

# Knowledge And Perception About Dental Implant And Its Complications Among General Practitioners And Post Graduates In Coimbatore – A Cross Sectional Survey

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## **Abstract:**

### **Background:**

It is necessary for dental students and freshly graduated dentists to apply their education and practice to different clinical and preclinical procedures. The implant success rate and durability are high. Therefore, this study was designed to assess the level of knowledge, awareness and perception of dental practitioners and post graduate students regarding dental implant complications in Coimbatore.

### **Materials and Methods:**

A prevalence study design using a web-based method was conducted among dental practitioners and postgraduate students in Coimbatore. Data were collected from all (n = 212) general dental practitioners and postgraduate students using a pretested standardized self-administered web-based questionnaire that was prepared and circulated using a template provided by Google Forms (Google, Inc., USA).

### **Results:**

In a survey of 212 general dental practitioners and postgraduate students in Coimbatore, 69.2% considered dental implants a viable option for tooth replacement, though 38% noted financial constraints affecting patient acceptance. While 38.5% were highly aware of the risks associated with implants, 61.5% emphasized the importance of case selection. Common issues included postoperative infections (53.8%) and screw loosening (46.2%). Aesthetically, 30.8% cited loss of the interdental papilla as a concern. Most participants favored flap surgical methods (61.5%) and recommended considering patient conditions when choosing implant prostheses. Notably, 61.5% were aware of regenerative possibilities related to dental implants.

### **Conclusion:**

A comprehensive evaluation concluded that undergraduate instruction in basic implantology is essential due to the increasing prevalence of implants. Additionally, postdoctoral training programs should be established to enhance practitioners' skills and knowledge, providing them with the confidence needed to treat patients effectively.

**Keyword:** Implant success rate, implantology.

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## **I. Introduction**

The goal of modern dentistry is to return the patient's appearance, speech, function, and health to normal. Because implant dentistry can attain these ideal goals so effectively and is so predictable and effective, the use of dental implants in the rehabilitation of partially and totally edentulous jaws has become a well-recognized modern therapeutic treatment. Nevertheless, problems can arise during or after therapy, which prevents patients from fully benefiting from the planned therapeutic treatments. Since the majority of medical errors and complications are thought to be avoidable, government programs, educational initiatives, and substantial research are focused on preventing problems. The word "complication" is still the most often used in the literature on dental implants, despite the fact that the medical literature frequently uses many terms to describe unfavorable issues or associated risks. The term "complication" does not always indicate a direct harm to the patient or an error in treatment planning, implementation, or follow-up. The dental team's skillful work, especially that of the lab technicians, is crucial in averting these detrimental effects on the patient. Another important factor is the patient's constant willingness to accept or adjust to little departures from the ideal in terms of form, function, or look.

There is not a single, widely recognized classification scheme for problems connected to implants. There have been several methods proposed for categorizing all or some implant problems. There are two broad approaches that authors have established for classifying implant complications: some authors have tried to

categorize all types of implant complications, while other authors have tried to categorize only some implant complications that are shared by either the specific therapy phase in which they typically occur (like surgical or prosthodontic complications) or by some other aspect of the process (like reversible complications) or the treatment-outcome (like aesthetic complications). The majority of earlier research has focused on assessing undergraduate students', patients', and general practitioners' awareness and understanding of dental implants. Research indicated that in order to improve comprehension of dental implants, undergraduate dental implant program administration and complications should be adjusted to improve implant care.

Although the many kinds of implant issues are well known, it is still unclear how much postgraduate students and general dentists in Coimbatore know about these complications. The purpose of this study was to ascertain the degree of awareness and the subjective and objective information needs regarding all forms of dental implant issues among postgraduate students and dental practitioners in Coimbatore.

## **II. Material And Methods**

A questionnaire consisting of fifteen items was created to assess postgraduate students' and general dentists' perceptions and knowledge regarding dental implants and their associated risks. Based on data previously published in the literature, authors created a self-explanatory closed-ended English language questionnaire. Knowledge and awareness of dental implants and their complications, factors contributing to implant-related complications, early and delayed implant-related complications, mechanical implant-related complications, soft tissue and hard tissue implant-related complications, and, lastly, aesthetic and reversible implant-related complications were all on the list of variables.

Using email and whatsapp, 250 private dental practitioners in Coimbatore as well as recent postgraduates were sent this link to the google form survey. Dentists who were interested in participating in the study were asked to fill it out and send it in. The survey's goal and how to answer the questions were made evident by the questioner. In reality, 212 people made up the study's sample size. The acquired study data will be input into Microsoft Excel and subsequently exported to SPSS version 25.0.

### **Questionnaire:**

Name:

E-Mail id:

Educational qualification of the applicant:

a) BDS

b) MDS

General Practitioner or Postgraduate:

MDS / postgraduate, mention the department:

Years of experience:

1. In the Coimbatore scenario, do you believe that dental implants are a viable solution for teeth that are missing?

- a) Yes, implants are widely accepted here
- b) No, economic conditions will limit their acceptance
- c) No, too invasive for patient acceptance
- d) No, other reasons; please specify

2. What degree of awareness do you have about the complications associated with dental implants?

- a) Very well
- b) Well
- c) Moderately well
- d) Poorly
- e) Not at all

3. What is the most significant factor that causes dental implant complications?

- a) Case selection
- b) Implant type and material
- c) Surgical technique
- d) Operator's experience
- e) Not aware

4. Do dental implants have the potential to cause neurological complications?

- a) Yes
- b) No

- c) Not aware
5. What is your view on the most common reversible complication that arises from dental implants?
- a) Gingival recession
  - b) Exposure of gingival margin
  - c) Chronic inflammation
  - d) Not aware
6. How satisfied are you with your dental implant knowledge?
- a) Very well
  - b) Well
  - c) Moderately well
  - d) Poorly
  - e) Not at all
7. What do you think is the most frequent early complication linked to dental implants?
- a) Implant failure
  - b) Permanent altered sensation
  - c) Postoperative infection
  - d) Unfavourable implant location compromising the prosthetic rehabilitation
  - e) Invasion of maxillary sinus
  - f) Life-threatening hemorrhage
  - g) Not aware
8. What do you think is the most frequently encountered mechanical issue with dental implants?
- a) Fracture of abutments
  - b) Fracture of implants
  - c) Fracture of screws
  - d) Screws loosening
  - e) Abutment loosening
  - f) Fracture Bridge framework
  - g) Not aware
9. What do you consider to be the most common soft tissue complication that arises from dental implant?
- a) Hemorrhage
  - b) Tissue emphysema
  - c) Nerve injury
  - d) Wound dehiscence
  - e) Infections
  - f) Not aware
10. What is the most prevalent hard tissue complication related to dental implants, in your opinion?
- a) Mandibular jaw fracture
  - b) Periapical implant pathosis
  - c) Complications associated with sinus elevation
  - d) Lack of implant primary stability
  - e) Inadvertent penetration into maxillary sinus or nasal fossa
  - f) Not aware
11. What is the most common aesthetic issue that arises from dental implants?
- a) Chronic inflammation
  - b) Poor emergence profile
  - c) Loss of interdental papilla
  - d) Gingival recession
  - e) Restoration too buccal or too palatal
  - f) Exposure of implant margin
  - g) Not aware

12. What do you think is the most suitable choice for implant prosthesis?
- a) Screw retained prosthesis
  - b) Cement retained prosthesis
  - c) Based on patients condition
  - d) Not aware
13. What is your preference for the surgical technique when it comes to dental implants?
- a) Flap surgery
  - b) Flap less surgery
  - c) Not aware
14. Do you know about the regenerative options that exist for implant complications?
- a) Yes
  - b) No
  - c) Not aware
15. What is the most common reversible complication that can be reversed when it comes to dental implants?
- a) Intraoperative compliance
  - b) Postoperative compliance
  - c) Prosthetic compliance
  - d) Soft tissue compliance
  - e) Not aware

### **III. Result**

A total of 250 surveys were taken among general and dental practitioners of Coimbatore, of which 212 responses were received. Of these, 30.8% held doctorate degrees and 69.2% were undergraduates. There were 7.7% dentists and 53.8% general practitioners. The survey's participants were divided in half by prosthodontists.

As per the poll, dental implants were deemed a feasible option by 69.2% of participants to replace lost teeth. Thirty-eight percent said that patients' financial situation would restrict their acceptance. Of the participants, about 38.5% are extremely well aware of the risks connected to implants. About 61.5% of participants stated that case selection contributes to implant difficulties, whereas surgical procedures account for 30.8% of the cases.

Additionally, it showed that while 69.2% of users thought implants might result in neurological problems, 23.1% were unaware of this possibility. According to 30.8% of patients, gingival border exposure is the most prevalent reversible implant-related problem. Gingiva recession and persistent inflammation are among the major issues. In terms of implant knowledge, 38.5% of respondents were very satisfied, and 30.8% were just mediocreatly satisfied. A poor implant placement was cited by 30.8% of respondents, whereas 38.5% thought that implant failure might be an early consequence. 46.2% of consumers reported that a typical mechanical problem with implants was screw loosening.

Regarding soft tissue issues, 53.8% of respondents said that postoperative infections were the most frequent cause. Regarding hard tissue issues, 23.1% were unaware that the primary implant's instability is a key contributing factor, according to 61.5% of respondents. Aesthetically, the most prevalent complaint, according to 30.8% of respondents, is the loss of the interdental papilla, followed by implant site exposure (23.1%). 38.5% recommended a screw-retained prosthesis, whilst 61.5% thought the patient's condition should be taken into consideration when choosing an implant prosthesis.

Overall, 61.5% of respondents selected flap surgical methods for implants. 46.2% of users ranked prosthetic compliance as the most common reversible problem, followed by soft tissue compliance (23.1%). Lastly, 61.5% of respondents said they are aware of dental implant regenerative possibilities.

### **IV. Discussion:**

There is a need to increase public knowledge of the possible issues associated with dental implants as they become more commonly utilized. A representative sample of undergraduate and graduate dental and general practitioner students from various Coimbatore neighborhoods participated in the survey. In our study, 69.2% of participants thought that implants were a good way to replace a missing tooth, whereas 30.8% said that patients' ability to pay would prevent them from accepting the procedure. It was discovered from the study that only roughly 38.5% of participants were extremely well aware of the risks connected to implants.

The majority of participants knew only a little bit about dental implants. A consensus was reached among the participants that case selection is the most critical element in implant success. When thinking about dental implants, patient selection comes first. It is crucial to take the patient's history and perform an

examination in order to determine whether or not they are willing to have surgery. Additionally, it showed that while 23.1% were unaware of the possibility, 69.2% of respondents thought implants might result in neurological problems. In our study, 38.5% of participants thought that the most frequent early problem could be implant failure, whereas 30.8% thought that the most common early issue was an unfavorable implant placement that hampered prosthetic rehabilitation.

The most frequent late consequence linked to dental implants, according to the majority of participants, is severe bone loss caused by implant failure.

According to 61.5% of respondents, the most frequent hard tissue complication linked to dental implants is a lack of primary stability, according to our findings. These outcomes were consistent with research by Duyck and Esposito, who found that primary stability has a significant role in predicting future implant success and is essential to advanced implant treatment strategies including immediate installation and loading.

Of the participants, 53.5% thought that the most frequent soft tissue problem linked to dental implants was infection. Significant patient disability is likely to arise from a number of hard-to-manage soft tissue consequences (e.g., nerve injury). The most frequent cosmetic issues linked to dental implants, according to survey participants, are loss of the interdental papilla, gingival recession, implant margin exposure, and a poor emergence profile.

Gingival recession, where the implant/abutment junction is visible, is the most frequent cosmetic consequence. Implant aesthetic failures can also be attributed to a lack of interdental papillae and poor prosthesis shade selection. 46.2% of participants in our study believed that prosthetic compliance was the most prevalent type of reversible compliance.

Reversible problems might arise throughout several stages of the procedure, such as during the prosthetic repair, early or late postoperative recovery, and after functional loading. Park and Wang introduced their widely recognized categorizations and interventions for a range of reversible issues that frequently arise during standard implant-related operations in 2005. Based on Park and Wang's classification, a number of studies were carried out to assess these complications. The findings indicated that preventing such events involved a thorough clinical and radiographic examination of each case, precise planning of procedures, the use of suitable surgical techniques and instruments, and appropriate management of healing and osseointegration.

For implant implantation, 61.5% of respondents generally favored flap surgical techniques, whilst 38.5% chose flapless surgical techniques. There were a number of restrictions with this study. To validate the current study's findings, a second survey with more thorough questions and a larger sample size—especially recently graduating dentists—is advised.

## **V. Limitation Of The Study:**

Owing to the brief study period, the convenience strategy was employed.

As a result, sample was also determined for convenience. Because of sample size estimation and possible bias, the study's conclusions cannot be generalized.

## **VI. Conclusion**

Following a comprehensive evaluation, it was concluded that undergraduate instruction in fundamental implantology is necessary given the growing ubiquity of implants. Programs for postdoctoral training in implants ought to be made available in order to improve participants' abilities and knowledge and provide them with the assurance they want when treating patients.

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