

Institutional Distinctiveness

Establishment of a Hi-tech, Hi-fidelity simulation training center and Clinical Skills lab

Health Science Education (Medical, Dental, Ayurveda, Physiotherapy and Nursing) has been dealing with two facets that pose dilemma. One that requires exposure to live patients so that the trainees acquire the knowledge, disease presentation and necessary skills to diagnose and treat, other to provide optimal treatment to ensure patients' safety and well-being along with learning. It is also necessary to understand that education in healthscience is a discipline that needs repeated exposures which will help improve skills and confidence of students but, keeping in mind utmost concern about patient safety.

Simulation-based training has provided a classic solution for addressing this dilemma of learning and safety of patients. Simulation based training has added newer prospects to learning by adding training models, life like simulators to traditional didactic teaching. This has also shown to hasten speed of learning, better retention of information, and also gives enough opportunity for the students to learn by repetitive efforts (practice) without harming anyone. And also the simulators give them an opportunity to practice on models themselves instead of being passive observers while the technique is performed on patients by seniors or faculty. Hence simulation based training has become an option in health science Institutions that is used for routine training and also in continuing education programmes that may help improve clinical practice.

Hence keeping in mind the need for training the students in a real life situation without posing threat to the patients, KLE Academy of Higher education and research decided to establish a Hi Tech Hi-fidelity clinical skill laboratory to support Simulation Based training. The center is 10000 sq ft, housed in the campus, furnished with latest state of art simulators in adequate space for training students.

The center is equipped with various dummies/models/task trainers. The simulators that need special mention are, Apollo -an adult simulator that simulates normal adult human patient. It is a wireless, tether less, high fidelity model. This model makes it possible to show the heart sounds, feel the pulse points, and measure blood pressure. The students will be able to learn and relearn respiratory and cardiovascular examination. Insertion of various tubes like nasogastric tubes, chest insertion tube, urinary catheterization. Some emergency situations, case scenarios have been created with the help of computers. Students enjoy trauma care situations where they learn to manage trauma emergencies. The common training modules created in the lab are Basic Life support (BLS), Advanced cardiac Life support (ACLS). Because, some procedures are difficult to do at the first time in a live patient. Instead if these are practiced on a mannequin repeatedly the person will be confident in a real case scenarios. CAE Lucina, where in ante natal examination, intra partum management, labour management, post partum situation like classic post partum haemorrhage can be learnt. Fetal heart sounds and uterine activity along with CST can be elicited. Another important simulator is Luna, an infant simulator. It can control airway sounds, breathing, rhythm and show various rhythm disturbances. Students can also practise synchronised cardio version and defibrillation. This mannequin has anatomically accurate oral cavity and realistic airway so students can perform endotracheal intubation/ inserting LMA/ inserting ICD/ decompressing pneumothorax/ putting iv ia lines/intraosseous line/ umbilical

catheterisation/ demonstrating pupillary constriction and dilatation/ demonstration of bulging or depressed anterior fontanelle. Surgical Simulation Room – Lap trainer introduces the students to essential skill module comprised of minimally invasive surgical skills including camera navigation, peg transfer, clipping and needle driving in surgical procedures. All these and many more have been used to train the students on IV injection, resuscitation, birthing, handling of newborns, ear examination etc. and have made the students training meaningful. Trained faculty has been able to guide the students through procedures, simple and effective surgical procedures, complex medical situations etc. Thus learning and relearning in order to fine tune the skills is made possible for students of Medical, Allied Health science, Physiotherapy, Nursing because of this setup.

Apart from this the training in Dental College includes training the students on Phantom Heads, simulators that mimic the oral cavity. Students practice the techniques of tooth restoration, tooth preparation, crown preparation etc on these before handling the patients in clinics. The students of Pharmacy have a Pharmacy set up to train the students on Clinical Pharma and so do the students of Physiotherapy that have excellent set up of physical therapy tools for adults, children and toddlers that makes them ready to handle patients with more confidence.

Thus clinical skill Laboratories for simulation based training has been able to bridge the gap in practice by intensifying training through repetitive clinical-simulated practice. It has been able to help students learn techniques in many ways by replacing and amplifying real experiences with help of simulators thereby protecting patients from unnecessary risks.

KAHER is one of the few Institutes that has prevalent learning culture influencing the way in which people learn. Establishment of a Hi-tech, Hi-fidelity simulation training center and Clinical Skills lab has been one such way that has shown to improve the quality of learning and T-L more successful.