on the respondents in the form of dentist and dental technicians available at dentistry department of King Saud University in Saudi Arabia.



Source: Eman et al (2023)

Figure 1: Relation in Dentists and Laboratory Technicians

2. Review of Literature:

In recent years, the population of partially dentate adults has increased compared to fully edentulous ones. According to the 2022 oral health barometer, 48.5% of the Portuguese population has 1 to 8 teeth missing, and 6.4% are completely edentulous. Tulbah et al (2022) Edentulous spaces can be rehabilitated with fixed bridges, implant-supported prostheses, or removable prostheses. Nissan et al (2021); Gowda et al (2016) A removable partial denture (RPD) with a metal framework is often the simplest and most cost-effective solution for treating patients with multiple edentulous areas. According to the European Union Medical Device Regulation, removable prostheses are considered medical devices. Millen et al (2015); Saini et al (2015) Thus, the ethical and legal guidelines indicate that, in the fabrication of an RPD, the dentist is responsible for planning and prescribing the prosthesis and giving the laboratory all the necessary instructions for its manufacture according to the prescribed design. Tulbah et al (2017); Vohra et al (2014). Principles of good practice indicate that fabricating an RPD requires a team approach involving the clinician, the dental technician (DT), and the patient. Yoshiyuki et al (2015); Ahmed et al (2016) The dentist must inform the DT about the following parameters for RPD construction: the abutment teeth's periodontal status, the patient's expectations, and aesthetic parameters. The dentist should also include pre-prosthetic preparations in its planning, which are essential for a successful treatment. Nassani et al (2020); Kumar et al (2021) In turn,

the DT may analyze other parameters in a parallelometer, such as the parallelism of abutment teeth and undercut areas, and transmit them to the dentist. Bilgin et al (2016); Fueki et al (2022) However, the literature shows that the above is not happening in clinical practice. In Ireland, Lynch and Allen reported that 53% of RPD prescriptions received by DTs did not include a design of the metallic structure. Gan et al (2018); Sousa (2017) In Saudi Arabia, Nassani and Alotaibi (2021) concluded that 64.2% of RPD cases were planned exclusively by the DT. In the United Kingdom, Rice et al. 10 observed that 48% of RPD prescriptions did not include occlusal rests, and 30% of the prescriptions that did (51.5%) did not have rest seats in the casts. Perti et al (2019); baig et al (2020) In Portugal, the DT did not receive design instructions from the dentist in 80% of the cases in Porto and 90.9% of cases in Lisbon, respectively. Thus, although communication between the laboratory and the clinic is essential, it is often insufficient, ambiguous, or even neglected.

Research Process:

- This present study was based on the primary data.
- The researcher has approached the dentistry department of King Saud University for collecting the relevant information.
- The duration of the study was between March 2024 to August 2024.
- Total sample of the study was 200 dental technicians working in the department (regular and contractual).
- A detailed questionnaire was used to collect the information from the respondents, most of the question were scale based so as to save time and effort of the respondents.
- The mode of data collection was face to face interaction with the respondents.
- Some amount of secondary data was also used to reach the objectives of this study and evaluate the work done in the past.
- The researcher has used basic descriptive statistics to evaluate the collected data and SPSS ver. 22.0 was used as a platform to work on test statistics.

3. Data Analysis and Interpretation:

Responses regarding implant Order and Preparation (N = 200).

S. No.	Questions	Options	Frequency	(%)	P-value
1	Which implant is in demand?	Cement retained	62	48	0.599
		Screw retained	68	52	
2	Which is the most used abutment with cement-retained prostheses?	Titanium	45	34	0.000
		Zirconium	27	21	

		Custom abutments	49	37	
3	What types of materials (i.e. veneer, coping) are used to make implant prostheses in the anterior region?	Porcelain fused to metal crown	44	34	0.000
		All ceramic crown (zirconia)	37	28	
		All ceramic crown (other materials)	19	14	
		Indirect composites (facing	22	17	
		crown)			
		Indirect composites (jacket crown)	8	6	
4	What types of implant fixed prostheses are used in the posterior region?	Porcelain fused to metal crown (full bake) Porcelain fused to metal	53	41	0.000
			18	14	
		crown (metal occlusal)	18	14	
		All Ceramic crown			
		(Zirconia)			
		Indirect composite veneer	16	12	
		crown (full bake)			
		Indirect composite veneer	15	11	
		crown (Metal occlusal) Metal crown	10	8	
1	The design of the implant overdenture	Decision made according to instructions of Dentist	67	51	0.000
			19	14	
		Work is left to technicians			
		Decided upon through consultation with each other	44	34	
2	What are the proportions of attachment types is used	Magnet	37	28	0.000

	with IODs?	Ball and socket	63	48	
		Locator	14	11	
		ERA	2	1	
		Other	14	11	

Interpretation:

Almost half of the dentists were leading the role in this regard, while around one fourth of the dentists were making the decisions primarily by themselves but with consultation of the DT. This indicated a positive attitude from the dentists where around three fourth of the dentists were leading the role in treatment planning and designing of the DIP. Be that as it may, the DT were still making the choices in 12% of the cases themselves and in 20% of the cases they were driving the part within the choices making along the discussion of the dental specialist. The prosthetic complications happening afterward after using the Plunge could be a result of repercussions of this critical issue. The screw- and cemented-retained embed rebuilding efforts appeared in long-term clinical imminent considers reported similar comes about in terms of understanding- and clinician-assessed victory parameters. Within the current consider the rate of dental specialists requesting screw held embed settled prostheses were hardly tall (52%) compared to the cement held settled prostheses (48%). The amazing negligible judgment and retrievability are the most points of interest of screw-retained rebuilding efforts but have impediments such as open screw access holes and require for ideal embed situating which have been proposed to stabilize veneering fabric and compromise impediment. The overall fetched of embed treatment increments due to the advanced clinical and research facility strategies of screw-retained reclamations. In spite of the fact that there's no supreme way of reestablishing the embed, screw maintenance still has numerous qualities and, when conceivable, ought to be considered the ideal arrangement.

4. Conclusion:

Considering the test assessed, we may conclude that DT played a part and took choices with respect to the Plunge. The issues that the DT confronted habitually were destitute embed area, errors in impression/bite enlistment, confronting damage/chipping and damage/fracture of the denture base and prosthetic teeth. The comes about recommended that in arrange to play down the recurrence of the complications in Plunge, the dental practitioners ought to increment their prosthetic information and clear conventions ought to be built up for communication between the dental specialist and the dental research facility professionals.

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