Review Article

Integration of Simulation Based Education in Nursing and Midwifery Education

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ABSTRACT

Simulation-Based Education (SBE) has been more prioritized among universities in their specialized health courses like as medicine, nursing and midwifery at different level. Evidences have proved that SBE helps students to acquire knowledge, attitude and skills into structured non-threatening environment which equipped them for clinical practice with more confident, less clinical errors resulting into better health outcome of their patient and client. Integration of structure curriculum is essential for implementing SBE where educators can facilitate their students for quality education which can transfer into quality practice during preservice courses.

INTRODUCTION

The core concept of simulation is "Preparation through education is less costly than learning through tragedy" which aims to prevent and minimize clinical errors while dealing with patients. Simulation is the artificial representation of a complex real-world case with sufficient fidelity to facilitate learning through immersion, reflection, feedback, and practice without the risks inherent in a similar real-life experience. [1] Simulation is increasingly used in all aspects of healthcare education and at all levels to teach cognitive, psychomotor and affective skills to individuals and teams in order to promote patient safety and quality care. Simulation is recognized as being able to provide a safe and relevant learning experience. A wide variety of clinical conditions can be simulated in controlled environments to produce standardized experiences. [2, 3] Beside this, Simulation based education challenges the traditional evaluation mechanism of assessing knowledge through structured multiple choices questions with the use of skills competencies assessment techniques. [4] In present days scenarios, SBE can be considered as new strategy for teaching and learning in health education with its integration in course instructions through application of practical guide. [5]

RATIONALE

Evidences have revealed that simulations have positive impacts among nursing students, midwifery students, educators and health care professionals to develop their skills which aids to provide quality health care at different level. [6] Nursing students found simulation sessions as stimulating, useful and a realistic learning method [7]. Statistical differences were observed on the clinical performances of nursing students who received simulation education [8, 9,10]

Importance of Integration of SBE on Curriculum:

Simulation should be utilized as an adjunct to patient care experiences and its integration into the curriculum should be well-planned and implemented. [5] For this, framework of the circle of learning consisting of following five steps of simulation learning skills has been widely referred [11]:

Step I: Knowledge acquisition: Process of acquiring knowledge through textbooks, charts, anatomical models etc.

Step II: Skills proficiency: Process of developing psychomotor skills through repetitive practice to master practical procedures typically using task trainers and simulators. Here, checklists and skills

labs play an important role. Checklists ensure objective and standardized learning of skills.

Step III: Critical thinking/ decision making: Using problem-based learning/ computer programs/ case studies that provide intelligent feedback to develop critical thinking and decision-making skills.

Step IV: Simulation in teams: Allows a group of students to practice and role play realistic scenarios to improve technical- critical thinking, physical skills and clinical decision-making skills and non-technical skills like communication, time management during clinical care, leadership and teamwork. Students have the opportunity to apply their previous knowledge and skills attained in a classroom to real world situations which require making decisions that in many cases well before they experience it in their clinical practicum experiences.

Step V: Clinical experience and practice: Learning through reflecting on the management of real patients, personal tuition, and exchange of knowledge with colleagues.

Planning / Implementing Clinical Scenario/ Simulation

Planning scenario is based on learners' level, environment and types of simulator and resources available. Formulation of clear objectives is important. Generally, objectives are based on types of simulators used. For eg. in low -fidelity simulation objectives to attain for knowledge and psychomotor skills are set. In medium-fidelity objectives are formulated to acquire complex knowledge and technique, in high -fidelity simulation focuses are set to achieve on communication, decision making team work and clinical judgements. And descriptions for scenario need to be create accordingly.

Educators Role for Planning:

Clinical protocols or guidelines should be prepared and available. Plan to incorporate feedback effectively into simulation education.

Determine how and when the feedback will be provided in a manner consistent with the learning objectives for the simulation session.

Ensure that you have emergent objectives which are not predetermined, but arise during the simulation, such as a knowledge gap or systems issue that should be addressed. It is important to note that not all objectives will be able to be discussed, so the facilitator must decide which are most important for the given session [12]. Prepare the environment with appropriate script for the simulation.

Implementing Clinical Scenario/Simulation: Clinical scenario is implemented on following three steps. i. Briefing, ii Action, iii. Debriefing

Educator roles in implementing clinical scenarios

Step I: Briefing

The details of patient and the physical condition are provided to the students. Allowing them to understand what they are expected to do. This step should be clearly, objectively and briefly presented.

Step II: Action

This step begins only after student have understood the situation to be managed. The scenario should give within 10- 15 minutes and ends when students have achieved the define objectives.

Step III: Debriefing

Debriefing focuses on the reflexion of the experiences performed by the students on their given role. [13]

Evaluation:

Students' satisfaction, performance competencies need to be evaluated. And simulation need to be re planned as per the feedback and outcome.

Educator role for Evaluation of Simulation

Create standardized tool and assess the performance

CONCLUSION

In these days simulation is getting more attention by most of the health-related universities through integration in curriculum. Simulation based Learning allow students to practice in simulation scenarios which yield them with more confidence to apply their knowledge, attitude and skills into clinical practice resulting in better health related outcome. Educator need to consider framework of circle of learning and their role very attentively and creatively in each step for obtaining quality education and practice.

REFERENCES

1. Chernikova O, Heitzmann N , StadlerM , Holzberger D, Simulation-Based Learning in Higher Education: A Meta-Analysis, Review of educational research.2020; 90 (4):499–541. doi:https: /doi.org/10.3102/0034654320933544
2. Alinier G, Platt A. International overview of high-level simulation education initiatives in relation to critical care. Nurse Crit Care.2014;19(1):42–9. https://doi.org/10.1111/nicc.12030
3. Alliner G, Oriot D. Simulation -based education, deceiving learners with good intention Advances in simulation. Biomed central. 2022;7 (8):2-13. Available from htp/doi:org: 10.11.86/ 541077-022-00206-3.
4. Levine AI, Schwartz AD, Bryson EO, De Maria S Jr. Role of simulation in US physician licensure and certification. J Med. 2012;79(1):140–53. https://doi.org/10.1002/msj.21291.
5. Motola I, Devene L, Chung H, Sullivan J, Isrnberg B. Simulation in health Care education. A best practical guide. AMEE guide no. 82. Medical Teacher. 2013; 35 (10): 1511-30 doi : 10.3109/0142159x.2013.818632
6. Tamas H et al. Simulation educators in clinical work: the manager's perspective. The manager's perspective. Journal of health organization and management. 2018; 31 (2) ; 1012-1022 doi :10.1108/JHOM-04-20180107.
7. Tizoflat I. Implementing simulation in a nursing education programme: a case report from Tanzania. Biomed Central. 2017; 2 (17): 1-4 . doi 10.1186/s41077-017-0048-z.
8. Aqel AA, Ahmad MM. High-fidelity simulation effects on CPR knowledge, skills, acquisition, and retention in nursing students. Worldviews Evid-Based Nurse. 2014;11(6):394–400. https://doi.org/10.1111/wvn.12063.
9. Shin S, Park J-H, Kim J-H. Effectiveness of patient simulation in nursing education: meta-analysis. Nurse Education Today. 2015; 35(1):176–82 https://doi. org/10.1016/j.nedt.2014.09.009.
10. Benishek LE, Lazzara EH, Gaught WL, Arcaro LL, Okuda Y, Salas E. The Template of Events for Applied and Critical Healthcare Simulation (TEACH Sim): a tool for systematic simulation scenario design. Simul Health. 2015;10(1):21-30. [PubMed]
11. World Health Organization (WHO). Regional office for Europe. Simulation on Nursing and Midwifery Education. 2018.
12. Harrigton D, Simon L. Designing a simulation scenario. 2021. State pearl publishing.
13. Kolbe M, Grande B, Sphan D. Briefing and Debriefing during simulation training and beyond content, structure, attitude& setting. Elsevier. 2015; 29 (1); 87-96. Doi: 10.1016/j. bpa.2015.01.002.