Simulation Training for Obstetrical Emergencies: Improving Nurse’s Clinical Skills during a Shoulder Dystocia

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1. Clinical Problem

Shoulder dystocia is a rare obstetrical emergency occurring in 0.2 – 3% of vaginal deliveries. It is when the head delivers and the shoulders become impacted behind the maternal pubic bone. Simulation training should be utilized to improve skills and knowledge to reduce perinatal mortality from shoulder dystocia.

2. PICO Question

In labor and delivery nurses, how does a simulation program for obstetrical emergencies compared to no simulation program, effect knowledge & competency of the staff?

3. Background/Significance

A pregnancy related maternal death has been defined as a death occurring during pregnancy or the year following the end of a pregnancy due to a pregnancy complication (CDC, 2014a). Obstetrical emergencies identified as causing poor perinatal outcomes consist of:

- Shoulder dystocia
- Eclamptic seizures
- Postpartum hemorrhage
- Umbilical cord prolapse
- Emergency cesarean section
- Incidence of brachial plexus injuries

4. Literature Review

Cass, Crafts, & Draycott (2011)

Relief of shoulder dystocia

Before simulation After simulation

42.9% 83.3%

Grobman, Miller, Burke, Hornbogen, Tam, & Costello (2011)

Incidence of brachial plexus injuries

Before simulation After simulation

10.1% 4.0%

5. EBP Theory

The framework used for the EBP change project was the IOWA Model by Marita G. Titler, PhD, RN, FAAN, Director Nursing Research, Quality and Outcomes Management, Department of Nursing Services and Patient Care, University of Iowa Hospitals and Clinics (Doody & Doody, 2011).

6. Implementation

PRE TEST SHOULDER DYSTOCIA SIMULATION DEBRIEFING AND POWERPOINT SHOULDER DYSTOCIA SIMULATION POST TEST

Simulation training improved nursing knowledge and competency regarding a shoulder dystocia

7. Results

Demographics

Outcomes

Figure 5. Knowledge Pre and Posttest

<table>
<thead>
<tr>
<th>Test</th>
<th>Sample Size</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>38</td>
<td>5.76157889</td>
<td>2.78005743</td>
<td>38</td>
</tr>
<tr>
<td>Post</td>
<td>38</td>
<td>5.79047348</td>
<td>2.91469967</td>
<td>38</td>
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</tbody>
</table>

Figure 6. Simulation Pre and Post Evaluation

<table>
<thead>
<tr>
<th>Test</th>
<th>Sample Size</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>12.5</td>
<td>7.5</td>
<td>4.35</td>
<td>6</td>
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<tr>
<td>Post</td>
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<td>8.3</td>
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</tbody>
</table>

I = 95%, 2-tail
P < 0.00006149