



Enhancing Maternal and Neonatal Care: Effectiveness of a Pilot Multidisciplinary and Cross-specialty Obstetric Simulation Workshop

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Background

A pilot obstetric simulation workshop was developed for strengthening the teamwork involving obstetricians, midwives and paediatricians in managing obstetric and neonatal emergencies as they work closely together in saving mothers and newborns during childbirth crisis.

Method

It was a cross-sectional study and conducted in May 2025. 13 subjects including 4 obstetricians, 2 paediatricians and 7 midwives from 2 public birthing hospitals were recruited. It was a half day workshop with a short lecture for recapping the key points of obstetric emergencies and crew resource management and then followed by team management of 2 different scenarios with debriefing after each scenario. Pre- and post-tests consisted of 10 multiple choice questions were performed to evaluate participants' knowledge gain. Validated Simulation Design Scale (SDS) with a 5-point Likert scale was used to evaluate the implementation of 5 simulation design elements in this workshop. Validated Debriefing Assessment for Simulation in Healthcare (DASH) with a 7-point Likert scale was used to evaluate the effectiveness of instructors' debriefings based on the 6 key elements of debriefing. Subjects were asked to complete the self-administered questionnaires of SDS and DASH at the end of the workshop.



Results

Participants showed knowledge gain after the training with mean pre-test score 4.54 (SD=1.81) and mean post-test score 7.08 (SD=1.61). There was statistically significant difference between pre- and post-test scores, improved 2.54 score out of 10, as analyzed by independent-samples t-test ($p=0.001$, 95% CI=1.15-3.92). The effect size is large with Cohen's $d=1.48$.

SDS categories	Mean / Subtotal score	Standard deviation (SD)
1. Objectives and information	21.69 / 25	1.93
2. Cues	18.23 / 20	1.74
3. Complexity	22.08 / 25	2.29
4. Feedback / debriefing	18.69 / 20	1.60
5. Fidelity	8.54 / 10	0.88
Overall	89.23 / 100	6.85

Table 1: Simulation Design Scale (SDS)

DASH categories	Mean / Subtotal score	Standard deviation (SD)
1. Establishes an engaging learning environment	6.22 / 7	0.88
2. Maintains an engaging learning environment	6.25 / 7	0.87
3. Structures debriefing in an organized way	6.28 / 7	0.89
4. Provokes engaging discussions	6.22 / 7	0.91
5. Identifies and explores performance gaps	6.23 / 7	0.93
6. Helps trainees achieve or sustain good future performance	6.20 / 7	0.92
Overall	37.40 / 42	5.25

Table 2: Debriefing Assessment for Simulation in Healthcare (DASH)

Conclusion

This pilot multidisciplinary obstetric simulation workshop enables participants to strengthen their knowledge on managing obstetric and neonatal emergencies. Also, it showed promising effectiveness in this pilot in terms of simulation design and instructors' debriefings, which helps to engage participants and facilitate their learning.

