Simulation Outcomes Based on Real World Practice

Kathleen Atchison, MSN, RNC
Project Development Coordinator
Founding Simulation Director
katchison@westcoastuniversity.edu
Background

The university wanted to explore the use of simulation for nursing education


Renee Schweitzer, MSN, FNP, RN
The effectiveness of simulation as a method of teaching in nursing.

But, teaching what?

The usefulness of simulation in evaluating student achievement of learning outcomes.

But, which outcomes?
Nursing Care

What do nurses in the *real world* need to do?

- Assess
- Diagnose
- Plan
- Implement/Intervene
- Evaluate
- Communicate
Nursing Care

How do nurses do it?

• Recognize abnormal findings
• Understand significance
• Prioritize
• Use resources
• Make judgments
• Critically think
• Adapt to dynamic situations
• Manage time
• Manage stress
• Respond to people
Nursing Care

Is that all?

• Follow laws and regulations
• Adhere to standards
• Act professionally
• Act ethically
• Advocate for patients
• Care
Can we measure this?

Evaluation Tool
• Nursing Process
• Communication
• Teaching
• Leadership
• Accountability
Simulation

How far can healthcare education go?
What are our limitations?

• Safety
• Opportunity
• Resources
• Time
How does simulation fit in?

- Safety – High risk
- Opportunity
- Resources
- Time
Simulation

How does simulation fit in?

• Safety – High risk
• **Opportunity – Low volume**
• Resources
• Time
Simulation

How does simulation fit in?

- Safety – High risk
- Opportunity – Low volume
- Resources - Complex
- Time
So when should we start?

- Safety – High risk
- Opportunity – Low volume
- Resources - Complex
- Time – Early and often
Can we teach all of this?
What should our priorities be?

What are the expectations of new graduate nurses?
Setting

Simulated Patient Rooms
- Mannequins
- Pertinent Patient Care Equipment (Medication Administration)
- Safety and infection control
- Communication focus (Phone, EHR)

Control Room, Observation Area
- One way mirror
- Audio
Design

Student Orientation

• Simulation
• Environment
• Equipment
• Processes
• Evaluation Tool

Learned not to try to preempt mistakes.
No information about specific scenarios given.
Day to gain comfort in the environment

Full disclosure of outcomes
Design

Practice
• 8 students randomly assigned to …
• 8 different 20 minute scenarios, each immediately followed by…
• A 40 minute debriefing immediately following each scenario

Test
• Less than 7 days after test
• 8 students randomly assigned to…
• One of the 7 twenty minute scenarios they did not participate in on the Practice day
• No debriefings
Design

Scenarios

• Stable State
• Problem State
• Recovery State
• One student assigned to RN role
• One student assigned to CNA role
Repeat Practice/Test

- With every clinical course
- 2 or more times, if possible
Sample

ADN Students
• N=42
• N=44

Advanced MS Nursing Clinical Course

Demographics
• LVNs
• 28% Male
Communication

Written
• Charting

Verbal
• Discusses goals

Nonverbal
• Addresses concerns
• Uses touch appropriately
Results - Communication

Phase 1
- Test 1: 57.7%
- Retest 1: 75.1%
- Test 2: 65.1%

Phase 2
- Test 1: 59.1%
- Retest 1: 73.8%
- Test 2: 69.2%
- Retest 2: 80.6%

1 & 3 Back to baseline
1 & 3 Retained learning
Results - Communication

Communicates clearly and accurately - SBAR

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Test 1</th>
<th>Retest 1</th>
<th>Test 2</th>
<th>Retest 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>42.9</td>
<td>57.1</td>
<td>52.4</td>
<td>78.6</td>
</tr>
<tr>
<td>Phase 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test 1
Retest 1
Test 2
Retest 2
Nursing Process

Assessment
• Timely completion

Diagnosis and Planning
• Recognizes abnormals

Intervention
• Carries out priority non-pharmacologic interventions
• Medication Administration

Evaluation
• Monitoring
Results – Nursing Process

Nursing Process

Phase 1                          Phase 2

Test 1                      Retest 1          Test 2                     Retest 2

40.5%                      71.7%                70.1%                    75.5%
43.6%                      68.3%                55.3%                    

1 & 3 Back to baseline      All changes are significant.
Results – Nursing Process

Interventions according to standard

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1</td>
<td>Test 2</td>
</tr>
<tr>
<td>Retest 1</td>
<td>Retest 2</td>
</tr>
<tr>
<td>11.9</td>
<td>31</td>
</tr>
<tr>
<td>47.6</td>
<td>34.1</td>
</tr>
<tr>
<td>71.4</td>
<td>45.5</td>
</tr>
<tr>
<td>79.6</td>
<td>52.3</td>
</tr>
</tbody>
</table>
Uses appropriate strategies  
Correct instruction  
Evaluates
Results - Teaching

All significant except 2 & 4 (p=.39)  All significant
Maintains patient privacy

Addresses environmental Safety Issues
Results - Accountability

Environmental Safety

Phase 1                                  Phase 2

Test 1                                   Retest 1       Test 2       Retest 2

19                                       50             54.8         84.1
35.7                                     50             63.6

Legend:
- Blue: Test 1
- Green: Retest 1
- Yellow: Test 2
- Red: Retest 2
We can’t teach nursing students about every possible situation they might encounter in the dynamic healthcare environment. But; we can teach them how to prioritize, organize, and think critically; to know their resources; and to be comfortable with ambiguity.

Thank you!
Kathleen Atchison, MSN, RNC
Director of Simulation
katchison@westcoastuniversity.edu