Exploring Factors Associated with Nurses' Adoption of an Evidence-Based Practice to Reduce Duration of Catheterization

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INTRODUCTION

- Hospitalized adult patients are at increased risk for adverse outcomes, particularly when undergoing invasive procedures such as indwelling urinary catheterization.
- Nurses are essential in providing high quality, cost-effective, and safe health care.
- This mixed methods pilot study identified factors associated with nurses' adoption of an evidence-based practice to reduce the duration of catheterization and potential for catheter-associated urinary tract infections in hospitalized adults.

BACKGROUND/SIGNIFICANCE

- Studies show that prolonged catheter usage greatly increases a patient's risk for developing a urinary tract infection (UTI).[1,2]
- UTIs are among the most common healthcare-acquired infections (HAI) and nearly 80% are catheter-associated (CAUTI).[3]
- While national and international guidelines for the prevention of CAUTI exist, the incidence continues to climb.[4]
- A variety of evidence-based practices to reduce or prevent CAUTI have been explored; however, limited research exists on nurses' adoption of those practices.
- This study sought to determine how nurses might adopt a nurse-driven protocol to remove IUCs without waiting on a physician order.

Early Catheter Discontinuation Protocol (Nurse-Driven Protocol)

Medical Executive Committee - approved Foley Catheter protocol that requires automatic discontinuation "stop order" of Foley catheters after forty-eight hours (48 hrs.).

The catheter will not be discontinued under this protocol without notifying the physician in the presence of the following conditions:

1. Urinary obstruction
2. Neurogenic bladder or urinary retention
3. Urological surgery
4. Open sacral wound
5. Palliative care or terminal illness

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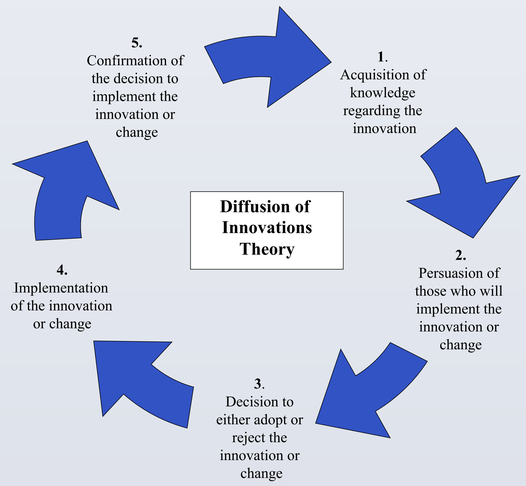
METHODS

- A prospective, cluster-randomized pilot feasibility study using mixed methods and a two-group pre- post-study design featuring an intervention group on one nursing unit and a control group on a similar unit within the same hospital
- Quantitative data were collected from the RNs on both units, pre- and post intervention about their perceptions, attitudes, and knowledge related to EBP. Quantitative and qualitative data about adoption of the intervention were also collected from the RNs on the intervention unit post-intervention.
- Quantitative data were collected on the incidence and duration of urinary catheterization among patients on both units, pre- and post-intervention.

RESEARCH QUESTIONS

1. What are nurses' perceptions of the characteristics (relative advantage, compatibility, complexity, trialability, observability) of an evidence-based, nurse-driven early catheter discontinuation protocol?
2. Does the use of an evidence-based, nurse-driven early catheter discontinuation protocol result in a lower mean duration of catheterization compared with patients for whom the protocol is not used?

THEORETICAL FRAMEWORK



Concept	Definition
Relative advantage	Degree to which the innovation is perceived as an improvement over what it replaces.
Compatibility	Degree to which the innovation is seen as being a good fit with the potential adopters.
Complexity	Degree to which the innovation is perceived as difficult to understand and use.
Trialability	Degree to which the innovation can be tried prior to adoption.
Observability	Degree to which the results of the innovation are visible and measurable.

RESULTS

Perceptions of Evidence Based Practice

- Response rates for the EBPQ were 70% for the intervention group (n = 21) and 54% for the control group (n = 15).
- Statistically significant differences were found between groups post-intervention on the total scale, practice subscale, and attitudes subscale. The knowledge subscale scores were not statistically significantly different between groups.

	Pre-intervention		Post intervention		Change scores		
	Mean	SD	Mean	SD	Mean	SD	*p value*
Intervention group (n = 21)							
Total	118.42	17.72	127.62	18.31	11.33	23.4	0.094
Practice	28.83	6.88	32.00	5.62	3.86	8.36	0.101
Attitudes	20.71	4.60	23.33	3.92	2.43	5.83	0.047
Knowledge	68.88	11.94	72.29	12.73	5.05	14.26	0.359
Control Group (n = 15)							
Total	106.47	23.97	108.73	21.41	2.47	29.9	0.757
Practice	22.53	8.11	24.07	8.35	1.67	7.89	0.510
Attitudes	18.93	5.90	18.13	5.58	-0.73	5.09	0.658
Knowledge	65.00	14.39	66.53	11.88	1.53	18.95	0.753
Total *p* value*	0.113		**0.007**		**0.018**		
Practice *p* value*	0.020		**0.002**		**0.009**		
Attitudes *p* value*	0.421		**0.002**		**0.004**		
Knowledge *p* value*	0.368		0.178		0.208		

Perceptions of the Nurse-Driven Protocol

Response rate (post-intervention) for the AECDPQ was 66% (n = 20)
The overall mean score for responses to the questionnaire was well above the neutral score of 4.0, indicating an overall favorable response to the intervention.
Mean scores for the relative advantage/compatibility, complexity, and observability subscales were also well above 4.0.

(n = 20)			
Intervention group	Post-intervention		One Sample t-test
	M	SD	test value = 4.0
Total	5.82	0.83	$t(19) = 7.076$, $p = 0.000$
Relative advantage	5.83	1.08	$t(19) = 5.548$, $p = 0.000$
Compatibility	6.00	0.76	$t(19) = 8.861$, $p = 0.000$
Complexity	5.73	1.63	$t(19) = 3.386$, $p = 0.003$
Observability	5.55	1.47	$t(19) = 10.053$, $p = 0.001$

Themes Developed from Qualitative Data

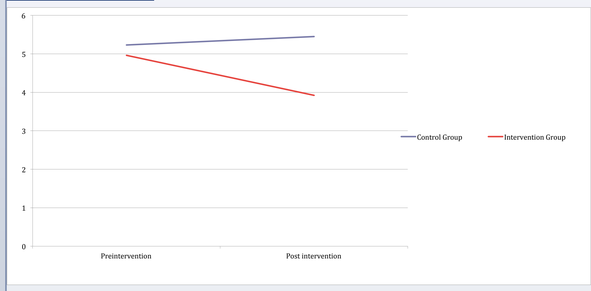
Enthusiastic support for nurse-driven intervention
Value of learning about EBP and CAUTI
Importance of educational reminders
Intervention increased nurses' workload

RESULTS

Catheter duration

	Pre-intervention			Post intervention			*p value*
	M	SD	N	M	SD	N	
Intervention group	4.96	2.53	69	3.26	1.77	65	0.000
Control Group	5.23	3.92	52	5.45	3.94	69	0.763

Catheter duration



CONCLUSIONS

- Education on the nurse-driven protocol was identified as the primary factor contributing to the nurses' enthusiastic support for the intervention.
- Providing reminders beyond the initial educational sessions was determined to be as important..
- The results from this study suggest that education coupled with practical application of an evidence-based intervention will increase nurses' perceptions and attitudes of EBP.
- The implications for practice are clear. Nursing leaders must support educational efforts related to EBP and specifically to new interventions.

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