A feasibility project utilizing blended education to increase knowledge, skills competency, and confidence of experienced registered nurses providing peripheral intravenous access for Home Infusion Therapy

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Purpose

This feasibility project aims to evaluate peripheral intravenous (PIV) knowledge, access competencies, and confidence of experienced home care infusion registered nurses before and after an education bundle based on current evidence-based practice (EBP) and standards.

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- Experienced volunteer graduate nursing students or Loyola Faculty who have PIV experience
- Implementation of an education bundle that is guided by EBP guidelines and protocols published by The Infusion Nurses Society (SIN) that will include an online education module, simulation using a low-fidelity task trainer in the SIMSLAB, and through Zoom technology.
- Status Quo
- Ongoing checklist(s) pre- and post-education module and direct observation of PIV access with a task trainer in the SIMSLAB (using ZOOM technology) to assess experienced volunteer graduate nurses for increased knowledge, PIV skills competency, and confidence.

Evidence-Based Initiative

A synthesis of the literature supports that experienced home care infusion registered nurses must be skilled and competent when performing PIV access. Moreover, three of these EBP studies assert that clinical variables in performance are related to the lack of standardized training and believe that using EBP guidelines can minimize PIV access variables to ensure positive clinical outcomes.

Theory and Guide - Kolb's Cycle of Experiential Learning Model

Kolb's Cycle of Experiential Learning

Rational for need:

- The education bundle, PIV skills competency, and confidence assessment tools will ensure reliable outcomes by increasing the experienced registered nurse's knowledge, psychomotor skills, and increase confidence when providing PIV access in the home.

Project Plan

Evidence Based Feasibility Project utilizing an Education Bundle

Project Setting
Due to the COVID-19 pandemic, the project will be conducted in the Simulation Lab (SIMSLAB) at Loyola University.

Participants
The project will utilize a proxy population of volunteer experienced registered nurses who are Loyola graduate nursing students or Loyola faculty with PIV access experience.

Sources of Tools and Data
Three tools will be used. The Peripheral IV Catheter Insertion Confidence Assessment, developed by Schuster, Stahl, Murray, and Glover (2016); PIV Catheter Insertion Skills Checklist, created by Schuster, Stahl, Murray, Kekelaki, and Glover (2016); PIV knowledge self-assessment test, which includes ten multiple-choice, true, or false, and yes or no answers.

Ethics
Privacy and confidentiality of the volunteer participants will be maintained with using a member in place of the name. Only the educator, investigator, and faculty will review. This project has been approved by the Research and IRB.

Budget
Not to exceed $1000. - Miscellaneous costs for printing - buddy cards, poster, and participant gift cards

Timeline
January 2021 - preparation February - complete preparation March implementation April/May - Complete

Evaluation

Three tools will be used to measure the achievement of increased knowledge, increased psychomotor skills and increased confidence when providing PIV access in experienced registered nurses providing home infusion.

- The tool developed by Schuster et al. yielded a Cronbach's alpha internal score of 0.96 (r=0.96). This was a valid and reliable tool to measure nurse's confidence level when inserting short PIV as part of blended education. This will be used pre and post-bundled education.
- PIV Catheter Insertion Skills Checklist, created by Schuster, et al. The tool assessed the PIV skills and was valid and reliable with an internal consistency was (r=.84) using Cronbach's alpha on the first attempt. It will be used pre and post-bundled education.
- Likert type PIV knowledge self-assessment test, which includes ten multiple-choice, true, or false, and yes or no answers. The baseline PIV knowledge and knowledge obtained after completing the bundled education will be evaluated.

Practice Implications

- Obtain baseline assessment of experienced registered nurses' knowledge, PIV competency skills and confidence when performing PIV access in the delivery of home infusion therapy.
- The project will provide an EBP bundle to increase knowledge, PIV psychomotor skills competency, and confidence in PIV access.
- Completion of the pretest, education bundle, and post test indicate the experience registered nurse is knowledgeable, has PIV skills competency and confidence with PIV access for home infusion will provide safe PIV access for home infusion therapy.
- Recommendations – All experienced registered nurses receive the education bundle to establish baseline knowledge, PIV skills and competency for home infusion therapy.

Bibliography – Key