

ORIGINAL ARTICLE

EFFECT OF PRECLINICAL SKILL LAB TRAINING ON CLINICAL SKILLS OF STUDENTS DURING CLINICAL YEARS

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Background: Integration of clinical and preclinical teaching results in improvement of clinical acumen and better understanding of basic medical sciences. Keeping this in view, it was aimed to determine the efficacy of clinical skill lab (CSL) training during preclinical years on acquirement of clinical skills by the medical students. **Methods:** It was a descriptive study carried out at Foundation University Medical College. Based on convenience sampling, 4th year students who had received CSL training were compared with the 5th year students who had not received CSL training. Evaluation proforma was used. Students graded their clinical skills between non-satisfactory to excellent based upon recall. **Results:** Ninety-six students responded, 47 from 5th year and 49 from 4th year. Sixty-seven percent students of 4th year considered that CSL sessions benefitted them in ward learning. Seventy-three percent students rated their history-taking and general physical examination skills as very good. Eighteen percent of 5th year students graded them as good. For systemic examination and basic life support (BLS), 66% of 4th year and 82% of 5th year graded them satisfactory. Overall ward performance was rated very good by 60% of 4th year and 36% of 5th year students. However, 33% of 4th year and none from 5th year students rated it excellent. Improvement in communication skills was observed by 53% of 4th year and 45% of 5th year students; and 53% from 4th year and 36% from 5th year felt improvement in their confidence level. **Conclusions:** CSL sessions during preclinical years greatly benefit the students in clinical years to improve overall performance, communication skills, and confidence.

Keywords: Clinical skill lab, Medical education, Integration, Communication skills, BLS, Hospital ward

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INTRODUCTION

With the modernization of medical sciences, various new methods and techniques have been introduced in the medical curriculum. The basic aim is to enhance psychomotor skills, cognitive thinking, professionalism and effective communication skills of the medical students in order to provide safe, competent and skilled doctors to the society.¹ Introduction of Clinical Skill Lab (CSL) in medical schools is one of the techniques which can ensure that modern health care professionals acquire all the competencies necessary for delivering the best medical care to the patients. Clinical Skill Lab provide a standardized, safe and protected setting to the medical students where they acquire, learn and practise ethical standards, structured clinical skills and techniques using manikins and simulated patients before applying them on real life patients. It is mandatory for the future doctors to be well equipped with ethical and moral values, to gain more comprehensive understanding of clinical skills and to execute proper decision making competencies.²

The history of CSL dates back to 1976, when it was established in Maastricht, The Netherlands Limburg University.^{3,4} Since then all the medical schools and universities across the globe have regularly incorporated CSL sessions in their curricula. Studies have shown that CSL training has played significant role in complimenting bedside teaching, decreasing students'

anxiety and boosting their confidence during clinical training.⁵

In order to keep pace with the transformation in medical technology, CSL teaching was introduced at Foundation University Medical College in year 2012 as part of regular, integrated curriculum. In addition to traditional preclinical teaching of basic medical sciences, all the students of 1st year MBBS in 2012 were introduced to 2 hour weekly sessions of clinical skills in small groups at CSL supervised by qualified faculty from medicine, surgery and other clinical specialities. A study conducted by Liaqat *et al*, in 2011 on these students revealed that integration of clinical teaching in form of Small Group Interactive Sessions (SGIS) at CSL, resulted in marked improvement not only in clinical skills but also in basic medical sciences.⁶

It is, therefore, need of time to analyse whether the CSL sessions in our institute are bridging the gap between clinical and preclinical teaching and whether our students are benefitting from the CSL sessions. It was hypothesized that regular sessions on communication skills, history taking and examinations during preclinical years at CSL can impart a better effect on students during their clinical rotations in 4th year and 5th year MBBS.

Study was conducted to determine the efficacy of CSL training during 1st and 2nd years on acquirement of clinical skills during 4th and 5th years through self-perceived proforma by the medical students.

MATERIAL AND METHODS

After the ethical approval from Ethical Review Committee of the Institute, a cross-sectional questionnaire based descriptive study was carried out at the Department of Physiology, Foundation University Medical College, Islamabad. In order to determine the efficacy of clinical skills, based on convenience random sampling, 4th year students of session 2012–16 who had received preclinical training in CSL were compared with the 5th year students of session 2011–15 who had not received the preclinical training in CSL. After obtaining informed consent, they were asked to fill up a printed, structured questionnaire. The questionnaire was pretested on 30 students in the pilot study who were not included in the main study. Evaluation proforma contained questions regarding history taking, communication skills, Basic Life Support (BLS) and examination skills. Students were asked to grade their skills regarding history taking, communication skills, BLS, and examination of patients when they were in 3rd year, based upon their recall. The students of 4th year were taught these skills in their weekly sessions of CSL in 1st and 2nd years on simulated patients. However, 5th year students were taught these skills for the first time on real patients during their clinical rotations in wards in 3rd and 4th year. Their response was graded on scale 1–5, with 1 being not satisfactory and 5 being excellent. The data were analysed using Microsoft Excel. Frequency and percentage were calculated for each category of Likert scale responses.

RESULTS

A total of 96 students responded of which 49 students were from 4th year and 47 from 5th year. Thirty-one (67%) students from 4th year were of the opinion that CSL labs sessions had benefitted them in learning clinical skills in wards. Thirty-six (73%) students rated their history taking and general physical examination (GPE) skills as good and very good in clinical sessions. Only 8 (18%) students from 5th year graded them to be good. For skills like systemic examination and Basic Life Support (BLS) 32 (66%) students from 4th year and 38 (82%) students from 5th year graded them as satisfactory. For overall performance in wards 29 (60%) of 4th year students and 16 (36%) of 5th year students rated themselves as very good. Thirty-three percent students from 4th year graded their overall performance in wards as excellent, and 64% from 5th year rated it as satisfactory. None of the 5th year students rated it as excellent. Improved communication skills were observed in 53% of 4th year and 45% of 5th year students by grading very good. Fifty-three percent of 4th year students graded their confidence in wards as very good, and 36% of 5th year students graded their confidence level in wards as good.

Table-1: Responses of 49 students in 4th year (%)

| Parameter | Not satisfactory | Satisfactory | Good | Very Good | Excellent |
|----------------------------|------------------|--------------|------|-----------|-----------|
| History taking | 10 | 17 | 23 | 50 | 0 |
| GPE | 5 | 22 | 28 | 45 | 0 |
| Systemic examination | 8 | 64 | 28 | 0 | 0 |
| BLS Skills | 15 | 66 | 19 | 0 | 0 |
| Communication Skills | 5 | 15 | 27 | 53 | 0 |
| Overall ward performance | 0 | 2 | 60 | 5 | 33 |
| Confidence levels in wards | 18 | 12 | 17 | 53 | 0 |
| CSL training beneficial | 5 | 3 | 25 | 67 | 0 |

Table-2: Responses of 47 students in 5th year (%)

| Parameters | Not satisfactory | Satisfactory | Good | Very Good | Excellent |
|----------------------------|------------------|--------------|------|-----------|-----------|
| History taking | 64 | 16 | 18 | 2 | 0 |
| GPE | 66 | 10 | 18 | 4 | 0 |
| Systemic examination | 14 | 82 | 4 | 0 | 0 |
| BLS Skills | 12 | 82 | 6 | 0 | 0 |
| Communication skills | 50 | 5 | 45 | 0 | 0 |
| Overall ward performance | 64 | 30 | 6 | 0 | 0 |
| Confidence levels in wards | 58 | 6 | 36 | 0 | 0 |
| CSL training beneficial | 3 | 19 | 0 | 78 | 0 |

DISCUSSION

Clinical skill laboratories provide a structured setting for acquiring the bedside techniques and methods thus influencing the learning abilities and cognitive skills of the students. Being a multidisciplinary educational facility it enables students to learn clinical methods from skilled health professionals without affecting the overall patient care thus providing medical student a strong foundation for clinical years.⁷ Students attending CSL sessions perform better in clinical sessions. In a study at King Saud University, Saudi Arabia, majority of students considered CSL sessions as useful and satisfactory.⁸ In present study, 67% students from 4th year and 78% from 5th year considered CSL sessions beneficial while 60% students of 4th year who had attended CSL sessions in preclinical years considered that their overall performance markedly improved during clerkship years due to CSL training.

In present study, it is evident from the response of majority of students that by introduction of CSL sessions during preclinical years, students observed improvement in their communication skills with patients as well as boost in their confidence levels when actually dealing with patients. The results are consistent with the existing literature where increased confidence has been observed among the students who practiced complex motor skills and patient encounter skills in groups during pre-clerkship training sessions.^{3,9}

The majority of 4th year students who attended the CSL sessions during preclinical years reported better history taking and clinical examination skills compared to 5th year students who didn't attend the CSL sessions. These findings are consistent with various studies that CSL is more effective mode of teaching because it provides a perfect setting for acquiring clinical skills by ensuring equal learning opportunities.^{3,4} Thus, students trained with CSL sessions have better psychomotor, cognitive and communication skills compared to traditional mode of teaching.¹⁰

CONCLUSION

CSL sessions enhance the clinical skills and patient handling and act as a beneficial tool in improving not only the overall performance and communication skills of the students, but also boost their confidence level in clinical settings. Emphasis should be put on introducing more flexible, updated and improved CSL sessions that can mimic the true picture of clinical settings and real life scenarios thus bridging the gap between preclinical and clinical learning.

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