Editorial

Clinical Skills Laboratory (CSL) - a Modern Tool of Medical Education

Introduction:
Clinical skills laboratory (CSL) is a type of medical educational tool which proved its beneficial effect in undergraduate and postgraduate medical education. CSL provides a safe and protected facility to the learner in which they can practice the procedures before applying it on real patient. The CSL includes physical examination, procedural training, history-taking, building team work, effective communication and learning professionalism.[1] This teaching tool was first started in the Netherlands Limburg University of Maastrich in the year of 1976. After that the Universities of Liverpool, Dublin, Dundee, Southampton, Imperial College and Leeds have incorporated CSL in their medical curriculum. In the Asia, United Arab Emirates University first established CSL in their curriculum in the year of 1988.[2]

Table 1: Different skills practiced in CSL.

Name of the skills practiced in CSL
- Procedural techniques - Patient management - Physical examinations - History taking - Building team work - Interpreting investigational team - Communication skill - Teaching and learning methodology - Attitudinal awareness and professionalism.

In the modern medical education system CSL is also called as clinical and communication skill center. Apart from skill teaching, communication practice is also taught in CSL. According to the educational strategy the CSL could be of different types.[3] They are:

1. Self-directed learning
2. Student-centered
3. Problem-based learning
4. Outcome based education
5. Community oriented
6. Multi-professional

Different methods and resources are used in CSL. Audio and video components are important in the communication teaching. The participant groups could be small group or large groups. The skill teaching resource are of various types. Such as-

1. Role play
2. Simulated patients
3. Real
4. Standardized
5. Manikin

Structure of CSL area:
The CSL setups are mostly established in medical schools / colleges and Universities. In the year 1996, proposal was made to launch satellite centers of CSL in peripheral clinics and community based setup with the linking with the higher centers.[4]

Usually large area is required for an ideal laboratory which comprises of seminar area along with small rooms for interviews. Different types of clinical setting such as emergency room, ICU cubicle, counselling room, procedure practice rooms are to be included in the clinical skills laboratory apart from the simulations or manikins. There should be flexibility in the structure so that the floor area can be converted to different set up if required. This is very important that the set up should look very much realistic for the clinical scenarios.

Four types of simulators are usually used-

1. Part-time trainer
2. Simulated patients and environments
3. Integrated simulators
4. Computer-based system
   - Multimedia program
   - Interactive system
   - Virtual reality

Advantages and disadvantages:

The advantages of CSL in modern medical education is enormous. This provides a great opportunity to the medical students to learn the procedures in protected and safe environment. It reduces the gap between the classroom and clinical setup. The theoretical component is integrated with the skill by this procedure. During the skill training no patients feel stressed or embarrassed which makes the trainee more comfortable. Computer assisted programs gives detail audio visual information to the trainee which helps to build strong residual knowledge. This can be used as modern assessment tool like objective structured clinical examination (OSCE) all through the year as well as during the examination. Private part examinations learning are performed without disturbing the patients and compromising cultural barrier.[5]

There are few disadvantages also. Full time well groomed trainer to be appointed for smooth running of CSL. The training manikins and other simulator resources are expensive and sometimes are not affordable to many institutions. As the examination and procedures are taught without real patients so the holistic or spiritual relationship between physician and patients are not addressed here.[6]

Different type of simulators:

The commonly used simulation-based resources are-

1. Plastic model for partial task training (intubation, catheterization etc.)
2. Mannequin type simulators (ATLS, physical examination etc.)
3. Live or inert animals with isolated organs.
4. Human cadavers for surgical training (mastoid surgery, skull base surgery etc.)
5. Simulated and standardized patients (history taking, physical examination, counselling etc.).
6. Screen based software based virtual reality simulators.

Mannequin simulators were invented in 1950s mainly to teach resuscitation. There are of two types of mannequin simulators, dummy-type and high-fidelity type. Dummy type mannequins are used in teaching basic life support (BLS), advanced trauma life support (ATLS), endotracheal intubation and cardiac defibrillation training mainly. The high-fidelity simulators are mainly computer software controlled. They capable in showing some physical status like blood pressure, heart rate, respiratory and heart sound, pupillary diameter and movement of upper limbs. Modern high-fidelity mannequins can display the change of the vitals like heart rate, blood pressure, pulse, bowel sounds after any physiological or pharmacological stimulation.[7]

Conclusion:

Clinical skills laboratory is a unique addition to the modern medical education. Developing skill in safer way can be obtained by this teaching tool. In the Bangladesh context basic skills are scheduled to be taught in the third year MBBS course curriculum. Incorporating CSL in the third year bed-side ward placement rotation can improve the quality of skill/ procedure teaching in the undergraduate medical education.

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