

## The Effect of Lifestyle Intervention on Glycemic Control in Type 2 Diabetic Patients

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### ABSTRACT

Type 2 diabetes mellitus (T2DM) is one of the most serious health challenges of the 21<sup>st</sup> century. Diabetes is forecast to affect 537 million people in 2021, with the figure expected to rise to 643 million by 2030 and 783 million by 2045. A healthy diet and physical activity are essential aspects of the treatment. The aim of the study is to assess the effect of an educational programme on blood sugar and HbA1c levels. This study involved a three-month educational program intervention in a two-group, randomised controlled trial. It included two groups of subjects, one receiving an educational program and the other serving as a control group. Between November 2021 and February 2022, 100 patients with T2DM were recruited from Erbil, Iraq. The ethical approval from the College of Medicine at Hawler Medical University was obtained for this study. Patients with T2DM were randomly allocated to one of two groups: control (n = 50) or intervention (n = 50). The intervention group received an educational program with a publisher including, diet instruction, nutritional supplements, and an exercise recommendation as part of their intervention. For categorical data, a chi-square test was used to see if there was an association between the demographics of the two groups, and a t-test was used for numerical data to see if there was a difference between the two. Data are presented as mean  $\pm$  SD. A two-tailed unpaired t-test was employed for comparison between groups. A two-tailed paired t-test was employed to compare groups at baseline. Means, standard deviations, and percentages were provided as crude values for descriptive statistics. For data entry and statistical analysis, the statistical package for the social sciences, version 25.0 (IBM, SPSS USA), was used, and p-values  $\leq$  0.05 were considered statistically significant. The intervention group had a statistically significant reduction in weight (-2.51 kg), waist circumference (-2.27 cm), random blood sugar (-29.64 mg/dL), haemoglobin A1c (-1.13 %), and serum triglycerides (-40.06 mg/dL). The result of the study suggests that lifestyle intervention and a low-carbohydrate diet for three months are beneficial in improving glycemic control in patients with type 2 diabetes when compared to the control group.

Keywords: Effect, Lifestyle, Glycemic, Type 2 diabetic

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