



Improving the Diabetes Knowledge in Nurses Using Innovative Tools: An Evidence-Based Practice Change Project

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Clinical Problem

- Diabetes incidence and prevalence continues to rise in the United States and worldwide.
- Veterans in the U.S. have an increased prevalence of diabetes, a higher comorbidity, including coronary events.
- The complications of diabetes, which include eye, kidney, heart, and nerves are costly.

Background

- Because of the diabetes epidemic worldwide, studies support the need to improve diabetes knowledge in nurses.
- Studies have demonstrated a variation of diabetes knowledge among nurses.
- Up to date and current knowledge of diabetes will assist nurses in supporting individuals with diabetes.
- The effectiveness of patient education is determined by the accuracy of the information provided by nurses.

PICO

Will nurses who receive diabetes education utilizing the Diabetes Conversation Map® and Diabetes Go-To-Guide™ increase their knowledge, ultimately improving the diabetes outcomes of the veteran?

Project Design & Evaluation

- Implementation of a diabetes education intervention utilizing the Diabetes Conversation Map® and Diabetes Go-To-Guide™.
- The Diabetes Basic Knowledge Test (DBKT) was used to measure the nurses diabetes knowledge pre and post education intervention and at 6 weeks post intervention.
- Paired *t-test* analysis to determine the significance of the nurses' diabetes knowledge improvement
- A mean DKBT post-test score of 80% demonstrates "diabetes competence" of the nurse

Evidence

- The literature provides evidence regarding the increasing number of individuals with diabetes, the lack of diabetes knowledge in nurses, and the need for updated continuing education in diabetes for nurses.
- Studies describe and support both educational interventions and innovative tools to improve the diabetes knowledge in nurses.
- Studies have demonstrated a positive effect of the nurses' education on diabetes outcomes in patients.
- The Diabetes Conversation Map®, an innovative tool, is effective at improving nurses' diabetes knowledge.
- The Diabetes Basic Knowledge Test (DBKT), a 52 question, multiple choice questionnaire, is an effective tool at measuring nurses' diabetes knowledge.

The Model for Evidence-Based Practice (EBP) Change (Larrabee, 2008)

- Step 1: Identify and assess the need for change
- Step 2: Find the best evidence
- Step 3: Critically appraise the evidence
- Step 4: Design the practice change
- Step 5: Implement and evaluate the project change
- Step 6: Support change and disseminate project results

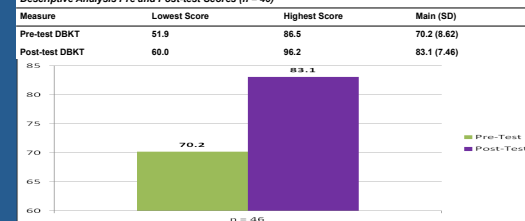
Nursing Theory

- "Theory of Prevention as Intervention"
- A middle range theory stemming from Betty Neuman's Systems Model is the framework for the operational definition of diabetes knowledge.
 - Encompasses 3 dimensions- primary, secondary, and tertiary.
 - The concept, diabetes knowledge, is operationally defined using the DBKT as empirical indicator.
 - The DBKT can be categorized and prioritized as primary, secondary, and tertiary interventions following the nurse's assessment.

Findings

- EBP project findings were consistent with previous studies demonstrating lack of diabetes knowledge in nurses and improvement of diabetes knowledge with an education intervention
- Improvement of the diabetes knowledge in the nurses was statistically significant ($P < 0.000$)
- Mean post-DBKT score and mean six-week post-intervention score exceeded the 80% benchmark
- Increase in mean six-week post-intervention DBKT suggested diabetes knowledge retention

Descriptive Analysis Pre and Post-test Scores (n = 46)



Paired t-test analysis for the DBKT (n = 46)

Mean	SD	Standard error mean	95% CI	t	Degree of freedom	Two-tailed significance (p-value)
12.86	7.64	1.127	10.59-15.13	11.409	45	<0.000

Clinical Implications

- Nurses play a crucial role in addressing the clinical problem of diabetes and the costs associated with the diabetes complications.
- Since the evidence supports the lack of diabetes knowledge among nurses, incorporating diabetes EBP and clinical guidelines into diabetes continuing education for nurses is recommended.
- Continued surveillance to support the nurses' application of diabetes knowledge gained is essential.
- Collaboration between clinical practice, education, and research in the update of diabetes knowledge among nurses should ensure success with implications for patient outcomes.

Please see handout for references