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The Impact of Dental Environment Stress on the Oral Health Status and Salivary Physicochemical Characteristics among Dental Students

A Thesis

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Abstract

Background: Stress is the reaction of one's body and mind to something that causes an adjustment in the balance, and a wide range of feelings. Several pathologies of the oral cavity have been associated with stress. The aims of this study was to assess the impact of dental environment stress on oral variables (dental caries, oral cleanliness and gingival health condition) and on the salivary physicochemical parameters (flow rate, pH, nitric oxide and uric acid), and the relation of the oral variables with salivary physicochemical parameters.

Subjects, Materials and Methods: The total sample was 300 dental students (males and females) aged between (22-23) years old, they were selected from College of Dentistry /University of Baghdad. The students were in the 4th and 5th grade. They were categorized according to dental environment stress questionnaire (DESQ) into three categories (mild stress, moderate stress and severe stress). The diagnosis and recording of dental caries was done using (DMFS and DMFT indices) according to WHO (1987), the oral hygiene variables plaque index according to (Silness and Loe 1964), calculus index according to (Ramfjord 1959) and gingival health condition using gingival index (Loe and Silness 1967). Unstimulated saliva samples was collected from 95 students of mild and severe stress levels to assess the salivary physical parameters (pH, flow rate),and salivary chemical parameters (nitric oxide, uric acid). All data were analyzed using statistical package for social science SPSS version 21.

Results: The results showed that all dental students expressed dental environment stress, and the moderate stress group was the highest group among dental environment stress levels. The mean value of the DMFT and DS fraction was higher among severe stress group of dental environment stress scale. The mean value of plaque index was higher among moderate stress group, while the mean

value of calculus and gingival indices were higher among mild stress group with non significant difference ($P \geq 0.05$). The prevalence of gingivitis was (100%) for the total sample, and was higher among moderate stress group. Salivary flow rate and pH was higher among mild stress group, while the salivary nitric oxide and uric acid was significantly higher among severe stress group. The correlations of flow rate, pH, nitric oxide and uric acid with caries experience, oral hygiene and gingival indices among both mild and severe stress groups were non significant except for the pH with DS, DMFT, plaque, calculus and gingival indices were significant among mild stress group. The correlation of flow rate and pH with nitric oxide among both mild and severe stress groups were negative and not significant except for the flow rate among severe stress group was significant. The correlation of uric acid with flow rate was weak positive, while with pH was weak negative among both mild and severe stress groups.

Conclusion: The results of this study revealed that the dental environment stress levels have an effect on the salivary physicochemical parameters which affect the oral health.