

# Knowledge and Perception of Dental Practitioners towards Dental Implant Treatment in Routine Dental Practice

Knowledge and Perception of Practitioners for Dental Implant Treatment

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## ABSTRACT

**Objective:** To determine the knowledge and perception of dental implant among dental practitioners

**Study Design:** Cross sectional survey

**Place and Duration of Study:** This study was conducted at the Department of Periodontology / Prosthodontics, Peshawar Dental College Peshawar from September to November, 2022.

**Materials and Methods:** This cross sectional survey was conducted on 117 dental practitioners working in dental teaching hospitals or running an independent clinic in Peshawar through a structured questionnaire containing close ended questions. The inclusion criteria were qualified dental doctors registered with Pakistan medical commission, both genders and working in Peshawar. Undergraduate dental students and dental house surgeons were excluded. They were asked about different parameters of implant placement procedures, for example, type of implants fixtures, surgical placement of fixture, impression taking procedures and post-operative care. Chi-square test was applied for comparison awareness about implants among level of qualification.

**Results:** The females were 50 (42.74%) and males were 67 (57.26%). Fairly informed participants were 36(30.77%), 49(41.88%) were moderately informed and 32 (27.35%) were well informed. Most common source of knowledge was clinical observations (n=58, 49.57%) followed by continuing dental education (n=46, 39.32%). The knowledge about dental implant system was fairly enough in 62 (52.99%) and moderate in 25 (21.37%). The knowledge about designs of implant abutment were fair in 59 (50.43%) and well informed in 18 (15.38%).

**Conclusion:** There is lack of proper knowledge about dental implants among dental practitioners about materials, types, surgical placement and design of appliance. Post graduate qualified dentist are more aware than general dentists.

**Key Words:** Awareness, Dental Implant, Dental Practitioners, Dentists

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## INTRODUCTION

Loss of tooth is most traumatizing experience from functional and psychological aspect and adversely affecting one's quality of life. Dental caries and periodontal pathologies are most common etiologies for tooth loss. The less common causes of tooth loss are trauma, endodontic treatment and congenital cause.<sup>1</sup>

Dental implant is becoming an indispensable specialty in dentistry.<sup>2</sup> In last three decade the dental field evolved enormously.

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Dental implants can replaced the missing dentition in comfortable, natural and stable way.<sup>3</sup> Dental implants treatment modality lacks all biological complications of fixed prosthodontics like preparation of abutments and failure in long terms. Implants can preserve bone and can an option to have fixed teeth in completely edentulous patients.<sup>4</sup>

The awareness about dental implant is increasing due to mass and social media. Previous studies by Sheth et al.<sup>5</sup> and Dhami et al.<sup>6</sup> found that general dentists have less knowledge about dental implants and most of them demand that implantology should be taught at undergrade level. Another study reported that 80% were well informed about implant material and 57% about various types of implants, 46.1% about implant placement technique, 67.8% know the concept of osseointegration.<sup>7</sup>

Due to social and print media the awareness about dental implant is increasing among patients. Usually patients demand about implants from general practitioners. The practitioners should be aware about this treatment options to guide their patients properly. To our knowledge there is lack of research in this area

in our population. This study will help to elucidate the awareness about dental implant among dental practitioners.

The objective of this study was determine the knowledge and perception of dental implant among dental practitioners.

## MATERIALS AND METHODS

This cross sectional survey was conducted on dental practitioners working in dental teaching hospitals (public/private sectors) or running an independent clinic (institutional based practice/private) in Peshawar through a structured questionnaire containing close ended questions. Sampling was done using convenient sampling technique. Verbal informed consent was obtained from all participants. The sample size was calculated as 117 participants using 30.3% information about dental implant from previous study at 90% confident level and 7% margin of errors in WHO calculator.

The inclusion criteria were qualified dental doctors registered with Pakistan medical commission, both genders and working in Peshawar. Undergraduate dental students and dental house surgeons were excluded from study. Participants were approached personally during their free clinical time. They were asked about different parameters of implant placement procedures, for example, type of implants fixtures, surgical placement of fixture, impression taking procedures and post-operative care. Their responses were recorded in the pre-designed proforma handed over to them.

Data analysis was done in SPSS 22. Frequencies and percentages were calculated for categorical variables and mean and SD for continuous data. Chi-square test was applied for comparison of awareness about implants among level of qualification.

## RESULTS

The females were 50(42.74%) and males were 67(57.26%). The most practitioners has BDS level of qualification (n=86, 73.50%) and 31(26.50%) had post graduate qualification. Most of practitioners have experience more than 5years (n=70, 59.83%). (Table 1) Most common age group was 36-45 years (n=65, 55, 56%) followed by 27-35 yeas (n=34, 29.06%). (Fig 1) Fairly informed participants were 36(30.77%), 49(41.88%) were moderately informed and 32 (27.35%) were well informed. Most common source of knowledge was clinical observations (n=58, 49.57%) followed by continuing dental education (n=46, 39.32%). The knowledge about dental implant system was fairly enough in 62(52.99%) and moderate in 25(21.37%). The knowledge about designs of implant abutment were fair in 59(50.43%) and well informed in 18(15.38%). When participants were ask do they give dental implant as a replacement option, most of them

responded they give 'when needed' (n=68, 58.12%) followed by 'always' (n=34, 29.06%). (Table 2)

**Table No.I: Distribution of Gender, Qualification and Experience**

Variable	Characteristic	n(%)
Gender	Female	50 (42.74)
	Male	67 (57.26)
Qualification	BDS	86 (73.50)
	Post graduate	31 (26.50)
Experience	Less than 5yrs	47 (40.17)
	More than 5yrs	70 (59.83)

**Table No.2: General Knowledge about Dental Implant Among Practitioners**

Variable	Characteristic	n(%)
General knowledge about implant	Fairly informed	36 (30.77)
	Moderately informed	49 (41.88)
	Well informed	32 (27.35)
Source knowledge about dental implants	Continuing dental education	46 (39.32)
	Clinical observation	58 (49.57)
	Postgraduate programme	13 (11.11)
Knowledge about implant systems	Fairly informed	62 (52.99)
	Moderately informed	25 (21.37)
	Nil	14 (11.97)
	Well informed	16 (13.68)
Designs implant abutments	Fairly informed	59 (50.43)
	Moderately informed	25 (21.37)
	Nil	15 (12.82)
	well informed	18 (15.38)
Do you give implant replacement option	Always	34 (29.06)
	Never	15 (12.82)
	When needed	68 (58.12)
When you not give implant a treatment option	Lack of skill	7 (5.98)
	Nil	102 (87.18)
	Patient issue	5 (4.27)
	Treatment time	3 (2.56)

Most of practitioners reported that 'their colleague' (n=38, 32.48%) followed 'their selves' (n=25, 21.37%) should do the surgical placement of dental implants. Nine (7.69%) participants reported they don't performed surgical placement of dental implant due lack of confidence, 2(1.71%) said due to lack of interest and 2(1.71%) reported due to time consumption. Most of practitioners tell the longevity of dental implant to be 10-15yrs (n=50, 42.74%) followed by 5-10yrs (n=30, 25.64%). Thirty nine (33.33%) practitioners planed for dental prostheses. Most of the practitioners responded that the design of the prostheses should be done by practitioner (n=60, 51.28%) followed by laboratory (n=42, 35.90%). Most of the practitioners reported the

dental implants are superior to other restorative option due to conservation of adjacent of teeth (n=82, 70.09%) followed by longevity and esthetics (n=15, 12.82%). (Table 3)

**Table No.3: Knowledge about of surgical procedure, longevity, restorative options and success of dental implant among dental practitioners**

Variable	Characteristic	n(%)
Operator for surgical placement of implant should be?	Colleague	38 (32.48)
	Combined	25 (21.37)
	Myself	41 (35.04)
Why you are not operator for surgical placement of implant?	Confidence	9 (7.69)
	Interest	2 (1.71)
	Nil	104 (88.89)
How you tell about longevity of dental implant?	10y-15yr	50 (42.74)
	15yr-20yr	21 (17.95)
	5yr-10yr	30 (25.64)
Do you plan for prosthesis in dental implant	No	78 (66.67)
	Yes	39 (33.33)
	Design of prostheses should be done by	Both
Lab		42 (35.90)
Practitioner		60 (51.28)
Superiority of implant over restorative option	Longevity	15 (12.82)
	Conservative	82 (70.09)
	Esthetic	15 (12.82)
	All of the above	5 (4.27)
Who should place dental implants	Multidisciplinary	20 (17.09)
	Periodontist	12 (10.26)
	Prosthodontist	39 (33.33)
	Surgeon	46 (39.32)
	Experience	45 (38.46)
Important factor dental implant success	Patient's compliance	18 (15.38)
	Treatment plan	54 (46.15)

General knowledge, source of knowledge, knowledge about implant systems, designs of implant abutments, operators for surgical placement of implant were more among practitioners with post graduate qualification than graduation statistically (P<0.001). (Table 4)

The knowledge about planning of prosthesis before implant placement, design of prostheses, superiority implant over other options, and who should place dental implants more among practitioners with post graduate qualification than graduation statistically (p<0.05). (Table 5)

**Table No.4: Comparison of general knowledge about dental implant among practitioners**

Variable	Characteristic	BDS, n= 86	post graduate, n = 31	p-value*
General knowledge about implant	Fairly informed	34(39.53)	2 (6.45)	<0.001
	moderately informed	43(50.00)	6 (19.35)	
	well informed	9 (10.47)	23 (74.19)	
Source of knowledge about implant	CDE	33(38.37)	13(41.94)	<0.001
	Clinical observation	53(61.63)	5(16.13)	
	postgrad programme	0 (0.00)	13 (41.94)	
Knowledge about implant systems	fairly informed	56(65.12)	6 (19.35)	<0.001
	moderately informed	16(18.60)	9 (29.03)	
	Nil	14(16.28)	0 (0.00)	
	well informed	0 (0.00)	16 (51.61)	
Designs about implant abutments	fairly informed	54(62.79)	5 (16.13)	<0.001
	moderately informed	16(18.60)	9 (29.03)	
	Nil	15(17.44)	0 (0.00)	
	well informed	1 (1.16)	17(54.84)	
You give implant replacement option	Always	27(31.40)	7 (22.58)	0.064
	Never	14(16.28)	1 (3.23)	
	when needed	45(52.33)	23(74.19)	
You not give implant an option	lack of skill	6 (6.98)	1 (3.23)	0.276
	Nil	72(83.72)	30 (96.77)	
	patient issue	5 (5.81)	0 (0.00)	
	treatment time	3 (3.49)	0 (0.00)	
Who performed surgical placement of implant	Colleague	34(39.53)	4 (12.90)	<0.001
	Combined	18(20.93)	7 (22.58)	
	Myself	21(24.42)	20(64.52)	
	Nil	13(15.12)	0 (0.00)	

**Table No.5: Comparison of knowledge about of surgical procedure, longevity, restorative options and success of dental implant among dental practitioners**

Variable	Characteristic	BDS, n = 86	post graduate, n = 31	p-value*
Why you not do surgical placement of implant	Confidence	9 (10.47)	0 (0.00)	0.153
	Interest	2 (2.33)	0 (0.00)	
	Nil	73 (84.88)	31(100.00)	
	time consuming	2 (2.33)	0 (0.00)	
What you tell implant longevity	10y-15yr	34 (39.53)	16 (51.61)	0.22
	15yr-20yr	16 (18.60)	5 (16.13)	
	5yr-10yr	21 (24.42)	9 (29.03)	

	Nil	15 (17.44)	1 (3.23)	
You plan prosthesis before implant placemat	No	70 (81.40)	8 (25.81)	<0.001
	Yes	16 (18.60)	23 (74.19)	
Design of prosthesis should done by	Both	6 (6.98)	9 (29.03)	0.007
	Lab	33 (38.37)	9 (29.03)	
	Practitioner	47 (54.65)	13 (41.94)	
Superiority implant over other options	All	0 (0.00)	5 (16.13)	0.002
	Conservative	62 (72.09)	20 (64.52)	
	Esthetic	12 (13.95)	3 (9.68)	
	Longevity	12 (13.95)	3 (9.68)	
who should place dental implants	Multidisciplinary	10 (11.63)	10 (32.26)	0.03
	Periodontist	10 (11.63)	2 (6.45)	
	Prosthodontist	30 (34.88)	9 (29.03)	
	Surgeon	36 (41.86)	10 (32.26)	
Important factor dental implant success	Experience	35 (40.70)	10 (32.26)	0.271
	Patient's compliance	15 (17.44)	3 (9.68)	
	Treatment plan	36 (41.86)	18 (58.06)	

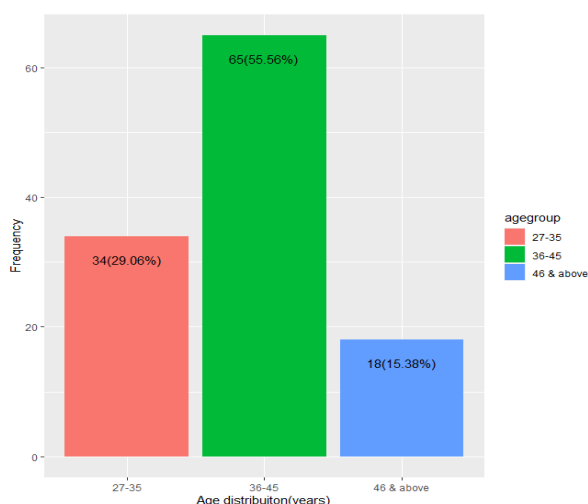


Figure No. 1: Age Distribution

## DISCUSSION

This study was conducted to determine the awareness level about dental implants among dental practitioners. Our findings shows that knowledge of practitioners about dental implant placement, design of prostheses and treatment planning was less than 50%. Post graduate qualified dental professionals were more than graduated professionals.

Dental practitioners have key role in educating patients about oral health and various treatment options available. The awareness about dental implant is very important to properly educate the patients. Both health and functions of fixed prosthodontics is better than removable dentures.<sup>8</sup>

Most of the previous studies are conducted on patients awareness about dental implants like cost, complication and stability.<sup>9</sup> A study was conducted on 500 dental residents in India about awareness of dental implants and their results showed that they have low level of knowledge about surgical placement, material and design of abutment.<sup>10</sup>

Our findings showed that most common source of knowledge about implants were clinical observations followed by continuing dental education and post graduate training. For dental practitioner’s clinical observations in dental department with senior colleague is an important of learning. The second common source of knowledge about dental implants was continuing dental education in the form of short courses like workshop and short certificate programmes. The dental field is never static and it evolves through advancement in technologies. Each practitioner need to learn these advancements while providing care to the patients. Sakshi et al<sup>11</sup> explore the knowledge of undergraduate students about dental implants and reported that most common source of knowledge was internet and clinical observation.

Kohli et al<sup>12</sup> conducted a study on awareness about dental implant and found that around one third participants had adequate knowledge about implants and most common source of information was dentists themselves and mass media.

## CONCLUSION

There is lack of proper knowledge about dental implant among dental practitioners about materials, types, surgical placement and design of appliance. Post graduate qualified dentist are more aware than general dentists

### Author’s Contribution:

Concept & Design of Study: Mahirah Iqbal  
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**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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