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# The Effect of Reduced Carbohydrate Diet Education on Hemoglobin A1c in Patients with Type 2 Diabetes

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## ABSTRACT

Type 2 diabetes (T2D) is characteristically the result of modifiable risk factors, impacting the health and well being of all ethnic backgrounds across the lifespan. Research has indicated that despite the many risk factors associated with T2D, alterations in dietary macronutrient composition can lead to improvements in disease management and resultant complications. Therefore, the purpose of this evidence-based practice (EBP) project was to provide individuals with reduced carbohydrate (carb) diet education to promote greater glycemic control and reduce associated risk factors through macronutrient modification, specifically carb intake. An integration of the most current evidence obtained from the critically appraised literature provided the best practice model for this EBP project, yielding 11 pieces of good quality evidence. Nola Pender's health promotion model and the Iowa model of evidence-based practice served as the theoretical frameworks guiding this practice change. A convenience sample of patients with T2D, aged 18 to 65 years, seeking routine medical care from a family practice during the fall of 2015 were recruited. The intervention included an individualized, 15-minute Doctor of Nursing Practice (DNP) student-led educational session regarding a reduced carb diet and its effect on T2D. Informational handouts and dietary food record sheets were also provided to each patient. Outcomes were evaluated via a descriptive, within-group pre-test/post-test design and included the knowledge of reduced carb diet strategies and the impact on T2D, hemoglobin A1c (HbA1c), lipid level, weight, body mass index, waist circumference, blood pressure, changes in medication management, and dietary compliance according to take-home food records. Of the 24 patients recruited, 19 patients returned for the 3-month follow up appointment. The project demonstrated significant improvements in patients' knowledge about T2D ( $p < .05$ ), HbA1c ( $p < .05$ ), high-density lipoprotein ( $p < .05$ ) levels, weight ( $p < .01$ ), body mass index ( $p < .01$ ), waist circumference ( $p < .01$ ), and systolic ( $p < .05$ ) and diastolic ( $p < .05$ ) blood pressure. The findings from this project can help to initiate policy change for the management of patients with T2D within this family practice, enhancing the provision of chronic care.