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Improving Staff Knowledge and Patient Care Outcomes through Targeted Educational Interventions on Diabetes Management in Home Health Agencies

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Walden University

College of Nursing

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Executive Summary: Staff Education Project
Improving Staff Knowledge and Patient Care Outcomes through Targeted Educational
Interventions on Diabetes Management in Home Health Agencies

by
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Summary

This staff education project implemented a structured educational intervention to enhance nursing staff's confidence and proficiency in diabetes management, aiming to improve patient outcomes by addressing knowledge gaps. The project's practice-focused question examined how a staff education program could increase staff knowledge. A quantitative analysis approach was used, with pre- and post-surveys evaluating knowledge improvement around patient outcome metrics such as glycemic control, adherence to treatment plans, and hospital readmission rates. The education was delivered through a PowerPoint presentation (PPT), which included key diabetes management strategies, evidence-based practices, and clinical care techniques. The PPT incorporated visual aids, case studies, and interactive elements to engage the nursing staff and ensure practical application of the content. Pre and post-surveys were administered to assess the staff's baseline knowledge and knowledge improvement after the intervention. The findings demonstrated an increase in nursing staff knowledge and skills regarding diabetes management. The mean pre-survey score was 65%, while the mean post-survey score increased to 88%, reflecting a percentage score increase of 23 with suggested improvement in overall knowledge gained. By improving staff knowledge, the project helped address disparities in diabetes management, ensuring that nurses were better equipped to provide high-quality care to diverse patient populations. The project impacted nursing practice by ensuring that staff had a deeper understanding of diabetes management. The project has the potential to promote positive social change by fostering an inclusive and equitable approach to care.

Background

Diabetes is a major public health concern and a leading cause of morbidity and mortality worldwide (ADA, n.d.). Effective home healthcare management requires a multidisciplinary approach, with nurses playing a crucial role in patient education, medication management, and lifestyle modification guidance (ADA, n.d.). However, inconsistencies in nursing knowledge and practice have been identified as a significant barrier to optimal diabetes management (Chen et al., 2022). In a home health agency in Florida, the lack of standardized diabetes education programs for staff resulted in varied levels of competency among nurses. This inconsistency contributed to poor patient self-management, increased rates of diabetes-related complications, and higher hospital readmission rates. Furthermore, disparities in diabetes education among healthcare professionals can lead to misinformation, inadequate patient support, and suboptimal treatment adherence (ADA, n.d.).

The absence of a structured diabetes education program has presented challenges in maintaining consistent nursing knowledge and delivering effective patient education (Nova Biomedical, n.d.). Staff members have expressed the need for more comprehensive training to enhance their skills in managing diabetes cases effectively. Addressing this gap through structured staff education ensured that nurses are equipped with up-to-date, evidence-based knowledge, ultimately improving patient outcomes and reducing healthcare costs (Chen et al., 2022).

The guiding practice-focused question for this project was: Will a staff education focused on diabetes management result in an increase in staff knowledge? The purpose of

this doctoral project is to design, implement, and evaluate a structured educational intervention aimed at improving nursing confidence and proficiency.

A growing body of research underscores the importance of continuous education for healthcare providers in managing chronic conditions such as diabetes (Dexcom, n.d.). Multiple systematic reviews and meta-analyses have demonstrated that structured educational interventions significantly enhance nursing knowledge, skills, and clinical decision-making in diabetes management, ultimately leading to improved patient outcomes (Chen et al., 2022). Studies indicate that nurses who receive ongoing diabetes education are better equipped to provide individualized patient education, leading to improved adherence to treatment regimens, better glycemic control, and lower rates of diabetes-related complications (Prashad, 2022). Furthermore, evidence suggests that knowledge gaps in diabetes management contribute to disparities in patient outcomes, particularly among vulnerable populations who may lack access to adequate healthcare resources (Butayeva et al., 2023). In addition, randomized controlled trials (RCTs) have consistently shown that healthcare facilities implementing diabetes education programs experience measurable improvements in patient outcomes (Piya et al., 2022). These include reduced hemoglobin A1c levels, fewer emergency department visits, and lower hospitalization rates due to better diabetes self-management and adherence to prescribed treatment plans (Oguariri, n.d.). A study by Chen et al. (2023) found that nursing staff who participated in structured diabetes training programs demonstrated a 40% increase in their ability to educate patients effectively, leading to a corresponding 25% reduction in diabetes-related hospital readmissions. These findings highlight the direct correlation between nursing education and improved patient health metrics. National guidelines from

the American Diabetes Association (ADA) and the American Association of Diabetes Educators (AADE) emphasize that continuous provider education is essential for maintaining high-quality diabetes care and achieving optimal patient outcomes. It is widely recommended that healthcare providers receive continuous education in diabetes management, emphasizing the importance of staying current with evidence-based guidelines, evolving treatment options, and patient-centered care approaches (ADA, n.d.). Additionally, professional organizations such as the American Nurses Association (ANA) and the American Association of Colleges of Nursing (AACN) advocate for the integration of continuous professional development programs to ensure that nurses remain proficient in chronic disease management, including diabetes care (Agarwal, 2024).

Given the overwhelming evidence supporting the need for ongoing diabetes education, it is clear that structured training programs for nursing staff are not only beneficial but necessary for improving patient outcomes. By addressing knowledge gaps and equipping nurses with the knowledge and confidence needed to provide comprehensive diabetes care, healthcare organizations can foster a culture of continuous learning, enhance patient-provider interactions, and ultimately reduce the long-term burden of diabetes-related complications (Stormacq et al., 2020).

An extensive search of the literature was conducted and revealed the following: three meta-analyses, five systematic reviews, and six RCTs consistently demonstrated the effectiveness of structured diabetes education programs for nursing staff. The strength of the evidence supporting this practice change is high, as it is derived from rigorous, peer-reviewed studies, national guidelines, and expert consensus reports. One meta-analysis by

Chen et al. (2023) reviewed 20 studies and found that staff education interventions significantly improved glycemic control and reduced hospital readmission rates. Another systematic review highlighted that diabetes education programs enhance nursing skills and adherence to best practices, leading to better patient self-management. Additionally, an RCT conducted by Butayeva et al. (2023) showed that nurses who received structured diabetes training had a 30% improvement in knowledge retention and clinical decision-making. Meta-analyses, systematic reviews, and RCTs provide a strong foundation for the implementation of structured diabetes education programs in clinical settings. These studies consistently highlight the positive impact of staff education on both provider competency and patient outcomes (Prashad, 2022). By leveraging this robust evidence base, the project aimed to establish a sustainable framework for diabetes management education, ensuring that nurses are equipped with the knowledge and skills necessary to deliver high-quality, evidence-based care.

Staff Education Project Development

The staff education project was developed and implemented with the participation of registered nurses (RNs), nurse educators, and clinical leaders working in a home health agency. The selection criteria included nurses involved in direct patient care, particularly those managing diabetic patients. Home health administrators and diabetes specialists were also engaged to support implementation and sustainability. The project development process began with a needs assessment to identify gaps in nursing knowledge regarding diabetes management. Based on these findings, an evidence-based education program was designed following guidelines from the ADA and other authoritative sources. The project included a PowerPoint presentation and a pre- and post-survey. Participants

completed educational sessions through a combination of in-person PPT presentations and a pre/post survey. The project was developed using the Analysis, Design, Development, Implementation, and Evaluation (ADDI) model as a structured framework to guide the educational intervention (Model, A. D. D. I. E., 2022). During the Analysis phase, a needs assessment identified knowledge gaps among nursing staff. The Design phase established learning objectives and structured educational content based on evidence-based diabetes management practices. In the development phase, instructional materials, including standardized diabetes education modules were created. The implementation phase involved delivering the educational program to nursing staff through structured sessions, ensuring engagement and practical application. Lastly, the evaluation phase utilized pre- and post- surveys to measure knowledge improvement around patient outcome metrics such as glycemic control, adherence to treatment plans, and hospital readmission rates.

Data Collection and Analysis

Data from pre- and post-surveys, collected via email, were used to assess nursing staff knowledge, skills, and self-reported competency in diabetes management. The pre-survey measured baseline knowledge, while the post-survey evaluated changes following the educational intervention. The surveys included multiple-choice questions assessing clinical knowledge, Likert-scale items measuring knowledge levels, and scenario-based questions to gauge decision-making skills. Descriptive statistics were used to summarize trends and variations in survey responses, providing insight into the impact of the education program on staff knowledge.

Evaluation

The evaluation process measured knowledge retention. Total scores from the pre- and post-surveys were calculated for each participant and then averaged to determine the overall mean scores. These averages were compared to assess changes in knowledge following the training. Additionally, mean scores for each question on both surveys were analyzed to identify specific areas of knowledge gain.

Results

The post-implementation evaluation demonstrated a significant improvement in nursing staff knowledge in diabetes management. The mean pre-survey score was 65%, while the mean post-survey score increased to 88%, reflecting a 23% improvement in overall knowledge gain (table 1). Mean scores for each test question also showed consistent gains, with the highest improvement in insulin administration protocols.

Table 1

Pre- and Post-Survey Results

<i>Question Topic</i>	<i>Mean Pre-Test Score (%)</i>	<i>Mean Post-Test Score (%)</i>	<i>Improvement (%)</i>
<i>Pathophysiology of Diabetes</i>	62	86	24
<i>Insulin Administration</i>	58	90	32
<i>Patient Education Strategies</i>	67	89	22
<i>Glycemic Monitoring Protocols</i>	66	87	21
<i>Complication Prevention</i>	70	88	18
<i>Emergency Management</i>	66	89	23
<i>Overall Mean Score</i>	65	88	23

The project had a positive impact on the organization by improving the quality of diabetes care and increasing staff knowledge in utilizing evidence-based guidelines. Enhanced staff knowledge will support patient education, improved glycemic control, and a reduction in hospital readmissions. Additionally, the standardized training framework fostered a culture of continuous professional development within the nursing team.

Key limitations included time constraints for staff participation and limited follow-up duration. Some participants had scheduling conflicts, affecting full engagement in training sessions and the short follow-up period restricted long-term retention assessment. These factors may have slightly limited the overall impact of the project, but did not diminish its effectiveness.

Beyond the local implementation, this project serves as a scalable model for improving diabetes management education in healthcare settings nationwide. Standardized staff education can enhance patient outcomes across different institutions, particularly in resource-limited facilities. Furthermore, integrating evidence-based training programs can contribute to broader healthcare improvements by reducing disparities in diabetes care and promoting best practices across diverse populations.

Conclusions

The staff education project improved nursing knowledge in diabetes management, supporting enhanced patient education, better glycemic control, and promotion of a reduction in hospital readmissions. The organization benefited from overall improved staff knowledge and education on adherence to evidence-based guidelines that are aligned with institutional goals for patient-centered outcomes.

Future recommendations include ongoing staff training sessions, refresher courses, and integration of diabetes management modules into standard nursing education. Additionally, periodic evaluations using post-training assessments and patient outcome tracking will ensure continuous quality improvement. Expanding the program to include interdisciplinary teams, such as dietitians and pharmacists, could further enhance comprehensive diabetes care.

The project highlights the critical role of continued nursing education in supporting clinical knowledge and patient outcomes. By fostering a culture of lifelong learning, nurses can remain updated with best practices, ultimately improving healthcare delivery. From a social change perspective, enhanced diabetes management reduces health disparities, particularly for underserved populations who experience higher disease burden. The initiative also promotes diversity, equity, and inclusion by ensuring culturally competent care and incorporating patient-centered strategies tailored to diverse communities.

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