

Assessment of Knowledge and Need for Further Education Related to Implant Dentistry in General Dental Practitioners of Palamu Area, Jharkhand

Dr. Akhilesh Tomar¹, Dr. Ayusha Kumari², Dr. Rajesh. H³, Dr. Reya Shree⁴, Dr. Sonali Kumari^{*5}, Dr. Gourav Sriwastva⁶

¹Professor, Vananchal Dental College and Hospital Garhwa, Jharkhand, India.

²Senior Lecturer, Vananchal Dental College and Hospital, Garhwa, Jharkhand, India.

³Professor and Head, Vananchal Dental College, Garhwa, Jharkhand, India.

⁴Senior Lecturer, Vananchal Dental College and Hospital, Garhwa, Jharkhand, India.

⁵*Reader, Vananchal Dental College and Hospital, Garhwa, Jharkhand, India.

⁶PGT, Department of Orthodontics and Dentofacial Orthopaedics, Institute of Dental Sciences, SOA University, Bhubaneswar, India

*Corresponding Author:

Dr. Sonali Kumari,

⁵*Reader, Vananchal Dental College and Hospital, Garhwa, Jharkhand, India.

Email ID: 01drsonalikumari@gmail.com

Cite this paper as: Dr. Akhilesh Tomar, Dr. Ayusha Kumari, Dr. Rajesh. H, Dr. Reya Shree, Dr. Sonali Kumari, Dr. Gourav Sriwastva, (2025) Assessment of Knowledge and Need for Further Education Related to Implant Dentistry in General Dental Practitioners of Palamu Area, Jharkhand. *Journal of Neonatal Surgery*, 14 (32s), 1561-1567.

ABSTRACT

Dental implant is a device that is installed into the jaw bone to retain prosthesis. There are no such surveys available regarding implant which is specifically conducted among general dental practitioners who are practicing in Palamu region of Jharkhand which is majorly a rural area. A cross sectional study was carried out among 71 general dental practitioners of Palamu region of Jharkhand. A questionnaire set was framed with a total 23 questions. The results are made by gathering all the responses marked by the participating dentists and summarizing them in 3 same sections in which all the questions were framed. In the first section, the first 9 questions of the survey are based on basic knowledge of implant, in which on an average 55 out of 71 (77.47%) dentists had basic knowledge of implant. In the second section, 8 questions were based on clinical knowledge of implant, in which on an average 28 out of 71 (39.44%) had clinical knowledge of implant. In the third section, 6 questions are based on advances and implant education. On an average 33.80% of general dental practitioners have knowledge of basic surgical procedures like incision, type of flap, type of incision and about 81.70% of general dental practitioners don't know about the advanced surgical procedures like sinus lift surgery, type of graft, GBR, GTR membrane. 80.28% of general dentists does not practice implant in their regular practice and about 84.51% finds implant placement to be difficult. The general dental practitioner should have adequate knowledge, skill and training which can be achieved by employing proper training and education to them.

Keywords: Dental implant, Dental Practitioner, Dental Education, Prosthesis, Surgical procedures

1. INTRODUCTION

A dental implant is a device that is installed into the jawbone to retain a prosthesis. It is an alloplastic substance (1). It is also known as "ENDOOSSEOUS FIXTURE". In modern dental practice implant becomes a very successful and well accepted treatment modality in terms of replacement of missing teeth because implant supported replacement teeth look, feel and function like natural teeth (1). As the time advances different types of implant designs, biomaterials, taper, width, biomechanics, graft materials, different surgical approaches, healing process post implant placement are introduced which hugely increases the success rate of implant (2) (3).

Use of implants in day to day practice has become very popular in the last 10 years because of increasing awareness and

knowledge among dentists as well as in patients. Now a days patients themselves ask the dentist whether an implant can be done as a treatment for replacing missing teeth. Though implant is popular in urban population but in rural practice it is still a matter of concern. In fact many of the implant manufacturers provide training majorly to the urban dentist populations thus general dental practitioner so frural areas are still having difficulty in introducing implants in their practice (4) (5). There are no such surveys available regarding implant which is specifically conducted among general dental practitioners who are practicing in Palamu region of Jharkhand which is majorly a rural area.

Learning in academic settings is strongly related to the way the students are tested or examined. Assessment therefore must be integrated in the curriculum design, coordinated and should reflect the learning outcomes of the education.

The aim of the survey is to assess the knowledge regarding implant in general dental practitioners of Palamu area of Jharkhand

2. MATERIAL AND METHODS

A cross sectional study was carried out among 71 general dental practionners of Palamu region of Jharkhand. A questionnaire set was framed with a total 23 questions. In which 9 questions are regarding basic knowledge of implant, 8 questions are regarding clinical knowledge of implant and 6 questions regarding advances and implant education. All the participating dentists in this questionnaire filled their responses either in hard copies or in soft copies sent to them (3) (6).

3. RESULTS

The results are made by gathering all the responses marked by the participating dentists and summarizing them in 3 same sections in which all the questions were framed. In the first section, the first 9 questions of the survey are based on basic knowledge of implant, in which on an average 55 out of 71 (77.47%) dentists had basic knowledge of implant. In the second section, 8 questions were based on clinical knowledge of implant, in which on an average 28 out of 71 (39.44%) had clinical knowledge of implant. In the third section, 6 questions are based on advances and implant education. On an average 33.80% of general dental practitioners have knowledge of basic surgical procedures like incision, type of flap, type of incision and about 81.70% of general dental practitioners don't know about the advanced surgical procedures like sinus lift surgery, type of graft, GBR, GTR membrane. 80.28% of general dentists does not practice implant in their regular practice and about 84.51% finds implant placement to be difficult. High cost of implant is a major concern for the dentists to incorporate implant in their regular practice says 84.50%. Only 16.91% had undergone formal education of implant, whereas 83.09% dentists were not satisfied with the knowledge they gained about implant. When asking them about what can be a better option for future training, the majority (47.89%) choose diploma training of 1-2 years, whereas 22.54% of dentists preferto go with a different MDS branch for implant. 85.92% dentists think they can create awareness in patients about implants in future. Cost is always a major concern for the rural Indian population to go for any dental treatment. When asking them about the price range which can satisfy the patient to go for an implant, 59.15% of dentists say the range between 10000-20000 INR can be a better choice for patient to avail treatment. 94.37% general dentists would like to attend CDE program once in a year for gaining knowledge about the advancements. All the responses are framed in a manner of chart in which the same questionnaire format is used and are discussed below.

Basic Questions

	YES	NO	NOT INVOLVED
1. Are you aware about dental implant? (71)	100% (71)	0 (0)	0 (0)
2. Do you know all the parts of dental implants? (71)	91.55% (65)	7.05% (5)	7.05% (1)
3. Do you know the indications of dental implant? (68)	95.77% (65)	4.23% (3)	0 (0)
4. Do you know about the different types Of dental implant? (54)	76.05% (41)	18.30% (10)	5.64% (3)
5. Do you know the difference between natural Tooth and implant? (46)	64.79% (30)	32.4% (15)	2.82% (1)

6. Whether implant can be used in medically	53.52%	45.07%	1.4%
Compromised patients like Diabetics, Hypertensive patients, hemophilic patients etc?	(38)	(32)	(1)
7. Do you know about various surgical	57.47%	39.44%	2.82%
Techniques of dental implant placement	(41)	(28)	(2)

Tick Any/All

- Distance between 2 implants 53.52%
(38)
- Distance between implant & natural tooth 49.29% (35)
- Distance of implant from major anatomic 54.93% structures (39)

i.e. Maxillary sinus, IAN canal, Mental Foramen

8. Do you know about the healing process after Implant placement?	76.05% (54)	22.54% (16)	1.4% (1)
9. Do you know about Peri-implantitis & its Management?	78.87% (56)	21.13% (15)	0

Clinical Knowledge

YES NO NOT INVOLVED

1. Do you know about the basic knowledge of CBCT Needed for implant resurgery?	60.56% (43)	39.44% (28)	0
2. Do you know about the basic surgical procedure Like type of incision, type of flap, type of suture etc.	33.80% (24)	66.20% (47)	0
3. Do you know about the advanced surgical procedures Like sinus lift surgery, type of graft, GBR, GTR membrane?	16.90% (12)	81.70% (58)	1.4% (1)
4. Do you know about immediate, delayed & immediate Loading implant placement?	43.66% (31)	56.34% (40)	0
5. Do you know about bone formation around implant After replacement of implant?	22.54% (16)	74.65% (53)	2.82% (2)

6.Do you know what are factors affecting bone formation	25.35%	69.01%	5.64%
Around implant after placement of implant	(18)	(49)	(4)
& how do they affect implant healing?			

TICKANY/ALL

1.Implant Biomaterial	15.49%
	(11)
2.Implant Biomechanics	18.30%
	(13)
3.Implant design	23.94%
	(17)
4.Implant taper	15.49%
	(11)
5.Implant width	16.90%
	(12)
6.Implant surface smoothness.	12.67%
	(9)

7.Are you practicing implant in regular practice?	19.71%	80.28%	0
	(14)	(57)	
8.Is the implant placement difficult for you in	84.51%	15.49%	0
Regular practice. If yes then mark why— (60)		(11)	

TickAny/All

- Regarding skills & knowledge 80.28% (57)
- Regarding instruments & material 77.46% (55)
- Regarding patient co-operation & compliance 81.69% (58)
- Regarding high cost 84.50% (60)
- Regarding unpredictable success 77.46% (55)
- Regarding post-operative management. 76.05% (54)

Advances & Implant Education

YES NO NOT INVOLVED

1.Are you satisfied about the knowledge you	16.91%	83.09%	0
---	--------	--------	---

Gained regarding implant? (12) (59)

2. What do you feel, can be a better option for future training.

● Workshop for days(1-6 days) 16.90%

(12)

● Workshop for weeks(1-3weeks) 12.67%

(9)

● Diploma training for 1-2years 47.89%

(34)

● Different MDS branch for 22.54%

(16)

3. Do you think you can create awareness in Patient about implant in future? 85.92% 14.08% 0

(61)

(10)

4. What do you think about the implant price that can satisfy the patient to go for implant

● 5000-10,000Rs per implant 21.13%

(15)

● 10,000-20,000Rs per implant 59.15%

(42)

● 20,000-30,000 Rs per implant 12.67%

(9)

● >30,000Rs per implant 7.04%

(5)

5. What you will do for restoration of 1st molar if missing

● Dental Implant 50.70% (36)

● Crown & Bridge 30.98% (22)

● RPD 14.08%

(10)

● Extraction/Don't want to restore 4.22%

(3)

6. Will you attend CDE program once in a year for Gaining knowledge about the advancements. 94.37% 5.63% 0

(67)

(4)

4. DISCUSSION OF RESULTS

Dental implant is a rapidly growing treatment modality in replacing missing teeth

As the day passes more and more patients also want to get implant treatment done, thus this is necessary for the general dental practitioners to gain knowledge regarding implants because general dental practitioners play a pioneer role in introducing any new treatment modality to patients(5). General dental practitioners should also have the knowledge to manage regular follow up, reevaluation, and any post implant placement complications so that they can intervene at least with the primary treatment⁽⁸⁾.

Though in this study only 71 general dental practitioners of Palamu region were included, this study at least tells us about

the interest in them to gain knowledge and incorporate implants in their practice. We also get to know about the factors for which general dentists find difficulty in placing implants. Only 16.90% general dentists have adequate knowledge regarding advanced surgical procedures like sinus lift, bone graft, GBR, GTR membrane like PRF which are used in modern day practice of various periodontal surgeries. PRF is used to regulate inflammation and fasten up the healing process by releasing growth factors⁽⁹⁾⁽¹⁰⁾ This study also reflects the status of practicing implants in rural Indian areas as well (11). This study gives us a brief idea about what kind of future options can be introduced to the general dentists about implants and what they prefer to do if an option is available to them for betterment of their skills as well as to learn new things. The study clearly signifies that from undergraduate level the students should be incorporated with theoretical as well as both preclinical and clinical training, so that they can incorporate the knowledge in their clinical practice⁽¹²⁾. This study was carried out in a small population to get a brief knowledge about the current scenario but further studies on a large scale would be more beneficial and also help in further development in this field.

At higher levels of competence, documentation of clinical proficiency by means of reflective portfolios and diaries is an appropriate assessment method with both formative and summative potential. The highest level of competence requires performance assessment using structured, objective, clinical criteria^(13,14).

5. CONCLUSION

Implant as a treatment of missing teeth replacement is gaining popularity among dentists and patients with every single day passing. The general dentists are core of dentistry thus they have a prominent role in introducing implants. The general dental practitioner should have adequate knowledge, skill and training which can be achieved by employing proper training and education to them. The advances in the field of implant should be introduced to them through organizing CDE (Continuing Dental Education) programmes by dental colleges and dental councils and dental organizations.

DECLARATIONS:

Conflicts of interest: There is no any conflict of interest associated with this study

Consent to participate: There is consent to participate.

Consent for publication: There is consent for the publication of this paper.

Authors & contributions: Author equally contributed the work

REFERENCES

- [1] Gallucci, German O.; Morton, Dean, Weber, Hans-Peter. Title: Loading Protocols for Dental Implants in Edentulous Patients. Source: International Journal of Oral and Maxillofacial Implant. 2009 Supplement, Vol. 24, p132-146. 15p. 16 charts.
- [2] Jae-Hoon Lee, Yonsei University Hospital, Val Frias, Keun-Woo Lee, Robert F. Wright, University of North Carolina at Chapel Hill. Title: Effect of implant size and shape on implant success rates: A literature Review. Source: Effect of implant size and shape on implant success rates: A literature review. November 2005 The Journal of prosthetic dentistry 94(4):377-81 DOI: 10.1016/j.prosdent.2005.04.018 PubMed.
- [3] Bhageshwar Dhami, Priti Shrestha, Bikash Lamichhane, Anuj Kumar Sharma, Sujaya Gupta. Title: Dental Implants and General Dental Practitioners of Nepal: A study of existing knowledge and need for further education. Source: Journal of College of Medical Sciences-Nepal, Vol-13, No1, Jan-Mar 017 DOI: <http://dx.doi.org/10.3126/jcmsn.v13i1.16668>
- [4] Hicklin SP, Albrektsson T. Theoretical knowledge in implant dentistry for undergraduate students. Eur J Dent Educ. 2009;13:25-35.
- [5] Caplanis N, Kan JY, Lozada JL. Implant dentistry education for the practicing dentist. J Calif Dent Assoc. 2001;29:757-64. PMID: 11806054.
- [6] Nishant Kumar Tewari, Aditi Sinha, Kunal Kundan, Sushmita Tiwari, Shraddha Pathak, Rohan Pratap. Title: Assessment of Knowledge Related to Implant Dentistry in Dental Practitioners of Patna, Bihar. Source: Annals of International Medical and Dental Research, Vol (6), Issue (2).
- [7] Misch's Contemporary Implant Dentistry. Fourth Edition.
- [8] Misch, Kelly, Wang, Hom-Lay. Implant Surgery Complications: Etiology and Treatment. Implant Dentistry: June 2008 - Volume 17 - Issue 2 - p 159-168 doi: 10.1097/ID.0b013e3181752f61
- [9] Eduardo Borie, Daniel García Oliví, Iara Augusta Orsi, Katia Garlet, Benjamín Weber, Víctor Beltrán, and Ramón Fuentes. Platelet-rich fibrin application in dentistry: a literature review. Int J Clin Exp Med

- [10] A.Tomar , A. Bhat, V. Pant et al Evaluation of biological effect of platelet rich fibrin on proliferation and osteogenic differentiation of culture human dental pulp stem cell in-vitro study.
 - [11] Mukhimov Odiljoni Sanova Diyora Features of rehabilitation of patients living in rural areas using dental implants. Journal of Medicine and Health Research, 4(1), 32-36.
 - [12] Robert Mcandrew, JaniceS Ellis, Christopher D Lynch, J Mark Thompson. Embedding implants in undergraduate dental education.
 - [13] January 2010 British dental journal official journal of the British Dental Association: BDJ online 208(1):9-10 DOI:10.1038/sj.bdj.2009.1175 Source Pub Med.
 - [14] Eliyas S, Briggs PFA, Gallagher JE. Et al. Assessing a training programme for primary care dental practitioners in endodontics of moderate complexity: Pilot data on skills enhancement and treatment outcomes. Br Dent J. 2018 Oct 12;225(7):617-628. doi: 10.1038/sj.bdj.2018.807. PMID: 30310203.
 - [15] Golnoosh Moeini et al. Knowledge and attitude in implant dentistry training courses amongst undergraduate dental students at Tehran University of Medical Sciences . Eur J Dent Educ .2023 May;27(2):353-359.
-