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**Oral Health Status in Prediabetic patients
in relation to Stress and Inflammatory
Biomarkers Interleukin-6 and Tumor
Necrosis Factor –alpha in comparison to
healthy subjects**

A Thesis Submitted to the Council of the College of
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Abstract

Background: prediabetes; as hyperglycemia that stand between health and diabetes is relatively a new concept that derive its importance from the potential medical burden that can originate from development to frank diabetes. The chronic nature and accumulative effects that start on the microstructure of circulatory and nervous systems with the absence of clear safe margin for plasma glucose make the search for the early expected changes in this intermediate zone very worthy.

Among many cytokines that are implicated in inflammatory response, interleukin 6 and Tumor Necrosis Factor-alpha draw the attention as both acute phase response markers and key cytokines in gingivitis, periodontitis and diabetes. Meanwhile the possible effect of stress as psychological modulator for many diseases is a new approach in detailing and enriching the researches for better understanding.

Aims of the study: evaluation of the oral health status and salivary flow rate in prediabetes in comparison to normoglycemic controls, and correlation with stress and salivary interleukin 6 and Tumor Necrosis Factor-alpha in both groups.

Subjects, materials and methods : a total of seventy two (72) subjects were enrolled in this study who were divided equally into two (2) groups of 36, based on their Fasting Plasma Glucose into: case group if Fasting Plasma Glucose =100-125 milligram per deciliter (mg/dl) and control group if Fasting Plasma Glucose <100 mg/dl.

Oral health status was evaluated as Plaque index, gingival index and

Decay missing filled tooth index. Stress was evaluated by answering a questionnaire developed by International Stress Management Association of United Kingdom 2013.

Results: prediabetes group expressed significantly higher Plaque index, gingival index, Decayed teeth, missing teeth, interleukin 6 and Tumor Necrosis Factor-alpha, while filled teeth and salivary flow rate were significantly lower than control group.

Salivary flow rate had shown positive correlation with Stress in control group

Plaque index and gingival index showed positive correlation with interleukin 6 and Tumor Necrosis Factor-alpha in both case and control groups.

Missing teeth showed positive correlation with Tumor Necrosis Factor-alpha in both case and control groups

Conclusions: Oral health is negatively affected in prediabetes; an effect that could be mediated by interleukin 6 and Tumor Necrosis Factor-alpha.