ORIGINAL RESEARCH

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EVALUATING A LEARNER-CENTRED REFLECTIVE LEARNING CONVERSATIONS DEBRIEFING MODEL: A MIXED METHODS PRETEST-POSTEST COMPARATIVE STUDY

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Introduction: Reflective Learning Conversations (RLC) can be used during debriefing to develop competence and clinical reasoning of healthcare practitioners [1, 2]. The current available RLC debriefing models were established to develop general clinical reasoning skills without consideration of the influencing factors concerning different learners' experiences and competence levels in a multicultural simulation learning environment.2 Ignoring these factors can put learners at risk of cognitive overload, inappropriate engagement in the learning process, and underdeveloped clinical reasoning [2, 3]. To mitigate that risk, a learner-centered RLC debriefing model was co-designed by a working group of simulation experts, educators, and clinical stakeholders. We aim to describe the evaluation of the co-designed RLC debriefing model's reliability and validity for use in multicultural simulation learning environments in the presence of different learners with different levels of competence and experience.

Methods: A mixed methods quasi-experimental, pre-test/post-test research design was used to evaluate the RLC debriefing model's reliability and validity. The study sample consisted of a cohort of critical care nurses and advanced nurse practitioners who attended critical care simulation courses (n=110) between 3 March 2022 and 2 February 2023, and were recruited from nine large tertiary public hospitals in Qatar. Participants (n=110) were pre-assigned to simulation activities as experimental (n=55) and control (n=55) groups. The data were collected from both groups using self-reported questionnaires, three direct observations and video reviews of the participants' clinical reasoning using CREST and LCJR tools, and focus group interviews. The quantitative data analyses were conducted using Mann-Whitney and Wilcoxon tests, and a thematic analysis for the qualitative data analysis.

Results: The newly co-designed RLC model was deemed to be valid and reliable to enhance learners' clinical reasoning skills while attending adult critical care simulation-based courses. The post-test group had a significantly higher level of clinical reasoning compared to the pre-test group, p= [.608, <.001, <.001] z= [-.513, -3.729, -5.850] respectively for three different observations (Table 1-A26). The model demonstrated a Cronbach alpha and ICC of (α=0.968, and ICC=0.972) respectively.

Discussion: Attending simulation in the presence of different learners' experiences and competence levels in a multicultural simulation learning environment are important factors in avoiding clinical reasoning under-development and cognitive overload. A learner-centered RLC debriefing model was co-designed and evaluated in consideration of these factors toward clinical reasoning optimisation. The model is deemed valid and reliable to enhance participants' clinical reasoning for a single discipline (nursing), and future validations are recommended for interprofessional simulation-based education.

Ethics statement: Authors confirm that all relevant ethical standards for research conduct and dissemination have been met. The submitting author confirms that relevant ethical approval was granted, if applicable.

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Table 1-A26. Descriptive and inferential tests for direct observation and video review using CREST and LCJR

Assessment method	Group	N	Mean Rank	Mann-Whitney U	Wilcoxon W	Z	P-Value
1st direct observation using CREST	Control	55	54.50	1457.500	2997.500	-.513	.608
	Experimental	55	56.50				
2nd direct observation using CREST	Control	55	46.00	990.000	2530.000	-3.729	<.001
	Experimental	55	65.00				
3rd direct observation using CREST	Control	55	39.69	643.000	2183.000	-5.850	<.001
	Experimental	55	71.31				
1st direct observation using LCJR	Control	55	52.63	1354.500	2894.500	-1.242	.214
	Experimental	55	58.37				
2nd direct observation using LCJR	Control	55	56.00	1485.000	3025.000	-.201	.841
	Experimental	55	55.00				
3rd direct observation using LCJR	Control	55	43.50	852.500	2392.500	-4.735	<.001
	Experimental	55	67.50				
1st video review using CREST	Control	55	54.50	1457.500	2997.500	-.513	.608
	Experimental	55	56.50				
2nd video review using CREST	Control	55	41.41	737.500	2277.500	-5.268	<.001
	Experimental	55	69.59				
3rd video review using CREST	Control	55	35.81	429.500	1969.500	-7.223	<.001
	Experimental	55	75.19				
1st video review using LCJR	Control	55	47.40	1067.000	2607.000	-3.038	.002
	Experimental	55	63.60				
2nd video review using LCJR	Control	55	52.08	1324.500	2864.500	-1.296	.195
	Experimental	55	58.92				
3rd video review using LCJR	Control	55	37.27	510.000	2050.000	-6.767	<.001
	Experimental	55	73.73				
Total		110					

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