A Low Fidelity Simulation of the Concept of Frailty: Time Compression as a Tool to Identify Manifestations of Frailty, to Plan Intervention and to Conduct Family Conferences

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St Catherine’s Student Profile

- Associate Degree students—271
- Bachelor of Arts Degree—243
- RN to BSN program—65
- Adult/Gero, Pediatrics and Neonate NP students—69
- Nurse Educator students—21
- DNP Students—31
- Total of 90 Masters students
Background
Frailty is prevalent (7%–23% Varies with definition)
• Associated with risk of health compromise
• Associated with increased utilization of services (Rockwood, 2000)

Institute of Medicine (IOM) has called for a change in nursing education to address complex care of the rapidly rising numbers of older adults in the community setting. (IOM, 2011)
Literature Review

Frailty—complex adaptive system with inflammatory, endocrine, skeletal, neurological system changes, genetic variations, and functional changes

Frailty may have a cluster of multiple phenotypes (Walstrom, et al., 2006)

How to frame this intricate, changing, data set?

Outline for simulation development (Guimond, et al., 2012)

* Cognitive task analysis
* Lack of nurse practitioner, directional tools with frailty
* Derived an analysis tool from literature on frailty
Literature Review

Will simulation help teach a complex frailty assessment tool to nursing practitioner students?

Johnston, et al (2012) role modeling with clinical judgment can improve clinical judgment

Richards (2012) simulation can also improve student satisfaction and self-confidence

Smith & Barry (2013): how simulation can best be utilized for geriatric care, especially in home setting, is not clearly available.
Research

**HYPOTHESIS:** Nurse practitioner learning of frailty
- (a complex adaptive theory) assessment parameters is improved with stimulation.

**QUESTIONS:**
1. Is there improved retention of assessment parameters of frailty with a video simulation?
2. Does video modeling improve clinical judgment of student nurse practitioners in assessing frailty?
3. How is student’s learning affected by use of simulation?
Methods

- **Study Design**: Quasi experimental. Pilot in an urban private school in Midwest. Approval to conduct was provided by institution’s Internal Review Board

- **Sample**: nonprobability, convenience sample of second semester nurse practitioner students (2012–2013 cohort)
Measures

- Pre and post test, 20 item multiple choice. Was not reviewed by content experts for validity.
- Post simulation: Objective Structured Clinical Exam
  - Simple yes/no: Identified frailty assessment parameters in case study
  - Used SPIKES format in sharing findings with “daughters.” Yes/no
  - Questions post experience to capture qualitative data

- Assessment framework for frailty was developed as a tool to conceptualize complexity of the syndrome.
Assessment Tool

FRAILTY ASSESSMENT PARAMETERS

ATTACHMENT

BALANCE

COGNITION CHRONIC DISEASE

DEPRESSION DRUGS DRIVING

ENERGY: FOOD

FUNCTION FUNCTION FUNCTION

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Procedure

- **Fourth** week: Pretest—Frailty assessment, lecture—Frailty and SPIKES format for difficult conversations.

- **Fifth** week: Simulation of Anna Nelson—designed to reflect assessment parameters in lecture.
  - First meeting: Anna as an engaging older adult.
  - Second: Anna 6 years later with daughter attending
  - Third: Nurse practitioner and daughter have conversation when Anna goes to the lab.

- **Sixth** week: OSCE testing. Post test. Debriefing questions.
## Data Analysis:

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<th>MEASURE</th>
<th>COMPAIRISON OF CONTROL AND SIMULATION GROUPS</th>
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<tbody>
<tr>
<td>P value: Two tailed</td>
<td>0.3010 (Not statistically significant)</td>
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<td>At p value &lt; 0.5</td>
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<td>Confidence Interval</td>
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<tr>
<td>Standard error of the difference</td>
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**Question One:** Students learned from lecture.
<table>
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<th>MEASURE</th>
<th>COMPAIRISON OF CONTROL AND SIMULATION GROUPS</th>
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**Question Two:** There was NOT improved learning on assessment of frailty parameters with simulation.
Debriefing—Themes

- Language
- Ethics
- Simulation model gave them confidence
- A/F tool helped retain the frailty assessment parameters
- Did not study; wish they had

Question Three: Students had more confidence in their ability to assess frailty because of the A/F tool and modeling with simulation.
Results

- Students learned about assessment of frailty
  - A to F assessment issues
- Learned from lecture
- Qualitative outcomes from debriefing
  - Confidence
  - Language/scripting
  - Need to study
- A–F assessment tool helped frame student’s thinking
Conclusions

- We did not ask the right question:
  - Instead of asking will simulation help nurse practitioner students retain information about assessment of frailty?

- What are teaching strategies that are effective to teach a framework of a complex adaptive system concept?

- As the literature says: Simulations help build confidence
Barrier & Limitations

- Inexperienced teachers and researchers
- Tools
  - Consider using Student Satisfaction and Self-confidence in learning Scale (NLN)
- Evaluation methods
  - “Daughters”
- Standardization with one tester
  - Panopto
  - Manpower
- Small sample size
- Homogeneous population and learners
Variables to consider

- Diversity of students
- Level of experience of students
- Recruitment process
- Study communication
Future Directions

- How to improve learning of a complex concept?

- How to frame frailty in a way that provides a basis for meaningful intervention and assessment?

- Continue simulations

- Consider using concept mapping to teach a complex system concept
Research Team Members
“Well, I guess we’re the control group.”
References

References


References


Vermeulen, J, Neyens, JCL, van Rossum, E, Speeuwenbery, MD &de Witte, LP.


## Data Analysis: Results on pre/post test

<table>
<thead>
<tr>
<th>MEASURE</th>
<th>CONTROL</th>
<th>SIMULATION GROUP</th>
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