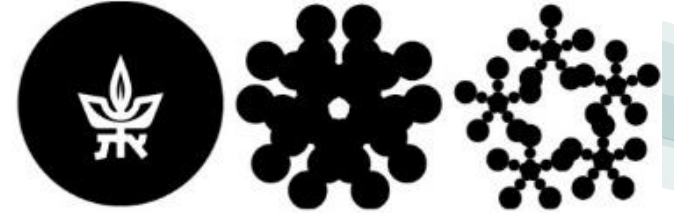


מיסודה של אחוות אלפה
אומגה הבינלאומית
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Intra-oral quantitative cold sensory test as a predictor of postoperative pain after restorative dental treatment.

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Abstract & study objectives



Postoperative pain affects 40% of the population posing a substantial concern for both dentists and patients. Its potential to induce severe discomfort can have repercussions, potentially fostering negative behaviors like dental anxiety and neglect. Addressing and managing this aspect is pivotal in ensuring a positive post-treatment experience and long-term oral health.



This study aims to tackle this issue by establishing a framework to identify patients at a heightened risk of experiencing post-operative pain by using IQST (Intra-oral Quantitative Sensory Testing).



Visual representation of IQST

Methodology

- 66 dental patients (27 women, 39 men; average age 36) completed preoperative assessments including dental anxiety (DAS) and general depression/anxiety (PHQ-4) and IQST involving a cold swab applied to the oral mucosa measuring the cold sensation's duration, its intensity (VAS) and severity of pain caused by it (VAS). Follow-up evaluations at 6, 24, and 48 hours post-operation gauged pain levels (VAS) and medication usage. Inclusion criteria: adults over 18 with Class 1 or Class 5 tooth lesions; exclusions: extensive caries near pulp, central nervous system conditions, prior analgesic use, or medication affecting the nervous system. Data collected: gender, age, income, DMFT, treated jaw, anesthesia type/amount, DAS & PHQ4 scores.

Results

descriptive data

Out of 78 patients approached, 3 declined due to pain fear, 5 needed amalgam treatment, 2 didn't respond to follow-up, and 2 required extensive restoration, leading to an 84.61% participation rate. Population breakdown: 27 women, 39 men, with income distribution of 15 low, 44 average, and 7 high. Average age: 36. Restorations included 26 class V and 40 class I. Two patients used paracetamol, one used Advil, while the rest did not take any analgesics.

Mean time of cold sensation was 12.98 (sd+/-10.834), male 15.23 (sd+/-12.298) & female 9.74 (sd+/-7.341). Mean cold sensation was 4.08 (sd+/-2.165), male 4.05 (sd+/-1.905) & female 4.11 (sd+/-2.532). Pain caused by cold sensation was 0.29 (sd+/-1.147), male 0.44 (sd+/-1.447) & female 0.07 (sd+/-0.385).

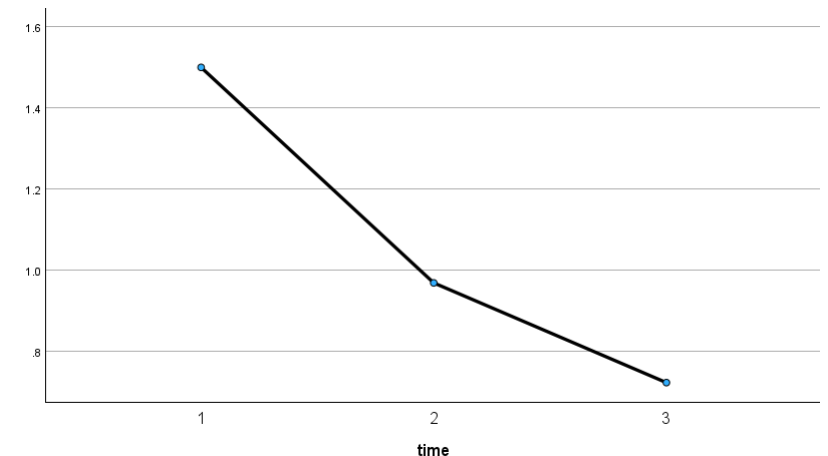
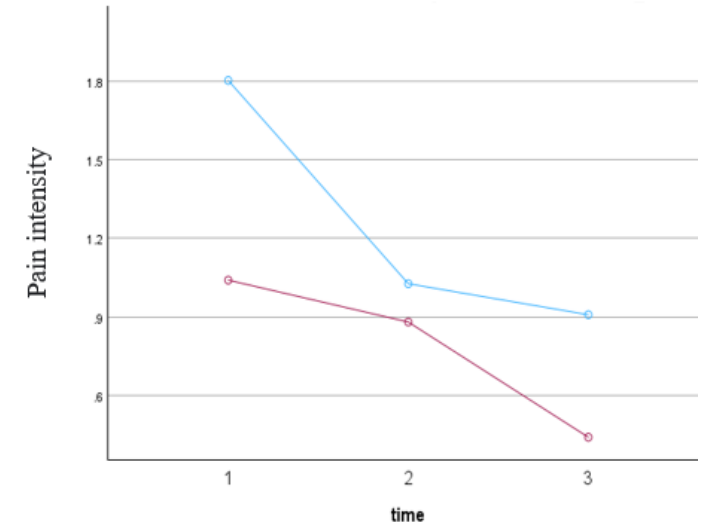
Time, pain & sex

We observed consistently higher reports of pain among males compared to females at all three recall points. The pain scores for males were notably elevated at 1.8 (sd +/- 1.814), 1.03 (sd +/- 1.32), and 0.9 (sd +/- 1.34), in contrast to the corresponding scores for females at 1 (sd +/- 1.69), 0.88 (sd +/- 1/45), and 0.44 (sd +/- 1.22), respectively as seen in Table 1.

Pain intensity peaked at the 6 hour interval and sharply decreased there after as seen in table number 2.

Table 1

Pain vs time according to sex



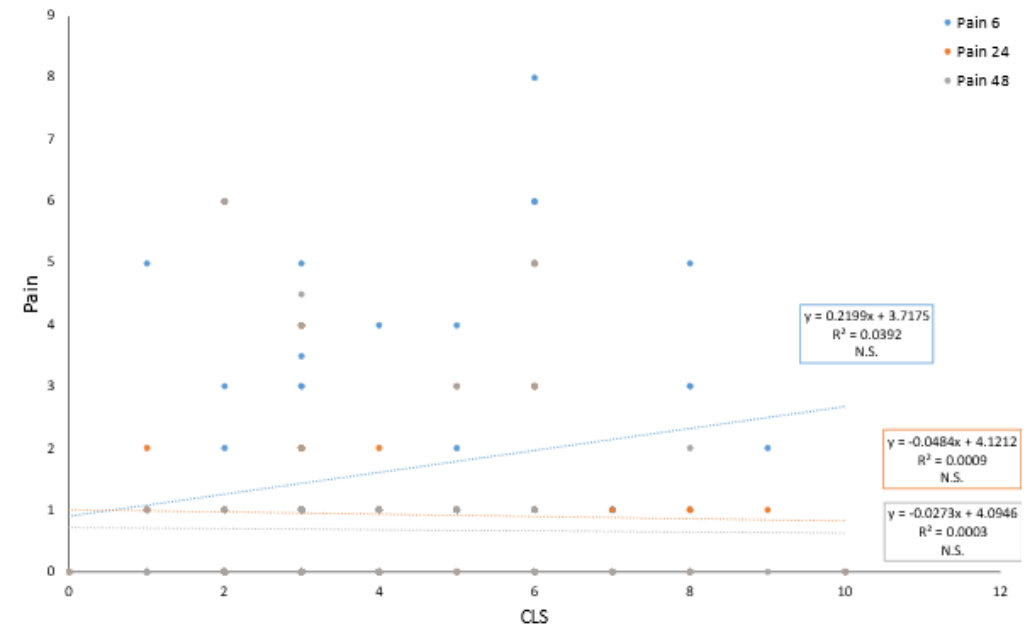
- CLS, TT & PT effect on pain over time

Examining correlations between a patient's cold sensation duration and discomfort showed no statistically significant link with reported pain severity at 6, 24, and 48-hour intervals post-treatment. The data across all categories display considerable variability, as illustrated in Figure 3, emphasizing the nuanced nature of the relationship between cold sensation-related factors and post-treatment pain outcomes.

- DAS, PHQ-4 effect on cold sensation and pain.

The subjects' average Dental Anxiety Score (DAS) was 6.49, and the average Patient Health Questionnaire-4 (PHQ-4) score was 0.97, notably low, particularly for the PHQ-4. Examining correlations between DAS and PHQ-4 scores and their impact on cold sensation, duration, and induced discomfort revealed no statistically significant findings (DAS Sig 0.254, PHQ-4 Sig 0.974; DAS Sig 0.632, PHQ-4 Sig 0.351; DAS Sig 0.620, PHQ-4 Sig 0.506). Similarly, no significant correlation was found with pain severity reported at 6, 24, and 48-hour intervals post-treatment, nor did variables like sex and age affect these patterns.

Figure 3



Conclusion

- Subject reactions to intra-oral cold stimulation of the oral mucosa could hold promise as a predictive tool for postoperative dental pain (PDP) following restorative dental procedures. Anticipating which patients may be prone to PDP allows clinicians to tailor treatment strategies, such as selectively prescribing postoperative analgesic drugs to high-risk patients and avoiding unnecessary medication for those with a lower likelihood of experiencing PDP.
- It is this author's opinion that more extensive studies need be conducted on larger sample population with an emphasis on more invasive procedures in order to affirm the finding of this study.

