Training Nurses for Charge Nurse Duties through Simulation

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Charge Nurses’ Duties and Responsibilities

- Managing, supervising and assisting the nursing staff of the unit during the shift
- Providing administrative support and patient care
- Caring for 4-8 patients
Nursing Shift Scheduling in Israel

The three-shift system:

- Morning shift: 7AM - 3PM
- Evening shift: 3PM - 11PM
- Night shift: 11PM - 7AM
Charge Nurse: Managerial Requirements

- Staff members’ management.
- On-going real-time decision making
- Communication skills.
- Multi-tasking
- Integration of knowledge and skills
Charge Nurses’ Educational Requirements

- RN (preferable with an academic degree)
- Advanced clinical nursing program in selected units:
  - Critical care nursing (CCN).
  - Emergency-care nursing (ER).
  - Operating room nursing (OR).
  - Midwifery.
Novice Charge Nurse

- Stressful situation
- Anxiety and uncertainty
- Need for more appropriate training
Simulation Training

- Well established in healthcare education
- Increasingly common in nursing education
- Training in a risk-free learning environment where errors can be permitted
- A method to teach clinical and critical thinking skills, communication and team interactions

Cant & Cooper, 2010
Simulation Training

- Homogeneous experience
- Learning from mistakes
- Wide range of situations

- Time and resource investment
- High staff-to-learner ratio
- Cost benefits???

Hallenbeck, 2012; Stayt, 2011; Levett-Jones, 2011
The Role of the Preceptor

- The most important factor of effective simulation-based training.
- Adequate preparation to provide simulation
- Explaining, refereeing, coaching and discussing
- Interaction with the trainees during scenarios that facilitate critical thinking and decision-making, allowing them to learn from their mistakes

Alinier et al, 2006; Schoening et al, 2006
The purpose of the study

• Examination of the effect of preparing the novice nurses to the charge nurse position through simulation

• Measuring the impact of simulation-based training on the decision making, performance, anxiety and satisfaction of novice charge nurses
Method

- Prospective and comparative study
- Convenience sample of 42 registered nurses, working in Carmel Medical Center, Haifa, Israel
- 22 nurses were trained to charge nurse position by moderate-fidelity simulation (simulation group)
- 20 nurses were prepared by lectures regarding charge nurse duties, hospital’s rules and policies (control group)
- Informed consent of participants and approval of research committee were received
Simulation-based Workshop

- Real world situations in a controllable format.
- Routine and unpredictable events.
- Use of knowledge and skills
- Fast decision making.
- Analysis and feedback after each scenario.
Simulation-based Workshop

- 6 scenarios based on real situations
- Checklists that refer to each scenario
- Validation of the scenarios and checklists by nursing directors and clinical preceptors.
- 6 preceptors were prepared
- Operating the workshop:
  - Everyone participates in each scenario
  - Each scenario lasts 40 minutes: 20 minutes for running the scenario and 20 minutes for analysis and feedback.
## The study population

<table>
<thead>
<tr>
<th></th>
<th>Simulation group</th>
<th>Control group</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>5</td>
<td>4</td>
<td>$\chi^2 = .239$ (n.s.)</td>
</tr>
<tr>
<td>Female</td>
<td>17</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RN</td>
<td>2</td>
<td>1</td>
<td>$\chi^2 = .1605$ (n.s.)</td>
</tr>
<tr>
<td>RN + BA/MA</td>
<td>20</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>28.8</td>
<td>27.1</td>
<td>$t = 1.3$ (n.s.)</td>
</tr>
<tr>
<td><strong>Years of experience</strong></td>
<td>1.4</td>
<td>1.5</td>
<td>$t = -.185$ (n.s.)</td>
</tr>
</tbody>
</table>
Research Instruments

1. Participants’ satisfaction and their rating of usefulness of the simulation-based training:
   – Questionnaires designed by the researchers and validated by expert judgement
   – 6 items, scored by Likert scale from 1 to 5
2. Checklist of charge nurses’ tasks – designed by the researchers and validated by expert judgement

- Being informed about the status of all complicated patients
- Staff assignments
- Preparedness to patient admission
- Calling appropriate services (shift supervisor, pharmacist-on-duty, maintenance staff, CPR staff)
- Accurate report to shift supervisor regarding the ward status

Each task is scored by Likert scale from 1 to 5

The total score was calculated
3. Script concordance test evaluating charge nurses’ decision-making
   - The test was designed by the researchers and validated by expert judgement
   - The test consists of 6 items describing common situations that require fast decision making
Script Concordance Test

- Method of assessment for clinical data interpretation
  - Examines steps used in clinical reasoning
  - Case-based assessment
  - “Real Life” scenarios allow uncertainty
  - Same scenario for each learner
  - Objective scoring instead of subjective judgment of skilled observers

Deschenes et al, 2011; Humbert et al, 2011
**Clinical scenario**

<table>
<thead>
<tr>
<th>If you were thinking of...</th>
<th>And then you find...</th>
<th>This hypothesis becomes...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing Hypothesis</td>
<td>New information</td>
<td>-2 -1 0 +1 +2</td>
</tr>
</tbody>
</table>

- **-2** = rejected/ contraindicated  
- **-1** = less relevant/not very useful  
- **0** = neither less nor more useful  
- **+1** = useful  
- **+2** = necessary

**New information:**  
- Change in patient conditions  
- Laboratory result

**Brief description of problem/situation**

**Relevant hypothesis/intervention**

**Learner must make a decision**

*Deschenes et al, 2011; Humbert et al, 2011*
You're the charge nurse during night shift. At 4 AM noise was heard from room N 14. When you've entered the room, you've found the patient A.B. laying on the floor next to his bed. A.B. is confused (He has an Alzheimer’s disease) and unable to explain what happened. You’ve reported to the physician and his response was: « If the patient is OK I'll see him at 6 AM »

<table>
<thead>
<tr>
<th>If you think of...</th>
<th>And then you find...</th>
<th>The intervention will become...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calling the physician to see the patient right now</td>
<td>Patient vital signs are within the normal range. No visible injury.</td>
<td>-2 (\text{ }) -1 (\text{ }) 0 (\text{ }) +1 (\text{ }) +2</td>
</tr>
</tbody>
</table>

- 2 = rejected/ contraindicated
- 1 = less relevant/not very useful
0 = neither less nor more useful
+1 = useful
+2 = necessary
You're the charge nurse during evening shift. In addition to being charge nurse, you're caring for 8 complicated patients. Your staff is experienced nurse 49 y.o. and novice nurse 27 y.o. who is pregnant (12 th week). You've got a message from ER about admission of patient suspected to measles within the next 30 minutes

<table>
<thead>
<tr>
<th>If you think of...</th>
<th>And then you find...</th>
<th>This decision will become...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asking the experienced nurse to take care of the patient suspected to measles</td>
<td>The experienced nurse refuses to take care of the patient. She doesn't remember whether she had measles in the past. The novice nurse is sure she hadn't measles.</td>
<td>-2 -1 0 +1 +2</td>
</tr>
</tbody>
</table>

- 2 = rejected/ contraindicated  
- 1 = less relevant/not very useful  
0 = neither less nor more useful  
+1 = useful  
+2 = necessary
Scoring of SCT

Do the clinical decisions chosen by the learner have concord with those of the “Reference Panel”?

- A group of experienced nursing professionals/clinical preceptors (at least 10)
- Each question score depends on the number of Reference Panel answers

**Example: Scoring by 15 experts**

<table>
<thead>
<tr>
<th>0 : 8 members</th>
<th>1 : 7 members</th>
<th>All other answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/8 = 1 point</td>
<td>7/8 = 0.88 point</td>
<td>0/15 = 0 point</td>
</tr>
</tbody>
</table>

Deschenes et al, 2011; Humbert et al, 2011
Procedure

• Measurement of participants’ perception of the training usefulness:
  – Immediately after the training
  – 6 months after commencing charge nurse duty performance
• Measurement of charge nurses decision-making
  – 6 months after commencing charge nurse duty performance
Procedure (cont.)

• Observations of novice charge nurses’ performance of their duties:
  – By 3 trained observers
  – During 3\textsuperscript{rd} to 4\textsuperscript{th} month of performing charge nurse duties
  – Scoring by the checklists
Results
### Participants’ rating immediately after training

* t-test, n=42

<table>
<thead>
<tr>
<th></th>
<th>Group</th>
<th>Mean</th>
<th>Stand. Dev.</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting the Expectations</td>
<td>Simulation</td>
<td>4.63</td>
<td>0.49</td>
<td>3.78</td>
<td>P&lt;.01</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>4.05</td>
<td>0.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decision-making</td>
<td>Simulation</td>
<td>4.50</td>
<td>0.51</td>
<td>2.6</td>
<td>p&lt;.05</td>
</tr>
<tr>
<td></td>
<td>6 months</td>
<td>4.08</td>
<td>0.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication skills</td>
<td>Simulation</td>
<td>4.68</td>
<td>0.47</td>
<td>7.43</td>
<td>P&lt;.01</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>3.55</td>
<td>0.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety reduction</td>
<td>Simulation</td>
<td>4.18</td>
<td>0.69</td>
<td>2.45</td>
<td>n.s.</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>3.89</td>
<td>0.45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Participants' rating 6 months after training
t-test, n=42

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Stand. Dev.</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Meeting the Expectations</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Simulation</td>
<td>4.9</td>
<td>0.29</td>
<td>12.45</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td>Control</td>
<td>3.15</td>
<td>0.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Decision-making</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Simulation</td>
<td>4.81</td>
<td>0.38</td>
<td>8.42</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td>6 months</td>
<td>3.51</td>
<td>0.61</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Communication skills</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simulation</td>
<td>4.63</td>
<td>0.47</td>
<td>8.48</td>
<td>P&lt;.001</td>
</tr>
<tr>
<td>Control</td>
<td>3.35</td>
<td>0.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Anxiety reduction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simulation</td>
<td>4.15</td>
<td>0.59</td>
<td>4.18</td>
<td>n.s.</td>
</tr>
<tr>
<td>Control</td>
<td>3.94</td>
<td>0.67</td>
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</tbody>
</table>
Participants' rating: Decision Making Skills Training

- Simulation group
- Control group

Immediately: 4.05
After 6 months: 4.8
Decision-making score

*t*-test, *n*=42

<table>
<thead>
<tr>
<th>Method of teaching</th>
<th>Mean</th>
<th>SD</th>
<th><em>t</em></th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Script Concordance Test Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simulation group</td>
<td>5.7</td>
<td>.65</td>
<td>2.72</td>
<td><em>p</em> &lt; .05</td>
</tr>
<tr>
<td>Control group</td>
<td>4.9</td>
<td>1.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Observation score

### t-test, n=42

<table>
<thead>
<tr>
<th>Method of teaching</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charge Nurses Activities Check List Score</td>
<td>Simulation group</td>
<td>18.9</td>
<td>3.06</td>
<td>2.05</td>
</tr>
<tr>
<td></td>
<td>Control group</td>
<td>17.2</td>
<td>2.2</td>
<td></td>
</tr>
</tbody>
</table>
Conclusions

- Simulation in nursing staff development is an effective training strategy to assess and strengthen the skills and competence in nursing practice.
- Simulation techniques may efficiently prepare novice nurses to the charge nurse tasks.
- Simulation training may improve the quality of performance.
Limitations of the study

- Small sample
- A non-random sample
- The tools validated by expert judgement only
- Higher frequency of charge nurse duties performance by the simulation group members (possible due to better performance level)
Further Research to be Conducted:

Developing a more detailed check list describing charge nurse duties

Quality of shift managers' performance as a function of their preparation, based on more frequent observation by shift and off-shift supervisors
Thanks...

- To the clinical preceptors for participation in the workshop:
  - Lena Vainshtein
  - Marina Feldman
  - Sophie Gimpelson
  - Alexey Dvorkin
  - Vicky Chernyack
  - Matan Offir
  - Gleb Dubinsky

- To Mrs Tamara Keshet, Yezreel Valley College Simulation Center manager, for assistance with the workshop.
References


