The Effect of Simulation with Debriefing on Clinical Reasoning Skills of Sophomore Nursing Students

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PURPOSE/BACKGROUND

The purpose of this pilot study was to determine if undergraduate nursing students demonstrated a positive change in clinical reasoning skills following three clinical simulations and debriefings. Limited literature exists measuring the correlation between simulation debriefing teaching strategies and change in clinical reasoning skills (Dreifuerst, 2012; Shinnick & Woo, 2012). A practice-based framework which teaches reasoning, not just task and skill development, will facilitate the learner in framing, thinking, and developing their clinical reasoning (Dreifuerst, 2012).

“What is the effect of simulation with debriefing on clinical reasoning skills of third semester nursing students in a traditional BSN program?”

METHODS

This quasi-experimental one group pre-test post-test study used the Health Sciences Reasoning Test (HSRT) to assess overall strength in clinical reasoning of 22 third semester baccalaureate of science nursing students. Using health care and health sciences related scenarios, the HSRT measures the reasoning skills human beings use in the process of reflectively deciding what to believe or what to do (Facione & Facione, 2015).

The participants were enrolled in an existing pair of clinical and theory courses covering the fundamentals of adult health, and high fidelity simulation (HFS) was an existing component of the clinical course. Debriefings were facilitated in twenty minute increments equal to the time spent in simulation. The debriefer used Socratic questioning and engaged participants in guided reflective thinking to foster learning.

RESULTS

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Pre Test</th>
<th>Post Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Score</td>
<td>19.45</td>
<td>20.00</td>
</tr>
<tr>
<td>Induction</td>
<td>3.82</td>
<td>3.95</td>
</tr>
<tr>
<td>Deduction</td>
<td>3.75</td>
<td>3.63</td>
</tr>
<tr>
<td>Analysis</td>
<td>3.68</td>
<td>3.64</td>
</tr>
<tr>
<td>Inference</td>
<td>3.95</td>
<td>4.05</td>
</tr>
</tbody>
</table>

• Overall Score: There was not a statistically significant difference in the values for Overall Score for pre-test (M = 19.45, SD = 3.262) and post-test (M = 20.00, SD = 3.638) conditions.

• Induction: There was not a statistically significant decrease in the scores for Induction for pre-test (M = 3.82, SD = 1.402) and post-test (M = 3.95, SD = 1.535) conditions; p = 0.542.

• Deduction: There was a statistically significant increase in the scores for Deduction for pre-test (M = 3.75, SD = 1.318) and post-test (M = 3.63, SD = 1.262) conditions; p = 0.032.

• Analysis: There was not a statistically significant increase in the scores for Analysis for pre-test (M = 3.68, SD = 1.176) and post-test (M = 3.64, SD = 1.136) conditions; p = 0.247.

• Inference: There was not a statistically significant increase in the scores for Inference for pre-test (M = 3.95, SD = 1.307) and post-test (M = 4.05, SD = 1.174) conditions; p = 0.172.

• Evaluation: There was not a statistically significant decrease in the scores for Evaluation for pre-test (M = 4.23, SD = 1.307) and post-test (M = 3.96, SD = 1.430) conditions; p = 0.513.

Based on the distribution of the overall score percentiles for participants, as compared to an aggregate sample of HSRT Nursing Undergraduate, the average percentile score of this group was 59. Two dimensions (Induction and Evaluation) showed decreases, two showed increases (Analysis and Inference), none of which were statistically significant. There was however, a statistically significant difference in the pre-test and post-test scores (p = 0.032) for one HSRT dimension: Deduction.

ANALYSIS

CONCLUSIONS

Overall, the findings of this study do not support simulation with debriefing as having an impact on students’ clinical reasoning skills. However, participants’ deductive reasoning skills were statistically significant. This is an important finding because decision making in precisely defined contexts where rules, operating conditions, core beliefs, values, policies, principles, procedures and terminology completely determine the outcome depends on strong deductive reasoning skills (Facione & Facione, 2015). Deductive reasoning moves with exacting precision from the assumed truth of a set of beliefs to a conclusion which cannot be false if those beliefs are true.

LIMITATIONS

Small sample size of 22 students
The sample was drawn from third semester traditional four year baccalaureate degree nursing students
Participants were novice to simulation
Study sample lacked cultural diversity
The researcher was the clinical instructor of the participants
The HSRT instrument was designed to accommodate the health sciences but is not specific to nursing

FUTURE RESEARCH

Replication of this study with a larger sample size and more diverse group of students at different points in the curriculum is indicated.
Additional research is needed on the sensitivity of the HSRT to measure clinical reasoning specific to nursing.
Further studies are needed to capture students’ transfer of knowledge to the clinical setting.

ACKNOWLEDGEMENTS

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