Simulation based Healthcare Education- Barriers in Initiation

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Abstract

Introduction: This paper summarizes a structured expert panel session on the subject of barriers in initiating Simulation based andragogy in Healthcare Education in India. The expert panel consisted of members of academia in Medicine, Nursing, paramedical and representatives from the healthcare simulation technology industry.

The global burden of unsafe medical care is significant and remains a cause of concern. Studies have shown that majority of medical errors do not result from individual negligence. Majority of the medical errors have been found to be preventable. Simulation Based Medical Education is the way forward in achieving greater patient safety and improving patient outcomes.

Hence there is an urgent need to incorporate Simulation into the healthcare education system in our country.

Objective: To discuss the current scenario of healthcare education, the role of Simulation and experience sharing on the barriers in its large scale initiation.

Result: The key barriers that emerged during the discussion in utilization of Simulation based medical education were capital investment, psychological resistance, difficulty in integrating curriculum and lack of trained man power.

Conclusion: This paper attempts to offer pragmatic solutions to the existing barriers and help mitigate medical errors and improve patient safety.

Keywords: *Simulation, challenges, healthcare education*

Introduction

This paper summarizes a structured expert panel session on the subject of barriers in initiating Simulation based andragogy in Healthcare Education in India. The panel session was conducted on the first World Patient Safety Day on September 17, 2019. The expert panel consisted of members of academia in Medicine, Nursing, paramedical and representatives from the healthcare simulation technology industry. The objective of the session was to encourage a free willing discussion on the current scenario of healthcare education, the role of Simulation and experience sharing on the barriers in its large scale initiation.

The global burden of unsafe medical care is significant and remains a cause of concern[1]. Although comprehensive and precise data on medical errors is not available in India, studies conducted in the states of Uttarakhand and Karnataka estimate the rate of medical errors in tertiary hospitals to be as high as 25.7 % and 15.3% respectively[2,3.] The landmark paper, "To err is human: Building a safer health system" in 2000 estimated that between 44000 to 98000 people die in

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hospital each year as a result of medical error. Studies have shown that majority of medical errors do not result from individual negligence. Errors are commonly caused due to faulty systems and processes that make people prone to commit error[4].

Majority of the medical errors have been found to be preventable. A Harvard medical practice study noted that 69% of the errors occurring in hospitalized patients are preventable[5]. Patient safety emphasizes the reporting, analysis and prevention of medical errors that lead to adverse health events[6]. The Government of India has taken a number of steps to improve the quality of healthcare services and strengthen patient safety[7,8,9]. The Government of India has collaborated with the Global Patient Safety Collaborative (GPSC). Under this initiative, India is the only country in the Southeast Asian region to receive technical support to strengthen education training capacity, research and leadership in patient safety[10]. Simulation Based Medical Education is the way forward in achieving greater patient safety and improving patient outcomes[11].

Hence there is an urgent need to incorporate Simulation into the healthcare education system in our country. Elaborated below are the broad themes that emerged during the expert panel discussion which focused on barriers in Simulation integration.

Key Barriers in Integration of Simulation Based Medical Education-

Capital Investment:

The teaching methodology in Healthcare Education has slowly evolved in the past few decades and has witnessed subtle transitions from the archaic "chalk and talk" to usage of posters, slides and power-point presentations. To make learning more practical, case based methodology was introduced into the curriculum. All these sessons remained didactic and were completely centered around the instructor, and the learners acting as mere spectators. This form of learning failed to engage the learner and could not perform a platform for team based experiential learning.

Simulation experiences across the globe have validated the efficacy of this methodology in improving the knowledge and practice of healthcare concepts, through numerous studies. Although the data available is limited in India, there is no reason to believe that Simulation wouldn't positively impact Healthcare Education. In interaction with management representatives of various medical and paramedical colleges, a clear resistance to adoption of this andragogy has emerged.

A key reason attributed, has been lack of funds and resources to introduce this technology. Although it is true that High Fidelity Simulation is a capital intensive investment where returns cannot be measured in real economic terms. The ultimate purpose of Simulation is to reduce medical error and patient safety, hence the outcome analysis should focus on the decrease in errors and complications in real healthcare settings. The skills learnt in a Simulation lab are applied by the learner, during his entire lifetime and hence the impact assessment in tangible terms during the learners training period is not practically possible.

Even though, cost concerns are genuine, a resource crunched country like ours can explore the 'Hub and Spoke' model wherein one Simulation Centre in a geographical area can cater to all institutes in its radius. This shall allow extremely limited encounters per student but it would definitely help in providing a first-hand experience to maximum learners and facilitators. The experiences gained through this model can be utilized for a slow phasic expansion, based on the specific needs of each institute. This shall help in avoiding unnecessary investment on costly technology. Institutes shall be able to take decisions on their individualized requirements and opt for appropriate technology.

Psychological Resistance:

Traditionally, medicine has been learnt by bedside and clinical skills learnt on a live patient, still remain the gold standard. Yet, in the past few decades the opportunities of learning in the Medical ward are steadily shrinking. This is partly due to the increasing empowerment of patients leading to refusal of repeated examinations done by students on them. This has resulted in greater dependence on theory and lack of confidence among newly graduated doctors and nurses due to insufficient practice. When these healthcare professionals join a hospital or nursing home they are unable to perform clinical examination and invasive

procedures independently.

Simulation offers an alternative for repetitive practice which can help boost the skill set of the learners. Simulation allows the learners to commit mistakes without causing harm to anyone and in many cases provide objective data for clinical skill performance. There is a widespread misconception that adoption of Simulation shall completely obliterate bed side teaching on live patients, but Simulation at its best is an adjunct and not a substitute. This false impression is responsible for psychological resistance amongst decision makers in healthcare institutions. This issue can be resolved by increasing advocacy and awareness created by existing simulation users. Existing users can share their experiences with application of Simulation, thereby allaying the fears of non-adopters.

Simulation allows the teaming of rare clinical cases as well as deliberate practice of difficult clinical procedures. Both of these objectives cannot be achieved by bedside teaching alone. Hence, rather than shunning simulation, healthcare institutions should increasingly adopt this methodology for achieving better patient outcomes.

Challenges In Integration:

It emerged during the discussion that, for eminent institutions which have initiated Simulation based education, comprehensive integration into the curriculum remains a challenge. The vastness in the curriculum leads to paucity of time for both the instructors and learners and restricts the use of Simulation. Simulation sessions require elaborate preparation as well as background training n the methodology. This causes resistance among instructors to teach clinical cases on Simulators. They continue to prefer didactic teaching method because they are conditioned with this methodology for many years.

Even guidelines for Introduction of Simulation into Curriculum and focus on skill learning have been emphasized by various medical and nursing councils very recently. These guidelines shall definitely boost the adoption but Healthcare Education Institutes shall require time and effort to implement the guidelines. Simulation is generally misinterpreted as only being the usage of high end technology manikins. High Fidelity Simulation is better for clinical scenario and team based learning, and hence should be utilized only for this purpose. Part task trainers constitute low fidelity simulation and can be used for effectively teaching a gamut of basic clinical skills. They require very less capital investment and can drastically improve the skillset of learners.

Utilizing standardized patient for teaching case history taking and clinical examination is another modality of Simulation which is largely being unexplored in our country. Most international certifying examinations utilize standardized patients for student assessment. Hence a variety of simulation modalities can be used based on appropriate clinical requirement.

Lack of Trained Man Power:

Although the technology has gradually trickled into Indian institutions, providing qualified man power undoubtedly remains a daunting task. Simulation based education requires a radically different approach compared to didactic teaching. Also, the instructors need to be trained on high-end softwares for programming clinical cases. Faculty Development Programme have been designed and implemented in a few institutions but the frequency of such training sessions remains abysmally low. This can be attributed to the presence of only handful of certified Simulation educators in the country. For Simulation to be truly a pan India phenomenon, there is pressing need to develop a dedicated cadre of Simulation educators across the country. Train the trainer programs should be conducted at regular intervals by pioneering institutions to create a sizeable number of trainers well versed in Simulation Based Education modalities.

Conclusion

Every new technology has faced varied kinds of barriers in its large scale implementation. Simulation Based Medical Education is a valuable addition to the healthcare education system in our country. The benefits of Simulation Based Medical Education far outway the limitations associated with it. This paper attempts to summarize the current simulation environment in our country. It also offers pragmatic solutions to the existing barriers in a hope that Simulation shall be adopted across the length and breadth of the country's healthcare institutes thereby mitigating medical errors

and improving patient safety.

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