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Assessment of Debriefing Experiences of Emergency Medical Professionals in Remote Simulation and Standardized Patients

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KEYWORDS: Remote simulation, debriefing, standardized patients, virtual debriefing.

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ABSTRACT:

INTRODUCTION:

Clinical training of medical students during their formative years of graduation and post-graduation forms the basis of their future clinical practice. Hands-on practice and bed-side teaching form the cornerstones of effective clinical education, but recently the utilization of simulation based medical education, is growing at a fast pace.

Students are exposed to Simulated Clinical Experiences (SCE's) in a safe and controlled environment. Simulation based training has been found to be a better tool than didactic teaching for medical graduate students to learn critical assessment and life-saving skills.Emergency Medicine requires expert and skilled professionals to handle critical situations with instantaneous decision making in order to save a patient's life.Reflective debriefing helps learners tackle real life emergencies more effectively.

OBJECTIVE:

To compare debriefing experiences of Emergency Medical Professionals after sessions in remote simulation and standardized patients.

METHODOLOGY:

Only those EMPs who had not been exposed to simulation, debriefing and ITLS sessions in the past participated in the study. The Facilitator demonstrated the skills to the participants and written patient assessment algorithms were distributed for better understanding.

The EMPs were randomly assigned into two groups A and B. Group A was exposed to Standardized Patients (SP) Simulation while Group B was exposed to Remote Manikin Simulation.

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CONCLUSION:
Remote Simulation has been largely successful as it is reiterated by the high satisfaction scores in our study. Nevertheless, in-person SP simulation, provided a richer debriefing experience to the learners.

1. INTRODUCTION:

Clinical training of medical students during their formative years of graduation and post-graduation forms the basis of their future clinical practice. It helps them to evolve into a practitioner who handles patients with medical conditions and emergencies effectively. The required skillset must be upgraded frequently with new improvised teaching methodologies and techniques to ensure that the best evidence based care is provided to the patient.[1] Traditionalmethod of teaching which is largely classroom based, has been found to be inadequate for skill acquisition. Hands-on practice and bed-side teaching form the cornerstones of effective clinical education.Bed-side clinical teaching has witnessed a steady decline in the last two decades due to multitude of factors.[2] Hence, the utilization of simulation based medical education, is growing at a fast pace.

Simulation based training has been integrated in the medical teaching methodologies which includes part task trainers, low and high fidelity manikins, standardized patients, remote and virtual simulation. Students are exposed to Simulated Clinical Experiences (SCE's) in a safe and controlled environment. They are given hands-on –training to handle emergencies, communicate with patient, caregivers, establish cordialinterpersonal skills with colleagues, and maintain professionalism with regular practice and debriefing sessions.[3]Simulation based medical education is slowly amalgamating into the clinical curriculum in the lastfew years and has found extensive utility in multiple specializations like emergency medicine, critical care, nursing care, obstetrics and surgery. It has drastically helped students to enhance and improve their clinical and cognitive skills.[4]

Simulation based training has been found to be a better tool than didactic teaching for medical graduate students to learn critical assessment and life-saving skills.[5]Emergency Medicine requires expert and skilled professionals to handle critical situations with instantaneous decision making in order to save a patient's life. Regular practice on simulation based scenarios and self-reflecting the actions through debriefing give valuable insights for self-improvement.[6]Reflective debriefing helps learners tackle real life emergencies more effectively.[7]

Skills like history taking and physical assessment can be better demonstrated and taught using standardized patients rather than manikins.[8]A study by Musa Dahlia *et al* in 2021 recommends that educators use teamwork for complex clinical scenarios in order to promote higher level learning. For promoting lower level learning, individual work in simple scenarios has been suggested.[9]The simulation experience is affected by the physical environmental factors, exposure to real life situations,

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comfort level of the participants etc.[10] Debriefing sessions should be conducted in an environment that supports confidentiality, trust, open communication, self-analysis, and reflection. The facilitator-participant bond needs to be established for vivid discussions, clarifying doubts and expressing ideas.[11] Wickers *et al* states that debriefing could be effectively done by creating a physical environment which includes all the aspects conducive to learning, developing a trusting relationship with the participants, resolving and discussing difficulties and doubts, engaging students in analysis of patient care situations, and tactfully asking self-reflective questions.[12]

Simulation activity is incomplete without comprehensive debriefing. It is essential that the essence of debriefing is not lost out in remote simulation. Studies have shown that simulation activities should include efforts to allow students to practice scenarios independently with a standardized After Action Review (AAR). The AAR is expected toaugment and assist the facilitator in improving the learning and self-reflection experience of the learner.[13]

Virtual Debriefing and its barriers earlier have been discussed in a 2020 study by Adam Cheng *et al*.The study points out the need to emphasize on explicit strategiesto build and maintain psychological safetywith the existingdebriefing methods and conversational techniques.[14]

There are several pitfalls and solutions discussed in a study on Debriefing in 2016 wherein a proposed checklist, a tool for providing peer feedback on debriefing performance named as Promoting Excellence and Reflective Learning in Simulation PEARLS has helped many Simulation educators.[15]

Other techniques of debriefing like tele-debriefing have been introduced to a limited extent arising out of the necessity during the COVID pandemic situation. Head to head comparison studies on debriefing experience in-virtual and in-person settings are lacking. [16]

2. OBJECTIVE:

To compare debriefing experiences of Emergency Medical Professionals after sessions in remote simulation and standardized patients.

3. METHODOLOGY:

The study was conducted in March 2022 among 150 Emergency Medical Professionals (EMPs) working in casualty, emergency care units, Intensive Care Units, Ambulances in the city of Pune, India. ITLS is a two-day intensive course consisting of strategic methods of patient assessment and management of critical conditions in a pre-hospital set up. The first day of ITLS course is focused on emergency patient assessment. The patient assessment module was utilized for comparing the EMPs experience.

Only those EMPs who had not been exposed to simulation, debriefing and ITLS sessions in the past participated in the study. The Facilitator demonstrated the skills to the participants and written patient assessment algorithms were distributed for better understanding.

The EMPs were randomly assigned into two groups A and B. Group A was exposed to Standardized Patients(SP)

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Simulation while Group B was exposed to Remote Manikin Simulationvia the Microsoft Teams Application.Each group was further divided into teams of six participants each exposed toSimulated Clinical Scenario's as per the ITLS patient assessment Algorithm.

On completion of the Simulation the participants were subjected to facilitator guided debriefing for 15 minutes each. The debriefing was conducted in-person for Group A and remotely for Group B. The debriefing session was followed by administration of the 20-item Debriefing Experience Scale (DES) questionnaire developed by Reed (2012).[17]

The DES questionnaire consistsfour subscales and 20 items in all which requires responses on a 5 point Likert scale, ranging from a score of 1 for '*strongly disagree'* to 5 for '*strongly agree*.' The four subscalestouch upon different aspects of debriefing experience like analysis thoughts and feelings (4 items), learning and making connections (8 items), Facilitator's Skill in Conducting the Debriefing (4 items) and Appropriate Facilitator Guidance (3 items).

Informed consent was taken from the participants prior to the administration of the questionnaire. The participants were provided with a duration of one hour to complete the questionnaire. Any queries pertaining to the questionnaire were clarified during the data collection process by the facilitators. The data was analysed using SPSS version 23.0

4. RESULTS:

Table 1: Demographic Data

Subscale	Mean		Standard Deviation		*p* value
	SP Simulation	Remote Simulation	SP Simulation	Remote Simulation	
Analyzing Thoughts and Feelings	4.16	3.91	0.095	0.140	**0.0316***
Learning and Making Connections	4.24	3.96	0.143	0.122	**0.00089***
Facilitator Skill in Conducting the Debriefing	4.20	3.81	0.113	0.098	**0.00543***
Appropriate Facilitator Guidance	4.45	3.85	0.088	0.059	**0.0138***

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Table 2: Debriefing Experience Score – SP Simulation V/s Remote Simulation
*** indicates significant *p* value (<0.05)**

Age:	**Percentage**	**In no.s**
Less than 25	34.66 %	52
25 to 30	53.34 %	80
30 years above	12 %	18
Sex:		
Male	32 %	48
Female	68 %	102
Academic Background:		
BHMS	54 %	81
BAMS	34 %	51
Others	12%	18
Work Experience :		
Upto 1 year	56 %	84
More than 1 Year	44 %	66

5. DISCUSSION:

The study aims to understand the effectiveness and benefits of debriefing in two different settings and techniques. Debriefing plays a crucial role for the learner to understand his or her roles and analyze actions taken during the simulation scenario. It is an excellent tool for self-reflection and improvement.

The study results overwhelmingly favor debriefing experience in SP simulation over remote manikin simulation. The findings can partly be attributed to the in-person environment and to the technique utilized by the facilitator in SP simulation. The Debriefing Experience Scale has 4 subscales viz., Analyzing thoughts and feelings, Learning and making connections, Facilitator skill in conducting the Debriefing and Appropriate facilitator guidance.

The participants are more involved inSP Simulation and it resembles real life situations more closely.The Group B participants were online and did not visit the Simulation Lab physically, thereby the environmental fidelity was affected.The debriefing session is highly impactful due to the physical environment factors, comfort of the participants and open interaction.

The subscale on'Facilitator Skill in Conducting Debriefing' has five items highlighting the competency and capabilities of the facilitator. Although the satisfaction levels with the facilitator were high in both the groups, the Group Aparticipants awarded higher score in the item pertaining to time provided for reflective debriefing. SP simulation involves greater facilitator-participant interaction and that in-person environment flows for greater camaraderie between the facilitator and the learners.

Even in terms of evaluation, provided during debriefing, learners of Group A, showed greater satisfaction levels with a constructive approach. Across all items and subscales significant difference was found in the experiences of learners in both groups, all in favor of in-person SP simulation.

6. CONCLUSION:

Remote Simulation was introduced as an adaptation to ensure continuity of education during the COVID-19 era. It has been largely successful as it is reiterated by the high satisfaction scores in our study. Nevertheless, in-person SP simulation, provided a richer debriefing experience to the learners. The study is

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limited by its sample size and comparison of a single event. Longer duration studies with larger sample size can help provide better insights.

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Conflict of Interest: None

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

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