

Journal of Coastal Life Medicine

A Provider Perspective of Adoption of Healthcare Simulation as a Teaching Andragogy

Received: 12 August 2022, **Revised:** 17 September 2022, **Accepted:** 19 October 2022

KEYWORDS: Clinical Simulation, andragogy, Simulation Educator, Provider Perspective

Dr. Parag Rishipathak¹, Dr. Shrimathy Vijayraghavan², Dr. Anand Hinduja³

Professor & Director, Symbiosis Centre for Health Skills, Symbiosis International (Deemed University), Pune, India¹

Sr. Medical Officer, Academics, Symbiosis Centre for Health Skills, Symbiosis International (Deemed University), Pune, India²

Adjunct Faculty Symbiosis Centre for Health Skills, Symbiosis International (Deemed University), Pune, India³

ABSTRACT:

INTRODUCTION:

Exposure of medical doctors to live patients for acquiring necessary skills is imperative. Simulation has been used as an education andragogy for a wide range of disciplines and finds multiple applications in various Healthcare fields. It has been observed that, though the doctors have a good understanding of medicine, there is lack of clinical skills, problem-solving abilities, and dearth in application of knowledge to patient care, particularly in emergency scenarios. The success of clinical simulation as a teaching andragogy in healthcare shall depend upon the whole hearted acceptance by the providers (educators). The first important step in improving its adoption is to gauge the provider perspective on the opportunities and barriers

OBJECTIVE:

The aim of the present study is to understand perspective of educators in adoption of simulation as a teaching andragogy.

METHODS:

The study was conducted amongst 22 Simulation Educators from across India during a virtual round table discussion. The educators belonged to various fields including medicine, nursing, paramedics and the group was a mix of junior, mid and senior level educators. The discussion lasted for 3 hours and was based on an open ended discussion on various aspects of clinical simulation. The data was collected during the month of December 2021. The collected data was transcribed and coded to generate themes pertaining to the subject.

RESULT AND DISCUSSION:

Many participants were of the opinion that simulation sessions were time consuming and that they were unable to take time out of their already busy schedule. It is commonplace in

Journal of Coastal Life Medicine

healthcare to have busy schedules. Yet some effort in the short term can lead to radical improvement in the teaching andragogy in the long run.

CONCLUSION:

The round table discussion raised important concern of training providers which can give directions to various educational institutes in implementation of their simulation programmes. Any technology shall remain redundant without the active engagement of training providers. The benefits of Simulation can reach the learners only when the providers wholeheartedly accept the andragogy. The present study attempts to suggest simple solutions to various provider barriers.

1. INTRODUCTION:

Exposure of medical doctors to live patients for acquiring necessary skills is imperative¹. With the patients becoming more aware and concerned that doctors and medical students are practising and learning skills on them, it is essential that alternative tools of learning should be adopted. In the recent times bedside teaching is becoming scarce as patients are increasingly unwilling to be examined by multiple students. In such cases ensuring patients well-being is of paramount importance.² Clinical Simulation is a technique which amplifies real life experiences with guided ones that evoke substantial aspects of real world in an interactive manner. As simulation based learning occurs in a controlled environment, it helps improve patient safety and quality of care, prevents or limits errors, minimizes harm to patients, and helps in developing safe, competent health-care professionals^{3,4}.

Simulation has been used as an education andragogy for a wide range of disciplines and finds multiple applications in the fields of nursing, para-medical training, medical professionals training, emergency medicine management, gynaecology and obstetrics, paediatrics, surgical skills etc. In all these fields, the basic tool and principle of Simulation remains the same

but is diversified based on the requirements.⁵

Simulation-based learning is not a substitute for real patients in real clinical scenario, but instead a technique for educating and training health-care professionals in both technical and nontechnical skills prior to their exposure of real patients.^{6,7,8}

It has been observed that, though the doctors have a good understanding of medicine, there is lack of clinical skills, problem-solving abilities, and dearth in application of knowledge to patient care, particularly in emergency scenarios. With an emphasis on problem-based learning in clinical simulation, the educator's aim is to establish a long-term, predetermined improvement in the learner's behaviour, acquired skills, and attitudes⁹.

A study by Seethamraju *et al*¹⁰ in 2022 concluded that effort is required to harness the surge of enthusiasm for simulation-based educational activities in the health sector. New instructors should focus on promoting a simulation culture at their workplace by encouraging more of their colleagues to get trained and integrating simulation-based activity into the curriculum.

The success of clinical simulation as a teaching andragogy in healthcare shall depend upon the wholehearted acceptance

Journal of Coastal Life Medicine

by the providers (educators). Technology can be acquired but its utility would depend on the level of engagement shown by the educators. The level of penetration of clinical simulation in our country remains abysmally low.¹¹The first important step in improving its adoption is to gauge the provider perspective on the opportunities and barriers.

The aim of the present study is to understand perspective of educators in adoption of simulation as a teaching andragogy.

s

2. METHODS:

The study was conducted amongst 50 Simulation Educators from across India during a virtual round table discussion.

The educators belonged to various fields including medicine, nursing, paramedics and the group was a mix of junior, mid and senior level educators. The discussion lasted for 3 hours and was based on an open-ended discussion on various aspects of clinical simulation. The data was collected during the month of December 2021.

The collected data was transcribed and coded to generate themes pertaining to the subject.

3. RESULTS & DISCUSSION:

The broad themes that had emerged out of the Round table discussion are as below:

1. Paucity of resources:

The overwhelming concern of a majority of participants was the lack of adequate resources to scale up simulation as a day to day tool in academics. The paucity of resources was felt in terms of time, technology and skilled human resource. In its current form, High fidelity simulation is costly and the investment required in terms of space and equipment to adequately fulfil learner requirements is enormous. The

providers felt that in the current scenario the availability of technology is disproportionately low compared to the number of learners. Hence, clinical simulation has remained an event based tool rather than a day to day andragogy.

It is true that scaling up technology is a time consuming and expensive process, yet simulation offers myriad tools like part task trainers and standardized patients which are low cost yet highly effective tools for learning critical skills¹². In the first phase of integrating simulation based education, providers can focus on these tools to acclimatize learners to simulation based andragogy.

Another concern that emerged was with regards to the lack of time available for simulation within the already crowded academic schedule in most healthcare courses as simulation is new for most providers it would require significant time for provider training, session planning and actual execution of the session.

Although there is limited time, it is widely known that session planning and execution require lesser time with consistent touch.^{13,14}

2. Skill Optimization:

Although the providers showed a great deal of enthusiasm during master training workshops, in that they lacked the confidence in conducting independent training session for learners. The providers attributed this lack of confidence to a multitude of factors like lack of regular training, existing academic workload and intimidation by advanced technology. Regular Provider training is essential to build self-efficacy and confidence. If providers are subjected to training only in the form of workshops every few months, there is lack of retention as simulation is a

Journal of Coastal Life Medicine

new subject for them^{15,16,17}. Training boot camps with dedicated hours and post training evaluation can help in boosting the knowledge and skill levels of providers¹⁸.

Many participants were of the opinion that simulation sessions were time consuming and that they were unable to take time out of their already busy schedule. It is common place in healthcare to have busy schedules. Yet some effort in the short term can lead to radical improvement in the teaching andragogy in the long run. A possible solution could be to identify faculties with high aptitude for simulation and formulation of a task force with such members. The task force can focus on intensive simulation learning for a few weeks and then provide support and handholding to other faculty.¹⁹

Advanced technology is always intimidating. But with latest simulation technology being extremely user friendly, repetitive practice can help overcome this barrier. These apart providers uncomfortable with advanced technology can be utilized for providing training on part task trainers and standardized patient education^{20,21}.

3. Learner Acceptance

The providers felt that in their limited experience with simulation, the acceptance level of simulation as a learning tool was low. They felt that simulation was vastly different from traditional teaching and the degree to which students would immerse themselves into the scenario cannot be predicted.

A section of the participants had a conflicting opinion wherein they observed that learners were receptive to interactive, real-time demonstration. Students would

grasp if taught in right way with simulation based approach^{22,23}.

Effective simulation depends upon ability of the student to suspend disbelief²⁴. This in turn depends on fidelity, psychological safety, emotional aspects, environmental fidelity to name a few.²⁵Hence adequate care and planning is required during design and implantation of simulation sessions.

4. CONCLUSION:

The round table discussion raised important concern of training providers which can give directions to various educational institutes in implementation of their simulation programmes. Any technology shall remain redundant without the active engagement of training providers. The benefits of Simulation can reach the learners only when the providers wholeheartedly accept the andragogy. The present study attempts to suggest simple solutions to various provider barriers. Further large-scale studies can be conducted to reaffirm provider perspective.

Source of Funding: Self

Conflict of Interest: None

Ethical Clearance: Obtained from Independent Ethics Committee (IEC), SIU

REFERENCES:

1. Jha , A.K, Duncan , B.W, Bates , D.W. Simulator based training and patient safety in: Making health care safer: a critical analysis of patient safety practices. Agency for Health care, Research and Quality, US dept of Health and Human Services. 2001: 511-518.
2. Okuda Y, Bryson E.O, Demaria , S.J.R. The utility of simulation in medical education: what is the evidence?. Mt Sinai J Med . 2009;76(0): 330-343.

Journal of Coastal Life Medicine

3. Lateef, F. Simulation-based learning: Just like the real thing. *J Emerg Trauma Shock*. 2010;3(4): 348-352.
4. Gaba , D. The future of simulation in health care. *Qual Safe Health Care*. 2010;13(0): 2-10.
5. Wheeler B, Dippenaar E. The use of simulation as a teaching modality for paramedic education: a scoping review. *Br Paramed J*. 2020 Dec 1;5(3):31-43.
6. Chacko, T.V. Simulation-based medical education: using best practices and curriculum mapping to maximize educational benefits in the context of shift toward competency-based medical education. *Arch Med Health Sci*. 2017;5(0): 9-15.
7. Motola I, Devine LA, Chung HS, Sullivan JE, Issenberg SB. Simulation in healthcare education: a best evidence practical guide. *AMEE Guide No. 82. Med Teach*. 2013;35(10): e1511–30.
8. Lawson S, Reid J, Morrow M, Gardiner K. Simulation-based education and human factors training in postgraduate medical education: a Northern Ireland perspective. *Ulster Med Journal*. 2018;87(3):163–167.
9. Datta R, Upadhyay KK, Jaideep C.N. Simulation and its role in medical education. *Medical Journals Armed Forces India*. 2012;68(2):167–172.
10. Seethamraju R.R., Stone K.P., Shepherd M. Factors Affecting Implementation of Simulation-Based Education After Faculty Training in a Low-Resource Setting. *Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare*. February 2022; 17(1): e113-e121.
11. Martinerie L, Rasoaherinomenjanahary F, Ronot M, Fournier P, Dousset B, Tesnière A, Mariette C, Gaujoux S, Gronnier C. Health Care Simulation in Developing Countries and Low-Resource Situations. *Journal of Continuing Education in Health Professions*. 2018 Summer;38(3):205-212.
12. Kundra P, Cherian A. Simulation-based learning: Indian perspective. *J Anaesthesiology Clinical Pharmacology*. 2014;30: 457–458
13. Lean J, Moizer J, Towler M, Abbey C. Simulations and games: use and barriers in higher education. *Active Learning in Higher Education*. 2014;7(3):227–242.
14. Zendejas B, Wang A, Brydges R, Hamstra S, Cook D. Cost: the missing outcome in simulation-based medical education research: a systematic review. *Surgery* 2012;153(2):160–176.
15. Joseph N, Nelliyanil M, Jindal S, et al. Perception of simulation-based learning among medical students in South India. *Ann Med Health Sci Res*. 2015;5(4):247–252.
16. Qayumi K, Pachev G, Zheng B, et al. Status of simulation in health care education: an international survey. *Adv Med Educ Pract* 2014; 5:457–467.
17. Hosny SG, Johnston MJ, Pucher PH, Erridge S, Darzi A. Barriers to the implementation and uptake of simulation-based training programs in general surgery: a multinational qualitative study. *J Surg Res* 2017; 220:419–426.
18. Marshall S.D, Flanagan B. Education for Simulation-based building clinical teams, *Journal of Emergencies Trauma Shock*. 2010 Oct-Dec; 3(4): 360–368.
19. Katoue M, Iblagh N, Somerville S, Ker J. Introducing simulation-based education to healthcare professionals: exploring the challenge of integrating theory into educational practice. *Scottish Medical Journal*. 2015;60(4):176–181.
20. Datta R, Upadhyay Kk, Jaideep Cn. Simulation and its role in medical

Journal of Coastal Life Medicine

- education. *Medical Journal Armed Forces India* 2012;68(2):167-172.
21. Shetty R, Thyagarajan S. Simulation in pediatrics: is it about time? *Ann Card Anaesth.* 2016; 19:505-510.
 22. Issenberg, S.B. & Scalese, R.J. Simulation in Health Care Education, Perspectives in Biology and Medicine. 2008 Winter 51(1)
 23. Li, S. The role of simulation in nursing education: A regulatory perspective. American Association of Colleges of Nursing Hot Issues Conference; Denver, CO. 2007
 24. Carey JM, Rossler K. The How When Why of High Fidelity Simulation. StatPearls Publishing. Jan 2022. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK559313/>
 25. Virginia C. Muckler, DNP, CRNA, CHSE. Exploring Suspension of Disbelief During Simulation-Based Learning. *Clinical Simulation in Nursing*, 2019; 35: 25-32.
 26. Koya, Minshi Krishna, K. Siva Prasad, And M. Siva Krishna. "Dfm & Simulation For Injection Mould Of Knob." *International Journal Of Mechanical And Production Engineering Research And Development (Ijimperd)* 9.5 (2019): 265-276.
 27. Singh, G. U. R. W. I. N. D. E. R., And M. A. H. A. K. D. E. E. P. Singh. "Pre-Clinical Modeling And Simulation Of Radiofrequency Ablation In Human Lung Tumor." *Int. J. Mech. Prod. Eng. Res. Dev* 7.4 (2017): 77-88.
 28. Shriyan, Amrita, And Ashvij Shriyan. "A Study On The Efficiency Of Cstd At A Health Care Centre." *Tjprc: Journal Of Nursing And Patient Safety & Care (Tjprc: Jnpvc)* 1.2 (2015): 7-16.
 29. Prabhu, Nayana, Nithesh Naik, And Vathsala Patil. "A Study On Effect Of Geometric Patterns And Material Onstress Distribution In Dental Implant System: A 3-Dimensional Finite Element Analysis." *International Journal Of Mechanical And Production* 9 (2020): 743-752.
 30. Danquah, E. M. E. L. I. A. "The Effect Of Elements Of Culture And Personality On Emotional Intelligence Levels In Service Delivery: A Banking Service Provider Perspective." *International Journal Of Business Management & Research* 4.3 (2014): 23-40.
 31. Danquah, E. M. E. L. I. A., And Theophilus B. Wireko. "The Impact Of Each Element Of Emotional Intelligence On Customer Service Delivery: A Customer Satisfaction Perspective." *International Journal Of Sales & Marketing Management Research And Development* 4.2 (2014): 9-20.