Getting Started in Research

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What is Research and Why Do We Do It?

- A planned and systematic investigation
- An essential part of nursing practice
Getting Started: Step 1

- Conceptualizing a research problem
  - What you see is what you know you don’t know
  - Examples
Step 2. Developing a study

• Find the resources to assist you.
  ▫ Nursing Research Coordinator in your hospital or unit
  ▫ Research Panel at your hospital
  ▫ Advanced Practice Nurses at your hospital
  ▫ Affiliated School of Nursing Researcher or Office of Nursing Research

• Where magnet status is a focus, the infrastructure will be there.
Step 3: Critiquing the Status Quo

- Identify current practice

- Critique current practice
  - A literature review—where to begin

- Develop a conceptual context for your question (i.e., what is the rationale or conceptual theory behind what you are interested in trying?)
Example 1

- **Problem:** High rates of teenagers in rural Georgia not receiving HPV vaccination.
- **Potential risk factors:** lack of knowledge of parents and teens, stigma, poor access
- **Hypothesis:** Teens in rural Georgia whose parents of teens receive educational information on the benefits of HPV vaccination will be more likely to receive at least 1 vaccine than teens in rural Georgia not receiving educational information.

Dr. Tami Thomas, PhD, PNP
Example 2

- **Problem:** Women who breastfeed report increased levels of fatigue compared to those who do not.
- Potential *physiological* risk factors:
  - Dehydration
  - Anemia
  - Inflammation
- **HYPOTHESIS:** Women who breastfeed will have lower hemoglobin levels than women who bottle feed.
Example 3

• Prevention of hair loss in patients receiving chemotherapy
  ▫ Chemo agents circulate in the blood
  ▫ Cooling constricts vessels and decreases blood flow
    • Hypothesis: Cooling the head will decrease chemo delivery to the head
Step 4: Planning your nursing study

- What are you going to do?
  - What type of study?
  - What population?
  - How can you control the variables as best as possible?

- How will you make sure your study is valid?
  - A good hypothesis should be simple, prepared in advance of the study and contains one predictor and one outcome variable
  - A good study should control for confounding variables
  - A good study should control for systematic bias
What to avoid

- Lack of control group if you are testing an intervention
- Investigator bias – don’t evaluate your own outcomes
- Participant bias (embarrassed, want to please, in the study with personal goals in mind)
- Confounding variables
  - The fewer variables that differ between groups the better. One variable per study ideal.
Examples

• Cognitive behavioral therapy to improve depression
  ▫ Home visits conducted RNs by will improve depression in patients. Consider medications, age of subjects, co-morbidities. Control group?

• Guided imagery to improve chronic pain-
  ▫ “Persons with chronic pain who use guided imagery for 12 week will experience less pain as determined by interviews every 2-weeks”
    • Compared to whom? Compared to what? NO COMPARISON GROUP
**Examples: Type 1 versus Type 2 error**

- **Example:** NICU infants whose siblings are allowed to visit will be more likely to develop an infection compared to NICU infants whose siblings are not allowed to visit.
  - Based on expected risk, an N of 100 infants is identified as necessary to test the hypothesis. Only 20 infants are recruited during the year allocated.
    - Among those 27, the infants visited by siblings **did NOT show** increased infection. Authors rejected the hypothesis. Type 2 error.
    - Among those 27, the infants visited by siblings **did show** increased infection. Authors concluded sibs should not visit. Type 1 error.
Hurdles to Plan for and Overcome

• Where are you going to do your study?

• When are you going to do your study?

• What resources will you need to do your study?
What do you do with your completed study?

- Spread the word
  - Talk about it
  - Write about it
  - Twitter about it
Summary

- Question what you see and don’t see.
- Seek out resources to assist you in the development of a valid study.
- Do it right.
- Disseminate your findings.
Thoughts?
Ideas?