The Effect of Evaluator Training on Reliability of High Stakes Assessment in Simulation: A Pilot Study

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Conflicts of Interest and Disclosures:

Objectives

- Describe the need for evaluator training for high stakes assessment of student performance in simulation
- Describe a training intervention developed to prepare faculty for performance evaluation
- Discuss the results of the pilot study and implications for nursing education programs and future research
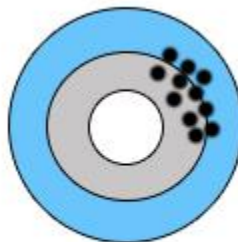
Background: Simulation

- A core nursing education strategy
- Used as teaching/learning strategy and for formative assessment
- More recently used for summative and high stakes assessment
  - **NCSBN study (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014)**
  - **NLN study (Rizzolo, Kardong-Edgren, Oermann, Jeffries, 2015)**
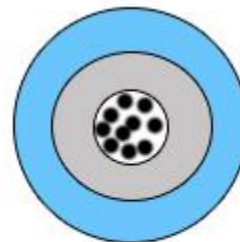
Evaluating Clinical Competence

- Readiness for practice determinations
  - Is NCLEX-RN sufficient?
- NLN Fair Testing Guidelines (2012)
- Methods and tools
  - OSCEs
  - Nursing instruments (LCJR, CCEI, etc.)
- How do we ensure validity and reliability in high stakes assessment in simulation?
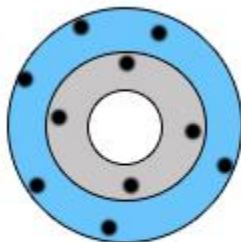
Not reliable or valid   Reliable but not valid   Both reliable and valid

The Pilot Study

- Extension of the NLN High Stakes study
- What is the effect of (a) a training intervention and (b) faculty personality characteristics on faculty ability to achieve intra/inter-rater reliability when evaluating student performance during simulation?
- Conducted to test the training intervention and study procedures prior to a larger experimental study.

Definitions

- Simulation:
  - the activity of having students perform a patient care situation using clinical judgment in a high fidelity environment (high realism, not necessarily highly sophisticated manikins).
- High stakes assessment:
  - "an evaluation process associated with a simulation activity that has a major academic, educational, or employment consequence . . ." (Meakim et al., 2013, p. S7).

Definitions

- Clinical competence:
  - the ability to "**observe** and **gather** information, **recognize** deviations from expected patterns, **prioritize** data, make sense of data, maintain a **professional** response **demeanor**, provide clear **communication**, execute effective **interventions**, **perform** nursing skills correctly, **evaluate** nursing interventions, and s**elf-reflect** for performance improvement within a culture of safety" (Hayden, Jeffries, Kardong-Edgren & Spector, 2011).

Conceptual Framework

- Shared Mental Model:
  - individually held knowledge structures that help team members function collaboratively in their environments and are comprised of four attributes: content, similarity, accuracy and dynamics (McComb & Simpson, 2014).

Method

- Recruited 5 participants with expertise in simulation
- Designed a Blackboard LMS site from which to deliver and receive all study materials
- Participants completed Basic Orientation and Advanced Evaluator Training components over 2 month period
- Participants completed experimental portion of study over 1 month period

Data Collection Instruments

- Demographic Survey
- Creighton Competency Evaluation Instrument (CCEI)
  - Video-recorded student performance videos
- Clifton StrengthsFinder Inventory
- Pilot Study Feedback Survey

The Training Intervention

- Basic Orientation
  - Documents to read, StrengthsFinder Inventory, training video for CCEI, practice evaluation of 1 video using CCEI
- Advanced Evaluator Training
  - Training Webinar, practice evaluations of 3 videos using CCEI, Coaching Webinar, repeat evaluations, remediation (if needed)

Results

- Demographic data

Demographic criterion	Participant data		
Gender	Female: 5	Male: 0	
Age	31-40: 1	51-60: 3	61-70:1
State	Iowa: 2	Michigan: 1	Minnesota: 2
Academic credential	Masters: 4	PhD: 1	
Type of program	Associate: 2	Baccalaureate: 4	Masters entry: 1
HSA experience	Yes: 1	No: 4	

Results

- Quantitative data
  - **7 video performances evaluated:**
    - **1 orientation video**
    - **3 training videos**
    - **3 experimental videos**
  - **Group level analysis**
    - **kappa, ICC, % correct**
  - **Individual level analysis**
    - **% correct, % agreement (intra-rater)**

StrengthsFinder Assessment

- StrengthsFinder: a web-based assessment of personality (Rath, 2007)
- 177 items with descriptors
- Assessment helps identify areas where there is the greatest potential for building strengths.
- Measures recurring patterns of thoughts, feeling, and behavior

StrengthsFinder Results

Top Strengths

⅘ Learner
⅗ Connectedness
⅗ Input
⅗ Belief

Four Domains

Executing - 7
Influencing - 2
Relationship building - 8
Strategic Thinking - 8

StrengthsFinder – Full Study

- Move to a Qualitative Survey
- After completing the study - participants review their results and answer a series of questions.
  - As you reviewed your individualized StrengthFinders report, what resonated with you? What surprised you when you read the reports? What was missing from the report?
  - How do your top five talents/strengths **help you** conduct accurate and consistent evaluation of students in testing situations?
  - How do your top five talents/strengths **make it more challenging** to conduct accurate and consistent evaluation of students in testing situations?
  - How would your peers or supervisor(s) say your talents/strengths affect how you evaluate students in testing situations?
  - Reflecting on your top five talents/strengths, when you work in a team situation, what do you bring to the team? What do you need from other team members?
  - As you reflect on the Shared Mental Model theoretical framework, how do your talents/strengths help you come to a Shared Mental Model with your clinical evaluation team?

Results

- Pilot Study Feedback Survey data
  - Basic Orientation: Mean = **4.6**
  - Advanced Evaluator Training: Mean = **4.48**
  - Study procedures and technology: Mean = **4.88**
  - Study outcomes: Mean = **4.6**
  - Estimated time spent: Mean = **21.1 hours**
  - Written comments:
    - Webinar discussions were most helpful in assisting with performance evaluations
    - Several participant recommendations were adopted for the full study

Lessons Learned

- Technology travails
- Developing a shared mental model
- Building an accurate timeline
- Fitting data analysis to the study purpose and tools
- "That's why we're doing a pilot study!"

Next Steps

- Manuscripts
- Full study - Nationwide experimental study (control group, intervention group)
  - 102 enrolled
  - 80 completed
- Just the beginning.............

Implications for Nursing Education

Implications for Research

THANK YOU

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