



# Differences in Methods used to Enhance Nurses' Knowledge, Attitudes and Practice of EBP

Laurie Ecoff, PhD, RN, NEA-BC

Belinda M. Toole, MSN, RN, CCRN, CCNS

Jaynelle F. Stichler, DNSc, RN, FACHE, FAAN

Lisa Kath, PhD

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# Objectives

- The learner will be able to:
  - Describe a study that examined the effectiveness of a computer based module as compared to a classroom presentation about evidence-based practice
  - Discuss the implications of the study on knowledge transfer strategies for evidence-based practice

# Setting



- Three hospitals on multi-site campus of an integrated health care system in southern California
- Each acute care hospital has a different patient population focus

# Background & Study Significance

- Professional practice
  - Magnet designation
- IOM:
  - *Health Professions Education: A Bridge to Quality* (2003)
  - *The Future of Nursing: Leading Change, Advancing Health* (2010)
- Financial implications
  - CMS & value based purchasing
- Knowledge gap

# Purpose

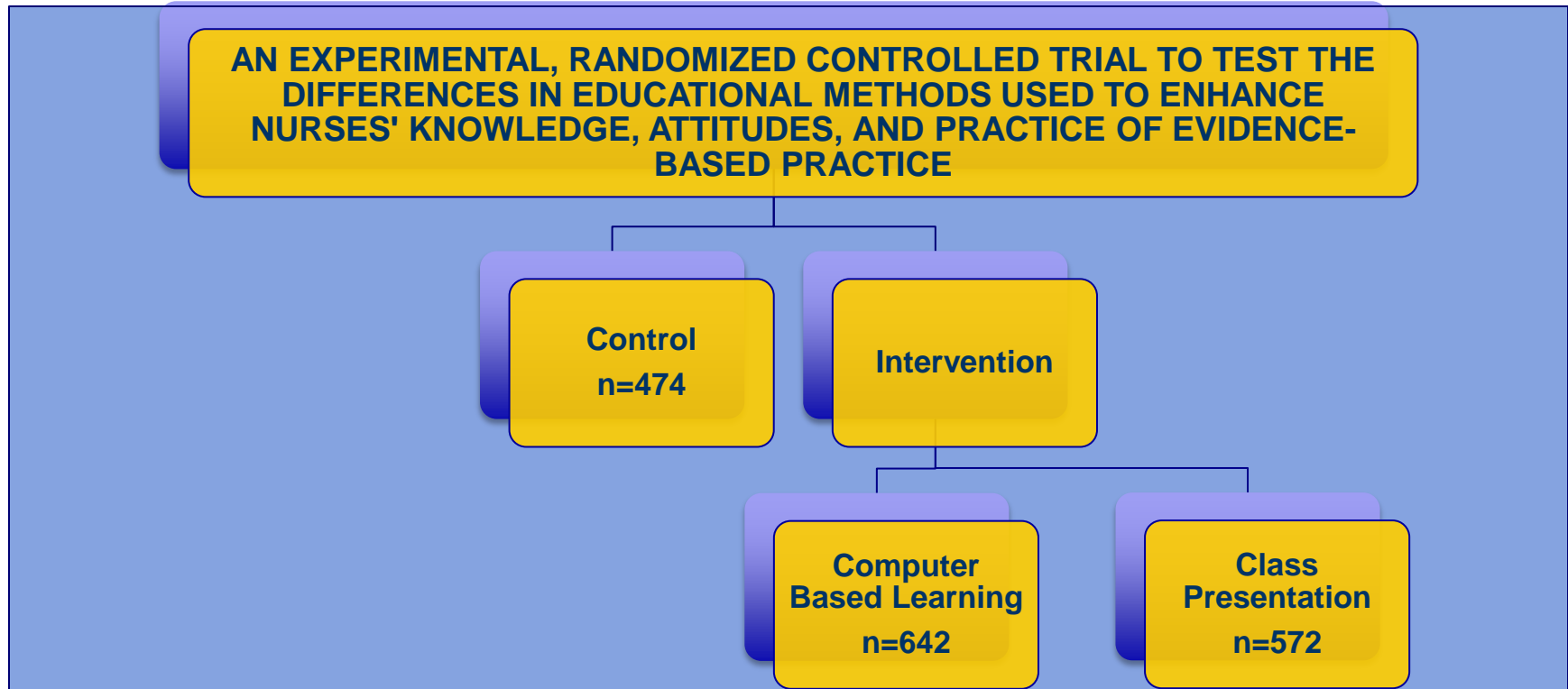
- ***Research Questions:***

1. What are the nurses' baseline knowledge, attitudes, and practice of EBP?
2. What is the effect of an educational intervention (computer-based self-administered learning module or in-class education) intended to enhance the nurses' knowledge about EBP?
3. Is there a relationship between the nurses' knowledge, attitudes and practice with their scores on the core knowledge questionnaire?
4. Is there a difference in the knowledge, attitudes and practice of EBP between nurses who receive the educational intervention as compared to nurses who do not receive the educational intervention?

# Theoretical Framework

- Adult Learning Theory
  - Knowles
- Diffusion of Innovation
  - Rogers
- Promoting Action on Research Implementation in Health Services (PARIHS)
  - Kitson, Harvey, McCormack & Rycroft-Malone

# Research Design & Methods



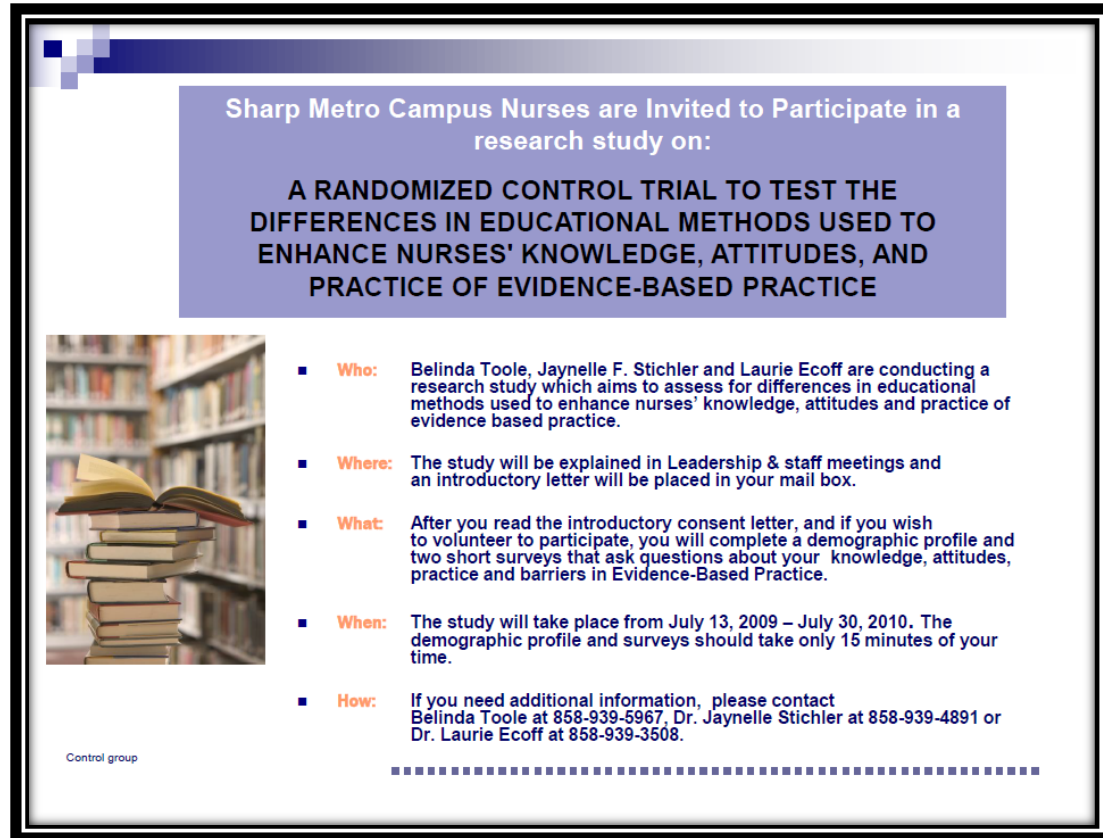
Three groups

Cluster randomization

Pre/post design


# Participant Recruitment

- Human subjects protection
- Inclusion/Exclusion Criteria
- Recruitment process



Sharp Metro Campus Nurses are Invited to Participate in a research study on:

**A RANDOMIZED CONTROL TRIAL TO TEST THE DIFFERENCES IN EDUCATIONAL METHODS USED TO ENHANCE NURSES' KNOWLEDGE, ATTITUDES, AND PRACTICE OF EVIDENCE-BASED PRACTICE**



- **Who:** Belinda Toole, Jaynelle F. Stichler and Laurie Ecoff are conducting a research study which aims to assess for differences in educational methods used to enhance nurses' knowledge, attitudes and practice of evidence based practice.
- **Where:** The study will be explained in Leadership & staff meetings and an introductory letter will be placed in your mail box.
- **What:** After you read the introductory consent letter, and if you wish to volunteer to participate, you will complete a demographic profile and two short surveys that ask questions about your knowledge, attitudes, practice and barriers in Evidence-Based Practice.
- **When:** The study will take place from July 13, 2009 – July 30, 2010. The demographic profile and surveys should take only 15 minutes of your time.
- **How:** If you need additional information, please contact Belinda Toole at 858-939-5967, Dr. Jaynelle Stichler at 858-939-4891 or Dr. Laurie Ecoff at 858-939-3508.

Control group



# Instruments

- Demographic survey
- Upton & Upton's (2005) Clinical Effectiveness and Evidence-Based Practice Questionnaire (EBPQ)
- EBP content knowledge tool (self-designed)

# Data Analysis

- t – test
- ANOVA
- Pearson Product-moment  $r$

# RESULTS

# Participants

	Control N=130	CBL N=192	In-class N=274	Significance across groups
<b>Work status</b>				p = .032
Full time	83%	73%	86%	
Part time	9%	20%	9%	
Per diem	8%	7%	6%	
<b>Ethnic group</b>	% of total	% of total	% of total	p = .004
White	60.5	75	60.9	
Asian/Pacific Islander	29.8	11.1	28.1	
Hispanic	1.6	3.7	7	
Black (not Hispanic)	4	1.9	1.6	
Multi-ethnic	3.2	6.5	2.3	
Other	0.8	1.9	-	
<b>Country of first degree</b>	% of total	% of total	% of total	p = .004
USA	80.6	95.4	80.3	
Philippines	16.1	1.9	15	
Other	3.2	2.8	4.7	

# Educational Preparation of Participants

	Control N=130	CBL N=192	In-class N=274
Highest earned degree	% of total	% of total	% of total
BSN	61	56	52.3
ADN	15.4	18	19.5
BS Other	9	8.4	14.1
MSN	5	7.5	4.7
Diploma	4.1	5.6	4.7
MS other	4	3.7	2.3
Doctorate Nursing	0.8	-	1.6
Doctorate Other	0.8	0.9	0.8

# EBP Training and Ability

	<b>Control N =130</b>	<b>CBL N = 192</b>	<b>Class N = 274</b>	<b>Significant differences across all three groups</b>
<b>Computer-based education <i>response scale from 0-10</i></b>	5.09 (SD = 3.67)	3.99 (SD = 3.35)	4.79 (SD = 3.69)	p = .037
<b>Apply research to patient care <i>response scale from 1-5</i></b>	3.26 (SD = .776)	3.51 (SD = .836)	3.48 (SD = .734)	p = .02

# EBPQ and Core Knowledge

	Control N=130	CBL N=192	Class N=274	Significance Across Groups
EBPQ – Practice Pre-test Post-test <i>Significant difference</i>	Mean 3.41	Mean 3.74 4.41 F = 9.552, df = 1, p = .002	Mean 3.63 4.11 F = 7.63, df = 1, p = .006	No differences in pre-test scores or post-test scores across groups
EBPQ – Attitude Pre-test Post-test	Mean 5.50	Mean 5.73 5.63	Mean 5.69 5.56	No differences in pre-test scores or post-test scores across groups
EBPQ – Skill Pre-test Post-test	Mean 4.47	Mean 4.66 4.95	Mean 4.76 4.78	No differences in pre-test scores or post-test scores across groups
Core Knowledge Pre-test Post-test	Percent Correct 72.4	Percent Correct 75.8 76.0	Percent Correct 72.9 75.9	No differences in pre-test scores or post-test scores across groups

# Correlational Matrix

	# Formal inservices or classes in EBP	# own readings in EBP	# Computer based education in EBP	# Conferences in EBP	# Professional organization bulletins or newsletters on EBP	EBPQ Skill Mean	EBPQ Attitude Mean	EBPQ Practice Mean
# Formal inservices or classes in EBP	1							
# own readings in EBP	.483**	1						
# Computer based education in EBP	.607**	.522**	1					
# Conferences in EBP	.575**	.446**	.462**	1				
# Professional organization bulletins or newsletters on EBP	.459**	.659**	.465**	.541**	1			
EBPQ Skill Mean	.215**	.352**	.237**	.147*	.346**	1		
EBPQ Attitude Mean		.213**			.188**	.410**	1	
EBPQ Practice Mean	.205**	.308**	.220**	.273**	.321**	.613**	.281**	1

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).



# Conclusions

- Type of educational intervention did not produce statistically significant differences in knowledge gain
- Educational intervention alone produced statistically significant increase in *self-reported practice* of EBP

# Limitations

- Inability to pair pre and post responses for individuals
- Participation rate variance
- Contextual factors
- Cost analysis of different methods

# Questions?



# Contact Information

Laurie Ecoff

[laurie.ecoff@sharp.com](mailto:laurie.ecoff@sharp.com)

Belinda Toole

[belinda.toole@sharp.com](mailto:belinda.toole@sharp.com)