The Impact of Evidence-based Simulation Modules in an Undergraduate Maternal Newborn Course

Yvette Rolle, DNP, CNE, OB-RNC
Christen D. Sadler, MSN, CNM, LCCE, FACCE
## Faculty Disclosure

<table>
<thead>
<tr>
<th>Conflict of Interest</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employer</td>
<td>St. Thomas University Carol and Odis Peavy School of Nursing Houston, Texas</td>
</tr>
<tr>
<td>Commercial Support</td>
<td>None</td>
</tr>
</tbody>
</table>
Presentation Goals

1. Explore the special needs of multicultural and economically disadvantaged nursing students.
2. Examine the implementation of evidence-based simulation modules in an undergraduate maternal newborn course.
3. Discuss the evaluation of the project and the implications for nursing education.
Background

- Increase in diversity of the population
- Need for multicultural nursing population
- Recruitment and retention of multicultural and economically disadvantaged students
- Facilitation of student success.
HSI STEM grant

Award Number PO31C160188

THE HISPANIC SERVING INSTITUTIONS SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS (HSI STEM) AND ARTICULATION PROGRAM
CFDA 84.031C
Awardee: The University of St. Thomas (Houston, Texas) - always include (Houston, Texas)
Revenue was utilized to design, implement, and evaluate an evidenced-based practice nursing simulation project in an undergraduate maternal newborn nursing course.
An evidence review confirmed the utility and effectiveness of simulation in nursing education (Adamson, 2015; Berndt et al., 2015; Hafaza & Brysiewicz, 2017; Miller, 2014).

A systematic review of one hundred and fifty-three studies validated NLN/Jeffries Simulation Framework Variables as a valuable tool to guide and support simulation (Adamson, 2015).

This framework was used to underpin the simulation project design.
Impact of Simulation

- Understanding of nursing knowledge
- Demonstration of nursing skills
- Application of knowledge
- Critical thinking, clinical judgment, problem-solving, and clinical decision-making in a safe non-threatening environment (Hafaza & Brysiewicz, 2017).
Impact of Simulation

- Simulation has been reported to increase cognitive knowledge, self-confidence, and has the potential to have a positive effect on maternal-infant outcomes (Miller, 2014).

- Several studies have reported the impact of simulation included positive responses for nursing student satisfaction, self-confidence, and increase in cognitive knowledge (Adamson, 2015; Berndt et al., 2015; Bortolato-Major et al., 2018; Hafaza & Brysiewicz, 2017; Kapucu, 2017; Macauley et al., 2017; Miller, 2014).
Project Purpose

- Facilitate student centered learning through active engagement in a clinically accurate simulated environment.
Project Objectives

- Positive students’ responses after participating in simulation.
- Promote academic success in economically disadvantaged nursing students:
  - Increase the standardized Maternity Specialty Exam Scores.
  - Improve maternal newborn course grades.
Project Outcomes

80% of the students surveyed would report substantial learning and improved maternal newborn clinical skills.

10% increase in the standardized Maternity Specialty Exam Scores when compared to a similar cohort with no simulation.

10% increase in “A” course grade when compared to a similar cohort with no simulation.
4 simulation modules and scenarios were developed according to course objectives, learning outcomes, and the NCLEX test plan.

Pre-simulation activity:
- Review of clinical scenarios
- Assigned readings and study questions
## N3553 Simulation #3: Mother Baby Couplet Care

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Outcomes</th>
<th>Pre-Brief Questions (60 mins)</th>
<th>NCLEX-Test Plan</th>
</tr>
</thead>
</table>
| 1. Demonstrate therapeutic communication skills with patients and families. | Effectively communicates with patients, family members, and members of the health care team in a simulated couplet care environment. | 1. Identify significant information that is required for continuity of care for the postpartum patient and her newborn in collaboration with other maternal newborn health care professionals. | Safe and effective Care Environment  
Health Promotion and Maintenance |
Project Implementation

- The simulated maternity unit was utilized to make the environment realistic.
- Learning activities ranged from the simple to complex and cues were utilized by the faculty when necessary.
- Pre-brief and debriefing sessions were utilized for reflective learning.
Project Evaluation

The simulation activities promoted the achievement of stated module objectives and learning outcomes.
## Project Evaluation

<table>
<thead>
<tr>
<th>Objectives and Outcomes</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive student response after participating in simulation.</td>
<td>96.15% of the twenty-six students reported substantial knowledge gains and improved clinical skills after simulation.</td>
</tr>
<tr>
<td>• 80% of the students surveyed will report substantial learning and improved maternal newborn clinical skills.</td>
<td></td>
</tr>
</tbody>
</table>
“I was very nervous at first, but I liked the fact that I was nervous and made mistakes and corrected verses going into the real world and making mistakes.”

“Simulation helps me think of how things will go in real life and how I would handle things.”
# Project Evaluation

<table>
<thead>
<tr>
<th>Objectives and Outcomes</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promote academic success in economically disadvantaged nursing students.</td>
<td>▶ 50% of the students who participated in simulation obtained “A” course grades.</td>
</tr>
<tr>
<td>• 10% increase in “A” course grade when compared to a similar cohort with no simulation.</td>
<td>▶ 43% of the students without simulation activity during the previous semester achieved a course grade of &quot;A.&quot;</td>
</tr>
</tbody>
</table>
## Project Evaluation

<table>
<thead>
<tr>
<th>Objectives and Outcomes</th>
<th>Results</th>
</tr>
</thead>
</table>
| Promote academic success in economically disadvantaged nursing students.  
  • 10% increase in the standardized Maternity Specialty Exam Scores when compared to a similar cohort with no simulation. |  
  ▶ Cohort with simulation: Number of students scoring 850 or above was 84%.  
  ▶ Cohort without simulation: Number of students scoring 850 or above was 78%. |
Project Findings

- Only the first outcome was met: 80% of the students surveyed would report substantial learning and improved maternal newborn clinical skills.
- Student centered learning through active engagement in a simulated non-threatening clinical environment did result in better grades.
- The benchmark of 10% increase in scores and A letter grades was not achieved.
- Simulation continues to play an important part in all our nursing courses.
Recommendations

- Nursing schools are charged with making the nursing profession resemble the increasingly diverse patient population.
- Simulation may be used to augment clinical experience when clinical placement sites are limited.
- Nurse educators must utilize simulation as a learning tool to promote active learning, problem solving, and student success.
- The revenue from available grants to fund innovative nursing education deserves exploration and consideration.
References:


References

