A Survey on Perception of Dental Students on Dental Implant Treatment and its Introduction in Dental Curriculum

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Abstract

> Aims:

As the awareness among patients is increasing about dental implants, it demands higher level of competence from the students of dental institutions. In developing countries only limited information is provided to students at undergraduate level regarding implants. So, the aim of this study was to access the knowledge and perceptions of dental students towards implant treatment and education.

> Material and Methods:

This descriptive cross-sectional study was an online survey based on questionnaire with a sample size of 120. Informed consent was taken from all the participants. The survey consisted of multiple standardized questions regarding their knowledge of implant therapy and their perception on introduction of the same in undergraduate curriculum. The data was analyzed using SPSS software.

> Results:

Out of all the participants, 105 students (87%) responded to the survey. The students considered dental implant as a restorative option for replacing missing mandibular molar, maxillary anterior tooth and edentulous mandible. Most of the respondents felt that the topics related to implant dentistry were not sufficiently covered during their undergraduate course and they showed keen interest in learning more about the therapy through simulated practicals and clinical placement of the implants.

> Conclusion:

The students were acceptably familiar with implants as a restorative option in partial and complete edentulous situations and showed keen interest in learning the theoretical as well as clinical aspects of the implant therapy at undergraduate level. However, there is a need to introduce structured implant dentistry curriculum at undergraduate education level in India and other developing nations.

Keywords:- Implant, Undergraduate Curriculum, Implant Training in Dental Students.

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I. INTRODUCTION

Implant therapy has become one of the significant treatment option to restore function and aesthetics in partially or completely edentulous patients.Due to continuous improvement in materials, surgicalprotocols and prosthetic techniques implant therapyhas become a valuable tool in restorative dentistry. In the early 1980s, this therapy was being mainly performed within specialized dental teams at universities or specialist centers, but now it has evolved to a treatment which is performed by increasing number of clinicians.1 Education in implant dentistry at institutional level wasmostly found in postgraduate programs such as periodontology, oral surgery and restorative dentistry. However, now this treatment modality is not reserved for specialists only. All the dental studentsrequire basic knowledge about dental implants so that they can enlighten and guide patients to undergo implant therapy.In most of the academic undergraduate programs in addition to basic level of theoretical information, clinical training should be provided as well. Assessing the students' understanding about implant therapy, will help us to cognize the needs for modifying the curriculum and to identify the obstacles for the further development in implant dentistry in routine educational program.²A structured curriculum is necessary for the undergraduateand postgraduate students that will prepare them for comprehensive understanding of implant treatment.³ The aim of this study was to investigate the perceptions of undergraduate dental students towards implant treatment and need for the introduction of implant education in the dental curriculum.

II. MATERIAL AND METHODS

This cross-sectional questionnaire-based online survey was conducted for the duration of 2 months after taking ethical clearance and approval from the research committee of A.J Institute of Dental Sciences. Informed consent was taken from all the student participants prior to the survey. The questionnaire for this survey was based on literature review and it consisted of 12 multiple choice questions (Table 1) to assess the student perception on implants and undergraduate implant education. The study participants were the dental students undergoing internship in the institution, at the time the study was conducted, with sample size of 120. Participation in the study was voluntary, and the respondents were ensured that the

ISSN No:-2456-2165

questionnaire was anonymous. The data collection was done online and analysis of the recorded data was done using software (SPSS version 17.0 software).

III. RESULTS

Overall, 105 responses were received yielding 87% response rate. All the responses from the respondents are presented in (Table 1). The results of the study can be broadly categorized as:

> Student's perceptions on implant education

Majority of the participants had knowledge about the implants and recognized implant therapy as a treatment option for restoring partially and completely edentulous patients. Most of the students participating in the study were exposed to implant therapy through lectures (58.5%), CDE programs (11%) and through internet (9.8%), or a clinical instructor (8.5%). However, (80.7%) of the students stated they were briefed about the implants during their undergraduate courses and 88% considered their knowledge as limited in this filed. Among respondents (89.3%) stated that the implant related topics were insufficiently covered during their undergraduate course. Maximum number of students (80.7%) accepted that the implant dentistry topics should be taught at the undergraduate level, with (61.4%) expressing that there is a need to have theoretical, simulated practicals, and clinical observation of the implant therapy in addition to the placement of the same during their undergraduate training. Only limited number of students (2.4%) reported that only theoretical part should be incorporated in curriculum.

> Student's perceptions on knowledge about implants

The knowledge of the participants regarding various restorative options were assessed. Overall 70.8% of students contemplated dental implant as a treatment of choice for restoring a missing mandibular first molar and only 26.8% felt thatfixed partial denture (FPD) was the treatment of choice. When students were enquired about how they will replace patient's missing incisors, the majority of the students (82.8%) regarded implant as the definitive treatment option. Most of the students (66.5%) considered implant supported overdenture as a viable option for restoring mandible in completely edentulous patients. The advantages of the implant therapy over other treatment modalities listed were longevity, better aesthetics and conservative nature. However, most of them regarded it costly, invasive and time- consuming procedure.

IV. DISCUSSION

It has been reported in many studies that student conceptions are important in developing new courses and make advancements in existing ones.⁴ In the current study, the majority of the students perceived that the dental implant was the treatment of choice for replacing a single missing tooth and an edentulous mandible as well. The implications of such response were that the participants of the study were already familiar with the implant therapy as a treatment of choice to restore teeth in the aesthetic zones

and for non-esthetic zone, only 70.8% of the students optedfor dental implants. The result of present report showed lower values compared to findings from the emergent nations where 60–78% of the students chose implants as their treatment option for missing posterior teeth as well.³The first choice of treatment for restoring an edentulous mandible as reported was implant supported overdenture and only 33.5% considered conventional complete denture as a viable treatment option. In most of the countries, mandibular overdenture supported by implants is considered the treatment of choice for completely edentulous patients.^{5,6} However, many factors that influence the treatment decisions arevariance in dental education, patient desires and financial status of the patients.⁷

A majority of students considered conservative nature as the positives of dental implants and 7% said that the longevity of such restoration is advantageous. Various studies have shown that the main advantage of dental implants as compared to other treatment modalities is they are more conservative as there is no need of preparing adjacent natural teeth.8-10 Various longitudinal studies on implant survival in the literature showed that the expected mean rate of survival is 20 years.¹¹⁻¹³Among the various drawbacks listed students consider high cost (34.5%) as the main disadvantage of this type of treatment modality. A systematic review of literature has shown the public concern about the high cost of dental implants but dental students should must be taught about the long-term cost of other treatment modalities modalities as compared to implants so that they motivate their patients for the proposed treatment plan well.¹⁴

Results of the present study showed that most of the students gained their basic knowledge about implants through lectures (58.5%), continuing dental education programs i.e., CDE (11%) and internet (9.8%). Recent studies have shown that reciprocity between students and clinical instructors have a positive impact on a student's choice of speciality.¹⁵ A survey of European dental schools was conducted to determine the curricular structure and teaching philosophies, they found that undergraduate implant dentistry programs varied from school to school, however large percentage of schools agreed on certain topics and the importance of including implant education in undergraduate level.¹⁶As shown in Table 1, students were in favor of assimilating comprehensive implant topics into the undergraduate curriculum. The consensus released by the First European Workshop on Implant Dentistry recommended that the implant dentistry should be an integral part of the undergraduate curriculum.¹⁷

In Europe and North America, implant topic is predominantly offered through a theoretical course, preclinical education and clinical assistance with implant surgery.^{1,18,19}Results of this survey indicated that most students preferred a combination of theoretical course, simulated practicals and clinical placement of the implants. Recent studies have shown that the incorporation of simulated practicals and clinical implant placement during

ISSN No:-2456-2165

undergraduate course appears to significantly increase the incorporation of implant dentistry into future dental practices.^{3,20,21} Limited trained staff in implant dentistry, investment costs, available funds and cost factors are the main barriers reported for incorporation of implant therapy in dental schools.^{2,20,22} It has been suggested that reinforcement from the implant corporations could overcome the obstacles that are experienced in this direction.²³ As there is an increasing concern about implant therapy provided by undergraduate students, literaturehas shown that the failure rates and complications associated with the treatment provided by students, were within acceptable range.^{24,25}

V. CONCLUSION

Within the limitations of this study, it can be concluded that the participants of the study (interns) were aware of dental implant therapy and regarded it as arestorative option of choice for restoring a single missing tooth and completely edentulous arches. They showed keen interest in learning the theoretical as well as clinical aspects of the implant therapy at undergraduate level and incorporating it into their future practice.

S. No	Question	Choice of answer	Responses (percentage)
	Question	Choice of unswer	n=120
1.	Do you have any knowledge about implant treatment?	Yes	83.3%
		No	16.7%
2.	If yes: from where did u get to know about it?	Internet	9.8%
		Continuing dental education (CDE)	11%
		College's lecture	58.5%
		Classmates	4.9%
		Clinical Instructor	8.5%
		Others	7.3%
3.	If you have to replace patient's missing first molar which treatment option would you choose?	Fixed partial denture	26.8%
		Cast Partial denture	2.4%
		Implant retained crown	70.8%
4.	If you have to replace patient's missing maxillary incisors which treatment option would you choose?	Fixed partial denture	14.5%
		Cast Partial denture	2.7%
		Implant retained crown	82.8%
5.	How would you restore a patient with edentulous mandible?	With conventional complete denture	33.5%
		With implant supported overdenture	66.5%
6.	What are the main advantages of dental implants over	Lasts longer	7.1%
		Conservative in nature	8.3%

S. No	Question	Choice of answer	Responses (percentage) n=120
	other treatment modalities?	Aesthetics	4.8%
		All of the above	79.8%
7.	What do you think are the limitations of implant therapy?	High cost	34.5%
		Invasive procedure	1.2%
		Time consuming procedure	1.2%
		All of the above	63.1%
8.	During your undergraduate course, were you briefed	Yes	80.7%
	about implaints.	No	19.3%
9.	At present what is your level of understanding about implants?	Proficient	11.9%
		Limited	88.1%
		Yes	10.7%
10.	Do you think implant topic is sufficiently covered during your undergraduate course?	No	89.3%
	Do you think there is a need to introduce implant	Strongly agree	80.7%
	education at undergraduate level?	Agree	18%
11.		Disagree	1.3%
		Strongly disagree	-
		Theoretical part only.	2.4%
		Theoretical + simulated	12.1%
12.	If you agree, what all would you suggest to be included in the program?	practicals. Theoretical + simulated practicals + clinical observation of the cases.	24.1%
		Theoretical + simulated practicals + clinical observation of the cases + clinical placement.	61.4%

Table 1:- Students perception on implant treatment and education.

ISSN No:-2456-2165

ACKNOWLEDGMENT

The authors would like to thank all the participants of the study and the Institution for granting permission for the study.

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