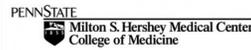


The Use of Simulation and Web Resource to Support Staff Education and Clinical Practice

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Abstract

The profession of nursing requires life-long education to remain competent in practice. More than ever, evidence-based practice guides nurses to provided the best healthcare. Traditional methods of learning, such as didactic education, may take a long time to implement specific information into practice. To address the gap between research and practice, the wound and ostomy nurses at a regional medical center developed the Wound, Ostomy, Continence (WOC) Fair that focused on providing staff the most current evidence on skin and wound care products and treatment, nutrition, documentation, wound assessment and staging, bed surfaces and ostomy care. Methods: A needs assessment was completed by each unit's practice and education councils and the wound and ostomy nurses statistics was evaluated. Using a variety of nursing and learning theories as a basis, the Fair provided education through simulation learning. Results: 647 registered nurses attended the WOCN Fair with the average score on the pre-test was 60% and the average score on the post-test was 90%. Due to the success of the Fair and staff nursing requests, a WOCN web resource was created to provide a reference and educational tool for clinical practice in these specific areas. The strong outcomes of the Fair help support the thought that healthcare simulation exercises and the use of web resources are powerful tools to facilitate learning that will improve patient outcomes and safety.

Introduction

United States 2009 statistics:

- Chronic wounds: pressure ulcers, venous stasis ulcers, arterial ulcers, diabetic ulcers
 - Affects 6.5 million patients annually
 - Associated healthcare costs \$6-\$15 billion dollars annually
- Ostomy: colostomy, ileostomy, urostomy
 - 75,000 people annually having surgery resulting in an ostomy
- Incontinence: urinary and fecal
 - Affects 11 million people
 - Costs exceed \$27 billion per year
- All of these conditions affect a patient's quality of life:
 - Physical, psychological and financial limitations and stress
 - Loss of productivity
 - Pain and decreased social interaction
- These statistics continue to increase each year related to changes in demographics of age and chronic illnesses
- Government agencies regulating wound care, quality assessment and improvement, reimbursement, access, treatment and outcomes:
 - Centers for Medicare and Medicaid Services (CMS)
 - National Pressure Ulcer Advisory Panel (NPUAP)
 - Joint Commission
 - Institute for Healthcare Improvement (IHI)
 - Institute of Medicine
 - Agency for Healthcare Research and Quality (AHRQ)
 - National Quality Forum (NQF)
- In addition, these agencies report simulation learning is one way to validate and measure competencies, decrease sentinel events, increase patient safety and quality and optimize efficiency.

Objective of WOCN Fair and Web resource

- Address knowledge and practice deficits in the areas of skin, incontinence and ostomy care
- Provide evidence-based practice in each specific field
- Improve patient outcomes and safety
- Provide readily accessible information related to patient care

Methods

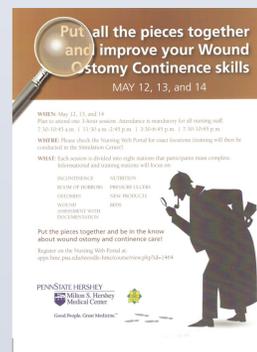
A needs assessment was completed by using the key informant and indicator approaches

- Individual practice and education unit councils were interviewed to assess wound, ostomy and incontinence needs
- 2009 and 2010 WOCN statistics were evaluated for the amount of consults and re-consults for incontinence, prevention, hospital acquired pressure ulcers, wounds and Candida skin rashes.

After a review of the literature, a simulation activity was developed that incorporated theories of learning, thinking paradigms and procedural knowledge.

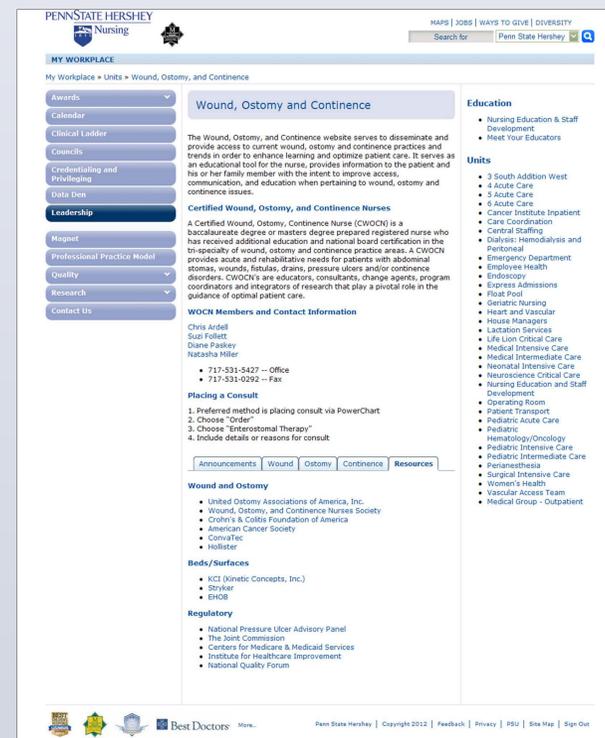
WOCN Fair included the following:

- Staff required to register and take online ten question pre-test
- Ten different stations set up in a simulation lab and included: a patient's story, urinary and bowel incontinence assessment and treatment, wound assessment and treatment with debriefing (two stations), documentation, nutrition, room of horrors, specialty bed surface, ostomy assessment and treatment and a game of Jeopardy.
- Each station attended by 6-10 nurses at a time and rotation to a different station occurred every 20 minutes.
- A hands-on-learning environment was created at every station
- Total time to attend the Fair was 3 1/4 hours long
- Participation occurred between the hours of 7:30am and 10:45pm and included weekend days
- Fair was held several times in 2011: May, July, August, November
- Post-test administered 2 weeks after attendance



Results

- A total of 647 nurses attended the WOCN Fair representing nearly 50% of the nursing staff.
- The average grade for the post-test was 90%, which was a 50% increase from the pre-test scores.
- There were other positive incidental findings from the Fair that included an increase in the amount of protein gelatin ordered for patients, units starting to stock protein gelatin and an increase in the amount of seat cushions ordered.
- The WOCN department observed a decrease in the amount of consults and re-consults involving incontinence skin issues, prevention interventions for pressure ulcers and Candida skin infections.
- The quarterly National Database of Nursing Quality Indicators (NDNQI) pressure ulcer prevalence study held in the fall of 2011 demonstrated an improvement in patients who had nutritional support ordered.
- As a result of the Wound, Ostomy and Continence Fair, a web resource was developed to be used internally by nursing staff. This intranet site provided staff an education and reference tool to assist in clinical practice and education that was available at all times.
- Increased test scores, positive subjective comments from nursing staff plus the incidental findings demonstrated improvements in information related to practice that involved skin care products, wounds, pressure ulcers, ostomies and nutrition.



Conclusions

- The WOCN Fair was well attended and improvement in test scores post-Fair
- The review of literature does support adult learning theories, the use of simulation and Internet for use in healthcare education.
- There does remain a deficit in the measuring of practice and patient outcomes when these types of teaching strategies or resources are used.
- There are no tools to measure these outcomes nor is there any specific research that has determined what type of modern education is the best.
- Research is limited in deciding what level of simulation such as low-fidelity, mid-fidelity and high-fidelity provides more knowledge, critical thinking, skill performance and learner satisfaction.
- Gaba (2007) suggested other areas of research and development in the use of simulation. These included:
 - integrating different levels of simulation across different dimensions
 - developing simulation applications for larger teams such as an entire healthcare organization
 - using simulation to test medical devices and patient care processes
- Simulation and web resources are valuable modern educational tools to support evidence-based practice but more research is required in measuring these tools for patient care and safety outcomes.

References

Upon request

Acknowledgements

Dr. Kelly A. Kuhns, PhD, RN-Assistant Professor, Millersville University, Department of Nursing
Kathy R. Brooks-Administrative Associate for Department of Nursing, Penn State Milton S. Hershey Medical Center