Increasing Nursing Students' Simulated Resuscitation Performance: a Standardized Simulation-Based Acute and Intensive Care Nursing Curriculum

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Background

- Simulation-based curriculum in the development of students’ critical thinking and complex clinical skills during a resuscitation simulation.

- Few studies have comprehensively examined the effectiveness of a standardized simulation-based acute and intensive care nursing curriculum on the performance of students in a resuscitation simulation.
Objective

To evaluate the impact of a standardized simulation-based acute and intensive care nursing curriculum on nursing students’ performance in a resuscitation simulation.
Methods

- **Design**: Two-group, non-randomized quasi-experimental design.
- **Setting**: A simulation center in a Chinese University School of Nursing.
- **Participants**:
  - Third-year nursing students (N=39)
  - Control group (CG, n = 20)
  - Experimental group (EG, n = 19)
Methods

- **CG (n=20)** participated in the *traditional curriculum* from September to December 2014.
  - Two modules: emergency care (including disaster response) and critical care with thirty-four lecture hours and two skill-practice hours (trauma).

- **EG (n=19)** participated in a *standardized high-technology, simulation-based emergency and intensive care nursing curriculum* from March to May 2015.
  - Three modules: disaster response, emergency care, and critical care
  - Clinical priorities (e.g. Triage), basic resuscitation skills, airway/breathing management, circulation management and team work with eighteen lecture hours, six skill practice hours and twelve simulation hours.
Methods
Methods

- The outcome measures included the difference in nursing students’ performance between pre- and post-intervention in the EG and the difference in performance between the CG and the EG.

- This included **measuring the time elapsed from the call for assistance to initiation of chest compressions and successful defibrillation** for each student.

- All the students have passed the test of chest compressions in the second-year course of Fundamentals of Nursing, therefore the technique of chest compressions was not the key point of this study.
Methods

- Thirty-nine third-year nursing students were recruited to form 19 resuscitation teams, **10 in the CG with 2 students in each team and 9 in the EG with 3 in 1 team and 2 in each of the other 8 teams**.

- Each team performed one simulated resuscitation selected randomly at the beginning of the course from the three modules.

- All teams completed three by the end of the course.

- The simulations were video recorded using software embedded in the monitoring system in the simulation lab.
## Results

### Table 1

Participants’ sociodemographic by group \((N=39)\)

<table>
<thead>
<tr>
<th>Variable</th>
<th>EG</th>
<th>CG</th>
<th>t/F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=19</td>
<td>n=20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (mean (SD))</td>
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<td>20.45 (0.686)</td>
<td>0.589</td>
<td>0.448</td>
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<tr>
<td>Gender</td>
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<td></td>
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</tr>
<tr>
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<tr>
<td>Urban</td>
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<td>12</td>
<td>0.043</td>
<td>0.819</td>
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<tr>
<td>Rural</td>
<td>7</td>
<td>8</td>
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<td></td>
</tr>
</tbody>
</table>
Results

Figure 1. Median (IQR) time to starting compressions at the beginning and the end of the curriculum: CG=control group, EG=experimental group

Figure 2. Median (IQR) time to successful defibrillation at the beginning and the end of the curriculum: CG=control group, EG=experimental group
Conclusions

- A simulation-based acute and intensive care nursing curriculum was created and well received by third-year nursing students and associated with improved performance in a resuscitation simulation.
Thanks for your attention!