Making a match: Impact of RN education, certification, and experience on quality outcomes and safety

Marty O’Neill, PhD, R.N.
July 25, 2016
Disclosure statement

- Faculty name: Marty O’Neill, PhD, RN
- Conflict of interest: None
- Employer: Thomas University
  Thomasville, Ga. (USA)
- Sponsorship/commercial support: None
Overall Goal of this Session

- To familiarize nurses with the impact of education, national nurse certification and years of experience on clinical practice and patient outcomes.
Educational Objectives

- Discuss challenges in examining the impact of years of experience in the clinical setting.
- Identify the impact of RN years of experience on specific adverse events.
- Describe differences in perception on quality of care in the work setting and grade for overall patient safety based on RN years of experience.
Educational Objectives

- Explore the impact of RN years of experience on perception of management response to patient care issues.

- Examine the role of nursing administration in supporting strategies to address the potential exit of experienced nurses from the acute care setting.
Dissertation Committee

Chair: Donna Felber Neff, PhD, RN, FNAP
Andrea Gregg, DNS, RN
Jeanne-Marie Stacciarini, PhD, RN
Charles Gattone, PhD
Anne Barrett, PhD
Key role of nursing

3 million licensed in U.S.
1.3 million work in acute care setting
Pivotal position in maintaining quality of care
Have direct impact on adverse events and
98,000 hospital deaths per year due to preventable errors in the acute care setting (Kohn, Corrigan, & Donaldson, 2000)
estimated 200,000-400,000 deaths from preventable errors (James, 2013)
Quality Outcomes/
Nurse Sensitive Outcomes

- Outcomes that are responsive to or lack of nursing interventions (Kurtzman & Jennings, 2008)

- Used as a barometer to measure quality of care

- Involve series of complex and integrated actions that could lead to adverse events
Adverse Events

Untoward patient occurrence during acute care hospitalization

List includes:
- Falls
- Infections
- Medication errors
- Restraint usage
- Pressure Ulcers
- Hospital associated infections
Hospital Organization

Nurse-Patient Ratios/Staffing Skill Mix

Surveillance/Early Detection of Complications

Medical Staff Qualifications

Organizational Support for Nursing Care

Resource Adequacy
Nurse Autonomy
Nurse Control
Nurse-Physician Relations

Process of Care

Nurse Outcomes

Patient Outcomes

Process of Care and Outcome Model (Aiken et al., 2002)
Structure

- Years of experience
  - 1-50

Process of Care

- Education
  - Associate Degree
  - Diploma
  - Baccalaureate
  - Master
  - Doctorate

Outcomes

- Adverse Events
  - Pressure ulcers developed
  - Physical restraint (vest/limb)
  - Physical restraint (8 hours or more)
  - Wrong medication or dose
  - Use of medication as a restraint
  - Falls with injury

- Hospital Associated infections
  - Surgical site
  - Urinary tract
  - Central line associated bloodstream
  - Ventilator associated pneumonia

- Quality
  - Nurse perception of quality of care delivered to patient on unit
  - Nurse confidence that patient able to manage care upon discharge
  - Nurse confidence that management will act to resolve problems in patient care that you report

- Safety
  - Nurse reported overall grade on patient safety
  - Opinion that management actions show patient safety as a priority
Structures within Nursing

What structures in nursing affect process and outcomes?
Structures: Demographic characteristics
- Years of Experience
- Education
- Certification

Does the research support the role of these demographic characteristics?
Years of Experience

Confusion with longevity in practice and level of competency (expert)
Benner’s work on critical thinking as opposed to longevity in practice (Benner, 1984; Benner & Tanner, 1987).

Literature supports 5 years as an “expert”
Research on Years of Experience

Mixed findings: medication errors
falls
clinical assessment
urinary tract infections

** no research on restraint usage
Certification

750,000 RN’s certified \( \text{(ABNS, 2016)} \)

Recognized by Institute of Medicine as a measure of knowledge and expertise of the Registered Nurse

Requires set didactic and clinical exposure with continuing education verification, supervised clinical practice, and extensive examination
Certification

Value to the RN is recognized but what about outcomes?
Mixed findings with pressure ulcer detection infections (blood stream, urinary tract, surgical) falls restraints

** no research on medication errors
Education

Levels in nursing:
- Associate Degree (2 year)
- Diploma (3 year)
- BSN
- MSN
- DNP or PhD

IOM recommends 50-80% RN at BSN level by 2020 (IOM, 2011).
Education

Acknowledged with mortality and failure to rescue (every 10% increase in proportion of BSN = 5% decrease in mortality (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002))

Few studies with mixed results on nurse sensitive outcomes
Education

Mixed results: falls
medication errors
skin breakdown
restraint
infection rate
congestive heart failure mortality
deep vein thrombosis
Purpose

Examine the relationship among years of experience, national nurse certification, and educational level of the registered nurse and nurse reported adverse events, hospital quality, and safety.
Design

Sample

RN’s (Florida) with direct care in acute care setting with over at least one year experience from 21-75 years of age full and part-time

Total = 6500 nurses
Variables (Independent)

Years of experience

National nurse certification

Education
Years of experience

Number of years as a Registered Nurse with at least one year of clinical nursing experience in the United States healthcare system

1-50 years of experience
21-75 years of age
National Nurse Certification

Recognized national nurse certification from a national nurse certifying body
Requires continuing education, completion of supervised clinical experience, and comprehensive examination
(36 national nurse certifications)

25% certified nurses in sample (out of 6500 nurses)
Education

Highest degree at time of completing survey

- Diploma (3 year hospital based nursing program) (9.5% of sample)
- Associate Degree (2 year technical training program) (52% of sample)
- Baccalaureate (4 year university academic degree) (36% of sample)
- Masters in Nursing (Graduate academic degree) (2.6% of sample)
- Doctorate (less than 1%)
Outcome variables

**Adverse events:** pressure ulcers
  falls
  restraints (vest/limb)
  restraints (8 hours or more)
  medication as restraint
  wrong med or dosage
  Surgical site infections
  Urinary tract infections
  Central line associated blood stream infections
  Ventilator-associated pneumonia

(nurse reports frequency 7 point likert type scale: never, a few times a year, once a month or less, a few times a month, once a week, a few times a week, everyday)
Outcome variables: Quality

1. “In general, how would you describe the quality of nursing care delivered to patients in your work setting?” was measured with a 4-point Likert type scale (excellent, good, fair, or poor).

2. “How confident are you that your patients are able to manage their own care upon discharge?” using a 5-point Likert type scale (Very confident, Confident, Somewhat confident, Not all confident, Not applicable).
3. “How confident are you that management will act to resolve problems in patient care that you report?” with a 4 point Likert scale (Very confident, Confident, Somewhat confident, Not at all confident)
Outcome variable: Safety

1. “Please give your unit/practice area an overall grade on patient safety”, using a 5-point Likert type scale
   A (Excellent)  B (Very good)  C (Acceptable)  D (Poor)  F (Failing)

2. “How confident are you that management will act to resolve problems in patient care that you report” with a 4-point Likert type scale: Very confident, Confident, Somewhat confident, Not at all confident
Outcome variable: Safety

3. “The actions of management show that patient safety is a top priority” was measured using a 5-point likert type scale: Strongly agree, Agree, Neither, Disagree. Strongly disagree.
Findings: Years of Experience

As years of experience increased

1. Reported less incidents of physiological adverse events (infections, falls, use of restraints)

2. Reported nursing care as good

3. Gave a Grade of B of patient safety

4. Less confidence that management would act to resolve patient care issues.
Findings: Certification

1. Little association with adverse events, quality and safety.

2. Reported more use of physical restraints.

3. Had higher odds of reporting incidents of involving them or their patients receiving wrong meds or wrong dose.
Findings: Education

1. Significant association on reporting the majority of outcomes
3. Diploma: had higher odds of reporting quality of care concerns
4. Diploma: less confident that patients can manage their own care upon discharge, and that management sees safety as a priority,
Additional aim for study

1. To determine if national RN certification moderates the relationship between years of experience of the nurse and RN reported adverse events, hospital quality, and safety.

2. To determine if national RN certification moderates the relationship between educational level of the nurse and RN reported adverse events, hospital quality, and safety.

Findings

No moderation effect
Limitations

Secondary analysis
Convenience sample
Nurse reported data
Reliability threats: random error
  systematic error (instrument)
Implications for research

Practice

Years of experience on adverse events, hospital quality, and safety
Educational level and trust with management
Impact of certification on nurse sensitive outcomes
Use of restraints
Implications for theory

Need to study characteristic impact on process of care

Explore impact of social structures on ability of nurse to achieve certification, education, or maintain longevity in practice

Explore social structure impact on the individual nurse and personality outcomes essential for critical assessment
Implications for future research

Impact of leadership style on patient outcomes

Impact of manager support on patient outcomes

Exploring difference between manager support and trust and confidence in management.
Conclusion

Different perspective of care:

- years of experience >>>> physiological incidents
- certification >>>>>>>>>>> patient safety
- education >>>>>>> quality of care and ability of patient to manage their own care
Conclusion

Safe efficacious care may depend on the nurse’s ability to effectively integrate experience, education, and expert knowledge.


American Board of Nursing Specialties (2016). *American Board of Nursing Specialties* http://www.nursingcertification.org

References (continued)


Thank you