



Our Moral Imperative to Healthcare- Simulation Based Education

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ABSTRACT

The repeated exposures with enhanced experience will help to improve the skills and confidence in a medical discipline. Due to growing issues and complexities in patient care the health care workers and doctors are supposing to gain not only the cognitive domain but the psychomotor skill equally along with the effective communication to coordinate and collaborate with other health care professionals for the various patient care activities. There is an obligation to ensure the safety of the patients and give proper treatment and the wellbeing of the clients which leads to the dilemma in students when they are not able to practice on the actual patients leads to less exposure. Simulation-based training is a kind of one model which is basically a technique not a technology, considered as a platform for the health workers to reduce the ethical worries and to overcome the issues related to practical dilemmas.

Keywords: Simulation Based Education, Prebriefing, Debriefing Psychological safety, Experiential and Reflective learning.

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INTRODUCTION

In the health care education, this is mandatory to expose medics and paramedics to the live patients to get the knowledge and important skills. In other means, there is an obligation to ensure the safety of the patients and give proper treatment and the wellbeing of the clients. There are situations when the health care providers can be in dilemma in the medical education to fulfill the needs of the patients. We can say that the repeated exposures with enhanced experience will help to improve the skills and confidence in a medical discipline [1]. Due to growing issues and complexities in patient care the health care workers and doctors are supposing to gain not only the cognitive domain but the psychomotor skill equally along with the effective communication to coordinate and collaborate with other health care professionals for the various patient care activities. The health professionals have to be good at the skills to work in a team as team work related competencies are recently introduced to upgrade the standards in health care.

Why SBE?

Primum non nocere 'above all, do no harm' is considered as a base of medical practice [2]. According to the Institute of Medicine's landmark report of 2000, To Err is Human, showed approx. 98 000 deaths occur in the hospitals of USA due to error in medical care annually.³ There are studies conducted globally suggest that almost 10% of patients who are admitted in hospital are at risk or harm [4-8]. Somehow we consider medicine based traditionally on a 'see one, do one' approach for the learning and experiencing the situation, which advertantly exposes patients to healthcare practitioners which are not competent enough, which leads to harm and danger to the patients underwent any treatment that is unacceptable [9]. It is being reported that complications and mortalities are increasing along with the timings of procedures are getting longer as well known as "learning curve" due to in experienced personnels.¹⁰ So moving on a curve with that steep learning cannot be achieved by the trial and error, so that's really important to find out, plan and execute the health care professional models trainings in which the patients are not exposed to even preventable errors. Simulation-based training is considered an important model, which is basically a technique not a technology, considered as a platform for the health workers to reduce the ethical worries and to overcome the issues related to practical dilemmas [11]. The strategies, techniques and tools are applied in designing the structured scenarios based on simulation which are used to measure not only the skills and competencies but the team work and communication as well along with the fulfillment of learning objectives. If we talk, simulation based learning is not a new technique but yes it is advancing these days in medical and paramedical profession. Since past years, it has been widely used in the aviation industries, anesthesiology and in military as well. The fundamental thing in the simulation based education is to

mitigate the mistakes and errors and to maintain a culture of safety, especially in health care setup and the industries where any deviation from the set standards is not acceptable [1, 12].

Importance of SBE

If we talk about the importance of simulation based education or learning helps people to solve the actual real world problems in a safe and in an efficient manner. The important thing about the simulation based education is that it helps in the making the students more competent where they learn without harming the patient in the clinical setting which is making even the novice students become competent enough like the trained personnel's working in the clinical setup. The research study on techniques of simulation to bridge the gap between novice and competent health professionals by Susan Galloway 2019, reveals the use and importance of simulation techniques are available today to develop new innovative techniques for future to care our patients in a skillful and safe manner [14].

The other study supporting importance of Simulation technique to bridge the gap in Psychiatric Nursing by Ramachandra 2018 shows that Simulation is an artificially created situation of the clinical setup and with safest learning environment for the students to boost up their confidence. This is a valuable tool when one has limited clinical clientele where students have to be trained [24]. The important thing in the simulation training provides an analysis which is easily verified, communicated and understood by the learners and trainers or facilitators as well. This methodology makes the complex things easy. The simulation based education becomes comfortable for the learners to get expose to each and every situation in the health care profession which may be impossible and impractical in the real world due to the cost, time and availability. The NCSBN National Simulation Study 2014: A longitudinal, Randomized, Controlled Study replacing the Clinical Hours with Simulation in Prelicensure Nursing Education. The 10 programs for the prelicensure in the United States were randomized into one group out of three study groups. The 50% of the traditional clinical hours replaced by simulation. The results show that replacing the good quality simulation experiences for up to half of the clinical hours is equally effective at outcomes for the new graduates that are ready for practice clinically [15].

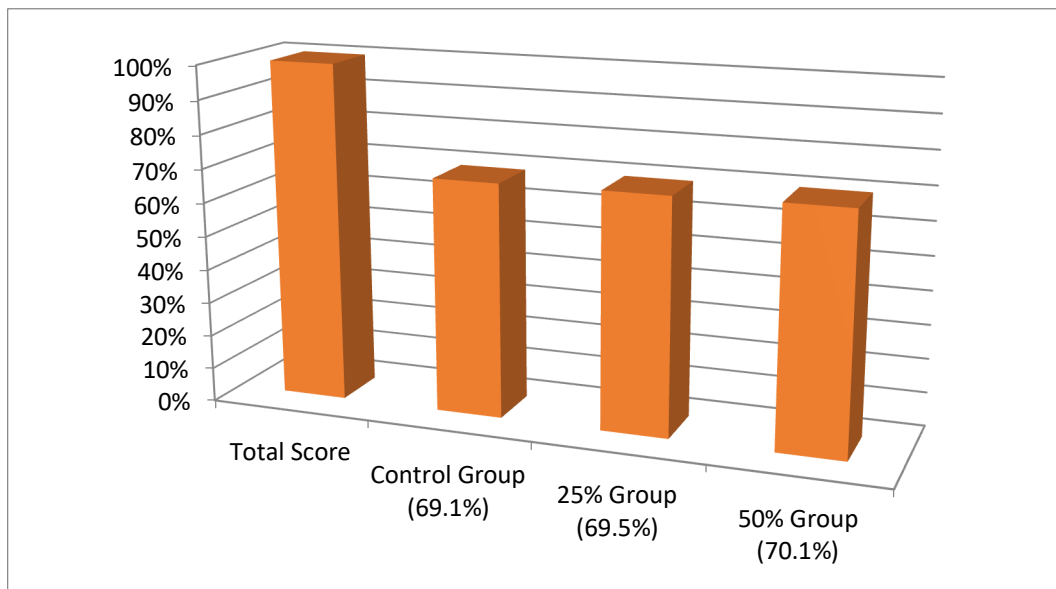
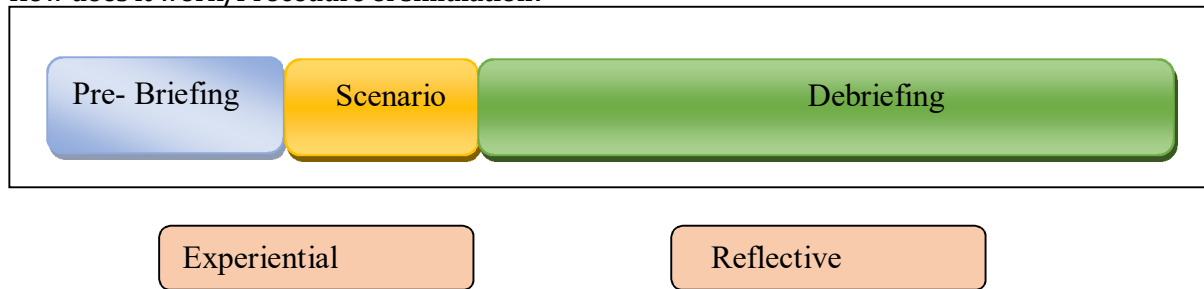


Fig.1.1 RN Comprehensive Predictor 2010

Figure 1.1 The graph showing the RN comprehensive Predictor 2010 was used to assess the nursing knowledge as a whole for Nursing program at the end of the which shows no statistical differences among the three study groups in the total score that is Control Group 69.1%, Experimental Group with 25% is 69.5%, experiment group with 50% is 70.1%

The simulation is not only being used for the health professionals and medical or nursing students, it is being used for the military training to manage with the natural and manmade disasters happened where the mass casualty has to be treated. The research paper supporting this Human Patient Simulator based CBRN Casualty Management Training by Sima Gautam *et al* in which it is been mentioned about the need and importance of Simulation Based Education which will identify and address the rare and complicated clinical CBRN emergencies which are not encountered during the practice usually. This training concept includes the standardized simulated victim suffering in typical CBRN emergency [25].

How does it work/Procedure of simulation?**Fig.1.2 Model for the Process of Simulation**

The figure 1.2 is the model for the simulation session signifies about the experiential and reflective learning which includes the Prebriefing, Simulation Scenario and Debriefing. The model has a significance, the different size of components written in blocks which is in respect to the time duration given to each component. Let's see if we talk about prebriefing it shouldn't be more than 10-12 minutes, Scenario the second component it shouldn't be more than 7-10 minutes last but not least the debriefing is about 30-35 minutes as the maximum learning takes place there so the time is maximum here in the last component. As per the systematic meta-analysis by Prof. Tracy Levett Jones (2011) about to get the effective learning in the debriefing it is important that the length of the debriefing session should be 3 times longer than the simulation [16]. The other significance is the first two components are helping the students to gain experience and the 3rd component is an opportunity for reflection which students are doing after what they have experienced leading to experiential and reflective learning [17, 18].

Pre- Brief: It is the 1st and foremost component of simulation process which helps in an experiential and reflective learning process to set a "safe" and enrolling environment. Pre-brief plays a crucial role which provides participants a detailed orientation to the simulation environment and helps them to achieve goals and objectives of the learning activity in a psychological safe container [1]. It is even an opportunity for the facilitator to "set the stage" to run the session through psychological preparation of students/participants so that the students get to know what is expected from them, about confidentiality, fiction contract, mutual respect which will eliminate fear of failure from some aspect and they can feel free to do errors with less fear.⁵ The effects of Prebriefing on psychological safety and learning outcomes by Young Sook *et al.* (2018) where the experimental group has been prebriefed in structured method and control group with the same traditional prebriefing shows that the nursing students with higher team psychological safety and good performance in the management of the case. So the team is psychological safe in case there is structured prebriefing is being conducted to make the students comfortable to achieve the objective planned by the facilitator

Simulation Session: It's the 2nd component of the simulation process where the participants actually perform activities by applying their knowledge, skills and decision making abilities in team. During this phase the facilitator keenly observes the activities of the participants based on the planned objectives by not interrupting or helping them in between the session. The students have the tendency to take the scenario in different direction which may not be the objective leading to the unexpected learning opportunities which are not planned. To manage this the facilitator is playing an important role to jump in and become a life saver to the scenario by giving the hints and clues. Life saver is an important component to be planned during the scenario designing as in one research paper by Peter Dieckman *et al.*, reveals that the interventions which are required can be logically from the same part of the scenario or considered as they are not being the part of the scenario already planned. These life savers should be kept in mind while preparing the scenario and should be carefully used so that maximum learning can take place for the students [22].

De-Brief: It is the 3rd and critical component to successful completion of simulation based learning ideally considered as a heart and soul of simulation process. Safe and structured debrief have critical conversation based on the objectives of simulation session occurs between facilitator and the participants just after simulation session with the concept of reflective learning and subsequent analysis. The students are encouraged to "know what, how and why" so that they can learn and think about the overall things happened even on their behaviour and communication as well and learn based on the discussions. As per the systematic meta-analysis by Prof. Tracy Levett Jones (2011) about the effectiveness of debriefing in simulation based education for health professionals that in many important and critical parts of the simulation process the debriefing is being considered. It's been suggested that the debriefing should be conducted immediately post simulation and some are suggesting it should be in-simulation and to enhance the debriefing analysis it's good to have the video recorded sessions of that particular session [16, 19, 21].

The impact of three phase video assisted debriefing i.e. the experiences, stress which was perceived and the practices by the facilitators: A mixed method study by H. Zhang *et al.* 2020 shows students improved their debriefing experiences ($p = 0.01$), stress has been experienced, and considered VAD facilitators are better for the reflective learning in which $P < 0.001$ compared to those in the control cluster. Repeated VAD significantly reduced students' stress ($p < 0.001$). Students feel the VD facilitators as less effective than the VAD facilitators. There were 3 categories were taken from the qualitative comments: the act of debriefing, the crux of VAD, and debriefing for successful learning [23]. The Picture 1.2 shows the different phases in debrief that helps the student to vent their emotions and becoming participative during the discussion.

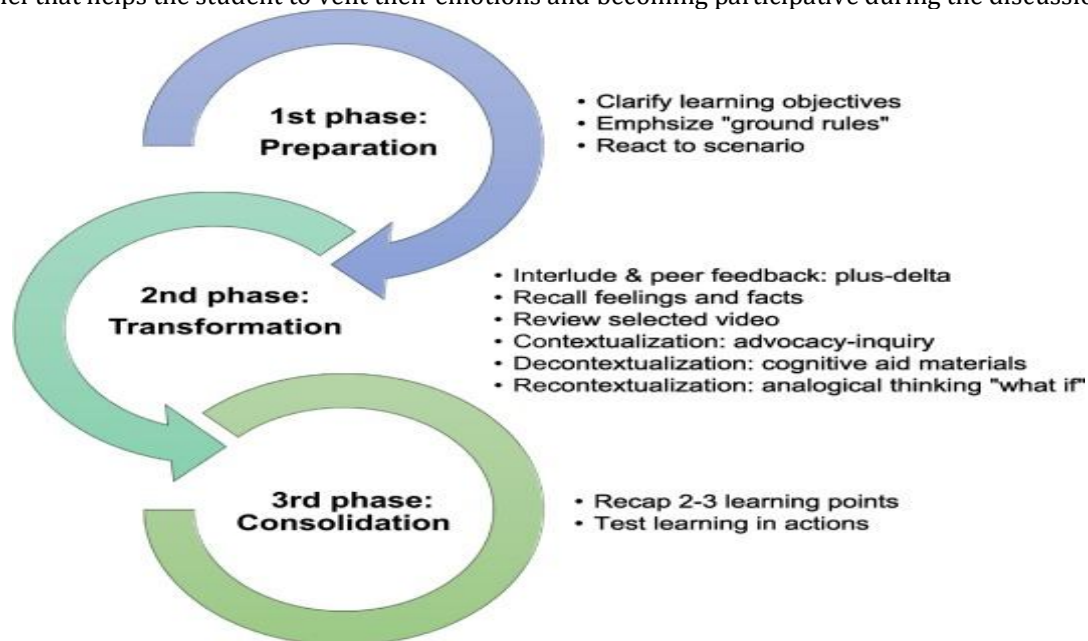


Fig 1.3 Different Phases of Debriefing H. Zhang et al 2020

CONCLUSION

To conclude with my article considering simulation is going to be the future of medical education. It may be a trend in the other countries but in India it is emerging. Faculty development is the important part about the simulation technique to be used with the students as simulation is not about the high fidelity manikins, task trainers and infrastructure. Since 2018, the National Reference Simulation Centre, SGT University, Gurugram, Haryana is one stop solution which is a center as a tetra partite collaboration with Indian Nursing Council, JHPIEGO, New Delhi, Laerdal Medical India, SGT University which is designed as per the Nursing curriculum of the Indian context. This center is a state of the art facility which gives training to the Faculties on simulation methodology in India and Abroad. So far, around 500 Nursing Faculty across India and Abroad have been certified in this center. The faculty is not only trained about the methodology the preparation and planning part of simulation methodology even if they are not having the same kind of infrastructure of Simulation Lab. Simulation is about the technical competencies, resources and there should be an understanding of the strategic thinking and planning which is necessary to create the scenarios in the more interactive manner to enhance learning that the Millennial learners relish.¹⁴

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