



EFFICACY OF SIMULATION BASED LEARNING IN ACQUIRING NEW SKILL DEVELOPMENT AMONG MEDICAL STUDENTS IN A TERTIARY CARE CENTRE IN CHENNAI

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ABSTRACT

Simulation is a fundamental exposure for the current and future challenges in the world of medicine. Repeated exposures and trainings improves the skills of trainee doctors and increases the safety assurance of patients, helps in developing knowledge and improving the confidence of medical students, and teaches them real patient management skills particularly in obstetrics emergencies, thereby decreasing the avoidable risks to patients and giving them quality care, for better outcome in obstetrics emergencies team work is needed. We conducted a prospective study in the department of Obstetrics and Gynecology among 40 Postgraduates and 140 final year MBBS Students to find out the effectiveness of simulation based learning. The stations included Assisted breech delivery, Shoulder dystocia, Instrumental delivery, Post Partum Hemorrhage management. The study revealed that there was a significant improvement in the quality and ability of students.

KEYWORDS : Simulation, Obstetric emergency, Breech delivery, PPH

INTRODUCTION:

Medicine is an art. Repeated exposures and trainings improves the skills of trainee doctors and increases the safety assurance of patients[1]. Particularly simulation based learning not only helps in developing knowledge and improving the confidence of medical students, it also teaches them real patient management skills particularly in obstetrics emergencies, thereby decreasing the avoidable risks to patients and giving them quality care, for better outcome in obstetrics emergencies team work is needed[2]. To get the team to work they should be trained with simulated obstetric emergencies. The unpredictability of life threatening obstetrics emergencies makes simulation based learning the most appropriate method for training health providers in order to gain and maintain competence in managing obstetric emergencies[3]. Obstetrics emergency drills should be conducted in real time in the normal working environment. Drills can be used to test professional team work dynamics and individual providers knowledge and skills.

MATERIALS AND METHODS:

This is a Descriptive Prospective study conducted by the Department of Obstetrics and gynaecology at the Simulation and Skill centre in Saveetha Medical college hospital.

The study included 30 Postgraduate and 140 Final year MBBS students. The participants were informed that their details will be kept confidentially and can participate if they want to. The study protocol received approval from the Institution Ethics and Research Committee.

Students were divided into 4 groups. 45 minutes time was allocated for each station. All students were provided Pre test questionnaire which was designed to asses the participants knowledge on the topic which had 15 Multiple choice questions & was awarded one mark for each correct answers and no negative markings for the wrong answers.

Post test questionnaire separately for each Station to assess their knowledge & Feedback were collected from the students for each station.

Stations:

Station 1 And 2: Assisted breech delivery and Management of Shoulder Dystocia was explained by the trainer, followed by

which individual hands on training in mannequin were given for each student and their skills were assessed.

Station 3: Students were taught about prerequisites for Instrumental delivery and Indications for forceps delivery and a Hands on training were given on application of outlet forceps and KIWI cup.

Station 4: Post partum Hemorrhage management was explained in detail first followed by hands on training on surgical management of PPH like B- lynch sutures and Hayman sutures were given using Uterine models made with sponge and microwave glove.

Post test questionnaire separately for each Station to assess their knowledge & Feedback form has questions regarding the adequacy of time, whether the programme was interesting and whether it will be helpful in future etc.

Data Analysis:

The collected data were analysed using SPSS Software (21.0 version).The paired t-test to compare mean scores and one-way analysis of variance test values. The results were statistically significant (p < 0.05).

RESULTS:

	MEAN	STANDARD DEVIATION	MEAN DIFFERENCE	P VALUE
PRE TEST SCORE	9.7	2.882	2.6	0.003*
POST TEST SCORE	12.3	2.862		

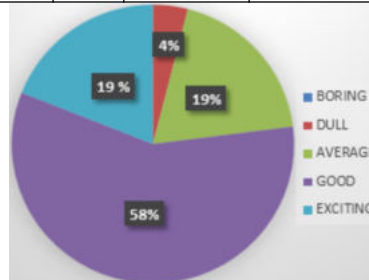


Figure 1 – Distribution Of People According To Their Perception Of The Drill.

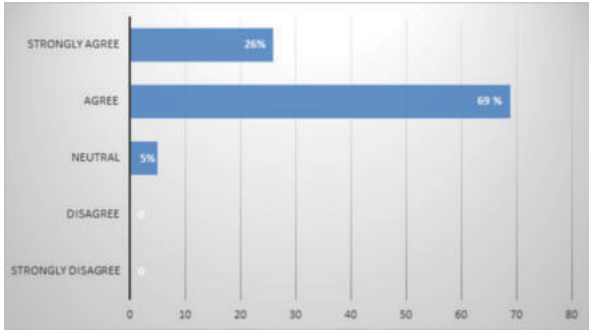


Figure 2 – Distribution Of People When Asked If The Topic Covered Was Complete In Its Content And Context.

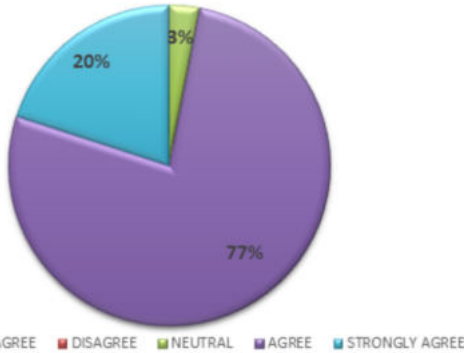


Figure 3 - Distribution Of People When Asked About Scope Of Their Active Hands On Participation

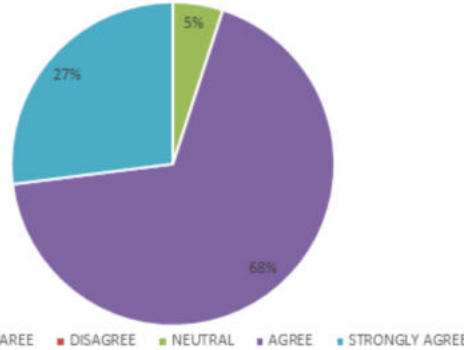


Figure 4 – Distribution Of People Based On Their Interest For Similar Teaching Method In Forthcoming Class.

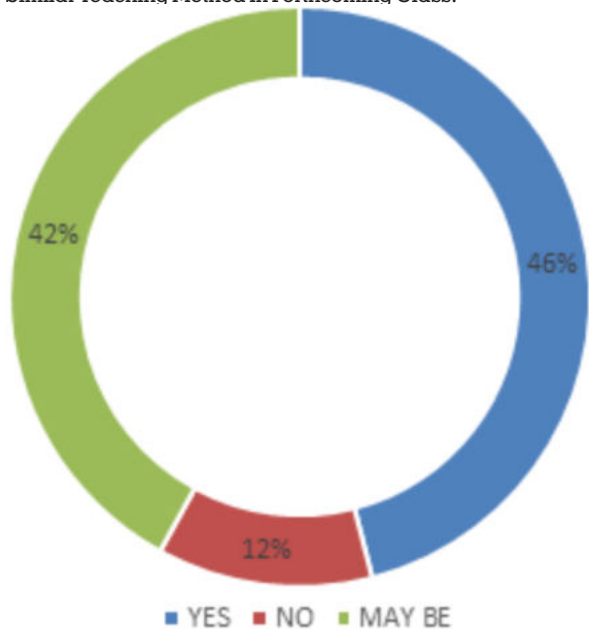


Figure 5 – Distribution Of People When Asked If The Teaching

Resulted In Any Interpersonnel Change Among The Peer Group

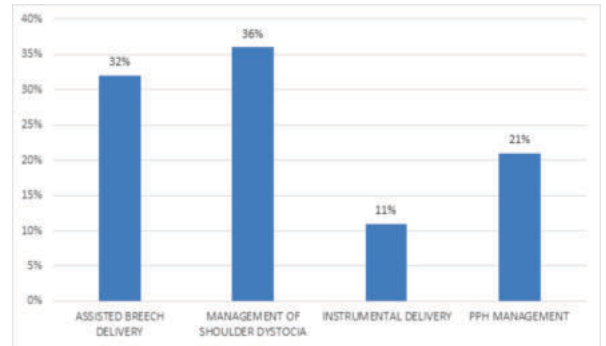


Figure 6 – Distribution Of People When Asked Which Programme They Found It Useful.

DISCUSSION:

In recent times, various researches have been going on in designing the simulation based training [4,5]. Simulation can be used for both undergraduate and postgraduate education which ranges from a simple procedure like a Intravenous line establishment or suturing technique to managing medical emergencies [6]. The Obstetrics emergencies like the other medical emergencies warrants a quick, confident and proper approach to treat. Inorder to achieve it a systematic implementation of simulation has proven to have more advantages over other methodologies without causing any threat to the patients health.

In our study, there was a significant improvement in score from 9.7 in pretest to 12.3 in Post test which was highly significant statistically. 58% of the students had a felt good on the drill conducted and 69% of them felt that the topics covered were complete in content and context. 77% of the students felt they had an active participation on the drill and 68% of them exhibited an enthusiasm for future classes with drill. The drill that was found to be most useful was Shoulder dystocia (36%), followed by Assisted breech deliver (32%) and the least was Instrumental delivery (11%).

In a similar study conducted by Ferguson to assess the clinical competence among 157 first-year medical students through graduation found that mean clinical evaluation scores demonstrated validity coefficients large enough to support their use as part of an evaluation of medical student clinical performance. Studies conducted by Saied et al [7] and Tofil et al [8] concluded that simulation enhances the learning for the students.

Based on the conclusion of various studies, there has been an increased critical thinking and decision making skills by the students. Future development in simulation depends on overcoming issues related to technology, cost and faculty development, as mentioned by So et al [9].

CONCLUSION:

Simulation is a fundamental strategy for current and future challenges in medical education and have various strategies that allows for a efficacious learning. It is a supplement training modality method which should be incorporated by the training institutions for training the students in a interdisciplinary approach to enhance their knowledge, attitude, skills and helps them in resolving dilemmas.

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