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Exacerbation of chronic myofascial pain during COVID-19

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ABSTRACT

Objective: The COVID-19 pandemic-related restrictions on the public have led to changes in occupation status and societal behavior which may be linked with adverse effects on mental health. We hypothesized that elevated personal stress induced by COVID-19 may underlie pain exacerbation among individuals with chronic myofascial pain.

Methods: Comprehensive myofascial pain questionnaire among 319 patients registered in our pain clinic. In total, 78 patients with TMD-associated pain responded and 113 patients with pain in other orofacial regions responded.

Results: Patients with chronic TMD pain reported a higher self-rated stress level, which correlated with significantly increased pain intensity, and analgesic consumption. In contrast, patients experiencing non-TMD pain did not report of any increase pain, regardless of their stress levels.

Conclusion: Significant correlation between self-perceived psychosocial stress levels and chronic myofascial pain exacerbation. Patients may benefit from early education and conservative intervention, and avoid uncontrolled increases in consumption of pain relief medication.

1. Introduction

COVID-19 presents a serious societal challenge, requiring adaptation to health authority recommendations which affect many aspects of daily activity and may have adverse effects on mental health, anxiety, depression and negative social behaviors [1].

Temporomandibular disorders (TMDs) encompass a variety of conditions involving the temporomandibular joint (TMJ), masticatory muscles, and adjacent soft tissue components [2–4]. Despite the widespread acceptance that stress is a major factor in TMD, the amount of evidence supporting this dogma remains limited [5,6].

During the current COVID-19 pandemic, we observed a prominent increase in referrals to our in-hospital oral medicine clinic, with a main complaint of a myofascial pain. The presented survey aimed to evaluate whether patient-rated COVID-19-induced stress adversely affects the intensity and frequency of myofascial chronic pain.

2. Method

The study was approved by the Institutional Review Board (IRB), the Helsinki Committee of Galilee Medical Center (GMC). This descriptive research was carried out by a web-based 30 multiple-choice question online survey (Qualtrics platform) between April 10 and May 10, 2020 to patients over 18 years old that had been admitted prior to the COVID-19 era to our clinic with an orofacial pain complaint. The survey was anonymous, and participants were allowed to stop at any time point. There were no geographic or ethnic limitations for participation.

The questions assessed the intensity, character, location, and frequency of myofascial pain before and after the COVID-19 outbreak. Pain intensity was measured using the standard 10-point visual analog scale and by considering an increase in analgesics use during this period.

A multivariate logistic regression was performed to isolate pain exacerbation predictors. The Dunn, Tukey or Bonferroni tests were used to adjust p values for multiple comparisons. GraphPad Prism version 8 (GraphPad Software, USA) was used for statistical analyses.

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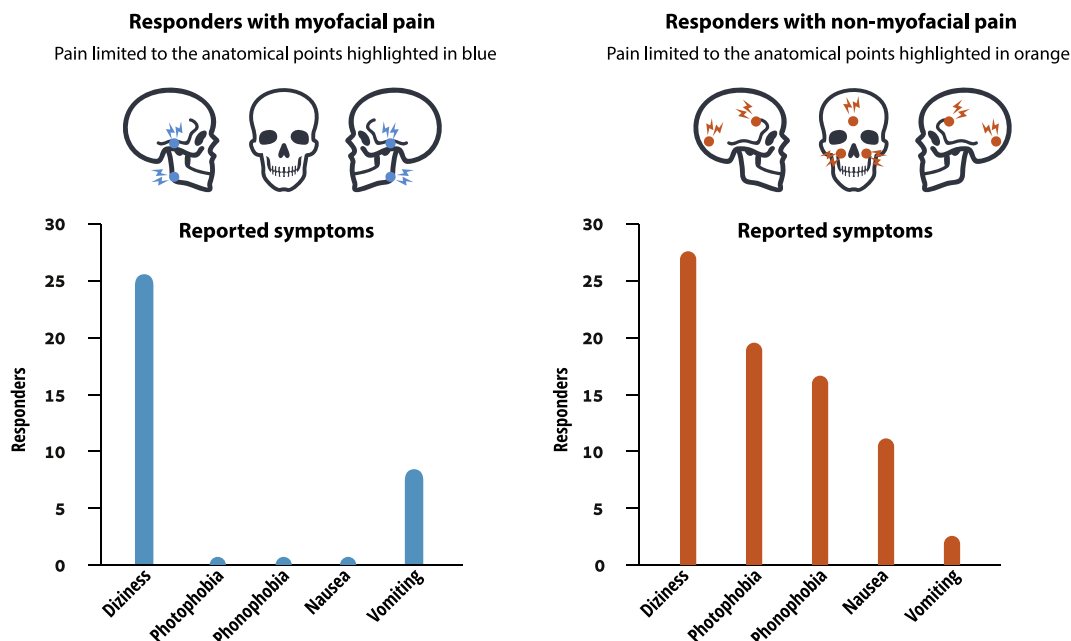


Fig. 1. The intensity of orofacial pain. Change in mean VAS scores of TMD patients (left) and non-TMD patients (right).

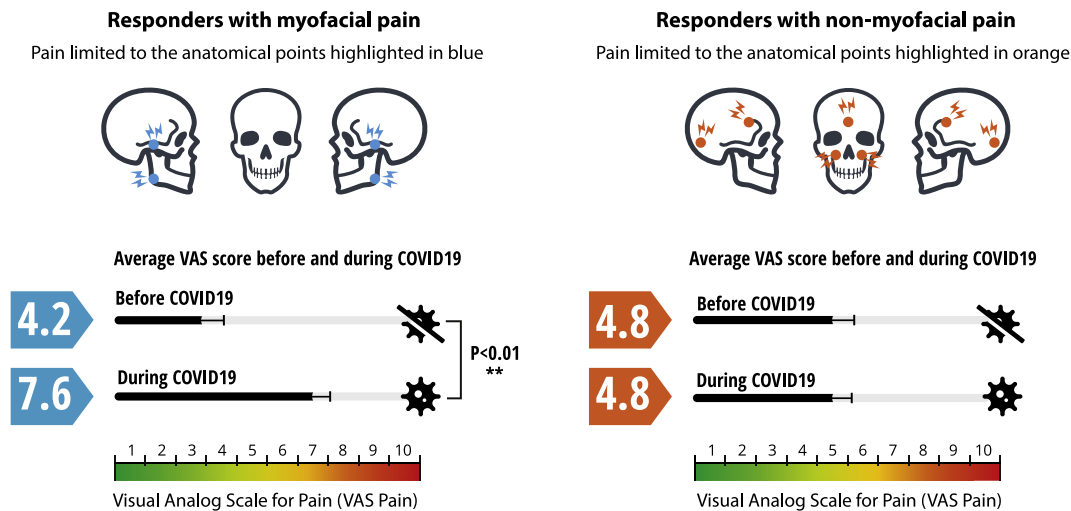


Fig. 2. Use of analgesics. 78% of the participants in the TMD group (left panel) reported on increased analgesic use, compared to 16% in the non-TMD group.

3. Results

The questionnaire was completed by 319 participants, 191 of whom had chronic myofascial pain. Of the 191 eligible participants, 78 suffered from pain in the temporomandibular region exclusively (masseter and temporalis regions; TMD group) and 113 had pain in other regions (sub-occipital, frontalis, infra-orbital and temporal fossa; non-TMD group). There was no significant difference in the mean age or gender distribution of the two groups.

An exacerbation in the pain intensity was reported by TMD patients, with an increase in mean VAS scores from 4.2 ± 1.06 to 7.6 ± 0.89 (p value < 0.01), while no difference was reported in the non-TMD group (Fig. 1). 78% of TMD patients as compared to 16% of the non-TMD patients reported on increased consumption of analgesics during the COVID-19 period (Fig. 2).

TMD participants reported on high rates of watching COVID-19 news, and most had lost their jobs during the study period. In contrast, participants in the non-TMD group reported on lower consumption of COVID-19-related news and maintained their occupational profile (Fig. 3).

4. Conclusion

The current survey found that TMD with masseter and temporalis pain worsened in responders with self-perceived elevated personal stress levels induced by COVID-19 which may also be related to employment status and high levels of news consumption. In contrast, non-TMD pain showed no dependence on COVID-19-related stress.

We identified a significant correlation between self-perceived psychosocial stress levels and chronic myofascial pain exacerbation. We are

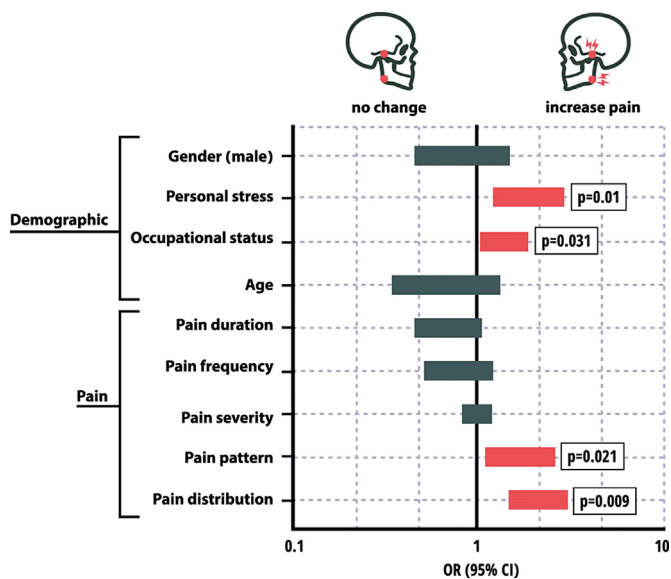


Fig. 3. Forest plot analysis. Pain distribution, pain pattern, occupational status, and personal stress demonstrated statistical significance.

convinced that appropriate treatment, patient education, maintaining occupational status and reduction of television and news consumption may prevent pain aggravation and extreme analgesics consumption during stressful periods, such as the current COVID-19 pandemic. Early recognition of the etiologic factors will facilitate appropriate treatment selection to reduce or eliminate the signs and symptoms of TMD.

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