Clinical Evaluation of Competence: What are we Measuring?

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Nursing Education Research Conference
April 2018, Washington, DC
Presentation Outcomes & Author Disclosures

• Presentation Outcomes:
  – Evaluate the state of the science in clinical evaluation of competence in the U.S. and internationally
  – Elizabeth Van Horn and Lynne Porter Lewallen, employed by UNCG, declare no conflict of interest.

• This study was funded by the National League for Nursing Research Grant program; Ruth Donnelly/Corcoran Research Award
Competence in the U.S.

- Three national groups (ANA, AACN, NLN) have general competency standards
- NCLEX is the minimum competence exam for licensure in the U.S. and Canada
- NCLEX is written by the National Council of State Boards of Nursing
- Based on new graduate practice experiences and expectations
The Problem

• Clinical evaluation of competence is done differently across schools and programs
• No standardized instrument for clinical evaluation is commonly used
• No research synthesis of clinical evaluation of competence in nursing education available in the literature
The Overall Study

• Purpose: Conduct a research synthesis to determine the state of the science related to clinical evaluation in nursing education programs

• Theoretical Framework: Cooper (2010)

• Inclusion criteria: Research studies that examined clinical evaluation for any level of nursing student, written in English

• Exclusion Criteria: Simulation, focus on perception/satisfaction only
Methods

• Extensive electronic literature search

• Review of TOC of 7 top-tier nursing education journals 2010-2017

• Review of reference lists of five review articles on clinical evaluation

• Grand total: 250 unique articles

• Final sample: 88 studies that met criteria
Results of Larger Study

Results of larger study:
Lewallen, L.P. & Van Horn, E.R. The state of the science on clinical evaluation in nursing education. In press at *Nursing Education Perspectives*
Competence Studies

- Studies with a competence focus: n = 35
- Publication dates: 1988-2016
- Originating in 11 countries: USA (8), UK (8), Australia (5), Finland (4), Taiwan (3), Iran (2), and 1 each from Sweden, Turkey, Ireland, Iceland, and Burkina Faso
- Quantitative n = 27, Qualitative n = 2, Mixed Methods n = 6
Findings

- Majority of studies evaluated general competence \((n = 22)\)
- Most studied undergraduate students
- Used a researcher-developed instrument \((n = 23)\)
- Used a conceptual framework \((n = 7)\)
- Funded study \((n=15)\) (most by governments)
- Included psychometric evaluation of an instrument \((n=17)\)
# Levels of Evidence

**Melnyk & Fineout-Overholt 2011**

<table>
<thead>
<tr>
<th>Level and criteria</th>
<th># of studies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level 1</strong> - Systematic review &amp; meta-analysis of randomized controlled trials</td>
<td>0</td>
</tr>
<tr>
<td><strong>Level 2</strong> - One or more randomized controlled trials</td>
<td>1</td>
</tr>
<tr>
<td><strong>Level 3</strong> - Controlled trial (no randomization)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Level 4</strong> - Case-control or cohort study</td>
<td>3</td>
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<tr>
<td><strong>Level 5</strong> - Systematic review of descriptive &amp; qualitative studies</td>
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<tr>
<td><strong>Level 6</strong> - Single descriptive or qualitative study</td>
<td>21</td>
</tr>
<tr>
<td><strong>Level 7</strong> - Expert opinion</td>
<td>N/A</td>
</tr>
</tbody>
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Types of Competence

• General competence – end of program, semester, clinical rotation, specific event

• Specific competence categories:
  – Psychiatric nursing skills
  – Intensive care nursing
  – Perioperative care
  – Medication calculations
  – Vaccinations
  – Critical thinking
  – Culturally specific care
  – Interpersonal communication
Instrumentation

• Reliability and validity summary
• Types of measures varied widely (self-assessment, focus groups, observation, examination)
• Many included student self-evaluation
• 5 based on country-specific competencies
• Two tools used twice: CINS Competency Inventory of Nursing Students; CNCQ Clinical Nursing Competence Questionnaire
General Competence Findings

• No agreement on definition of competence
• Little reliance on national standards
• Concepts in competence measures vary widely (critical thinking, clinical skills, knowledge, communication, safety, professional behaviors, etc.)
• Personal qualities sometimes measured (self-confidence, empathy, respect, honesty, caring, accountability, etc.)
Specific Competence Findings

• Primarily focused on specific setting, patient population, or nursing skill
• Concepts in measures similar to general competence tools (knowledge, critical thinking, skills, etc.)
• Criteria of measures differ according to specific setting or skill
• Personal qualities measured less frequently
Analysis of Competence Studies

- Qualitative content analysis to determine concepts measured
- Examined researchers’ descriptions, definitions, and/or discussion of competence
- Examined instrument items when available
- Inclusive approach
- Categories created from the data
Competence Concepts

K (knowledge)
SP (skills: psychomotor)
SCOG (skills: cognitive)
SCOMM (skills: communication)
SI (skills: interpersonal)
CT (critical thinking)
E (ethics)
PB (professional behaviors)
PERB (personal behaviors)
NP (nursing process)
T (teaching)
Competence Concepts (%)
Most Frequent Concepts

- Communication Skills: 19 (58%)
- Knowledge: 15 (45%)
- Psychomotor Skills: 15 (45%)
- Professional Behaviors: 15 (45%)
Least Frequent Concepts

- Cognitive Skills: 12 (36%)
- Nursing Process: 11 (33%)
- Ethics: 11 (33%)
- Critical Thinking: 9 (27%)
- Personal Behaviors: 9 (27%)
- Interpersonal Skills: 6 (18%)
- Teaching: 6 (18%)
What Do These Findings Say?

• Emphasis on communication and readily observed skills and behaviors
• Less emphasis on higher-order thinking and problem-solving
• Only 1/3 of studies measured nursing process-why?
• What about use of technology, EBP, safety?
• Are other concepts missing?
Conclusions

• Most studies of clinical evaluation of competence at low levels of evidence
• Wide variety of instruments used
• Focus on observable skills and knowledge
• Many are faculty-developed without established reliability or validity
• Most single-site studies
• Relative lack of theoretical frameworks guiding research
Considerations

• Competence is a multi-faceted concept
• What parts are essential?
  – knowledge
  – psychomotor skills
  – critical thinking
  – professional behaviors
  – personal characteristics
• May have relevance in both general and specific measures of competence
Future Research

- Explore global definition or essential components of competence
- Establish standardized measure of competence
- Multi-site research studies
- Build nursing science through replication of promising small studies
Thanks to our RAs

• Sarah Abrams, RN, PhD
• Wendasha Jenkins, PhD
• Catherine Moore, RN, PhD
References


Questions?

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