

Original Research Article

Association of Laser Hair Removal of Face and Prevalence of Odontogenic Pain among the Females; An Observational Study Done in Riyadh

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Introduction: Laser therapy has been associated with certain complications following its use, which include erythema, pigmentation and bruising. Lasers are also found to be associated with affecting the quality of saliva produced by the parotid as well as other glands. **Materials and methods:** This is a cross-sectional study using a closed-ended questionnaire with one open-ended question. The survey was constructed using paper as well as online link. Statistics was done using SPSS version 19. Descriptive as well as inferential statistics will also be measured using the same software. A value of significance will be kept below 0.05. **Results:** This study involved N=246 female dental students from REU, amongst which 19% had not used laser for facial hair removal before as compared to 81% having used it. It was observed in findings that significant differences were reported when inquired about sensitivity after laser treatment (p-value: 0.005) and the prevalence of caries (p-value: 0.016). **Conclusion:** Sensitivity increased among the participants when exposed to laser treatment. No significant comparison could be achieved when compared on the basis of laser sessions.

Keywords: Laser, dental pain, hair removal.

INTRODUCTION

There are multiple causes of toothache, which also include nerve-related problems. Usually, pain from surrounding nerves mainly trigeminal, radiates and express in the form of tooth ache. Although this etiology of oro-facial pain is more common among old aged patients, young aged people may acquire this problem if triggered externally (Noma et al, 2017; Mehrkhodavandi, Green & Amato, 2014).

Laser therapy for facial hair removal is becoming a common trend among the female population in both developed as well as developing countries. Initially, this technology was introduced in the market to treat unwanted hair on the body. However, this procedure was merely restricted to be performed by dermatologists as well as cosmetologists. In recent times, laser machines have been manufactured to be used in homes by the patients themselves (Lee, 2018; Onwudiwe, 2016; Lim et al, 2017)

Laser therapy has been associated with certain complications following its use, which include erythema, pigmentation and bruising. In many cases, these side effects are subsided after a specific period of time (Nilforoushzadeh et al, 2017; Nistico et al, 2018). Furthermore, lasers are also found to be associated with affecting the quality of saliva produced by the parotid as well as other glands. Low salivary rate is linked with the incidence of dental caries, which in turn

causes toothache. A lack of catalytic enzyme takes place when these glands are exposed to the laser beam (El-Sadek et al, 2017; Palma et al, 2017; Uzeda-e-Silva et al, 2017).

AIM OF THE STUDY

To determine the incidence of caries and tooth sensitivity among the patients undergoing facial hair removal treatment using laser therapy.

MATERIALS AND METHODS

This is a cross-sectional study using a closed-ended questionnaire with one open-ended question. The survey was constructed using paper as well as online link. REU female students took part in this study. Questions included facial laser treatment experience, number of sessions, sensitivity before and after the treatment and a few more.

Statistics was done using SPSS version 19. Descriptive as well as inferential statistics will also be measured using the same software. A value of significance will be kept below 0.05.

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Inclusion Criteria

Females aged more than 18 years.

Informed Consent

Participants were asked to sign the informed consent before the start of the study.

RESULTS

This study involved N=246 female dental students from REU, amongst which 19% had not used laser for facial hair removal before as compared to 81% having used it. As far as the number of previous laser sessions was concerned, 32% has 1-3 sessions, 36% had 4-6 sessions and 32% had undergone 7+ sessions (figure 2). The study participants were also grouped according to their brushing frequency, which revealed that 26% brushed once a day, 71% brushed and 3% didn't brush (figure 3).

Table 1 shows the comparison of survey responses on the basis of laser use history. It can be noted from the findings that the overall significant difference among the groups was seen apart from change in oral cavity experience (p-value: 0.583), prevalence of caries (p-value: 0.203) and history of teeth

whitening (p-value: 0.274). Statistically significant comparisons were found when inquired about sensitivity before laser treatment (p-value: 0.019), after laser treatment (p-value: 0.020) and having RCT before (p-value: 0.012).

Table 2 describes the difference in responses among the participants when compared on the basis of laser sessions. It was interesting to note that the no significant difference was found when inquired about sensitivity after laser treatment (p-value: 0.115), changes in the oral cavity (p-value: 0.911), prevalence of caries (p-value: 0.514), history of RCT and teeth whitening (p-value: 0.478 and 0.701 respectively). Merely one survey question revealed a significant difference when inquired about sensitivity before laser treatment (p-value: 0.000).

Table 3 explains the comparisons on the basis of brushing frequency. It can be noted from the findings that significant differences were reported when inquired about sensitivity after laser treatment (p-value: 0.005) and prevalence of caries (p-value: 0.016). However, no statistically significant comparison was made when inquired about sensitivity before laser treatment (p-value: 0.250), change in the oral cavity (p-value: 0.989), history of RCT and teeth whitening (p-value: 0.531 and 0.362 respectively).

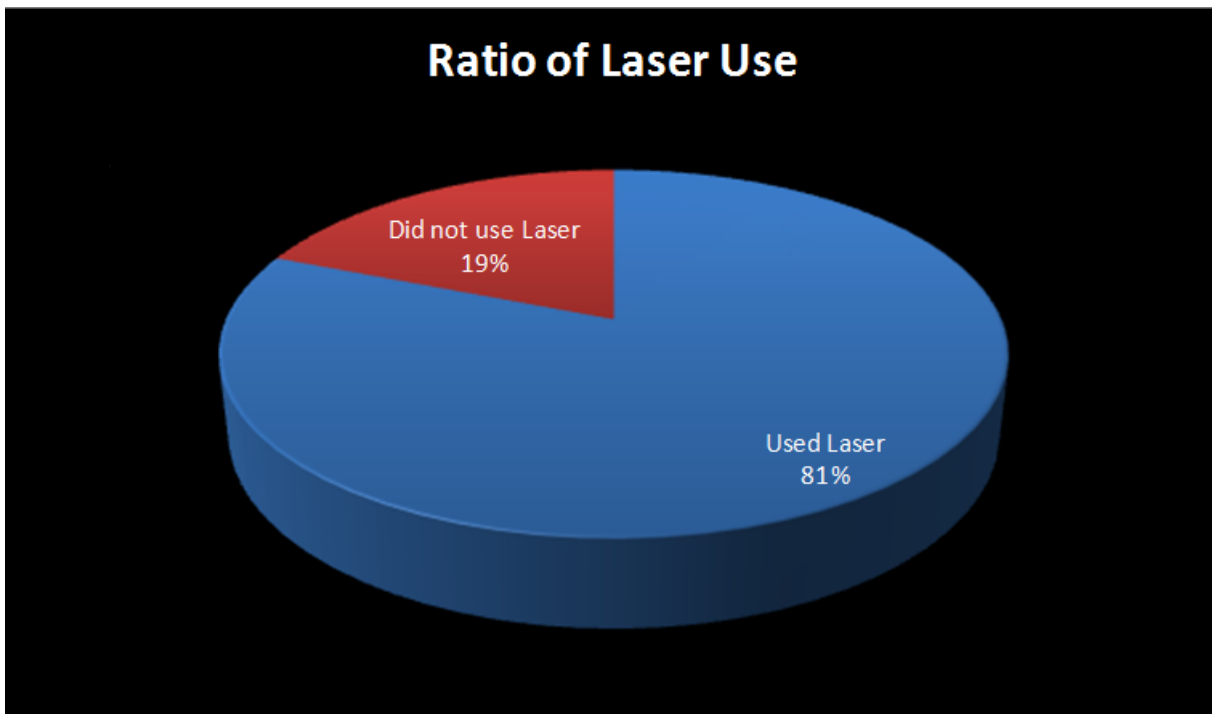


Figure 1: Ratio of participants having used or not used laser for facial hair removal

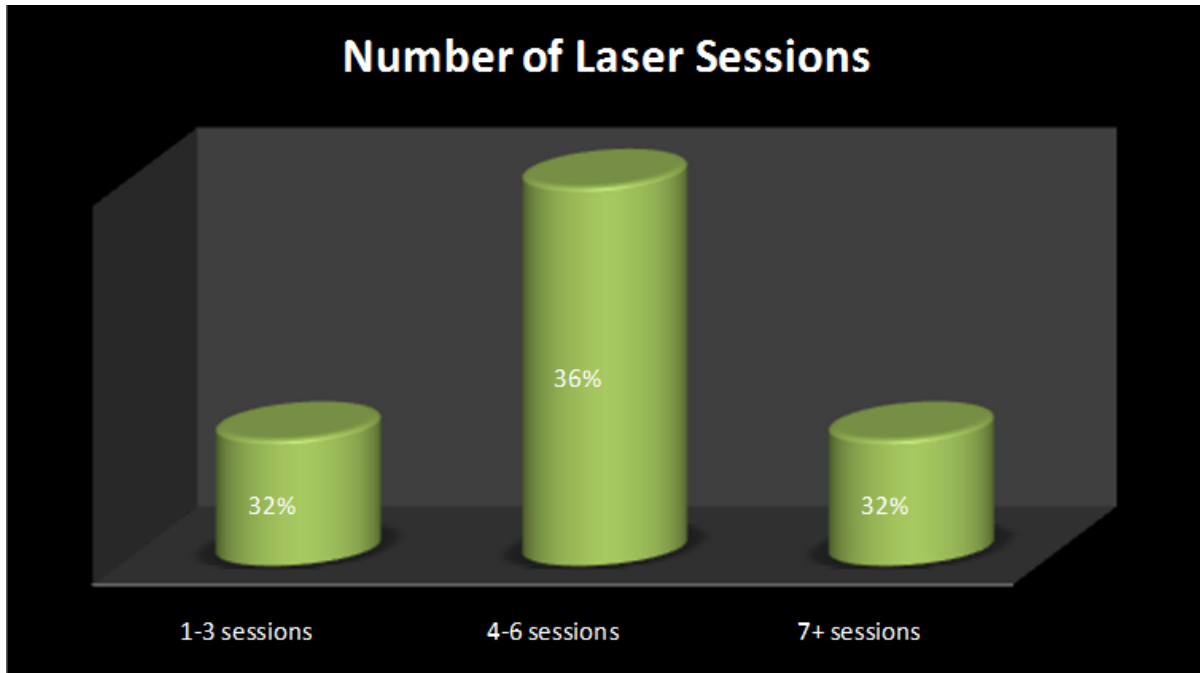


Figure 2: Number of laser sessions among the study participants

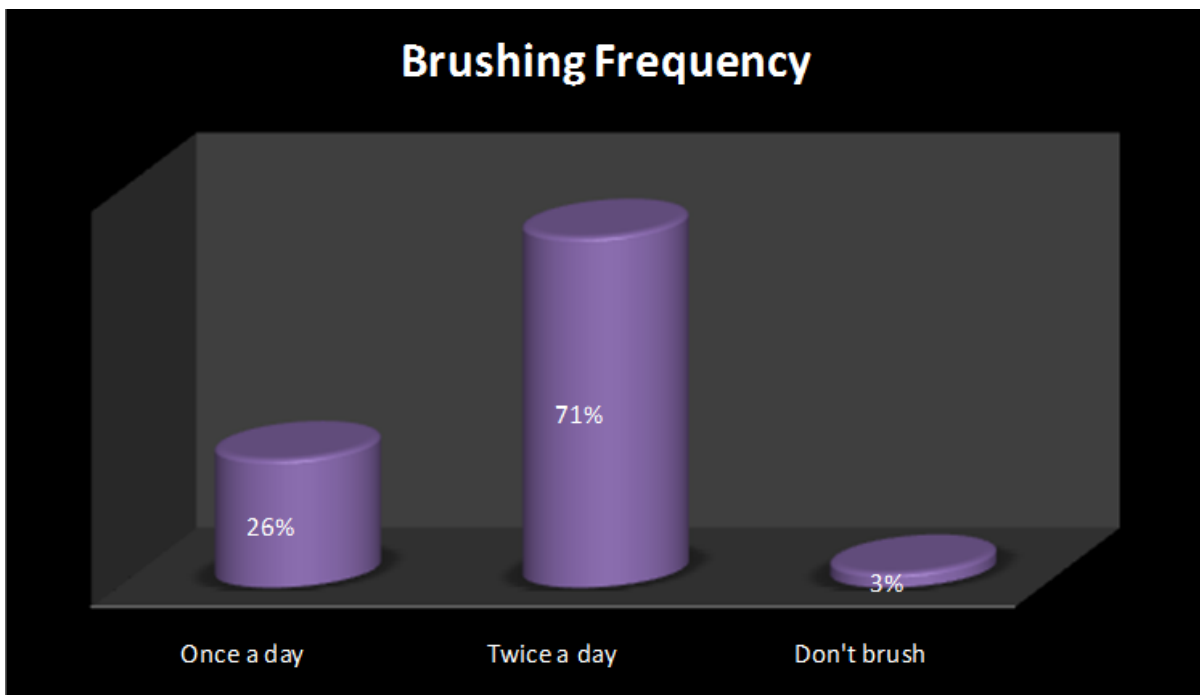


Figure 3: Brushing frequency of the study participants

Table 1: Survey responses and their comparison on the basis of laser use

Survey Items	Used Laser Before	Did Not Use Laser Before	P- value
Sensitivity before laser treatment	Yes: 36% No: 64%	Yes: 13% No: 87%	0.019
Sensitivity after laser treatment	Yes: 40% No: 60%	Yes: 15% No: 85%	0.020
Change in oral cavity experienced	Yes: 10% No: 90%	Yes: 0% No: 100%	0.583
Prevalence of caries	Yes: 59% No: 41%	Yes: 51% No: 49%	0.203
Had RCT before	Yes: 47% No: 53%	Yes: 27% No: 73%	0.012
History of teeth whitening	Yes: 62% No: 38%	Yes: 56% No: 44%	0.274

Table 2: Survey responses and their comparison on the basis of laser sessions

Survey Items	1-3 sessions	4-6 sessions	7+ sessions	P- value
Sensitivity before laser treatment	Yes: 48% No: 52%	Yes: 42% No: 58%	Yes: 15% No: 85%	0.000
Sensitivity after laser treatment	Yes: 49% No: 51%	Yes: 41% No: 59%	Yes: 31% No: 69%	0.115
Change in oral cavity experienced	Yes: 9% No: 91%	Yes: 11% No: 89%	Yes: 10% No: 90%	0.911
Prevalence of caries	Yes: 67% No: 33%	Yes: 59% No: 41%	Yes: 55% No: 45%	0.514
Had RCT before	Yes: 45% No: 55%	Yes: 52% No: 48%	Yes: 42% No: 58%	0.478
History of teeth whitening	Yes: 58% No: 42%	Yes: 65% No: 35%	Yes: 59% No: 41%	0.701

Table 3: Survey responses and their comparison on the basis of brushing frequency

Survey Items	Once a day	Twice a day	Doesn't brush	P- value
Sensitivity before laser treatment	Yes: 43% No: 57%	Yes: 30% No: 70%	Yes: 40% No: 60%	0.250
Sensitivity after laser treatment	Yes: 56% No: 44%	Yes: 32% No: 68%	Yes: 60% No: 40%	0.005
Change in oral cavity experienced	Yes: 10% No: 90%	Yes: 10% No: 90%	Yes: 0% No: 100%	0.989
Prevalence of caries	Yes: 71% No: 29%	Yes: 53% No: 47%	Yes: 83% No: 17%	0.016
Had RCT before	Yes: 48% No: 52%	Yes: 43% No: 57%	Yes: 29% No: 71%	0.531
History of Teeth whitening	Yes: 67% No: 33%	Yes: 58% No: 42%	Yes: 71% No: 29%	0.362

DISCUSSION

This study aimed to determine a relationship between laser hair removal for face and dental pain among female subjects. It can be noted from the results that there was an increase of pain prevalence among groups having laser treatment as well as no treatment. However, more difference in percentage increase was noted among the group having received facial laser treatment. The prevalence of caries was also found to be higher among the laser treatment group as compared to non-laser group. We also recorded open-ended response if any change in oral health was experienced during laser treatment. Participants with laser treatment revealed that they experienced sensitivity after they began their laser treatment.

On the other hand, no statistical difference was achieved when compared the post-laser sensitivity according to the number of laser sessions. It can be noticed from the findings that sensitivity was more during the initial laser sessions, but decreased when further sessions took place. The number of laser sessions did not affect the prevalence of caries as well, which is also the case with having experienced any changes in the oral cavity. As far as brushing habits were concerned, it was noticed that the participants brushing twice a day showed higher sensitivity prevalence. This is possible due to aggressive brushing, which could lead to wearing off enamel

and eventually causing teeth sensitivity (Kopycka-Kedzierawski et al, 2017).

CONCLUSIONS

- Sensitivity increased among the participants when exposed to laser treatment.
- No significant comparison could be achieved when compared on the basis of laser sessions.

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CONFLICT OF INTEREST

There was no conflict of interest among the authors of this study.