



ORIGINAL RESEARCH PAPER

Periodontics

DENTAL LASER EDUCATION AND KNOWLEDGE AMONG FINAL YEAR DENTAL STUDENTS AT ADHIPARASAKTHI DENTAL COLLEGE- A QUESTIONNAIRE STUDY

KEY WORDS: Dentistry, laser, Co2, Diode laser.

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ABSTRACT

Aim of The Study: To evaluate the knowledge and educational level of final year dental students for the use of lasers in periodontics and dentistry. **Materials And Methods:** In Adhiparasakthi Dental College, a cross-sectional, descriptive study was conducted. A survey was conducted where 100 dental students from final year students are recorded and responded to it. There were two sections to the questionnaire. The first section of the questionnaire asked about the dental basic laser education, and the second question asked about respondents' knowledge of how lasers are used in Periodontics. **Result:** The majority of the students had sufficient knowledge about laser and its applications in periodontics. **Conclusion:** The final-year dental students of Adhiparasakthi Dental College have appropriate laser training and knowledge of how lasers are employed in dentistry. The undergraduate education curriculum should include more instruction on dental lasers. Because it is crucial for students to understand emerging technology and use them in their practice. By understanding about the undergraduate students' education and knowledge regarding the use of lasers in dentistry, this study has aided Adhiparasakthi Dental College in determining what steps should be taken to incorporate laser education into the undergraduate curriculum

INTRODUCTION

Undergraduate students need to be educated about modern technology because they are already influencing dental practice and altering conventional methods to make treatment simpler, easier, and less uncomfortable for patients.^[1]

All areas of research, including dentistry, are experiencing a rapid and luxuriant growth in the impending new technologies. Due to the benefits over traditional methods, these technologies are attracting young practitioners. Dental lasers are one of the most important advancements in dentistry, and they were first used in the 1960s.^[2]

LASER- Light Amplification by Stimulated Emission of Radiation. It is based on the idea of spontaneous stimulated emission theory, which was posited by Neil Bohr in the early 1900s, lasers operate on the premise of stimulated emission theory, which Albert Einstein proposed in 1917.^[3] In all areas of dentistry, different types of lasers with varied wavelengths are employed for various therapeutic techniques.^[4]

Understanding dental laser-how they work, what kinds there are, which ones to use for specific dental specialties, and how safe they are-is crucial for practicing and using them as beneficially. Dental practitioners are increasingly interested today in learning about emerging methods, devices, and materials that provide better dental care faster. The use of dental lasers is recognized as an efficient tool for improving the effectiveness, specificity, ease, cost, and comfort of dental treatment for patients based on the data and literature. Dental lasers have advantages, but they also have drawbacks, such as expensive laser units, the need for specialized training and education in laser operations, the need for different types of lasers for various procedures, the risk of disease transmission in immune compromised patients from laser-generated aerosols, and eye damage.^[5] In order to treat soft and hard tissues, lasers have been employed in all areas of dentistry, either as a primary tool or as an addition to more traditional methods. Lasers made of Co2, diode, and neodymium are mostly used to control gingival and periodontal tissue. The use of erbium hard-tissue lasers in apicoectomies, surgeries, and operative dentistry is extremely common^[6]. The purpose of this study was to educate emerging dentists about laser technology. This survey was conducted among emerging dentists to determine their awareness, perspective, and knowledge about dental lasers due to the growing accessibility of new technology in dental practices.

MATERIALS AND METHODS:

In Adhiparasakthi Dental College, a cross-sectional, descriptive study was conducted. Two components of a questionnaire were created and voluntarily distributed to Adhiparasakthi Dental College final-year dental students. The questionnaire was then collected after they responded in order to assess the results. The existing dental laser types and specific laser used in various dental specialties were used to create the questionnaire. 7 questions about the student's dental laser education and training at their institution made up the first part of the questionnaire. The second section contained 9 questions about uses of laser in periodontics.

Scoring System:

Table 1 displays the student replies to each question as yes or no responses when assessing dental student's laser education.

Table: 1

Items	No. Of Respondent Students	Percentage %
Do You Know What Is Laser	80	80%
Had Enough Dental Laser Education	12	12%
Had Previous Dental Laser Practice	10	10%
Need For More Dental Laser Education	76	76%
Had Interest In Dental Laser	72	72%
Do You Need For Dental Laser Ug Course	78	78%
Known Laser Type:		
Co2	52	52%
Nd:Yag Laser	2	2%
Er,Cr:Yag Laser	5	5%
Diode Laser	25	25%
Er:Cr:Ysgg Laser	6	6%
All Of The Above	10	10%

RESULT:

A total of 100 dental students (60 female and 40 male) responded to the questionnaires, making it 100% complete. Table 1 show that about 80% of the respondents know what is laser. Only 12% of them thought that they had enough education about dental laser. About 10% had practiced dental procedures with dental laser outside the college. Most of the

dental students has the interest in dental laser and would like to have more theoretical and practical education in this area (Table 1). Co2 and diode lasers were the two most popular types of lasers among them (Table 1).

Table :2 Laser -in Periodontics:

Laser -In Periodontics:	Correct		Do Not Know	Incor rect	Mean
	Yes	64			
Are You Aware That Lasers Used In The Treatment Of Periodontal Disease	No	35			
Laser Stands For Light Amplification By Stimulated Emission Of Radiation	45		31	23	1.86
Is Calculus Detection Done By Laser	30		19	50	2.00
Is Removal Of Calculus Done By Laser	48		33	18	1.85
Is Periodontal Pocket Disinfection Done By Laser	75		7	17	1.31
Is Gingivectomy & Crown Lengthening Done By Laser	81		9	9	1.27
Is Frenectomy Done By Laser	82		9	8	1.25
Is Removal Of Melanin Pigmentation Done By Laser	57		25	17	1.68
Laser Offers A Decreased Risk Of Infection, Sensitivity, And Bleeding After The Procedure	56		15	28	1.59

Table 2 displays the student replies to each question as correct, incorrect, and do not know responses as well as the mean and mean score for each section when assessing dental students' laser knowledge.

Table:2

RESULTS:

Table 2 demonstrates how much knowledge students have about laser applications in periodontics. According to Table 2, 64% of the respondents aware that lasers used in the treatment of periodontal disease. Only 30% of them were aware that the laser are used in calculus detection. Roughly 75% of people are knowledgeable with using lasers to disinfect periodontal pockets. The majority of students were aware that the lasers are utilized for treatments including frenectomy (82%), gingivectomy, and crown lengthening (81%).

DISCUSSION:

The invention of lasers was a significant turning point in dentistry, and today many procedures involve various lasers. Lasers are now used on a regular basis in medical procedures.^[6]

The knowledge required for students to use the most modern dental technology in their practice is sufficiently provided by adequate theoretical education. Since it is each student's primary source of knowledge and their comprehension of the subject depends on the information provided by their institution, So the education and practical uses provided at dental colleges is crucial for students.^[7] This study examined the education and familiarity of lasers used in dentistry by dental students in the last year at Adhiparasakthi Dental College.

The majority of pupils (80%) are familiar with the word "laser." But, the purpose of this survey was to evaluate the final-year dental students at Adhiparasakthi Dental College's awareness about the use of lasers in dentistry and periodontics. In this poll, their understanding of laser physics, various laser kinds, wavelengths, and the best kind of laser for each situation was not evaluated. Accordingly 12% of students had enough dental laser education in periodontics. Most of the pupils received no laser training during their

coursework. 72% of the students were interested in dental lasers. This shows how an average level of education was associated with an average level of knowledge about the use of lasers in dentistry. This demonstrates that students mostly rely on their dental college for info most importantly; more and more patients are learning about laser technology and its armation relating to their field of study. Only 10% of the students had the opportunity to use dental laser. Which shows that they are lack in using lasers in dentistry. The majority of the students expressed interest in dental laser. Due to its expanding use, periodontics at Adhiparasakthi Dental College provided the majority of the knowledge on dental lasers. Students must be aware of how laser technology is used in other dental specialties, though.

Due to its history as one of the first lasers and its widespread usage in treating soft tissues in both dentistry and medicine, CO2 lasers were the kind of lasers that dental students were most familiar with.^[8-10] Several students were also familiar with the diode laser type of laser. The majority of pupils (70%) were not aware of the role that lasers play in the detection of calculus. The majority of them were aware of its uses in periodontal dentistry, including gingivectomy and crown lengthening and frenectomy . Although the dental laser was developed in the middle of the 1960s and its efficacy was established in the late 1990s, neither a theoretical nor practical component of its use has yet been incorporated into the undergraduate dental curriculum.^[2,11] In Adhiparasakthi Dental College, laser units are provided. As newer technologies become available, dental students should receive training in them because this will help them in their future careers as practitioners and will also benefit dentists and patients. Today, more and more dentists are incorporating laser technology into their practices, more businesses are producing and marketing various dental lasers, and applications. As a result, they seek out dentists who have used laser for treatment procedures.^[12] Due to the high cost, packed schedule, expanded clinical training, and shifting teaching environment, the ongoing improvement of the dentistry curriculum poses a significant challenge to the professors, administrators, and students.^[1]

CONCLUSION:

Dental students at Adhiparasakthi Dental College has adequate laser education theoretically, but they were lack in utilization of laser practically. So undergraduate dental students need to be provided with laser for practical experience to make there confident about using laser safely.

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