

Prior Conditions Influencing Nurses' Decisions to Adopt Evidence-Based Postoperative Pain Assessment Practices
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Purpose

- To test select elements of Rogers' Diffusion of Innovations (2003) model by identifying factors, termed *prior conditions*, that influence registered nurses' decisions, while caring for adults, to adopt evidence-based postoperative pain assessment practices.

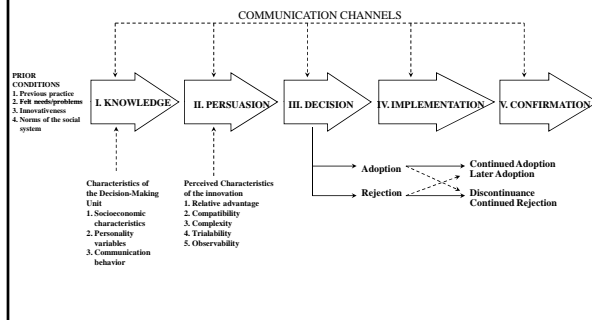
The Problem: Unrelieved Post-Operative Pain

- Postoperative pain is significant problem for patients as over 40 million operative procedures are performed each year in the United States (Center for Disease Control, n.d.)
- Pain undertreated 46 – 94% of the time in studies beginning over 30 years ago (Cohen, 1980; Klopfenstein et al., 2000; Marks & Sachar, 1973; Shea, Brooks, Dayhoff, & Keck, 2002; Svensson, Sjostrom, & Haljamae, 2000)

Strategies for Improving Practice

- Research has produced knowledge that makes successful elimination or control of pain possible
- Systematic literature review and summarization of empirical evidence has been formatted into evidence-based pain management practices through clinical practice guidelines
 - Acute Pain Management Guideline Panel, 1992
 - American Pain Society, 2003
 - American Society of Anesthesiologists Task Force on Acute Pain Management, 2003
 - American Society of Perianesthesia Nurses, 2003

A Model of Stages in the Innovation-Decision Process



Prior Conditions

- *Previous practices*
- *Felt needs/problems*
- *Innovativeness*
- *Norms of the social system*

Literature Review

- The literature has identified barriers that hinder the adoption of EBPMP
- Divided into three categories related to:
 - Health care professionals
 - Patients
 - Health care system

(Jacox, Carr, and Payne 1994)

Review of the Literature

- No studies were found that collectively examined the *prior conditions* in relationship to Rogers' model
 - No studies were found that collectively examine the *prior conditions* influencing nurses' decisions to adopt evidence-based postoperative assessment practices

Research Design

- Correlational descriptive study
- Survey research methods

Survey Questionnaire

- 12 pages, 56 items
- Characteristics of the nurse as an adopter – 8 items

Carlson's Prior Conditions Instruments
30 items

- *Previous Practice Instrument* – 11 items
 - I assess my patient's pain level by asking the patient to rate his/her pain.
- *Felt Needs/Problems Instrument* – 6 items
 - Pain is generally well controlled where I work.
- *Innovativeness Instrument* – 6 items
 - Co-workers ask my opinion about new ideas/practices.
- *Norms of the Social System Instrument* – 7 items
 - There is insufficient time to implement pain management strategies.

Survey Questionnaire cont...

- Systematic Pain Assessment
- Assessment of Patient's Patient-Controlled Analgesia Device (PCA) Use
- Acceptance of the Patient's Report of Pain

Level of Adoption	Item	Scoring for Extent of Adoption	Cumulative Score
Awareness	Have you read any literature discussing this nursing practice?	Yes/No	Yes to any one item = 1 No to all items = 0 1
	Have you heard this nursing practice described at inservices or other professional conferences?	Yes/No	
	Do nurses in your practice setting use this practice?	Yes/No	
	Do you have any other sources of information about this nursing practice?	Yes/No	
Persuasion	Should nurses perform this nursing practice?	Yes = 1	2
Implementation	Do you _____?	Yes, sometimes = 1	3
		Yes, always = 2	4

Population and Study Sample

- All nurses who care for adult postoperative patients in two metropolitan hospitals in the Midwest
- 443 responses/945 possible
- 46.9% response rate

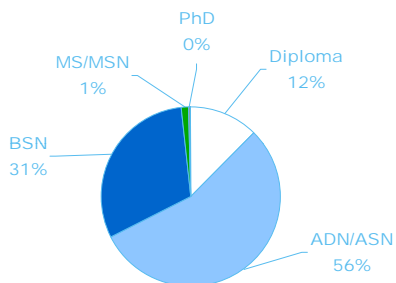
Procedure

- Nurses contacted directly or indirectly through two resource nurses
- Each participant received a booklet via their nursing supervisor, division director, or resource nurse via unit mailboxes and staff lounges
- Posters placed in staff lounges
- A large collection envelope was placed in each lounge for returned surveys.
- Resource person gathered booklets periodically and after two weeks.

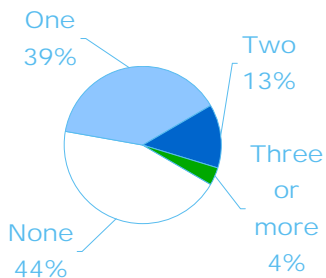
Demographic Characteristics

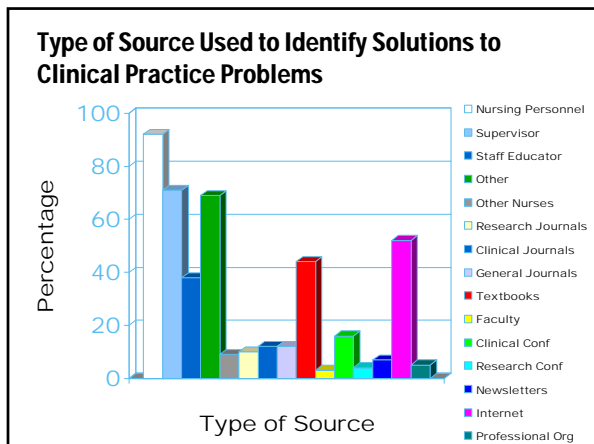
- Age 39.71 years
- Years of nursing experience 13.19 years
- Number of sources used to identify solutions to clinical practice problems 4.61
- Gender 7% Male, 93% Female
- Certification 87.9% no, 12.1% yes
- Plan to advance into a higher level nursing position 59.6% no, 40.4% yes

Highest Degree in Nursing



Number of Journals Read Regularly





Instrument Reliability

• *Carlson's Prior Conditions Instruments*

- <i>Previous Practices</i>	.747
• Pain Assessment	.689
• Pain Control Intervention	.753
• Pain Communication	.044
- <i>Felt Needs/Problems</i>	.726
- <i>Innovativeness</i>	.673
• Leadership	.784
• Reliance on Others	.356
- <i>Norms of the Social System</i>	.840

Instrument Reliability

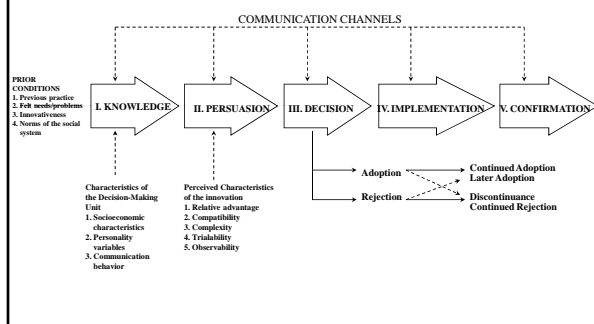
• *Postoperative Pain Assessment - Nursing Practice Questionnaire*

- Systematic Pain Assessment	.642
- Assessment of Patient-Controlled Analgesia Device Use	.699
- Acceptance of Patient's Report of Pain	.631
- Total Practice Score	.779

Level of Adoption of Three Evidence-Based Postoperative Pain Assessment practices

Level of Adoption Measured by PPA-NPO

A Model of Stages in the Innovation-Decision Process



Level of Adoption of the Three Assessment Practices Combined

- Unaware *n* = 11 2.5%
- Aware *n* = 34 7.9%
- Persuaded *n* = 88 20.3%
- Use Sometimes *n* = 192 44.3%
- Use always *n* = 108 24.9%

Mean Score = Use sometimes
2.77

Systematic Pain Assessment

•Unaware	<i>n</i> = 54	12.9%
•Aware	<i>n</i> = 13	3.4%
•Persuaded	<i>n</i> = 46	11.0%
•Use Sometimes	<i>n</i> = 170	40.8%
•Use always	<i>n</i> = 133	31.9%

Mean Score = Use sometimes
2.75

Assessment of Patient's PCA Device Use

•Unaware	<i>n</i> = 52	12.1%
•Aware	<i>n</i> = 21	4.9%
•Persuaded	<i>n</i> = 17	3.9%
•Use Sometimes	<i>n</i> = 94	21.8%
•Use always	<i>n</i> = 247	57.3%

Mean Score = Use sometimes
3.07

Acceptance of Patient's Report of Pain

•Unaware	<i>n</i> = 64	14.9%
•Aware	<i>n</i> = 26	5.9%
•Persuaded	<i>n</i> = 92	21.4%
•Use Sometimes	<i>n</i> = 141	32.9%
•Use always	<i>n</i> = 106	24.7%

Mean Score = Persuaded
2.46

Prior Conditions

Prior Conditions

<i>Previous Practice</i>	4.20 Somewhat Supportive
<i>Felt Needs/Problems</i>	2.39 Somewhat Unsupportive
<i>Innovativeness</i>	3.40 Neither supportive nor unsupportive
<i>Norms of the Social System</i>	3.50 Somewhat Supportive
<i>Total Prior Conditions</i>	3.36 Neither Supportive nor Unsupportive

Research Question #1

Are there relationships among the level of adoption of evidence-based postoperative pain assessment practices and: (a) *prior conditions* and (b) selected characteristics of a group of registered nurses including age, gender, highest level of nursing education, years of nursing practice, current specialty certification, number of nursing journals regularly read, resources utilized for clinical practice problems, and plan to advance into a higher level nursing position in the future?

Significant Relationships

- **Prior conditions**
 - level of adoption of the three evidence-based postoperative pain assessment practices ($r = .128; p < .01$)
 - level of adoption of NP1, systematic pain assessment ($r = 0.166; p < .01$)
- **Previous practices**
 - level of adoption of NP1, systematic pain assessment ($r = 0.218; p < .01$)
 - level of adoption of NP3, acceptance of patient's report of pain ($r = 0.153, p < .01$)

Significant Relationships

- **Number of sources used to identify solutions to clinical practice problems**
 - the *prior conditions* ($r = .225; p < .01$)
 - *previous practices* ($r = 0.238; p < .01$)
 - *innovativeness* ($r = 0.23; p < .01$)
 - level of adoption of the three evidence-based postoperative pain assessment practices combined ($r = 0.181; p < .01$)
 - level of adoption of NP1, systematic pain assessment ($r = 0.209; p < .01$)
 - level of adoption of NP2, assessment of patient's PCA device use ($r = 0.111; p < .05$)
- **Innovativeness**
 - age ($r = 0.096; p < 0.05$)
 - years of nursing experience ($r = 0.119; p < .05$)
 - level of adoption of NP1, systematic pain assessment ($r = 0.160, p < .01$)

Other Significant Differences

- **Reading one or two professional journals regularly**
 - adopted the three evidence-based postoperative assessment practices ($F = 4.312; p < .01$)
 - adopted NP3, acceptance of the patient's report of pain ($F = 3.924; p < .01$)

Findings for Research Question #2

Do *prior conditions* related to registered nurses' pain management practices improve the ability to predict their level of adoption of evidence-based postoperative pain assessment practices?

Independent Variables for Regression

- **Demographic Variables**
 - Age
 - Gender
 - Highest level of nursing education attained
 - Years practiced as a Registered Nurse
 - Current certification in a nursing area
 - Number of professional journals read regularly
 - Number of resources used to solve clinical practice problems
 - Plan to advance to a higher level nursing position⁹.
- **Prior Conditions**
 - *Previous practices*
 - *Felt needs/problems*
 - *Innovativeness*
 - *Norms of the social system*

Level of Adoption of Three Assessment Practices with 13 IV

- Number of sources used to identify solutions to clinical practice problems $R^2 = 0.048$
 - *Previous practices* $R^2 = 0.026$
 - *Innovativeness* $R^2 = 0.010$
- Adjusted $R^2 = 0.077$

Level of Adoption of Systematic Pain Assessment with 13 IV

- Number of sources used to identify solutions to clinical practice problems $R^2 = 0.055$
- *Previous practices* $R^2 = 0.033$
- *Innovativeness* $R^2 = 0.130$

Adjusted $R^2 = 0.094$

Level of Adoption of Acceptance of Patient's Report of Pain with 13 IV

- *Previous practices* $R^2 = 0.037$

Adjusted $R^2 = 0.034$

Other Findings

Prior Conditions with 8 IV

- Number of sources used to identify solutions to clinical practice problems $R^2 = 0.051$
 $R^2 = 0.018$
 - Number of professional journals read regularly
- Adjusted $R^2 = 0.083$

Previous Practices with 8 IV

- Number of professional journals regularly read $R^2 = 0.054$
 - Gender $R^2 = 0.009$
- Adjusted $R^2 = 0.058$

Felt Needs/Problems with 8 IV

- Number of sources used to identify solutions to clinical practice problems $R^2 = 0.009$
- Adjusted $R^2 = 0.009$

Innovativeness with 8 IV

- Number of professional journals read regularly $R^2 = 0.102$
 - Number of sources used to identify solutions to clinical practice problems $R^2 = 0.021$
 - Highest level of nursing education $R^2 = 0.015$
 - Years of nursing experience $R^2 = 0.015$
 - Desire to advance to a higher level nursing position $R^2 = 0.013$
- Adjusted $R^2 = 0.155$

Norms of the Social System with 8 IV

- Gender $R^2 = 0.031$
 - Number of sources used to identify solutions to clinical practice problems $R^2 = 0.011$
- Adjusted $R^2 = 0.038$

Conclusions

- Respondents were aware of but not using three evidence-based post-operative pain assessment practices consistently.
- Registered nurses' *previous practices* and *norms of the social system* were supportive of adoption of the three evidence-based postoperative pain assessment practices.
- Nurses felt patients received adequate pain relief, which is unsupportive of adoption of the three practices as there is no impetus to change.

Conclusions

- Registered nurses who used multiple sources to identify solutions to clinical practice problems and read one or two professional nursing journals were more likely to have adopted the three evidence-based postoperative pain assessment practices.
- Registered nurses who perceived the *prior conditions* as being supportive of adoption of pain management practices were more likely to have adopted the three evidence-based postoperative pain assessment practices.
- Registered nurses who regularly read professional nursing journals and used more sources to identify solutions to clinical practice problems were more innovative.

Conclusions

- The number of sources used to identify solutions to clinical practice problems, *previous practices*, and *innovativeness* were predictive of registered nurses' adoption of evidence-based postoperative pain assessment practices.
- Number of professional journals read regularly, number of resources used to identify solutions to clinical practice problems, highest level of nursing education, years of nursing experience, and desire to advance to a higher level nursing position were predictive of *innovativeness*.

Recommendations: Education

- **Emphasize evidence-based postoperative pain assessment practices**
- **Foster education through mass media and other types of communication**
 - Professional nursing journals
 - Attending research conferences
- **Education creates awareness and possibly persuasion**
 - Adoption needs to be addressed by other means

Recommendations: Practice

- **OPINION LEADERS**

Recommendations: Research

- Further exploration of the large unexplained variance in adoption of evidence-based pain assessment practices is needed
- Further development of the *Carlson's Prior Conditions Instruments* is needed
- Repeat study using a group of pain management practices and just not assessment practices
- Investigation into unanswered questions about how and why nurses' make clinical decisions about postoperative pain assessment practices through phenomenological inquiry is needed to understand how nurses' think and feel during decisions in their clinical practice.
