Validation of the Critical Care Pain Observation Tool in a Small Community Hospital

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Conflict of Interest

- I have no disclosures or conflicts of interest

Objectives:

- The participant will describe why nursing research should be done.
- The participant will list the steps of identifying a research problem
- The participant will be able to list the steps in validating a research tool.
- The participant will verbalize the importance of identifying the presence or absence of pain in the non-verbal patient.
- The participant will list 3 tools used to assess pain in the non-verbal patient

Poll

- How many participants enjoyed a research class in college?
- How many participants disliked their research class in college?
- How many participants consider themselves a nurse researcher currently?

Who can be a nurse researcher?

- Here's a hint…
- Look in the mirror!

What is research?

- A systematic process of inquiry
- Goal directed
- Focused on uncovering new knowledge to help understand phenomena, answer questions, or address problems

Identifying the research problem

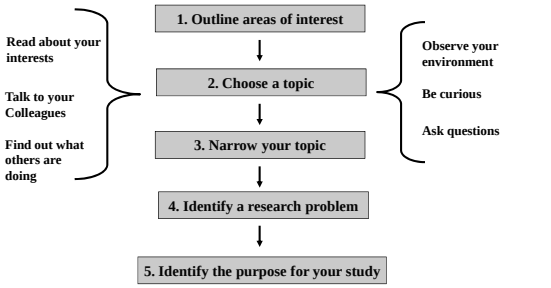
- Critical first step in research process
- Directs the entire research process and decisions you will make
- Being clear about the problem you wish to address will assist in focusing your study
- Start with a broad area of interest/concern which is gradually refined until you have a research problem

Nursing researcher

A nursing researchers will ask:

- What do patients need?
- What do nurses do to meet those needs?
- How does that make a difference?
  - To whom?
- Nurses look at things important not just to patients and families, but to other members of the healthcare team:
  - Physicians, pharmacists, social workers
- It's those special traits, abilities, and roles that give nursing research a new and important role in the evolution of healthcare in America.
- Nursing research takes advantage of a vast body of experiential and evidence-based knowledge, wisdom and curiosity accumulated by nurses working with patients in all sorts of settings.

Steps in identifying a research problem



Areas of Interest

- Start with an area you are familiar with
- Begin broadly and think of things that interest you in your practice
  - What do you find frustrating? Perplexing?
  - What do you think works well? What could be improved?
- Be creative and try to "think outside the box"
- Brainstorm about general areas of interest
- Write down all your thoughts and ideas

Choosing your topic

- **Choose one area of interest as a topic you will focus on**
- **To help you select a topic consider:**
  1. Significance/relevance: Is this an important problem for nurses/nursing practice? Is it timely?
  2. Gaps: What is already known about the topic? Have others already examined this issue? Is more research needed?
  3. Interest: Is this something you would like to explore further?

Narrowing your topic

- Refine your topic by becoming more specific about what you are interested in
- Pose some questions about your topic to help you narrow your focus
- Polit & Beck (2008) suggest some question stems to use to assist in refining your topic
  - What is going on with….
  - What is the meaning of…
  - What influences or causes…
  - What is the process by which….
  - What factors contribute to….
  - How effective is…..

Narrowing your topic:
Choosing a researchable question

- Narrow down the questions you have posed by eliminating those that are not researchable
- According to Brink & Wood (2001) researchable questions are
  - Focused on fact not opinion – answers will help to describe or explain a phenomenon
  - "Now" questions - deal with current, significant issues
  - Relevant - Generate useable information
  - Action oriented - usually require you to do something and provide direction for the rest of the research process.

Identifying the research problem

- To decide on your research problem consider the potentially researchable questions about your topic you identified earlier
- Select one that you would like to explore in more depth
- In choosing your focus consider
  - Your interests
  - The literature
  - Feasibility of studying the problem

Identifying the research problem

To finalize the research problem consider:

- Significance
- "Researchability"
  - Nature of the problem
  - Ethical considerations
- Feasibility
  - Time
  - Funding for the study
  - Researcher expertise
  - Availability of participants
  - Availability of facility and equipment

(Polit & Beck 2008))

Identifying the study purpose

- Clear, concise statement of the goal, aim, focus, or objective of the study (Burns & Grove, 2005)
- Should include a description of
  - "what" = variables or phenomena of interest
  - "who" = sample or participants
  - "where" = setting

Our question???

- Is the Critical Care Pain Observation Tool as reliable as our current method of pain assessment – Assume pain present ?
- We went through many versions of this question and it took a long time to determine if this is what we actually wanted to find out.

Moving from the problem to a research project: Next steps

- Reviewing and critiquing the literature related to your problem
  - Find out what is known
  - Identify approaches to studying the problem
  - Consider theoretical approaches to studying the problem
  - Further refine your problem & purpose
- Move to the planning phase of your study

Process of validating a research tool

- Develop an idea
- Investigate the need for your project
- EBP vs Research
- Engage stakeholders
- Write a proposal
- IRB
- Engage the staff
- Doing the work
- Collecting data
- Analyzing the results
- Your statistician

Pain and Pain Assessment

- Pain is a common occurrence in the hospital setting
- Pain is a protective mechanism which results in the stimulation of the sympathetic nervous system as a protective mechanism (McCaffery & Pasero,2010)
- Unrelieved pain results in negative physiologic consequences
- The patient's self report of pain is the gold standard and should be used regardless of whether a patient can adequately utilize a pain intensity scale

Why identify pain in this patient population?

- Physiological consequences of uncontrolled pain
- Pain behaviors
- AACN PAD guidelines
- ASPMN guidelines

Pain Assessment for the Non-verbal Patient

- Assessment of non-verbal patients present a challenge for the nursing staff as they currently rely on non-verbal indicators of pain or pain behaviors to assess the presence or absence of pain.
- This is further complicated when the nurse reports his/her assessment findings to a physician or allied health professional (AHP) to obtain appropriate pharmacological management of the patient's pain.

Tools used to assess pain in the non-verbal patient

- Critical Care Pain Observation Tool (CPOT)
- Behavioral pain scale (BPAS)
- Non-verbal pain assessment tool (NPAT)

Background

- Pain is a subjective experience, and no objective tests exist to measure it (APS, 2003).
- Best practice supports utilizing the patient's self report of pain intensity when ever possible and as per the clinical definition of pain which states "Pain is whatever the experiencing person says it is, existing whenever he/she says it does" (McCaffery, 1968).
- The patient's self report of pain is the gold standard and should be used regardless of whether a patient can adequately utilize a pain intensity scale.
- Non-verbal patients are not always capable of providing a self report of pain
- ASPMN and AACN endorse the use of a validated behavioral pain assessment ***tool*** when a patient is not capable of providing a self report of pain.

Slide 24

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Indicator	Score		Description
Facial expression	Relaxed, neutral	0	No muscle tension observed
	Tense	1	Presence of frowning, brow lowering, orbit tightening, and levator contraction or any other change (eg, opening eyes or biting during nociceptive procedure)
	Grimacing	2	All previous facial movements plus eyelid tightly closed (the patient may have mouth open or may be biting the endotracheal tube)
Body movements	Absence of movements or normal position	0	Does not move at all (does not necessarily mean absence of pain) or normal position (movements not aimed toward the pain site or not made for the purpose of protection)
	Protection	1	Slow, cautious movements, touching or rubbing the pain site, seeking attention through movements
	Restlessness	2	Pulling tube, attempting to sit up, moving limbs/thrashing, not following commands, striking at staff, trying to climb out of bed
Compliance with the ventilator (intubated patients)	Tolerating ventilator or movement	0	Alarms not activated, easy ventilation
	Coughing but tolerating	1	Coughing, alarms may be activated but stop spontaneously
	Fighting ventilator	2	Asynchrony: blocking ventilation, alarms frequently activated
or **Vocalization (nonintubated patients)**	Talking in normal tone or no sound	0	Talking in normal tone or no sound
	Sighing, moaning	1	Sighing, moaning
	Crying out, sobbing	2	Crying out, sobbing
Muscle tension Evaluation by passive flexion and extension of upper limbs when patient is at rest or evaluation when patient is being turned	Relaxed	0	No resistance to passive movements
	Tense, rigid	1	Resistance to passive movements
	Very tense or rigid	2	Strong resistance to passive movements, inability to complete them
Total		/8	

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Purpose

- To validate the Critical-Care Pain Observation Tool for use in a small community hospital
- The Critical Care Pain Observation Tool (CPOT) has been ***validated*** in large university hospital settings, but not in a small community hospital.

Initial Steps

- Literature Review
  - We found several studies to validate the CPOT in a University Hospital Setting; none in a community hospital
- Attended Critical Care staff meeting to discuss the possibility of starting a study in the critical care unit and listened to feedback from the nursing staff
- Contacted Céline Gélinas to obtain permission to use her tool
- IRB approval

Staff Education

- Critical care staff were educated about the research project.
- The Primary Investigator attended staff meetings, daily line-up, and informal unit-to-unit based educational sessions.
- All critical care staff were required to view the CPOT training video on the ***intranet*** which demonstrated proper use of the tool.
- Nurses were required to complete a post-test to validate completion of the training supporting consistency in it's application.

Design/Sample

- Repeated measures design
- Quantitative study
- Convenience sample of 52 critical care patients at JT Mather Memorial Hospital
- Patients considered for inclusion:
  - 18 years or older
  - Unable to communicate the presence or absence of pain either verbally or through gestures
- ***Exclusion*** critieria:
  - Patients receiving neuromuscular blockade
  - Patients being ruled out under brain death criteria.
- This study was approved by the Institutional Review Board (IRB) .

Recruitment

- Recruitment of eligible patients was done through daily ***rounding*** by the primary investigator and/or identification by the staff nurses
- ***Written*** consent was not required by the IRB
- Family members/significant other/healthcare proxy of the patient were provided with a letter of information about the study and were given the option of refusing participation by their family member
  - ***There were no families/significant others who refused participation.***

Methods

- A total of 52 critical care patients at ***John T. Mather Memorial Hospital*** were recruited for the study
- Patients were chosen for inclusion based on their inability to verbalize the presence or absence of pain
- Each patient that was included in the study was issued a study folder that contained 3 sets of 2 CPOT scoring tools
- Patients were ***assessed*** by 2 RNs at the bedside on 3 separate occasions using both the CPOT and ***Assume Pain Present (APP)***

Methods (cont'd)

- CPOT
  - Behavioral pain assessment tool that looks at 4 separate categories and assigns a numeric value for each one.
  - facial expression, body movements, muscle tension, and compliance with the ventilator for intubated patients or vocalization for extubated patients
  - Scores range from 0-8
  - > 2 strongly suggests the presence of pain
- Assume Pain Present (APP)
  - Current method of pain assessment
  - Patients are evaluated for pain behaviors such as grimacing, moaning, guarding, change in behavior
  - Patients are considered +APP if presence of one or more pain behaviors or if their current medical condition would be one in which any other individual would feel pain

Findings

- Every patient who was assessed as having +APP also received a CPOT score > 2
  - Scores >2 on the CPOT tool are indicative of the presence of pain.
- CPOT scores obtained by both nurses at the bedside were typically the same or only ***differed*** by 1 point, demonstrating good ***interrater*** reliability
- From a statistical perspective:
- Interrater reliability was found to be acceptable with the weighted kappa coefficients of 0.950
- ***Statistically*** significant high correlations between the CPOT and the Assume Pain Present were found indicating good convergent validity at 0.98.

Results /Discussion

- Through this research project we have demonstrated that the CPOT is a valid tool to detect pain in the non-verbal patient in a community hospital setting
- This tool is as reliable as the current method of assessment being used by the nursing staff
- The next steps:
  - Determine if the use of this tool increases the confidence of the nurse in assessing pain for this patient population
  - Determine if the use of this tool facilitates collaboration with other disciplines to communicate the presence of pain in the patient who is unable to advocate for themselves

What did we learn?

- The CPOT is a valid and reliable tool to assess for the presence of pain in a small community hospital setting
- Biggest challenge:
  - You never have as much time as you think you do.
  - Become friendly with the statistician…the librarian…the copy room clerk…the nurse manager…the unit secretary…the staff nurses…
  - You can never have too many friends!

The next steps:

- Determine if the use of this tool increases the confidence of the nurse in assessing pain for this patient population
- Determine if this tool "works" for the nursing staff.
- Does the use of this tool facilitate collaboration with other disciplines to communicate the presence of pain in the patient who is unable to advocate for themselves.

Summary

- Identifying a researchable problem is the first step in the research process and ultimately guides the remaining steps.
- Research problems describe knowledge gaps that need to be addressed in order to understand or improve practice.
- Research problems can be derived from observations, dialogue with others, and/or the literature.

Summary (cont.)

- A good research problem is relevant, current and "researchable."
- Choose a problem that is of interest to you.
- Identifying a "researchable" problem is a creative process that requires time for reflection.
- Seeking input from others and referring to the literature will help to narrow your problem down.
- A clear and focused problem statement provides direction for the next steps of the research process - the planning phase.

Conclusion

- Every nurse has the power to make a change that can significantly improve patient care and satisfaction with the job you do each and every day.
- If you feel things can be "done better", don't wait for someone else to implement a change
- Look in the mirror –
  - You have the ability to make a change and a difference
  - Change is facilitated by research
  - Remember – you are not only a nurse…

YOU ARE A NURSE!

Thank you for your time and attention and enjoy the rest of the conference

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