

**Determination of the effect of stress on the
salivary cortisol level and myofacial pain
among sample of university students.**

A Thesis

Submitted to the Council of the College of Dentistry at the
University of Baghdad in Partial Fulfillment of the
Requirements for the Degree of Master of Science in Oral
Medicine

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2013 A.D.

1434 A.H.

Abstract

Psychological stress is known to induce various adaptational responses of physiologic systems, including increased the activity of the hypothalamic-pituitary-adrenocortical system which promotes cortisol secretion. Cortisol is an essential hormone in the regulation of the stress response, and salivary cortisol has been used as a measure of free circulating cortisol levels.

Temporomandibular disorders are a collection of disorders involving the temporomandibular joint, the soft tissue structures within the joint, and the muscles of mastication. Stress related parafunctions have a role in initiating and aggravating of temporomandibular disorders. The most common type of painful temporomandibular disorders is myofascial pain.

The study has carried out to evaluate the level of salivary cortisol in a stressed sample of university students with myofacial pain and whether this finding could have a significant value as a psychobiological marker.

A total ninety eight Baghdad university students, under and post graduate, aged (18-30) years were enrolled in this study. Fifty students were with myofacial pain as a study group and forty eight students were without myofacial pain as a control group. The participants examined according to Research diagnostic criteria of temporomandibular disorders (Axis I).

Five ml of unstimulated whole saliva samples were collected before final examination and three months later to measure salivary cortisol.

The current study shows a highly significant difference in salivary cortisol level between the two periods for both the study and control groups, and a non significant difference between the two groups in before examination period. Furthermore a negative association has been observed between the level of salivary cortisol and severity of pain and a highly significant improvement of pain between the final examination periods and three months later.

Dental students perceived a higher level of stress prior to the final exam associated with raised salivary cortisol levels which could be considered as a useful noninvasive biomarker for measuring acute stress. Clenching and sleeping bruxism were the most frequent habits and parafunctional tooth contact could be an adaptive response to stress.