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Knowledge, Attitude And Practice Of SOFT TISSUE LASER By An Orthodontist Among Dental Practitioners.

Lingeshkumar.N^{1*}, Vijayadhith.C², Ashok Pothuri³, Mohanakrishnan⁴

1. Senior Lecturer, Dept. of Orthodontics, Priyadarshini Dental College & Hospital, Pandur
2. Professor, Dept. of Orthodontics, Priyadarshini Dental College & Hospital, Pandur.
3. Reader, Dept. of Orthodontics, Priyadarshini Dental College & Hospital, Pandur.
4. Senior Lecturer, Dept. of Orthodontics, Priyadarshini Dental College & Hospital, Pandur.

Abstract

BACKGROUND- The usage of LASER in the field of dentistry began early in the year 1960. Hard tissue lasers used in the enamel and dentin surfaces have been studied briefly explaining the intensity, and glazing of the surfaces which began replacing the conventional drills used for cavity cutting procedures. Likewise SOFT TISSUE LASERS began replacing the conventional suturing techniques citing reduction in the bleeding, reduction in pain and overall patient comfort. **AIM-** The study was aimed in assessing the knowledge, attitude, perception and practice of SOFT TISSUE LASER by Orthodontist among Dental Practitioners. **METHODS-** a cross sectional study was carried among 95 dental professionals including Orthodontists, Periodontists and General Dentist. A self addressed questionnaire was circulated among the participants and their responses were processed further and analyzed. **RESULT & CONCLUSION-** Survey results infer that (3.7% of participants were aware of the SOFT TISSUE LASERS use in procedures in Orthodontics, 53.7% of participants know that SOFT TISSUE LASERS are used as adjunct in retention protocol .

KEYWORDS- Dental Practitioners, Orthodontist, Survey, Soft tissue laser

INTRODUCTION

The term Laser stands for 'Light amplification by stimulated emission of Radiation'. Past few decades have seen an increasing trend in the use of LASER in the field of Dentistry. LASER use in the dentistry has been divided into hard tissue and soft tissue based on the location of its use. SOFT TISSUE LASER has gained more popularity in the recent years because of its advantages like reduction in the bleeding, pain, reduction in the post operative swelling and less need of sutures. Usage of SOFT TISSUE LASER has garnered more weightage in the Periodontics and Oral Surgery leaving the rest of the Specialties less exposure to the LASER use. So this questionnaire survey has been conducted among dental professionals aimed to find the knowledge, Attitude and perception of SOFT TISSUE LASER usage by the Orthodontist among Dental Professionals.

Questions have been sent to the participants through Google forms containing 14 questions. One participant can submit only one response through his/her account. Responses were collected.

The questions given to participants were as below –

1. Age/Gender *

2. 1. Are you an Orthodontist/Periodontist/General Dentist? *

Mark only one oval.

- Orthodontist
 Periodontist
 General Dentist

3. 2. Are you associated with any teaching institution? *

Mark only one oval.

- Yes
 No

4. 3. Are you aware about the use of soft tissue LASER in Orthodontics? *

Mark only one oval.

- Yes
 No

5. 4. Do you feel it is appropriate to use soft tissue LASER by an Orthodontist? *

Mark only one oval.

Yes

No

6. 5. Procedures can be treated using soft tissue LASER in Orthodontics? *

a) Frenectomy b) Gingivectomy c) Removal of soft tissue around
TADs d) Exposure of unerupted teeth e) Ablation of aphthous ulcer

Mark only one oval.

yes

no

7. 6. Are you practising soft tissue LASER in your day to day practice? *

Mark only one oval.

Yes

No

8. 7. If yes, where do you use soft tissue LASER ?

Mark only one oval.

Private practice

Education institute

9. 8.How did you get exposed to soft tissue LASER'S in your practice? *

Mark only one oval.

- CDE programme
- Self taught
- Private certification courses
- Formal advanced dental program/Dental speciality /residency program

10. 9.How often do you use soft tissue LASER'S?

Mark only one oval.

- <1month
- 1-3month
- 3-6month
- once in a year

11. 10.Are you aware that soft tissue LASER is used as an adjunctive in retention of treated patients? *

Mark only one oval.

- Yes
- No

12. 11.What advantage(s) does soft tissue LASER have over conventional procedures? *

Mark only one oval.

- Pain
- Bleeding
- Post treatment wound healing
- All of the above
- Other: _____

13. 12.Do you feel that the intensity of LASER has any influence on treatment ?? *

Mark only one oval.

Yes

No

14. 13.Do you feel patients are aware of LASER therapies? *

Mark only one oval.

Yes

no

15. 14.If yes, How?

Mark only one oval.

Explained by the Doctor

Through Media

Through other Patients

RESULT

1. Of the 95 responses obtained from the participants, 66.3 % of participants around 63 of them were General Dental practitioners and 27.4 % of participants around 26 of them were Orthodontists and rest were Periodontists. (Fig.1)

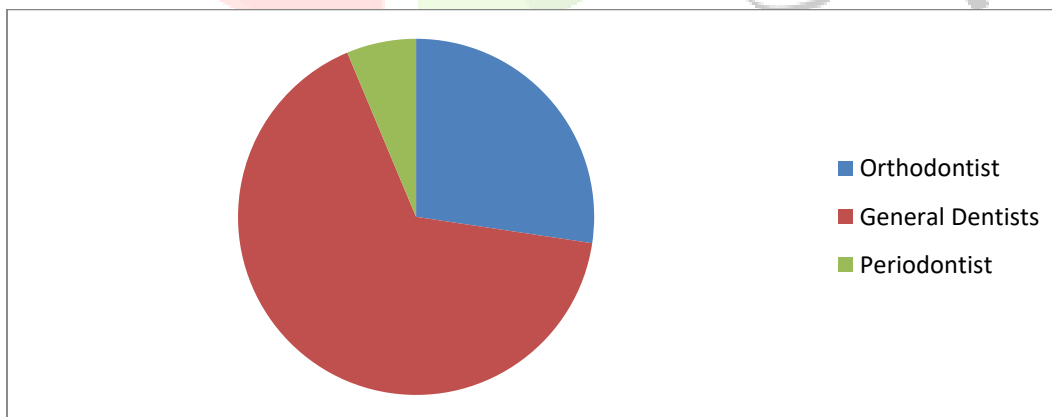


fig.1

2. Of the 95 responses received from the participants, around 66 participants averaging 66.3 % were associated with teaching institutions. Around 33.7 % of the participants involved in this study were not involved in any of the teaching institutions. fig.2

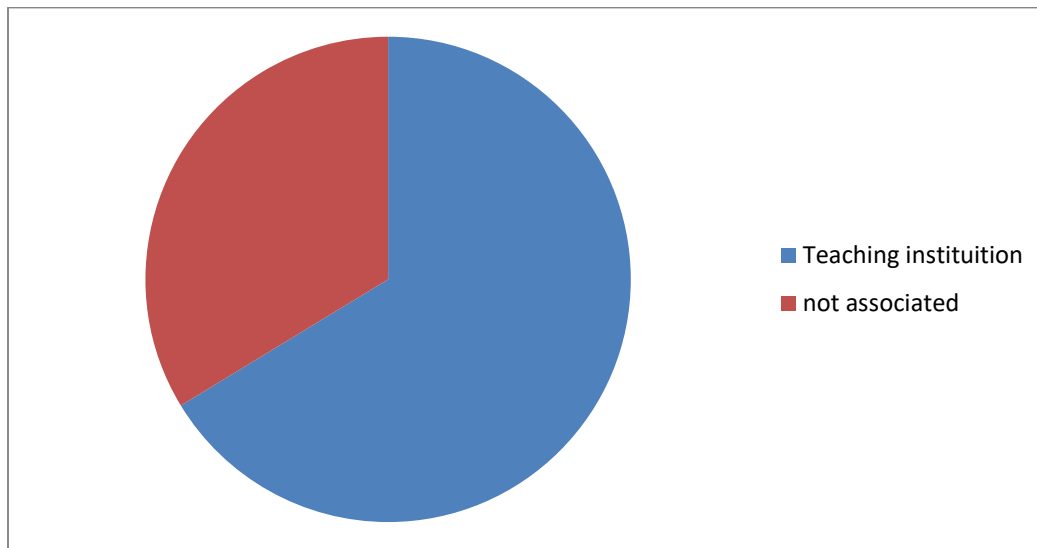


fig.2

3. Of the 95 responses received from the survey, 78.9 % of participants were aware about the use of SOFT TISSUE LASER in Orthodontics. Remaining 21.1 % of the participants were not aware of its use in Orthodontics fig.3

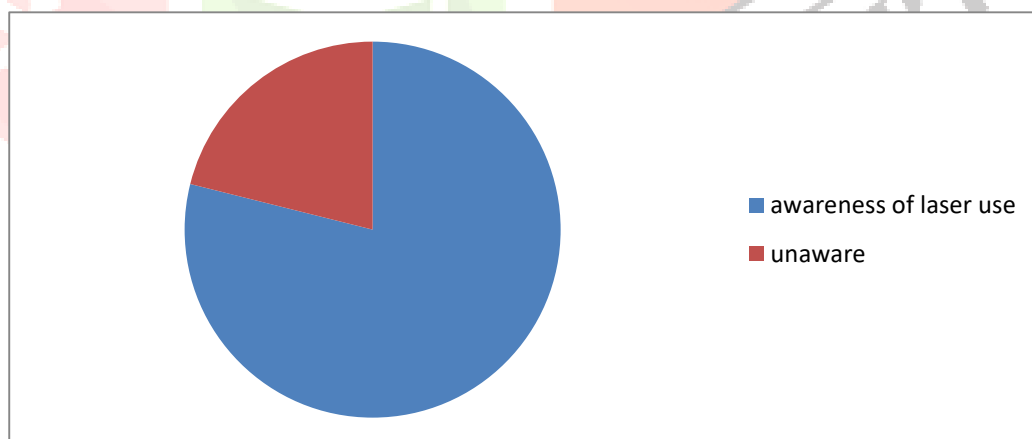


fig.3

4. Of the responses received 84.2% of the participants felt that it was appropriate to use the SOFT TISSUE LASER by Orthodontist. Remaining 15.8% felt that it was inappropriate to use LASER by Orthodontist. fig.4

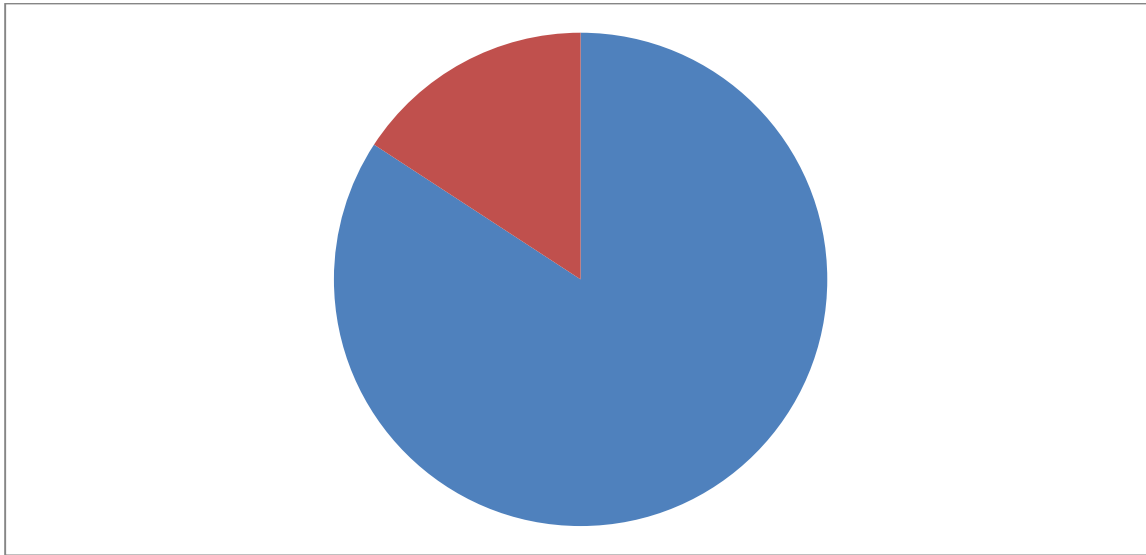


fig.4

5. Of the responses received by the participants, 93.7 % of them reported that Procedures like frenectomy , Gingivectomy, Soft tissue removal around TAD’s ablation of ulcer, Exposure of unerupted teeth can be treated by SOFT TISSUE LASER. Remaining 6.3 % of the participants were unaware of the SOFT TISSUE LASER use in the mentioned above procedures. fig.5

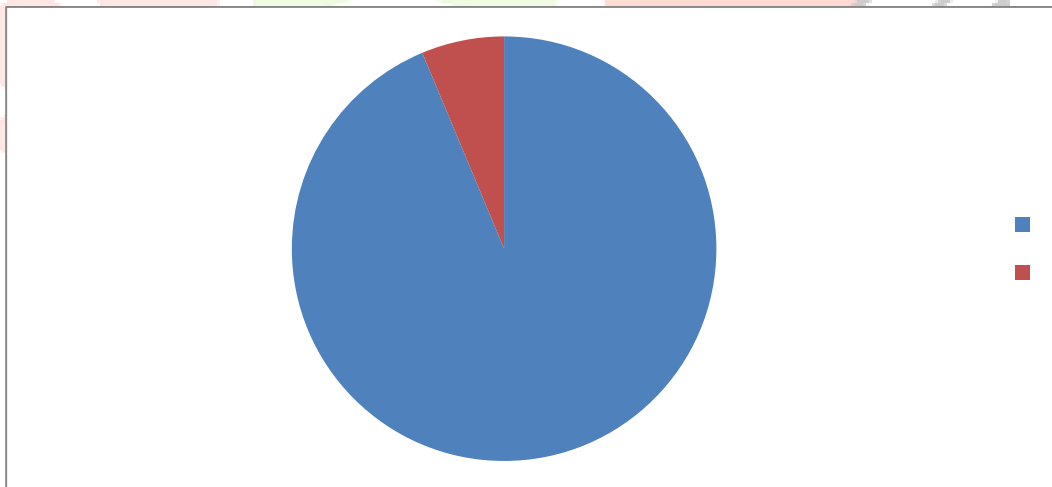


fig.5

6. Of the 95 responses from the participants 25.3 % of them around 24 of them were using SOFT TISSUE LASER in their day to day practice. Remaining 74.7% of them around 71 of the participants were not using SOFT TISSUE LASER in their practice. fig.6

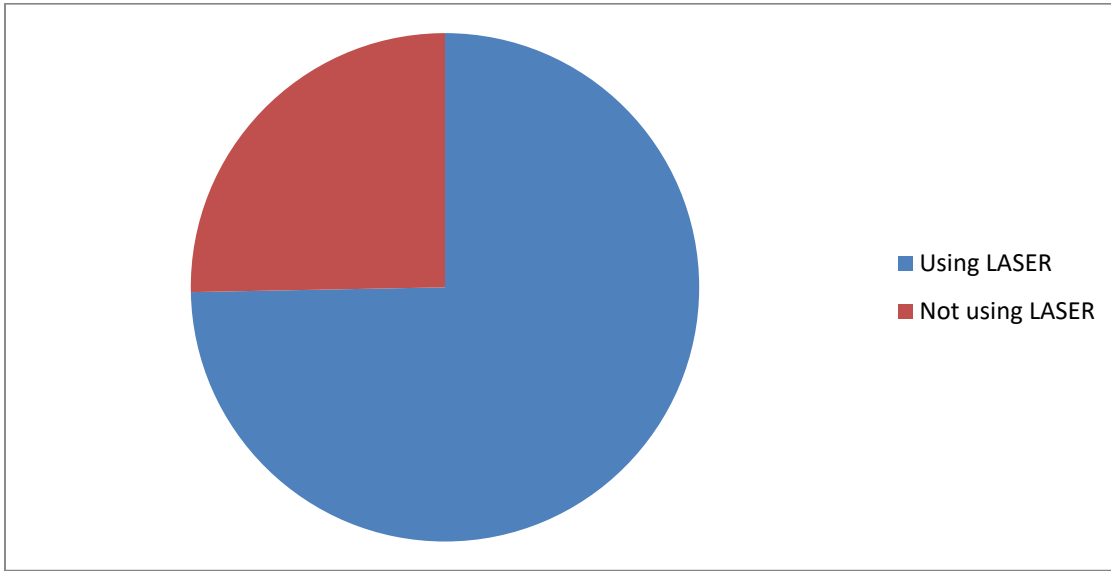


fig.6

7. Of the 45 responses received from the participants those who use SOFT TISSUE LASER 44.4% of them use LASER in educational institutions and remaining 55.6 % of them use LASER in their clinical practice. fig.7

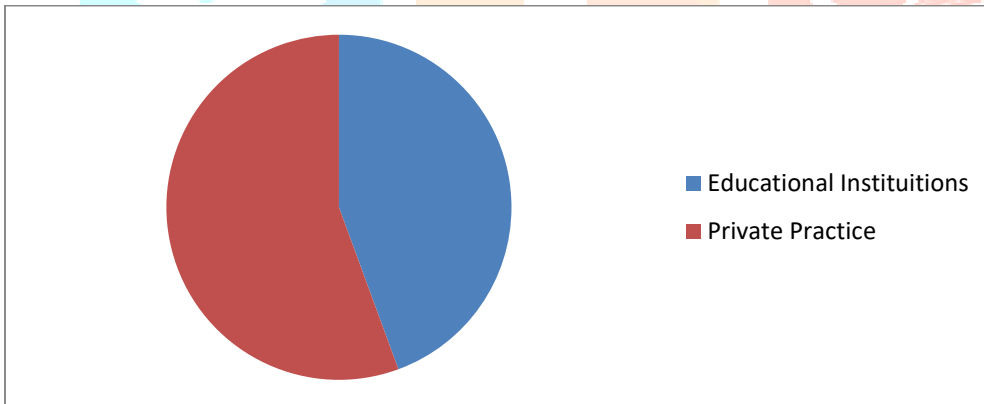


fig.7

8. Of the 95 responses received from participants highest of 37 participants around 38.9 % get to know about the SOFT TISSUE LASER by CDE programs conducted followed by 26.3 % of them around 19 of them get to know it by self taught procedures like Educational videos. 20 % of the participants underwent formal residency program in SOFT TISSUE LASER and around 14.7 % of them underwent private certification courses to get to know about the SOFT TISSUE LASER. fig.8

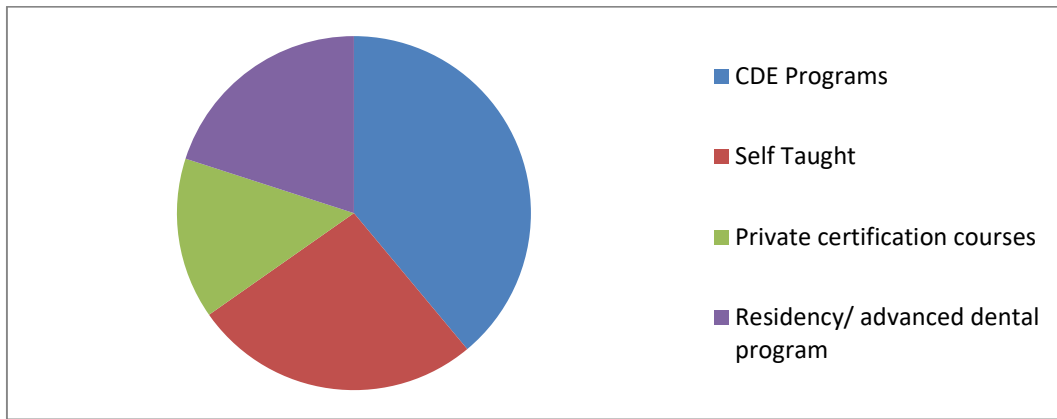


fig.8

9. Of the 64 responses received from the participants 26.6% of them around 17 of them use SOFT TISSUE LASER once in 3 months , 10.9 % of them around 7 participants use LASER once in a month, 15 of participants said they use once in 3 to 6 months, 39.1 % of them use once in a year. fig.9

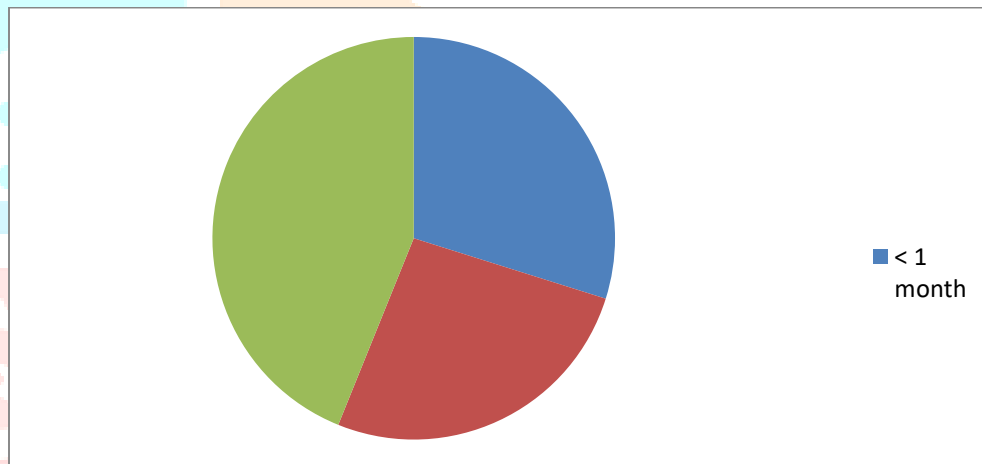


fig.9

10. Of the responses received 53.7% of them were aware of the SOFT TISSUE LASER use as an adjunct in retention after fixed orthodontic treatment. fig.10

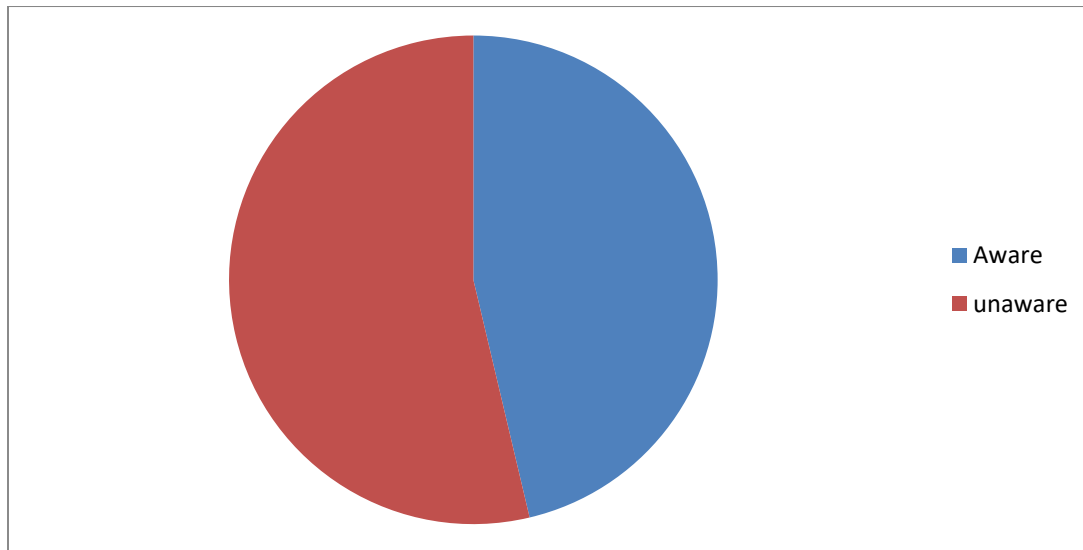


fig.10

11. Of the responses received 84.2 % of them responded that SOFT TISSUE LASER aid in reduction of bleeding, pain, Post treatment wound healing, 7.4 % of them responded that it aids in Post treatment wound healing alone , 1 participant responded that it has no advantages over conventional procedures, 4.2 % have reduction in bleeding alone fig.11

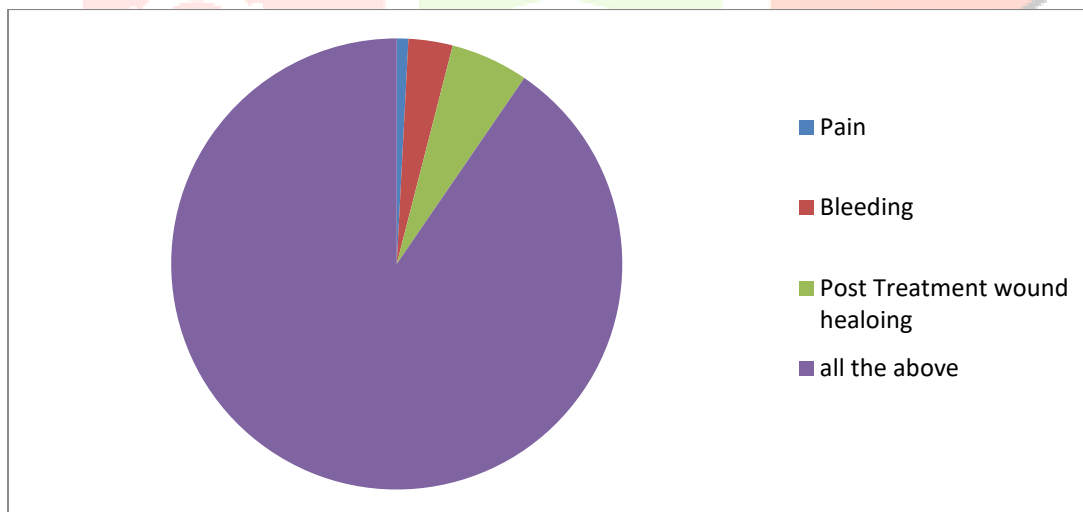


fig.11

12. Of the 95 responses received from participants around 82.1 % of them feel that intensity of LASER has influence on the treating surfaces. fig.12.

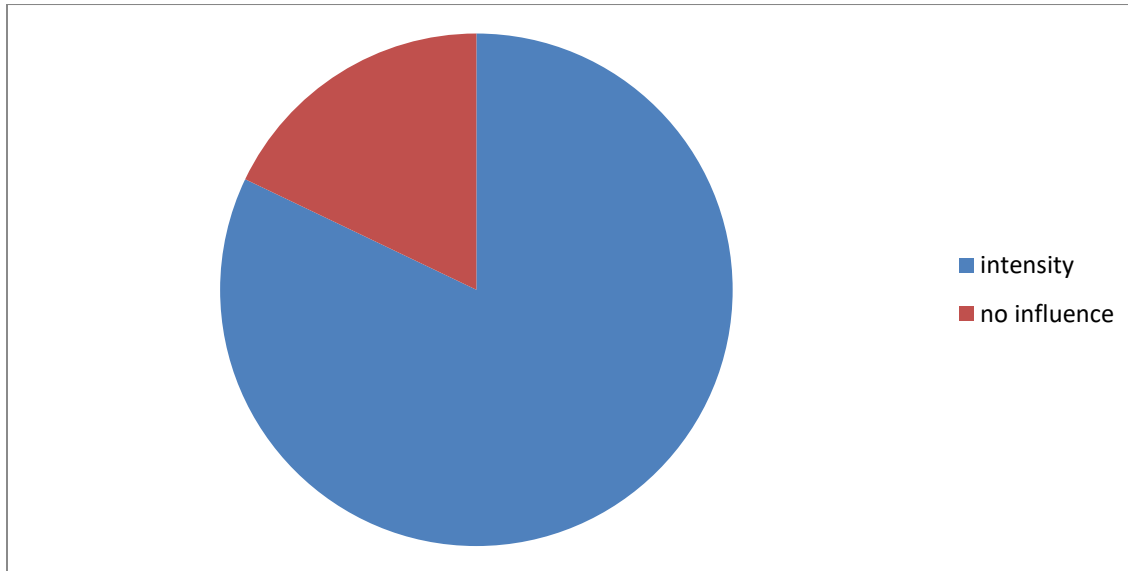


fig.12

13. Of the 95 responses from the participants, around 44.2 % of the participants states that patients were not aware of LASER therapies in Dentistry, where as 55.8 % of the participants states that patients were about some of the LASER treatment therapies. fig.13

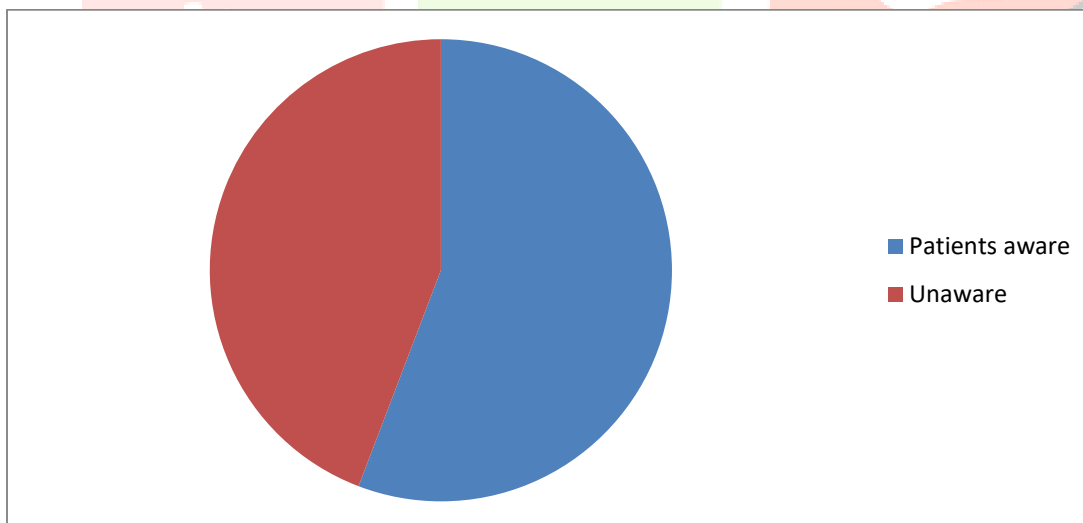


fig.13

14. Of the 58 responses from the participants, 56.9 % of participants around 33 know the LASER only through Doctor, 37.9% of them know about LASER through media and 5.2 % of them get to know by other patients. fig.14

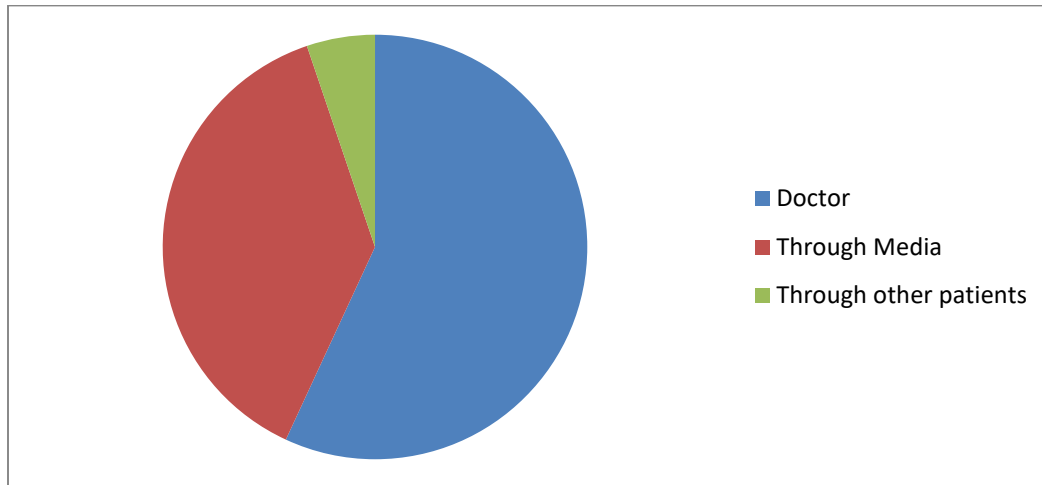


fig.14

DISCUSSION

Of the 95 participants participated in the study, 78.9% of them were aware of the use of soft tissue lasers by orthodontist in the field of dentistry. A whopping 93.7% of the participants know that procedures like frenectomy, gingivectomy, ablation of ulcer, soft tissue removal around TADS can be done by soft tissue lasers. 84.25% of the participants felt that it was appropriate to use soft tissue lasers. 84.2% of participants felt that lasers reduce bleeding, reduction in the Local anesthetic dose and aids in faster healing process. Only 53.7% of the participants have reported that soft tissue lasers can aid in retention protocol as an adjunct procedures. 82.1% of the participants have reported that intensity of the LASER has influence on the tissue surface being used upon. Around 44.2% of the participants felt that patients were unaware of SOFT TISSUE LASERS being used in the dentistry.

Most popularly used soft tissue lasers are Diode lasers, CO₂ lasers and erbium lasers. Diode lasers use a solid state elements that change electrical energy into light energy. This light energy from the diode is highly absorbed by the bone and teeth¹. Soft tissue lasers deliver energy in a gated or continuous manner. Diode laser, CO₂ lasers and Nd:YAG lasers have been effectively used for oral soft tissue surgical procedures⁴. Lasers work by thermal ablation. Thermal ablation depends on the amount of light energy absorbed. Degree of the absorption is determined by the wavelength. Diode lasers use a wavelength of 870-910nm. It was reported that enamel could be vapourized using a pulsed ruby laser². High levels of laser radiation resulted in significant damage to the surrounding tissue. CO₂ laser radiation at 10.6 micron, has strong absorption band in tooth enamel, producing cracks in the dental enamels and created a glazed appearance on the surface of the tooth. Investigations using Er:YAG laser have renewed interest of the

dental community in the laser as an alternative to the mechanic drill. Er:YAG laser falls in the area of the spectrum where both enamel and dentin have absorption peaks³. Advantages of lasers on day to day practice have overcome the disadvantages of conventional procedures except the cost of equipment and handling of the materials. Adding to the cost and material handling, patient safety and tissue safety too to be handled during the procedures adding to its disadvantages in regular practice.

CONCLUSION

Since laser is a blooming topic in the field of dentistry, it is vital in knowing the mechanics and treatment techniques that are required by each type of lasers for the procedures. Our study aimed in assessing the knowledge, attitude and perception of laser use by orthodontist. More detailed investigations on the knowledge of different type of laser for each type of procedure is inevitable in the future studies. Our study further showed that around 55.8% of the patients were aware of soft tissue laser therapies showing promising increase in its evolution in the field of dentistry. Further 38.9% of the participants get to know about soft tissue laser through continuing dental education and an increasing trend of 20% of participants took formal certification and residency program LASER .

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