Learning in Simulated Environments: Does It Transfer To Clinical Settings and Provide Quality and Safety Education?

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Background
Simulation

- **Definition**
  - “...a person, device, or set of conditions which attempts to present [education and] evaluation problems authentically. The student or trainee is required to respond to the problems as he or she would under natural circumstances.” (McGaghie, 1999, p.198)

- **Background**
  - Early Development
  - Types
Standardized Patient

“The umbrella term for both a simulated patient (a well person trained to simulate a patient’s illness in a standardized way) and an actual patient (who is trained to present his or her own illness in a standardized way) (Barrows, 1993, p. 443).”
Why Use Simulation in Healthcare?

- Safety
  - “To Err Is Human” (IOM, 1999)
  - Changing Demographics
The Use of Standardized Patients in the Medical Curriculum

- Provides the student the opportunity to perform and experience the ‘essential’ skills
  - Physical, psychological, emotional aspects of patient care
- Eliminates problems associated with evaluation
  - Different from other types of simulation
The Use of Standardized Patients in Nursing Education

- Used in undergraduate and graduate curriculums
  - Nurse Practitioner students
- Measurement tool, assessing
  - Students’ clinical competence
  - Faculty effectiveness in teaching
  - Clinical decision making
The Problem
Statement of the Problem

- Gaps in the literature pertaining to the use of standardized patients with nurse practitioner students
  - Few studies done with this unique sample of students
  - No research addresses if there is a transfer of learning from the simulation laboratory to the clinical setting
    - And, if so, how?
  - Little research to indicate if student’s self-efficacy increases with standardized patient simulation
Purpose

- To investigate the issue of transfer of learning of knowledge and skills in a standardized patient simulation and in clinical practice.
- To learn if students who participate in a simulation experience with standardized patients show increases in perceived self-efficacy.
Research Questions

1. To what extent does the clinical competency of students in the standardized patient simulation setting differ from the clinical competency of students in the clinical setting?

2. Is there a relationship between the clinical competency of students in the standardized patient setting and the clinical competency of students in the clinical setting?
Research Questions

3. How do students describe the effect of a standardized patient simulation on their clinical competence?

4. Does clinical self-efficacy change among students who participate in a standardized patient simulation?
Theoretical Framework
Theoretical Framework

Figure 1: A model of the transfer process (Baldwin & Ford, 1988).
Methodology
Methodology

Design- descriptive research

- Students were observed in the simulation setting and then in the clinical setting.
- Students evaluated their perceived self-efficacy at three points during the study.
- Students answered written questions about whether and how the standardized patient experience affected their learning.
Methodology

- **Setting** - large private university in Midwest United States
- **Sample** - n=14
- **Observations**
  - Simulation Lab
  - Clinical Setting
Methodology

- **Data Collection and Instrumentation**
  - History Taking and Physical Examination Assessment
  - Self-Efficacy Assessment
  - Open-Ended Questionnaire

- **Analysis**
  - Paired samples t-test, affect sizes
  - ANOVA
Results
## Demographic Characteristics of the Sample

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<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percent</th>
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<td>29%</td>
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Research Question 1- To what extent does the clinical competency of students in the standardized patient simulation setting differ from the clinical competency of students in the clinical setting?

## Competency Difference Scores

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<th>r</th>
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<td>0.37</td>
<td>0.10</td>
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<td>FS</td>
<td>13</td>
<td>2.50*</td>
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<td>3.41**</td>
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<td>SH</td>
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<tr>
<td>CC</td>
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<td>0.59</td>
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<tr>
<td>PE</td>
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<td>3.68**</td>
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<td>Overall</td>
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<td>2.46*</td>
<td>0.56</td>
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*p<.05,  **p<.01
Research Question 2- Is there a relationship between the clinical competency of students in the standardized patient setting and the clinical competency of students in the clinical setting?

## Correlation Competency Scores

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<th>Spearman r</th>
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<td>.66*</td>
<td>.73**</td>
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<tr>
<td>Overall</td>
<td>14</td>
<td>.69**</td>
<td>.47</td>
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</table>

*p<.05,  **p<.01
Research Question 3- How do students describe the effect of a standardized patient simulation on their clinical competence?

“The SP was a helpful experience because it gave me the feeling of how a patient interaction could be in a clinical setting.”

“Doing a standardized patient H&P helps me a lot because of the constructive feedback they gave me after the whole ‘experience’.”

“The interaction mimics a potentially realistic scenario and this interaction can only be realized in present time rather than read about or viewed.”

“This experience helped me to feel more comfortable and confident in performing a H&P.”
Research Question 4-Does clinical self-efficacy change among students who participate in a standardized patient simulation?

The overall ANOVA (Using the Greenhouse-Geisser adjusted test statistic) suggested the mean scores approached significance across time $F(1.4, 17.0) = 3.56, p=.06$ with a large effect size ($n^2=.28$).
Why?

The results of this study can:

• Expand research previously conducted in the area of simulation with standardized patients in the nurse practitioner curriculum

• Provide guidance for program administrators and instructors regarding appropriateness, accuracy and acceptability of this type of simulation experience in nurse practitioner education

• Contribute to the understanding of effective instructional methods in order to provide guidance to faculty who are new to using simulation technology

• Provide information on the impact of standardized patient use prior to nurse practitioner students going into their first clinical rotation

• Support both process and program improvement.
Significance

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Thank You