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Bashair Mussa, Endocrinol Diabetes Res 2017, 3:3
DOI: 10.4172/2470-7570-C1-002

19TH Asia Pacific Diabetes Conference

July 20-22, 2017 Melbourne, Australia

Physiological stress and sleep quality assessment: A new approach to improve glycemic control and enhance weight loss in type-2 diabetes

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Optimal glycemic control and weight management involve several approaches including nutrition recommendations and physical activity. However, recent views have suggested that there are other factors including sleep deprivation and stress contribute to development of type-2 diabetes mellitus (T2DM). Therefore, the present study was designed to investigate the effects of a novel intervention on weight and glycemic control in Emirati patients with type-2 diabetes. The present study is a randomized controlled study. 27 Emirati patients with type-2 DM (18-60 years, BMI≥25 kg/m2) were included in the study, intervention group (n=14) and control group (n=13). Heart rate variability was used for real-life and long-term assessments of sleep, stress and recovery. The intervention group attended information session followed by an initial assessment of the stress and recovery levels and sleep pattern and feedback sessions. Action plans were created for each patient based on the outcomes of the initial assessment. The results have shown that the percent change in body weight was significantly greater ($p<0.05$) in the intervention group (-3.18%) compared to the control group (-0.02%). The percent change in the BMI of the intervention group was -4.50%, whereas the control group exhibited less change in BMI (-0.0003%, $p<0.05$). In addition, a significant reduction in HbA1C was observed in the intervention group (-5.3%) and an increase of 9.9% was observed in the control group ($p<0.01$). Moreover, stress levels were decreased in the intervention group (-2.2%) whereas the percent change in the stress levels in the control group was 25.3%. The interventions that reduce the levels of stress enhance the recovery levels and maintain healthy sleep habits play an important role in weight management and glycemic control in type-2 DM.

Biography

Bashair Mussa is currently an Assistant Professor of Physiology at University of Sharjah, UAE. She has graduated from the University of Melbourne, Australia with PhD in Neurophysiology and Pharmacology. She has an extensive experience in diabetes research and has characterized the neural pathways and receptors that are involved in the control of insulin secretion. Currently, she is the Principal Investigator of three projects that related to diabetes and Emirati patients. Her current research focuses on the central control of pancreatic secretion, glucose homeostasis and diabetes.

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