INTERNATIONAL NURSING EDUCATION PARTNERSHIP FOR CARE OF AN AGING POPULATION

SIMULATION AND CLINICAL JUDGMENT DEVELOPMENT
SIGMA THETA TAU INTERNATIONAL
OCTOBER 31, 2011
PRESENTATION CO-AUTHORS

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DISCLOSURES

• This study was funded in part by a National League for Nursing Educational Grant.

• The researchers have nothing to disclose.
PROBLEM STATEMENT

• International challenge to educators: train future health care leaders skilled in geriatric care
• Clinical judgment is critical to meeting the challenge
• Simulation is used to teach clinical judgment
• Evidence linking simulation and clinical judgment is lacking.
LITERATURE

- Lack of clinical thinking and judgment skills implicated in patient care safety errors made by novice nurses (Ebright, Urden, Patterson, & Chalko, 2004).

- Increased cost predicted by low level of nursing intervention with pre-operative patients (Titler, et al., 2007)
LITERATURE

• Patient safety is at risk
  • Nurses have not been taught and do not recognize key symptoms of delirium in older patients (Steis & Fick, 2008)

• In older adults, hip fracture and subsequent surgery may lead to negative outcomes related to delirium (Ouldred & Bryant, 2011)
  • Increased risk of longer hospital stays
  • Admissions to extended care facility
  • Higher mortality rates

• Call for clinical education redesign (Tanner, 2005).
PURPOSE

• Determine the effect of expert role modeling on students’ clinical judgment in the care of a simulated geriatric surgical patient
THEORETICAL FRAMEWORK

• Clinical judgment – Tanner’s model
  • The complex ways in which nurses make decisions about patient care

• Observational learning and mastery modeling – Bandura
  • Problem-solving competencies developed by observation of others who model basic rules and strategies
  • Competencies developed through instructive modeling, guided skill perfection, and transfer learning.
METHODS

• Four diverse US schools (N = 221 students) and one UK school (N = 54 students)

• Three phase unfolding clinical simulation
  • Geriatric patient with a hip fracture

• Variation between sites minimized with digital toolkit and regular conference calls.
METHODS

• Students assigned to treatment or control groups

• Students randomized
  • phase of simulation
  • nursing roles within each phase

• Treatment = video recording of exemplar nurse
SIMULATION DESIGN

- Students completed assigned preparatory activities
  - Lecture
  - Assigned readings
  - Guided websearch for evidence-based information

- Guided pre-simulation activities
  - Completed on day of simulation prior to lab experience
  - Narrowed student focus from nursing care for all surgical patients to care for patients undergoing orthopedic surgery to a plan of care for the simulated patient.
SIMULATION DESIGN

• Video exemplar
  • Viewed by treatment group students
  • Professionally recorded with voice over describing the nurse’s clinical judgments
  • Mirrored amount of time allowed for each phase
SIMULATION DESIGN

- Simulation
  - Video recorded for later analysis
  - Three phases:
    - preparation for surgery
    - admission to surgical nursing unit
    - 2 days post-operative with development of delirium
SIMULATION DESIGN

• Debriefing
  • Followed each phase
  • Concluded with larger group debriefing
MEASUREMENT
PERCEIVED SATISFACTION & CONFIDENCE

- Perceived satisfaction with aspects of simulation
- Confidence in care of the patient
- Perceptions of pre-simulation learning activities
  - Researcher developed survey
  - Likert scale (1 = strongly disagree, 5 = strongly agree)
  - Piloted with previous simulations
Lasater Clinical Judgment Rubric
- Measures 4 dimensions of clinical judgment
  - Noticing
  - Interpreting
  - Responding
  - Reflection
- Describes 4 developmental levels from beginning to exemplary

Trained observers rated student clinical judgment from video recordings of the simulations
PERCEIVED SATISFACTION & CONFIDENCE

- US students
  - no differences between treatment and control groups
  - all satisfied with simulation
  - all confident in the care of a patient with a hip fracture.

- US and UK students (treatment group) found opportunity to
  - practice the care of a geriatric patient
  - transfer classroom information to clinical setting
PERCEIVED SATISFACTION & CONFIDENCE

• UK students
  • significant differences between groups for perceived satisfaction and confidence ($p < .001$)
  • did not express confidence in ability to care for patient with delirium
# US Schools Satisfaction

<table>
<thead>
<tr>
<th></th>
<th>Control Mean (SD)</th>
<th>Treatment Mean (SD)</th>
<th>p value (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom to clinical</td>
<td>4.31 (.69)</td>
<td>4.41 (53)</td>
<td>.21 (-.27 to .06)</td>
</tr>
<tr>
<td>Interpret symptoms</td>
<td>4.36 (.65)</td>
<td>4.37 (.57)</td>
<td>.87 (-.17 to .15)</td>
</tr>
<tr>
<td>Realistic practice</td>
<td>4.22 (.72)</td>
<td>4.27 (.64)</td>
<td>.62 (-.23 to .14)</td>
</tr>
<tr>
<td>Gero skills</td>
<td>4.25 (.58)</td>
<td>4.26 (.57)</td>
<td>.89 (-.16 to .14)</td>
</tr>
</tbody>
</table>
## UK SCHOOL SATISFACTION

<table>
<thead>
<tr>
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<th>Control Mean (SD)</th>
<th>Treatment Mean (SD)</th>
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</thead>
<tbody>
<tr>
<td>Classroom to clinical</td>
<td>3.86 (.45)</td>
<td>4.77 (.43)</td>
<td>.000 (-1.15 to -.67)</td>
</tr>
<tr>
<td>Interpret symptoms</td>
<td>3.93 (.26)</td>
<td>4.77 (.43)</td>
<td>.000 (-1.03 to -.65)</td>
</tr>
<tr>
<td>Realistic practice</td>
<td>3.57 (.50)</td>
<td>4.54 (.58)</td>
<td>.000 (-1.26 to -.67)</td>
</tr>
<tr>
<td>Gero skills</td>
<td>3.75 (.52)</td>
<td>4.62 (.10)</td>
<td>.000 (-1.14 to -.59)</td>
</tr>
</tbody>
</table>
## US SCHOOLS CONFIDENCE

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<th>Control Mean (SD)</th>
<th>Treatment Mean (SD)</th>
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</thead>
<tbody>
<tr>
<td>Prep for surgery</td>
<td>3.96 (85)</td>
<td>4.10 (.75)</td>
<td>.22 (-.35 to .08)</td>
</tr>
<tr>
<td>Care for hip fracture</td>
<td>4.07 (.79)</td>
<td>4.23 (.70)</td>
<td>.11 (-.36 to .04)</td>
</tr>
<tr>
<td>Care for delirium</td>
<td>4.00 (.79)</td>
<td>4.12 (.64)</td>
<td>.23 (-.31 to .08)</td>
</tr>
</tbody>
</table>
## UK SCHOOL CONFIDENCE

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<th>Control Mean (SD)</th>
<th>Treatment Mean (SD)</th>
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<tr>
<td>Prep for surgery</td>
<td>3.39 (.50)</td>
<td>4.27 (.72)</td>
<td>.000 (-1.21 to -.54)</td>
</tr>
<tr>
<td>Care for hip fracture</td>
<td>3.86 (.59)</td>
<td>4.65 (.48)</td>
<td>.000 (-1.09 to -.50)</td>
</tr>
<tr>
<td>Care for delirium</td>
<td>2.82 (1.42)</td>
<td>2.5 (1.45)</td>
<td>.41 (-.46 to 1.10)</td>
</tr>
</tbody>
</table>
PRE-SIMULATION ACTIVITIES

• Students in US and UK preferred the guided pre-simulation activities over other preparation.

• Video exemplar was highly rated.
  • Most highly rated activity among US students
## US SCHOOLS

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<tbody>
<tr>
<td>Lecture</td>
<td>3.85 (.88)</td>
<td>3.81 (.09)</td>
<td>.76 (-.20 to .27)</td>
</tr>
<tr>
<td>Assigned reading</td>
<td>4.02 (.80)</td>
<td>3.9 (.67)</td>
<td>.12 (-.08 to .31)</td>
</tr>
<tr>
<td>Websearch</td>
<td>3.56 (.96)</td>
<td>3.25 (.79)</td>
<td>.01 (.07 to .54)</td>
</tr>
<tr>
<td>Pre-sim activities</td>
<td>4.23 (.83)</td>
<td>4.19 (.78)</td>
<td>.72 (-.18 to .25)</td>
</tr>
<tr>
<td>Exemplar</td>
<td>NA</td>
<td>4.59 (.61)</td>
<td>NA</td>
</tr>
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</table>
# UK SCHOOLS

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<tr>
<td>Lecture</td>
<td>3.68 (.48)</td>
<td>4.42 (.58)</td>
<td>.000 (-1.03 to -.46)</td>
</tr>
<tr>
<td>Assigned reading</td>
<td>3.71 (.46)</td>
<td>4.31 (.55)</td>
<td>.000 (-.87 to -.32)</td>
</tr>
<tr>
<td>Websearch</td>
<td>3.64 (.49)</td>
<td>4.15 (.61)</td>
<td>.001 (-.81 to -.21)</td>
</tr>
<tr>
<td>Pre-sim activities</td>
<td>4.04 (.51)</td>
<td>4.85 (.37)</td>
<td>.000 (-1.05 to -.58)</td>
</tr>
<tr>
<td>Exemplar</td>
<td>NA</td>
<td>4.5 (.1)</td>
<td>NA</td>
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</tbody>
</table>
CLINICAL JUDGMENT

- Simulation allowed for clinical judgment practice
  - For UK, significant difference between groups was found

- Significant differences between treatment and control groups for 3 of the 4 dimensions of clinical judgment for all schools ($p < .001$)
## CLINICAL JUDGMENT & SIMULATION

<table>
<thead>
<tr>
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<th>Control Mean (SD)</th>
<th>Treatment Mean (SD)</th>
<th>p value (95% CI)</th>
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<tbody>
<tr>
<td>All Schools</td>
<td>4.32 (.63)</td>
<td>4.44 (.58)</td>
<td>.10 (.27 to .02)</td>
</tr>
<tr>
<td>US Schools</td>
<td>4.45 (.60)</td>
<td>4.38 (.59)</td>
<td>.37 (-.09 to .23)</td>
</tr>
<tr>
<td>UK Schools</td>
<td>3.86 (.53)</td>
<td>4.73 (.45)</td>
<td>.000 (-1.14 to -.61)</td>
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## CLINICAL JUDGMENT – ALL SCHOOLS

<table>
<thead>
<tr>
<th></th>
<th>Chi-Square</th>
<th>df</th>
<th>Asymp. Sig</th>
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<tbody>
<tr>
<td>Mean Notice Score</td>
<td>15.98</td>
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<td>.000</td>
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<tr>
<td>Mean Interpret Score</td>
<td>14.50</td>
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<td>.000</td>
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<tr>
<td>Mean Respond Score</td>
<td>19.26</td>
<td>1</td>
<td>.000</td>
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<tr>
<td>Mean Reflection Score</td>
<td>.60</td>
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<td>.441</td>
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## CLINICAL JUDGMENT - UK

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<tbody>
<tr>
<td>Mean Notice Score</td>
<td>17.94</td>
<td>1</td>
<td>.000</td>
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<tr>
<td>Mean Interpret Score</td>
<td>17.83</td>
<td>1</td>
<td>.000</td>
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<tr>
<td>Mean Respond Score</td>
<td>16.52</td>
<td>1</td>
<td>.000</td>
</tr>
<tr>
<td>Mean Reflection Score</td>
<td>10.25</td>
<td>1</td>
<td>.001</td>
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## CLINICAL JUDGMENT - US

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</thead>
<tbody>
<tr>
<td>Mean Notice Score</td>
<td>5.45</td>
<td>1</td>
<td>.02</td>
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<tr>
<td>Mean Interpret Score</td>
<td>4.43</td>
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<td>.035</td>
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<tr>
<td>Mean Respond Score</td>
<td>9.04</td>
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<td>.003</td>
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<tr>
<td>Mean Reflection Score</td>
<td>0.15</td>
<td>1</td>
<td>.694</td>
</tr>
</tbody>
</table>
LESSONS LEARNED

• Program differences dictated when simulation was conducted.
• Delirium phase was overwhelming as originally designed.
LIMITATIONS

- Sample size difference between US schools and UK school may have influenced results.
- Perceived satisfaction and confidence measured with researcher-developed survey.
- Despite efforts to achieve heterogeneous sample, participants were predominantly female Caucasian students pursuing a first degree.
CONCLUSIONS

• Clinical simulation with exposure to expert role modeling may contribute to improved clinical judgment development in the care of older patients.

• Differences in perceived satisfaction & confidence may be related to differences in international nursing programs.

• International partnerships in nursing education offer potential for discovering best practices in meeting health care challenges of an aging worldwide population.
PARTNER SCHOOLS

Ball State University Nursing

Oregon Health & Science University

University of Worcester

Brigham Young University

Portland Community College
• Ball State University
  - Elizabeth Johnson, RN, PhD
  - Kay Hodson-Carlton, RN, EdD
  - Linda Siktberg, RN, PhD
  - Nancy Dillard, RN, PhD
• Oregon Health and Science University
  - Kathie Lasater, RN, EdD
  - Stephanie Sideras, RN, PhD
• University of Worcester
  - Ronnie Meechan, MSc Nursing
• Portland Community College
  - Doris Rink, RN, MSN
  - Marilyn McGuire-Sessions, RN, MSN
  - Amy Mann, RN, MSN
• Brigham Young University
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- Brandon Campbell, Lead Technology Services Specialist
- Britain Bryant, Technology Services Specialist
- Allison Ottinger, RN, Simulation Laboratory Specialist
- Becky Fights, RN, Simulation Laboratory Specialist
- Samuel Clemmons, Producer/Director WIPB-TV