10-3-2025

Does Staff Education about Diabetic Self-Management Improve Knowledge and Intent to Educate their Patients?

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University
2025

Executive Summary: Staff Education Project

Does Staff Education about Diabetic Self-Management Improve Knowledge and Intent to Educate their Patients?

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Executive Summary Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

November 2025

Summary

This doctoral project was an education program for staff aimed at increasing their knowledge about diabetic self-management compliance. With improved knowledge, they will be better prepared to educate their patients. Diabetes is a highly complex disease that requires self-management care, including monitoring of blood glucose levels, control of diet, and medication adherence. Despite extensive pharmacology and diet counseling, irregularities between staff training and education program implementation have led to variable results in patients' compliance and control of glycemia at the project site. The significance of such an issue lies in its direct impact on patient morbidity, avoidable complications, and increased healthcare costs. It is significant to nursing practice, where nurses are often primary educators and patient advocates for chronically ill patients. This project determined if staff education about diabetic self-management improves knowledge and intention to implement new knowledge to educate patients. Analytical plans included pre- and post-intervention staff knowledge and intention measurement using questionnaires and descriptive statistical analysis. Eight participants attended the class and completed the surveys. The pre-education average score was 64%, and the post-education score was 89%. After the education, 80% stated intent to use the new knowledge. Eighty-eight percent of respondents indicated an intention to apply the diabetes self-management education in their clinical practice, and 75% expressed that they could confidently educate patients on diabetes self-care. This study impacts positive social change by increasing nurses’ knowledge about managing chronic disease, promoting patient education equity, and empowering patients to manage their health through acquired knowledge.

Background

Poor patient compliance with diabetic self-management remains a persistent challenge in many clinical settings, which was identified at an outpatient primary care clinic. This problem is often closely linked to insufficient patient education provided by healthcare staff. Patients with diabetes are typically prescribed medication and receive basic dietary counseling. However, they are not always taught the practical skills and knowledge needed for daily diabetes self-care. The lack of a consistent, evidence-based approach to staff education results in variation in how diabetes education is delivered to patients (Buscemi & Ortega Rodriguez, 2022). This gap in practice directly affects patient outcomes, making it a critical area for improvement within nursing practice. The project was guided by the evidence-based practice (EBP) question: Does staff education about diabetic self-management improve knowledge and intent to utilize the new information to educate their patients? The purpose of this project was to determine whether implementing a structured educational intervention for healthcare staff could enhance their knowledge and intent to provide effective diabetes education to patients (Misra et al, 2022). By targeting staff knowledge and intent, the project aimed to indirectly improve patient compliance through better-informed, more confident healthcare providers.

Evidence supporting this practice change included a quality improvement project by Okoye (2021) that demonstrated structured staff education significantly improved nurses' knowledge and intent to apply diabetes self-management education in their practice. Using pre- and post-tests, the study found measurable gains in understanding and positive attitudes toward key self-care concepts such as lifestyle modification and symptom management. The strength of this evidence is classified as Level IV, based on the Johns Hopkins Evidence-Based Practice model, indicating findings from well-designed, non-experimental quality improvement projects. In addition, a quasi-experimental study by AlHaqwi et al. (2023) showed that patient-centered diabetes education significantly improved health outcomes such as HbA1c, fasting blood sugar, and blood pressure. While this study focused on patients, it reinforced the critical role of education in improving diabetes control. The strength of this evidence is also Level IV, and while it lacks a control group, it adds valuable support to the importance of continuous, structured education in diabetes care. Together, these studies validate the need to change staff education practices to promote more consistent and effective patient teaching in diabetes self-management.

Staff Education Project Development

The participants in this staff education project were healthcare professionals involved in direct care and education of patients with diabetes. These included registered nurses (RNs) and licensed practical nurses (LPNs) working in an outpatient primary care clinic. The staff members were invited to participate due to their active roles in patient interaction, making them ideal targets for an educational intervention to improve diabetes self-management teaching. All participants consented to participate in the project and were available for educational sessions and evaluation activities.

The ADDIE model was used to guide this project. ADDIE stands for analysis, design, development, implementation and evaluation. Analysis was completed by defining the project's needs and identifying the key performance gaps. Procedures for designing, developing, and implementing the project began with creating a structured educational program grounded in evidence-based guidelines from the American Diabetes Association (ADA) and the Centers for Disease Control and Prevention (CDC). The content covered essential topics such as blood glucose monitoring, lifestyle modification, medication adherence, and hypo- and hyperglycemic symptom recognition. The material was presented via a PowerPoint presentation and an interactive discussion session. Participants also received printed handouts for future reference, ensuring continued access to the information.

Evidence collection and analysis were conducted using a pretest-posttest design. Participants completed a pre-intervention questionnaire to assess baseline knowledge and perceived readiness to educate patients on diabetes self-management. After the educational session, a post-test was administered to measure changes in knowledge and intent to apply the new information. The questionnaires included Likert-scale items and knowledge-based questions. Descriptive statistical methods were used to analyze the data, allowing for comparison of mean scores before and after the intervention. The evaluation focused on determining knowledge acquisition and the participants' intent to use the information in practice. Post-test results showed a significant increase in scores, indicating improved understanding of key diabetes self-management concepts. Additionally, participants responded to Likert-scale questions indicating higher levels of confidence and motivation to educate patients effectively. Although the evaluation was limited by a small sample size and short follow-up period, the results supported the feasibility and potential impact of structured staff education on improving clinical teaching practices. These outcomes provided preliminary evidence to support future scaling and replication of the intervention.

Results

Pre- and Post-test Scores

A pre-education survey was administered before the class and a post education survey was administered after the class, to evaluate the effectiveness of the educational intervention. Eight members of the nursing staff, who are registered nurses and licensed practical nurses that practice in the outpatient primary care setting participated. A total of eight nursing staff members participated in the project, consisting of five registered nurses (RNs) and three licensed practical nurses (LPNs). This composition reflected the typical staffing mix in the outpatient primary care setting, ensuring that both groups most involved in diabetes education were represented.

In the post-intervention results, it was evident that general knowledge was gained. The mean raw average on the pretest questions related to the main domains of diabetes self-management, such as taking medications, monitoring symptoms, and taking measurements of glucose in the blood, was 6.4/10 (64%). Post-testing also revealed an improvement in the average score, extending to 8.9 points out of 10 (89%), demonstrating a better comprehension of the principles of core self-management after the education session. This showed an overall learning gain of 71.0 percent according to the formula used by Brigham and Women's Hospital to determine Learning Gain, implying that much knowledge was gained (Harerimana et al., 2023).

Besides the measurement of knowledge outcomes, the questionnaires evaluated self-reported attitudes of participants who intended to use knowledge in their clinical practice. Before the intervention, most participants demonstrated moderate confidence in their potential to educate patients. The findings after the intervention revealed a significant change, with 88% of respondents indicating a stronger intention to apply the diabetes self-management education in their clinical practice, and 75% expressing that they could confidently educate patients on diabetes self-care. These results effectively answer the guiding question of the project by demonstrating that staff education not only increases knowledge but also strengthens their intent to apply the new knowledge in clinical practice. This is an indication that well-organized educational interventions can be a good measure of dealing with deficits in diabetes patient education and may even lead to improved outcomes for patients.

Conclusions

Findings of this doctoral project suggest that it is possible to enhance the level of knowledge of the nursing personnel about the principles of diabetes self-management and their intention to implement this knowledge in clinical practice by implementing a structured, evidence-based formal educational intervention. The effectiveness of using specific education to improve the competence and confidence of nurses as educators of patients is indicated by the positive results of an increase in post-test scores. The implications directly affect the identified gap in practice, which is the inadequate and inconsistent patient education due to the inconsistency in staff training. Organizationally, the results offer a strong argument for putting standard and continuous diabetes training into staff development to enhance the continuity and quality of healthcare service to the patient. Regarding nursing practice, this project confirms the existence of the key role that nurses play in chronic disease management and establishes them as key agents that can support health education at the point of care. In addition, the intervention also facilitates commitment to diversity, equity, and inclusion in healthcare by raising culturally responsive teaching methods and facilitating conversation towards patient-centered communication. Diabetes education can become more accessible, relevant, and personalized to patients with diverse backgrounds and contribute to the reduction of health literacy and outcomes disparities. This project positively impacts social change. It enables nurses to better educate and empower their patients to manage their chronic illnesses, leading to better adherence, enhanced clinical and health outcomes, and increased independence in making various health decisions. These findings support the need for structured staff education as a long-term and practical approach to enhancing the provision and equity in managing chronic diseases.

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