

# KNOWLEDGE OF DENTAL STUDENTS TOWARDS IMPLANT PLACEMENT FOR MISSING PERMANENT TEETH: A CROSS-SECTIONAL STUDY

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## ABSTRACT

This study aims to determine the knowledge and attitude of dental students toward immediate implant placement as a treatment modality for replacing missing teeth. A cross-sectional study was carried out on 300 dental surgeons (Male=150; Female=150) who participated in a study with age ranges from 20 to 55 to know the knowledge and awareness among dentists toward immediate implant placement as a treatment modality in replacing missing teeth. Written informed consent was obtained from the participants after explaining the study's purpose. The sampling method included in the study is a simple random sampling method. A self-administered structured questionnaire was developed, and the data was collected. Both descriptive and analytical statistical measurements were done. The majority of participants, 189 (63%), were aware of dental implant treatment as an alternative for missing teeth. 65% agreed that dental implant lasts longer than other dental replacement alone. When asked whether there is any possibility of implant failure, 73% of participants agreed to this information. When asked regarding think insurance coverage is needed in our country for dental implant treatment, 89% agreed to this. The present study revealed adequate knowledge concerning replacement methods for lost teeth and dental implants as an option for teeth replacement among dentists. This facilitates the need for strengthening education among dentists to reinforce their knowledge and awareness about implants in their undergraduate curriculum.

**Key words:** Dental implants, Knowledge, Dentistry, Missing teeth, Saudi Arabia.

## Introduction

Dental implants have become an innovation nowadays in dentistry which has been efficient in replacing dentures throughout patients and offered additional advantages for sufferers. Presently, teeth implants are extensively accepted as prosthetic treatments for completely or perhaps partially edentulous sufferers [1]. Full information on implant remedies and alternative remedies should be provided to steer the patient in the range of the most suitable alternative [2]. A dental implant is an alloplastic material usually surgically placed into the residual alveolar bone fragments chiefly as a base for the prosthesis [3]. Preservation of the tooth (does not demand reduction of nearby tooth structure), provision of additional support, the capacity of disease (lesser prevalence of recurrent caries which occur end up being neath) or on the margins of the recovery on the main part, recent advances within bio components together with clinical techniques, and so forth, lead to significant

development in the indication involving oral implant since treatment choices in prosthodontics [4]. Dental Augmentation has also received enhanced approval and pleasure with its use by simple patients [5, 6]. They may have been linked to the resource efficiency of adjacent teeth and alveolar bone, unlike the conventional repaired bridge tooth substitute option [7]. A few analytical works confirmed that will dental patients generally admit dental implants [8, 9]. Zimmer *et al.* [10] study on patients showed improved knowledge about implants, yet, different results have already been reported for Finnish (about 29%) plus Australian patients (about 64%) [11]. One of dental health care providers' many issues is always imparting positive dental health knowledge and habits to society [12]. This can be attained through scientific work, arranged discussions, teeth health education, and lectures. It's been advocated that dentists must compulsorily have a suitable understanding of diagnostic and healing choices of tooth implant care along with the ability to differentiate between low, medium, and

high-risk situations that make it possible for early referrals [13]. Consequently, the study was taken to measure the knowledge and attitude associated with dental students toward immediate implant position as a treatment technique for replacing missing teeth.

## Materials and Methods

A cross-sectional study was carried out on a total number of 300 dental surgeons (Male=150; Female=150) was participated in the study with age ranges from 20- to 55-year-old to know the knowledge and attitude associated with dental students toward immediate implant position as a treatment technique in replacing missing teeth. A written, informed consent was obtained from the participants after explaining to them the purpose of the study. The sampling method included in the study is a simple random sampling method, and data collection was done from May 1, 2022, to September 30, 2022. Ethical approval for the survey was obtained from the Scientific Research Committee of King Khalid University, College of Dentistry (IRB/REG/2022-2023/49). The questions were designed and circulated through online google forms among dental surgeons practicing in the Abha region of Saudi Arabia. The questionnaire was formulated, which comprised two parts: The first portion included questions related to the participant's demographic information, such as age, gender, year of experience, and level of education. The other part of the questionnaire comprised ten questions with a 'yes' and 'no' pattern and a multiple-choice section. The questionnaire was tested for reliability and validity.

A self-administered structured questionnaire originated and was tested among a comfort sample of 20 dental surgeons. These were interviewed to get feedback on the entire acceptability of the study regarding length and language clearness; following their feedback, and the queries were corrected. Encounter validity was furthermore assessed before the start of the research. The SPSS 18 (IBM Corporation, Armonk, NY, USA) software used descriptive and analytical statistical dimensions to describe the primary variables.

## Results and Discussion

Three hundred (150 males and 150 females) dental students, general dentists, and specialists responded to the questionnaire. 88% of study subjects were 20-30 years, 7% were 31-40 years, 5% were 41-50 years, and 0% were >50 years (**Tables 1 and 2**). The distribution of study samples according to a level of education is shown in **Table 1**. The majority of participants, 189 (63%), were aware of dental implant treatment as an alternative for missing teeth. 65% agreed that dental implants last longer than other dental replacements alone. **Table 2** shows the distribution of the mean knowledge score about dental implants. When asked about the possibility of implant failure, 73% of participants agreed to this information. 86% of participants agreed with

the statement, "Dental Implant is a Solution for Lost Teeth." Moreover, most participants (85%) agreed that implants are placed on the extraction day. **Table 3** shows the relationship between knowledge of dental implants among the respondents and the educational level of the respondents. A statistically significant association was observed between the grade of knowledge and the specialty of the respondents. Knowledge of dentists towards immediate implant placement for missing teeth is shown in **Table 4**. When asked whether insurance coverage is needed in our country for dental implant treatment, 89% agreed. Participants' responses on not being willing to receive dental implants and their reasons are shown in **Figure 1**. Most participants recommended that dental implant knowledge be increased among dental professionals.

**Table 1.** Distribution of the study sample according to Age, Gender, and Level of education.

GENDER	n (300)	%
Male	150	50%
Female	150	50%
AGE		
20-30 years	264	88%
30-40 years	21	7%
40-50 years	15	5%
>50 years	0	0%
EDUCATIONAL LEVEL		
Undergraduate student	186	62%
General Dentist	93	31%
Specialist	21	7%

n = Number; % = Percentage.

**Table 2.** Distribution of mean knowledge score about dental implant.

GENDER	Mean ( $\pm$ SD)	P
20-30 years	0.65 (0.48)	<0.001*
30-40 years	0.57 (0.50)	
40-50 years	0.45 (0.50)	
>50 years	0.26 (0.44)	

\*F test (one-way analysis of variance),  
SD=Standard deviation

**Table 3.** Relationship between the knowledge of dental implants and the Educational level of the respondents

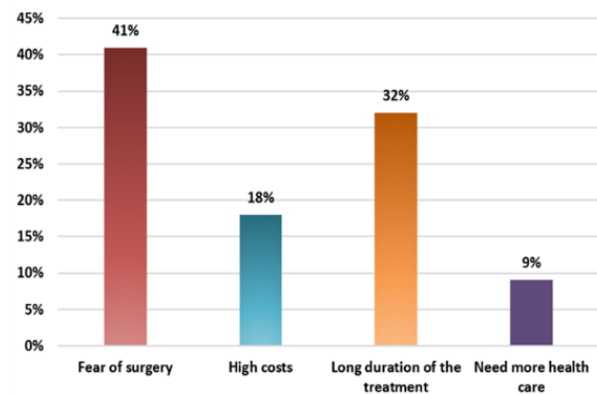
Educational Level	Knowledge of Implant Dentistry		P
	Poor	Good	
Undergraduate student	88(47)	98 (53)	<0.001
General Dentist	37 (40)	56 (60)	
Specialist	5 (24)	16(76)	

The prevalence of dental implants is rising throughout modern dental practice due to the simplification of scientific procedures and shorter forms of treatment moments with such innovations, including immediate augmentations, flap surgery, etc., [14]. Within our study, the seen level of practitioners together with good knowledge is leaner than what was reported by Lang-Hua *et al.* [15] in a study. Furthermore, this might show that more recent advancement within treatment procedures (such as the immediate implant protocol) is usually not necessarily taught at the undergraduate level. Dental enhancements can either be used since treatment for being a fixed or easily-removed prosthesis. It was noticed in this study that just half of the respondents had been of this opinion, even though the other half either considered it could only be within the fixed prosthetic option or got no idea [16]. The lack of knowledge could be due to the fact that dental implant practice was not frequent among the respondents. In our study, the majority of members, 189 (63%), are aware of dental implant treatment as a substitute for missing teeth. 65% agreed that dental implants last longer than other dental replacement units alone.

Dental augmentations are getting the standard regarding care for missing teeth in numerous situations; hence, they look superior to other prosthetic options for recovery depending on the patient's regional and systemic components. Most individuals have new good knowledge on the use of dental implants since they documented that they can supply for single tooth substitution, for the replacement of numerous teeth, and the maintenance of maxillo-facial prosthesis [17]. The results of the current study also revealed that social media would be the third source of pelisse knowledge among individuals, which is consistent with different studies [10]. The reason is that the use of social media programs has escalated in the region, a continuous source of details. However, the desired info is similar to the results in the particular Western countries, the location where the individual's primary way to obtain information was dental surgeons rather than the web providers, contrary to specific studies in the establishing countries [18, 19].

When patients were asked about the variables that may prevent these people from choosing augmentations, the responses were high long treatment time, cost, and fear of surgery. Several patients think the implant is a significant surgical procedure because of the word surgery [4]. In Al-Juhany *et al.*, 49.5% of the asked subjects believed that implant failure could be due to poor mouth hygiene, and 19.9% attributed implant failures to the low quality of treatment offered by the dentist [20]. In this analysis, 279 (93%) members wished to get more information regarding dental implants. This demonstrates the importance of knowledge concerning dental implants, which was confirmed in the study of Tomruk *et al.*, through which 68.3% of the interviewees wished to learn more about dental implants associated with that 76.9% wished to have them from the dental practitioner [21]. The analysis has certain

constraints. One of the limitations of this study was the comparatively small sample size, being restricted to only one country in the Persia and Gulf location, and adopting a quantitative approach using the questionnaire. These concerns minimal the generalizability in the outcomes based on the diverse sociodemographic conditions consisting of regions. Furthermore, upcoming study efforts ought to be directed to adopt a similar research objective, in addition, to the use of a qualitative review method for pulling more comprehensive effects.



**Figure 1.** Knowledge of dentists toward immediate implant placement for missing teeth

**Table 4.** Knowledge of dentists toward immediate implant placement for missing teeth

QUESTIONNAIRE	Total (n)-300	%
<b>Q1. Are you aware of dental implant treatment as an alternative for missing teeth?</b>		
Yes	189	63%
No	111	37%
<b>Q2. Do you think that the dental implant lasts longer than other dental replacements alone?</b>		
Yes	195	65%
No	69	23%
May be	36	12%
<b>Q3. Is there any possibility of Implant Failure</b>		
Yes	219	73%
No	66	22%
May be	15	5%
<b>Q4. Dental Implant is a Solution for Lost Teeth</b>		
Yes	258	86%
No	36	12%
May be	6	2%
<b>Q5. Immediate implants are placed on the day of the extraction</b>		
Yes	255	85%

No	45	15%
<b>Q6. An important factor held in immediate implant placement is</b>		
Socket preservation	126	42%
Soft tissue management	93	31%
Less traumatic extraction	81	27%
<b>Q7. Do you think insurance coverage is needed in our country for dental implant treatment?</b>		
Yes	267	89%
No	33	11%
<b>Q8. If you are not willing to receive dental implants, mention the reason.</b>		
Fear of surgery	123	41%
High costs	54	18%
Long duration of the treatment	96	32%
Need more health care	27	9%
<b>Q9. Sources of information regarding dental implantology among the respondents</b>		
Implant courses	69	23%
Educational films	45	15%
CDE courses	81	27%
Conferences	30	10%
Journal article	21	7%
Undergraduate training	33	11%
Textbooks	21	7%
<b>Q10. Would you like to know more about dental implant</b>		
Yes	279	93%
No	21	7%

n = Number; % = Percentage.

## Conclusion

The present study revealed that there is adequate knowledge concerning replacement methods for lost teeth and dental implants as an option for teeth replacement among dentists. This facilitates the need for strengthening education among dentists to reinforce their knowledge and awareness about implants in their undergraduate curriculum. Engaging dental care experts and specialists more about dental implants and their potential benefits are recommended as they represent the trusted and authentic source for that information.

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