Editorial

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Skill Lab in Obstetrics and Gynecology Curriculum—An Advancement in Medical Education Technology

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INTRODUCTION

According to Medical Education Regulations 2018, the new outcome driven competency based undergraduate curriculum goals to create an "Indian Medical Graduate" (IMG), the physician of first contact, having globally relevant knowledge, skills and values.[1] The expected level of a competency is identified as – knows (K), knows how (KH), shows (S), shows how (SH) and perform (P); 'Shows' onwards being skill domains. Skill is the ability of an individual to perform a task. The term 'clinical skills' involves effective communication, examination, reasoning, technical and practical procedures (data interpretation, presentation, documentation, legal consideration, patient the management, resuscitation, team work, administration, leadership, professionalism).[2]

For skill acquisition, maintenance and enhancement, skill labs have become indispensable component of medical education providing safe environment and employing resources like simulated patients, mannequins and information technology which offer realistic portrayals of real life situations.[3] The aim is to provide learning opportunity, assessment and feedback to the students before they are actually exposed to real life situations. Skill labs are also known as clinical skill center, clinical skill training facility, professional skill lab etc.

REASONS FOR CHANGE IN CURRICULUM

There are multiple factors that led to the emergence of need for change in medical curriculum. With time the patients have become more aware of their rights. They no longer agree to be passive participant in the traditional bedside teaching. Also the consent becomes invalid if the patient care and confidentiality is compromised. Moreover ethical issues emerge when genital, rectal or breast examination has to be done. Patients reserve the right to be treated in a safe environment and deserve the quality health care services.

The number of students has disproportionately increased as compared to the number of teachers. The indications for hospital admission have also been changed drastically; more emphasis is given on day care facilities leading to decrease in the number of admitted patients. The fact that admitted patients are really sick

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makes them unsuitable for bedside teaching. Eventually there is depletion of the resources. Early clinical exposure has further increased the burden. A decline in the clinical skills among the students has also been noted due to these constraints. Considering all these changes, medical curriculum was restructured giving more emphasis on the practical skills than theoretical knowledge only. Skill labs void the gap between the theoretical and practical knowledge.

ESTABLISHMENT OF CLINICAL SKILL LABS

In 1976 first clinical skills lab was established in Maastrich, The Netherlands Limburg University.[4] In 9th century a French midwife, Madame du Coudray, created anatomically correct, mannequins of life size babies and female pelvis. She used these to train others in delivery and its related complications.

Establishment and effective functioning of skill labs requires support from Curriculum development committee, faculty members and instructors which in turn actively participate in planning, management and ongoing evaluation of skill labs. The labs should replicate the real clinical environment. It should be located within or close to the hospital area. There should be adequate space for seminar rooms, skill rooms, consultation rooms, office and computer with internet facility, models and simulators. In the skill labs core skills can be taught and learned.

CLINICAL SKILLS TEACHING METHODS

The teaching method required to learn clinical skills may include didactic sessions, demonstration, case scenario, small group teaching, interactive sessions, role-playing, self-directed learning and task-based approach. Audio and video recording is important particularly in the development of communication skills. While choosing educational strategies for skill labs, we adopt SPICES model which is more student-centered, problem-based, integrated, community-oriented, elective and system-based.[5]

Educational resources in skill labs include models; simulators-mannequin-type simulators, dummy type, high-fidelity type, screen-based virtual-reality simulators, human resources (simulated or standardized patients, real patients, volunteers, students) and human cadavers for surgical skill training.[6]

Nowadays, skill labs play vital role in obstetrics and gynecology teaching various procedures using different models and mannequins e.g. birth simulator, gynecological examination simulator, intrauterine contraceptive device (IUCD) insertion and removal model, episiotomy model, baby dolls (dummy), female pelvis, cervical dilatation and effacement models, anorectal examination model, model for catheterization, endotrainers, simulators for teaching ultrasound-guided amniocentesis and managing obstetric emergencies and trauma and manikin for adult and infant resuscitation.

ADVANTAGES

Most of the obstetrical skills like management of complicated vaginal deliveries have become a vanishing art. Management of obstetrical emergencies requires teamwork and lot of medicolegal issues are associated with them as two lives are involved. Also routine examination in obstetrical and gynecological patients raise ethical concerns making bedside learning difficult for the students. Introduction of skill labs in Obstetrics and Gynaecology has many associated advantages.

Ideal Environment

Clinical skill labs create an ideal environment that encourages learning with the ability to rewind, rehearse, and practice without negative patient outcomes.

Debriefing

One can brief about the clinical scenario and its management before any task which is not practical in bedside teaching.

Better and Standardized Training

Learning activities can be made predictable, consistent and standardized using simulators.

Better Learning

Experimental or practical learning is always better than the didactic lectures only. Students have no time restrictions and can practice as and when required. They have no hesitation on rehearsing a procedure like per vaginal examination on the simulators.

Safe Environment

Many studies suggest that 10% of patients admitted to hospital suffer from some kind of harm resulting from the mistakes of health workers. Management of obstetrical emergencies has no scope of error. The use of simulators allows students to learn through their mistakes without compromising the safety of the patients.

Enhancement of the Confidence

Training in skill labs decreases the anxiety of the students, improves their satisfaction level and boosts their confidence. One can practice to conduct breech vaginal delivery (Fig. 1), instrumental deliveries or management of shoulder dystocia on a simulator using proper maneuvers which will improve their confidence, expertise and eventually decrease the cesarean rate.

Better Acquisition and Maintenance of Skills

Clinical skill labs plays pivotal role in acquiring and maintaining a clinical skill with proficiency. Regular workshops on resuscitation protocol and management of post partum hemorrhage (Fig. 2) can help to acquire and maintain the skill. Imbibing good communication skills are important to avoid many medicolegal issues. Endotrainers help to learn laparoscopic skills.

Assessment

The students can get feedback from the teachers and directly through audio visual aids. This helps them to improve upon their skills by repeat practice. Since skill cannot be assessed by written examination, Objective structured clinical examination (OSCE), which can be carried out at the clinical skills labs, has been adopted as method of skills evaluation and assessment.

Fig. 1: Breech delivery simulation

Fig. 2: Skill lab station teaching various hemostatic sutures on dummies

Leadership and Administrative Qualities

No obstetrical emergency can be managed single handedly; it requires a well coordinated teamwork. Role plays like PPH drill and eclampsia drill can inculcate teamwork, leadership and administrative qualities in the students.

SHORTCOMINGS

High Cost

Development and maintenance of simulators and information technology (IT) resources of a skills laboratory is a very expensive undertaking.

Lack of Expertise

Proper back up of instructors and IT professionals is essential to maintain skill labs which is lacking in most of the institutes.

Less Effective Learning

Skills lab learning can never match the real clinical environment learning as simulators cannot completely mimic a true patient. Learning on low fidelity simulators may not be upto mark as the important vital signs are missing which the students in real life situations may forget to record.

Indifferent Attitude of Learners

The approach to a simulator is different as there is no medicolegal issue and no real threat to a life. The learner may not give importance to the most important communication skill and may forget to take the consent.

Insufficient Supporting Evidence

Evidence on the effect and validity of simulation based training is lacking. Results of few studies which are available are also equivocal. The outcome has to be justifiable to invest on this costly affair.

CONCLUSION

Traditional medical curriculum was based on 'see one' 'do one' approach. Depletion of resources results in inadequate clinical training and disconnect between lecture theatre and clinical environment. To meet these challenges, the medical curriculum has been modified and restructured with skill labs being an important tool for teaching clinical skills. Skills lab improve individual performance, team performance and system performance. They help the students to acquire basic skills by the time of graduation and acquire new skills during their carrier in order to become lifelong learner. As far as medical students are concerned, skill labs provide them safe environment to acquire core clinical skills; and from patient's point of view, the pre trained medical students are more acceptable to them. Still the introduction of skill labs faces challenges in terms of resources, infrastructure and administrative support. No doubt skill labs can never provide the ideal clinical environment, but the ideal cannot be always practical.

To conclude, with changing clinical scenario, skill labs have become an important educational tool to master the clinical skills. However they should complement the bedside teaching and not completely replace it.

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Conflict of Interest

There are no conflicts of interest.

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