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Clinical Skills Education - Why, What & How?

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ABSTRACT:
Skill is the ability to use ones knowledge effectively and readily in execution or performance. With he latest CBME curriculum in medical schools the importance of skill has increased highly. Till now in medical colleges more importance is given to the knowledge sharing and procuring. Mastering the knowledge along with performing the activities make the students confident. An attempt is made by this study to emphasise the importance of skill attaining along with the knowledge.

I. INTRODUCTION:

Knowledge is not enough: we must apply
Willing is not enough: we must do
- **Von Goethe**

Knowledge is a familiarity, awareness, or understanding of someone or something, such as facts, information, descriptions. Skill is acquired through experience or education by perceiving, discovering, or learning. Knowledge can refer to a theoretical or practical understanding of a subject. Skill is the ability to do a particular task. What is the difference between knowledge and skill? ---

DOMAIN	KNOWLEDGE	SKILL
Teacher role is as	Lecture	Mentor
Activity centre is around	Teacher	Learner
Learning opportunity	Anytime	Limited
Learning Increment	Variable size	Discrete & Well defined
Assessment & Feedback	Anytime	As soon as possible
Setting	Almost anywhere	Clinical/simulated
Need for repetition	Variable	Mandatory

In medical college we are continually encouraged to master a common body of knowledge and we are not as expected to master the clinical skills. The Purpose of Undergraduate Medical Education should be to provide for the development of the knowledge, skills and values necessary to undertake the life-long responsibilities as a physician. Does our curriculum emphasis on only knowledge or on skills education also ?

Why the emphasis on skills education should be there?
- Patient care is an applied activity
- Performance emphasis is increasing at all levels of our professional activity
- Medical school skills education has been slipping

The 3 competencies that students bring in varying degrees of development to medical college should be :
1. Professionalism
2. Patient engagement & communication
3. Scientific knowledge & methods to apply that learning

In skills education
- The accent is upon learner doing
- Upon the application of knowledge and understanding to an intellectual psychomotor or effective activity.

This study is done to emphasize the importance of students understanding the skill to practise medicine.

II. MATERIAL AND METHOD:

A total of 90 voluntary participants were included for the study. The participants are first year medical students from Apollo Institute of Medical Sciences and Research, Hyderabad. The study is conducted after obtaining ethical clearance from the Institute research committee. A pre-test is conducted for the students with a questionnaire which included the basic clinical procedures, indications & contraindications for the procedures and the method to perform these procedures.

The clinical procedures included are :

1. Pulse rate monitoring
2. Blood pressure monitoring
3. Intramuscular injection
4. Intravenous injection
5. Venepuncture
6. Bladder catheterisation – Male & Female
7. Nasogastric tube insertion
8. Surgical suturing
9. Endotracheal tube intubation.

The pretest data is collected and analysed. Later the students were shown the videos of all the procedures and reading material of all the procedures is been provided. The videos of the various procedures are collected from various channels and edited accordingly.

After a day post test was conducted this included the same questionnaire as the pre test. The responses given in this are compared with the pre test answers.

Questionnaire:

1. Basic parameters :

a) Pulse rate –

- Limb used commonly
- Preferable vessel
- Position of person

b) Blood pressure –

- Limb used commonly
- Preferable vessel
- Position of person
- Does the cuff size change with age

2. Intramuscular injection

A. Most preferred site in

- ✓ Adults –
- ✓ Children-

B. Bevel of needle should be directed

- ✓ Upwards
- ✓ Downwards

C. Before injecting the drug withdraw the syringe – Yes/No

D. When vaccines are given should the area to be cleaned with spirit – Yes/No

3. Intravenous injection - Most preferred site

4. Venepuncture-

A. Most preferred site

B. Indications

5. Bladder catheterisation – Male ; Female

A. Name the catheter commonly used

B. Amount of saline to be sent to blow the balloon

C. In how many days catheter should be changed to prevent infections

D. Indications

E. Basic contraindication in which catheter cannot be used

F. Types of catheters available

G. Urinary catheter sizes
6. Nasogastric tube insertion
A. Position of the patient
B. What is the normal length of the tube
C. How to measure the level till which the tube should be passed
D. Indications
E. Contraindications
F. Types of nasogastric tubes
7. Surgical Suturing
A. Types of sutures available
B. Commonly used suture material
C. The suture end is trimmed at which length
D. Most common method
E. After how many days the sutures are to be removed
8. Endotracheal tube intubation
A. Indications
B. Contraindications
C. Till what level the tube should be passed

III. RESULT:

Post test responses show a difference in the knowledge about these clinical procedures. The students had a better idea to perform the various procedures and could know indications & contraindications of the same. So during the routine curriculum schedule if the clinical importance and the method or technique to do various basic life savings procedures are demonstrated to the students it creates interest and they will have better orientation. It is recommended to add such skill orientation classes from the early stage so that students will have an integrated learning of the basic subject and clinical procedures.

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Post test	13.68	84	3.151	.344
Pretest	9.67	84	2.538	.277

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Post and pretest	4.012	4.224	.461	3.095	4.929	8.705	83	.000

IV. DISCUSSION:

Clinical skills orientation education will make difference in clinical leaner performance. The purpose of a clinical skills curriculum is to articulate an explicit set of clinical competencies to be mastered by medical students as part of undergraduate medical education. Medical schools should implement a clinical skills curriculum so that the student's developmental nature of learning will improve.

General principles of skill learning and leaching include:

- It has a clear and specific purpose
- It reinforces knowledge and understanding
- It must be demonstrated well
- An opportunity to try it out
- An opportunity to practice it
- Coaching (observation)
- Useful evaluation and helpful to get feedback
- Emphasis upon self-directed initiative
- Confidence-building opportunity in direct patient care

Educators have articulated explicit developmental models of skill learning that create a useful framework when considering student skill acquisition. Pangaro's RIME schema, Miller's Learning Pyramid, and Dreyfus' competency level model are frequently applied in the context of defining skill acquisition in medical education. Pangaro's RIME schema (1) describes the developing clinical role of the learner. Miller's pyramid (2) refers to the type of demonstrated learning, and Dreyfus' model (3) relates to the general level of skill performance. While each of these models may not always be applicable to every skill objective, the task force suggests that combining components of these different models may help to more specifically define the appropriate skill outcomes for the developmental level of the learner.

A number of medical education organizations have developed formal or informal task forces to look specifically at preinternship clinical skills education (4-6). Until this time, however, there has been no national consensus regarding the clinical skills that medical students should learn prior to starting the clinical clerkships.

The clinical skills are generally taught in senior years of study, and there is a heavy burden on students to master a large number of skills over a short period of time. The possible solution for this can be :

First phase: Explanation of the rationale for the procedure, equipment, instruments and materials used .

Second phase: Skill practice in the Clinical Skills Laboratory (CSL)

Third phase: Skill practice in clinical setting, first to observe, and finally to perform

Catalogue of some of Clinical Skills:

- Application of bandage
- Assessment and care of injuries (wounds, bleeding, burns, distortion, dislocation, fractures)
- Basic life support: assessment, breathing, circulation, defibrillation
- Heimlich manoeuvre
- Temporary haemorrhage control (direct pressure, pressure point, pressure bandage)
- Transport to casualty

V. CONCLUSION:

The modern medicine should be characterised by activity and not only by scientific teaching. The student no longer merely listens and memorizes but his activities in the laboratory and clinic are also important. An education in medicine should involve not only learning but also learn how , why and what.

I believe that training of clinical skills can be significantly improved, through (7):

1. Changes in institution values
2. Introduction of mentorship and clinical instructors structure
3. Flexible timing of training
4. Extensive use of training laboratories
5. Graduate learning that start in the first year of study
6. Introduction of Catalogue, Practicum and logbook
7. Multilevel assessment and strict control – all skills should be adopted at the end of study

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