



Rubric-based debriefing enhances nursing student's critical thinking in simulation learning

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BACKGROUND

- Simulation-based learning has been incorporated into medical and nursing education in last decade, by providing a platform for students to amplify real experiences.
- Simulation-based learning provides a platform for students to amplify real experiences in a systematic and interactive manner and develop their knowledge and skills while protecting patients from unnecessary risks
- Debriefing plays a vital role in ensuring effective simulation-based learning by serving as a reflective learning step to foster students' development of critical thinking.

AIMS

- To evaluate the effects of rubric-based debriefing on students' critical thinking and level of confidence in performing tasks and communication.

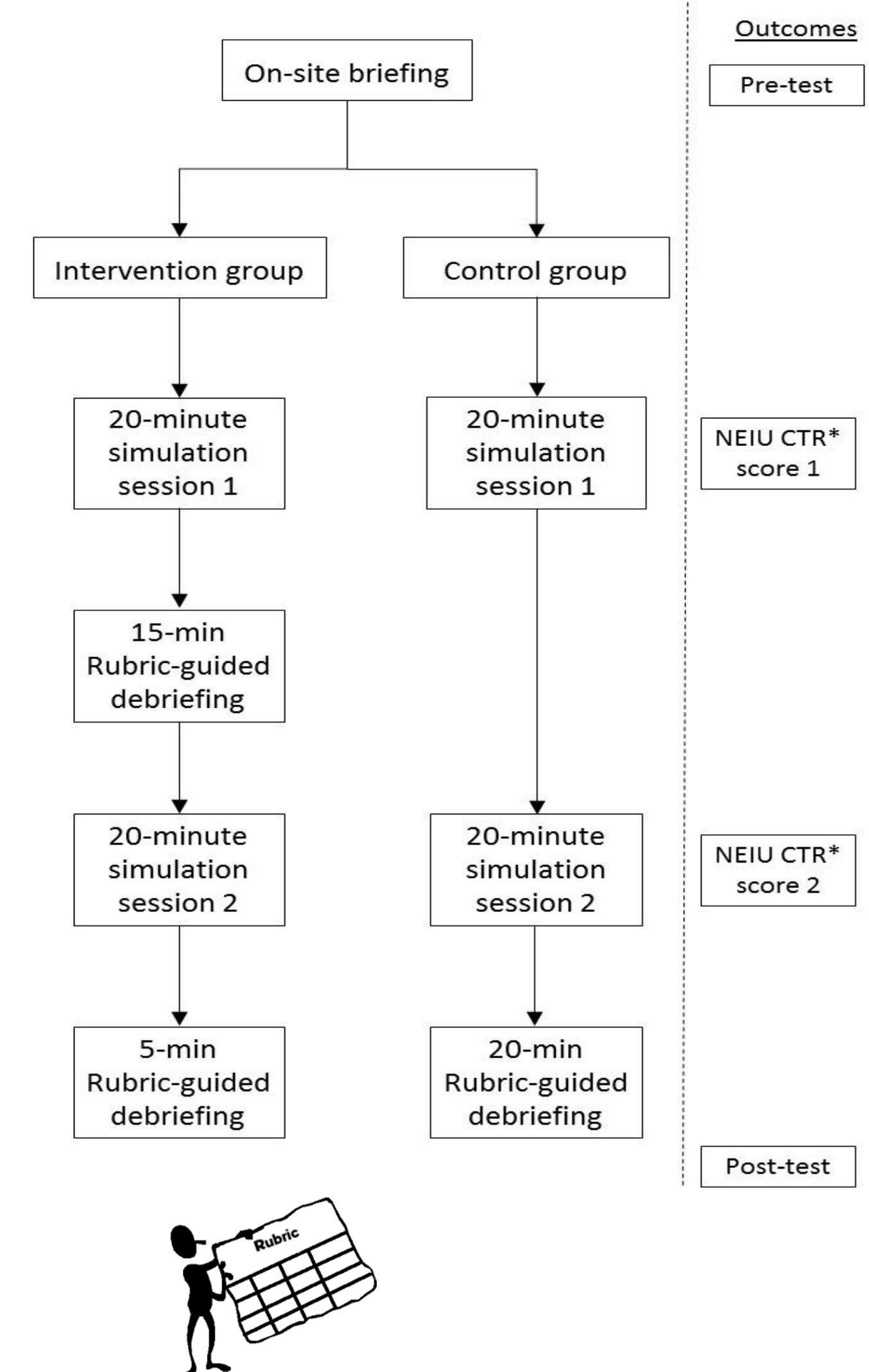
METHODS

- A quasi-experimental design
- A class of final year nursing undergraduates (n=204) participated.
- Students in both the intervention and control groups performed two 20-minute simulation sessions individually with simulated patients.
- A 15-minute individual rubric-based debriefing between the two sessions was done in the intervention group.
- The rubric was developed by the Northeastern Illinois University (NEIU) Center for Teaching and Learning.
- The rubric assesses 6 dimensions with the following criteria: (1) Issues; (2) Context; (3) Perspectives; (4) Assumptions; (5) Evidence; (6) Implications.

RESULTS

Participant's characteristics (n=204):

- Majority of the nursing students were female (n = 153, 74.5%)
- Majority of them had working experiences as part-time nursing staff (n=173, 84.8%)
- Around 25% had received basic life support training



Quantitative Results

- Generalized estimating equation models for primary and secondary outcomes (n=204)

| | Intervention | Control | Time 2 – Time 1 (time) | | Intervention – Control (group) | | Intervention – Control (time x group) | |
|--|--------------|--------------|---------------------------|--------------|--------------------------------|--------------|---------------------------------------|--------------|
| Outcomes | Mean (SE) | Mean (SE) | Estimated effect (95% CI) | | Estimated effect (95% CI) | | Estimated effect (95% CI) | |
| NEIU Critical Thinking Rubric score | | | | | | | | |
| Time 1 (Case Scenario 1) | 10.31 (1.18) | 10.44 (1.18) | | | | | | |
| Time 2 (Case Scenario 2) | 12.87 (1.27) | 10.95 (1.21) | 2.57* | (1.77, 3.36) | 1.92* | (1.00, 2.85) | 2.06* | (1.04, 3.08) |

| | Intervention | Control | Time 2 – Time 1 (time) | | Intervention – Control (group) | | Intervention – Control (time x group) | |
|---------------------------------------|--------------|-------------|------------------------|---------------|--------------------------------|---------------|---------------------------------------|---------------|
| Confidence in... | | | | | | | | |
| assessing patients' needs | | | | | | | | |
| Time 1 (Pre-test) | 4.02 (0.16) | 4.02 (0.16) | | | | | | |
| Time 2 (Post-test) | 4.19 (0.20) | 3.84 (0.20) | 0.18 | (0.05, 0.40) | 0.36* | (0.04, 0.68) | 0.36* | (0.01, 0.71) |
| performing accurate assessment | | | | | | | | |
| Time 1 (Pre-test) | 3.99 (0.17) | 3.95 (0.18) | | | | | | |
| Time 2 (Post-test) | 4.13 (0.22) | 3.95 (0.20) | 0.15 | (-0.11, 0.40) | 0.18 | (-0.16, 0.52) | 0.15 | (-0.22, 0.52) |
| identifying patients' problems | | | | | | | | |
| Time 1 (Pre-test) | 3.87 (0.16) | 3.85 (0.16) | | | | | | |
| Time 2 (Post-test) | 3.98 (0.21) | 3.81 (0.20) | 0.11 | (-0.14, 0.36) | 0.17 | (-0.15, 0.49) | 0.15 | (-0.20, 0.50) |
| prioritizing patients' needs | | | | | | | | |
| Time 1 (Pre-test) | 3.87 (0.17) | 3.86 (0.17) | | | | | | |
| Time 2 (Post-test) | 4.03 (0.21) | 3.77 (0.19) | 0.17 | (-0.10, 0.43) | 0.25 | (-0.09, 0.60) | 0.25 | (-0.13, 0.62) |

Qualitative Results

| Categories | Qualitative data |
|---|---|
| Benefits of simulated activities | <ul style="list-style-type: none"> improve my knowledge very helpful can learn without stress enable us to know more about our ability when facing the real situation very realistic |
| Time arrangement on simulation activities | <ul style="list-style-type: none"> allow more time for debriefing and discussion allow more time for students to assess and evaluate themselves for any missed points allow more time for each simulation task and debriefing more orientation for the room setting (including equipment and assessment form) |
| Future improvement for simulation activities | <ul style="list-style-type: none"> more stimulation exercises would better improve skills organize more simulation activities include medical students or simulated physicians add more problematic and difficult acts from simulated patients the scenario can be more difficult |



CONCLUSIONS

- This study provides evidence that a 15-minute debriefing after a simulation activity is beneficial in enhancing students' critical thinking.
- The qualitative findings demonstrated the feasibility and benefits of conducting rubric-based debriefing in simulation education.



*p-value < 0.05