



# 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.

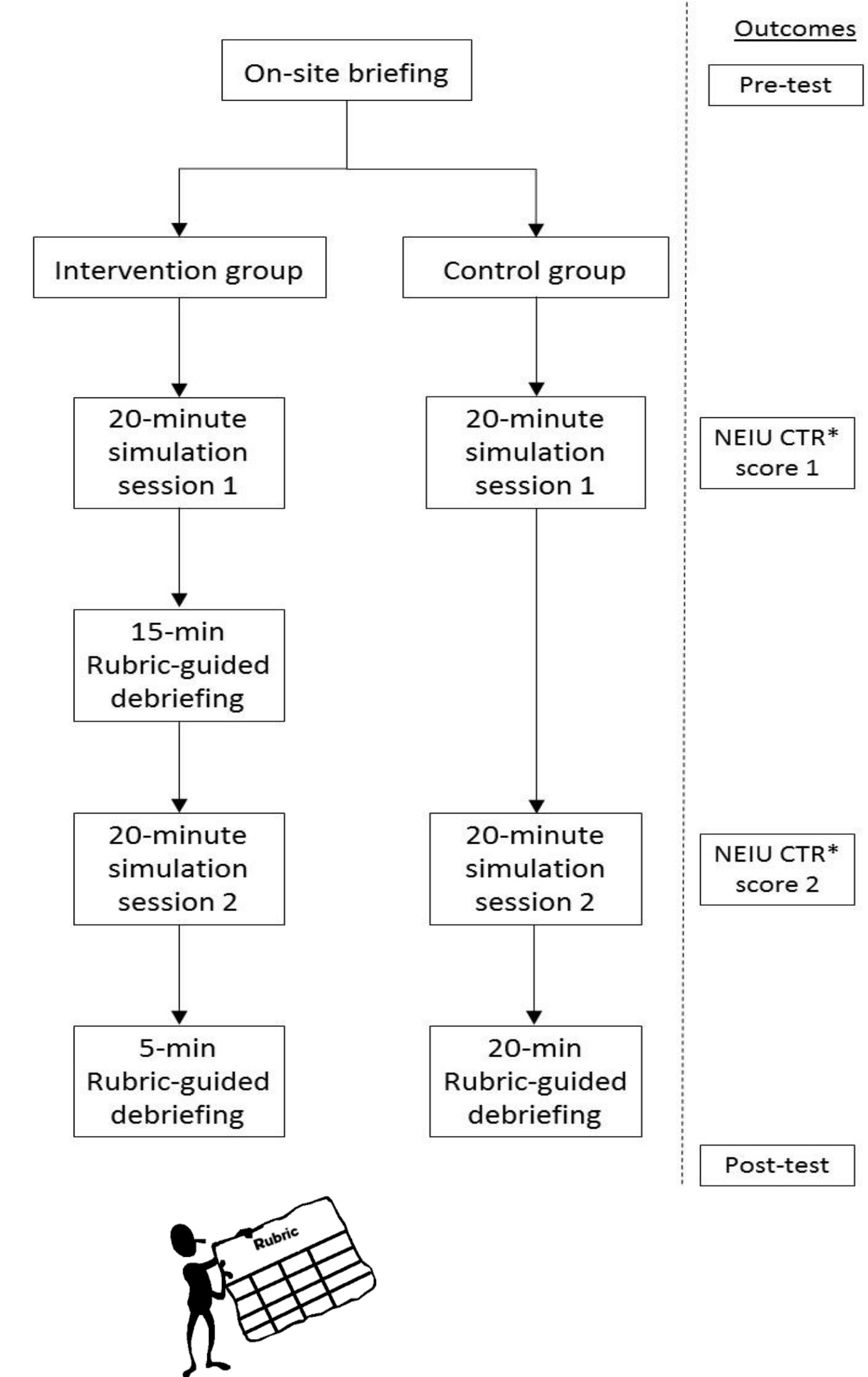
## METHODS

- 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)		
<b>NEIU Critical Thinking Rubric score</b>									
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)		
<b>Confidence in...</b>									
<b>assessing patients' needs</b>									
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)	
<b>performing accurate assessment</b>									
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)	
<b>identifying patients' problems</b>									
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)	
<b>prioritizing patients' needs</b>									
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
<b>Benefits of simulated activities</b>	<ul style="list-style-type: none"> <li>improve my knowledge</li> <li>very helpful</li> <li>can learn without stress</li> <li>enable us to know more about our ability when facing the real situation</li> <li>very realistic</li> </ul>
<b>Time arrangement on simulation activities</b>	<ul style="list-style-type: none"> <li>allow more time for debriefing and discussion</li> <li>allow more time for students to assess and evaluate themselves for any missed points</li> <li>allow more time for each simulation task and debriefing</li> <li>more orientation for the room setting (including equipment and assessment form)</li> </ul>
<b>Future improvement for simulation activities</b>	<ul style="list-style-type: none"> <li>more stimulation exercises would better improve skills</li> <li>organize more simulation activities</li> <li>include medical students or simulated physicians</li> <li>add more problematic and difficult acts from simulated patients</li> <li>the scenario can be more difficult</li> </ul>



## 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