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Original Research Article

PERCEPTION OF INDIAN MEDICAL STUDENTS REGARDING TRAINING IN SKILL LAB ACCORDING TO CURRENT COMPETENCY BASED MEDICAL EDUCATION GUIDELINES: A CROSS-SECTIONAL SURVEY

Kshatrapal Prajapati[1], Kiran Thorat[2], Vivek Kumar[3], Ila Gujaria[4]

[1]Associate Professor, Department of Community Medicine, SRVS Government Medical College, Shivpuri, Madhya Pradesh, India
[2]Associate Professor and Head, Department of Physiology, SRVS Government Medical College, Shivpuri, Madhya Pradesh, India
[3]Assistant Professor, Department of Anatomy, SRVS Government Medical College, Shivpuri, Madhya Pradesh, India
[4]Professor & Head, Department of Anatomy, SRVS Government Medical College, Shivpuri, Madhya Pradesh, India

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Corresponding Author:
Dr. Ila Gujaria,
Email: igujaria@gmail.com

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Abstract

Background: Clinical skills are essential for clinicians to effectively manage patient encounters. Clinical skill laboratories offer medical students and staff the opportunity to learn and practice these skills before applying them in real patient settings. This study aimed to evaluate the perception of medical students regarding skill lab training at an Indian Medical College. **Materials and Methods:** A total of 156 Final Year MBBS students participated in the study using convenient sampling. Questionnaires were distributed to the students after obtaining their informed consent. The questionnaire consisted of two parts: the first part collected demographic data, while the second part included 18 questions to assess the students' perception of skill lab training. Responses to the 18 questions were measured on a four-point Likert scale ranging from strongly disagree to agree. **Result:** The mean age of the participants was 23.6 years. Majority were female. The majority of students preferred practicing in the skill lab before working with actual patients. They also expressed the importance of having friendly and helpful mentors during teaching sessions. Most students believed that procedures in the skill lab should be demonstrated by mentors before students practice them. Most thought that practical skill training enhanced their learning. Majority of students felt that skill lab training increased their motivation to become doctors and it provided a sense of security in the learning process, and it should be a compulsory part of the medical curriculum, ideally starting from the first year. **Conclusion:** The study revealed that medical students perceive skill lab training as highly beneficial. They prefer practicing on manikins before interacting with actual patients, emphasizing the importance of skill lab training in medical education.

INTRODUCTION

Today, medical students have underperformance in their clinical skills because of decline in bedside teaching. The seniors spent less time in rounds because of their other responsibilities leading to decrease in bedside teaching. Therefore, there should be some alternate options for the betterment of clinical skills of medical students. Clinical Skill lab (CSLs) is a valuable place for the students to acquire clinical skills as it provides opportunities to practice essential medical skills on manikins in a systematic and safe way before dealing with the patients. Such skill learning opportunities enable students to train themselves via effectual educational facilities according to their own individual requirements. High efficiency and cost effectiveness are one of the striking features of working in skill labs.[1-3]

The National Medical Commission (NMC) of India has indeed issued guidelines for the development of skills laboratories at medical colleges. These guidelines outline the requirements and standards for setting up and operating skills labs, ensuring that medical students receive comprehensive training in clinical skills before interacting with patients in real clinical settings. The skills lab guidelines cover various aspects such as infrastructure, equipment, staffing, curriculum integration, assessment methods,

and quality assurance measures to ensure that medical education meets international standards and prepares students effectively for clinical practice.[4]
Practicing the skills, repeatedly in CSLs enhance the learning abilities of students and it led to increase expertise and confidence level, decrease anxiety and have feeling of security among students. Furthermore, non-technical skills like communication, leadership and decision making is also improved by doing these clinical skills. The students are able to differentiate between, "knowing" and "doing" which definitely influences the outcomes in clinical setting.[5-9]
The aim of the study was to evaluate perception of students of an Indian Medical College regarding skill lab training so that we can do need-based changes and get better setup for improving the learning of medical students.

MATERIALS AND METHODS

A cross-sectional study was conducted on 156 final-year students of an Indian Medical College using convenient sampling. Verbal consent was initially obtained from all students as part of ethical practice, followed by data collection using a self-administered closed-ended questionnaire. The questionnaire included demographic information and 18 questions on students' perception of skill lab training, detailed in [Table 1].
The reliability of the questionnaire was assessed using Cronbach's alpha test, which yielded a value of 0.72, indicating satisfactory reliability. A total of 175 questionnaires were distributed, and 156 students responded. The questionnaire utilized a Likert scale ranging from strongly agree, agree, disagree and strongly disagree. Data analysis was performed using SPSS version 20, with frequencies and percentages calculated for categorical data and mean and standard deviation for continuous data. The Chi-square goodness-of-fit test was used to analyze levels of agreement, with a significance level set at $p < 0.05$.

RESULTS

The average age of 156 students was 23.6 years, with the youngest being 22 years old and the oldest 25 years old. Among them, 62 students (39.75%) were male, while 94 students (60.25%) were female.
[Table 1] displayed the frequencies and percentages of other responses related to skill lab training items. The p-value indicating the level of agreement for all variables concerning perceptions of skill lab training was found to be < 0.05, signifying statistical significance. The mean and standard deviation for each item were presented separately in [Table 2].

Table 1: Students' perception about Skill Lab training

Statement	Strongly Agree & Agree		Strongly Disagree & Disagree	
	n	%	n	%
I prefer practicing in a skill lab before performing procedures on patients.	148	94.87	8	5.13
I believe that mentors should be friendly and helpful during teaching sessions.	148	94.87	8	5.13
Engaging in skill lab practice boosts motivation for pursuing a career in medicine.	129	82.69	27	17.31
Students require guidance and attention from mentors.	126	80.77	30	19.23
It's beneficial for mentors to demonstrate procedures to make them easier for students.	146	93.59	10	6.41
I've developed a professional approach through skill lab experiences.	97	62.18	59	37.82
Active participation in skill labs improves performance during patient care.	133	85.26	23	14.74
Skill laboratory training enhances confidence.	138	88.46	18	11.54
Skill lab training is essential in medical education.	137	87.82	19	12.18
Preparing mentally for skill lab learning is important.	126	80.77	30	19.23
Starting skill lab training early in medical education is crucial.	137	87.82	19	12.18
Skill lab training proves to be useful.	138	88.46	18	11.54
Feedback from teachers about skill performance is valuable.	119	76.28	37	23.72
Practical skills are better learned through hands-on training.	140	89.74	16	10.26
I anticipate being able to perform clinical skills under supervision by the end of the course.	138	88.46	18	11.54
I aim to apply clinical skills independently on patients.	130	83.33	26	16.67
Skill lab practice instills a sense of security during the learning process.	140	89.74	16	10.26
Practical skill training leads to better learning outcomes.	141	90.38	15	9.62

Table 2: Mean scores of each item in Questionnaire

Statement	Mean ± SD
I prefer practicing in a skill lab before performing procedures on patients.	3.6 ± 0.6
I believe that mentors should be friendly and helpful during teaching sessions.	3.4 ± 0.6
Engaging in skill lab practice boosts motivation for pursuing a career in medicine.	3.2 ± 0.7
Students require guidance and attention from mentors.	3.0 ± 0.7
It's beneficial for mentors to demonstrate procedures to make them easier for students.	3.4 ± 0.6
I've developed a professional approach through skill lab experiences.	2.9 ± 0.8
Active participation in skill labs improves performance during patient care.	3.2 ± 0.7
Skill laboratory training enhances confidence.	3.2 ± 0.6
Skill lab training is essential in medical education.	3.3 ± 0.7

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Preparing mentally for skill lab learning is important.	3.1 ± 0.7
Starting skill lab training early in medical education is crucial.	3.5 ± 0.7
Skill lab training proves to be useful.	3.3 ± 0.7
Feedback from teachers about skill performance is valuable.	3.0 ± 0.8
Practical skills are better learned through hands-on training.	3.3 ± 0.7
I anticipate being able to perform clinical skills under supervision by the end of the course.	3.1 ± 0.7
I aim to apply clinical skills independently on patients.	3.1 ± 0.7
Skill lab practice instills a sense of security during the learning process.	3.3 ± 0.6
Practical skill training leads to better learning outcomes.	3.3 ± 0.7

DISCUSSION

Skill laboratories play a crucial role in medical education by bridging the gap between theoretical knowledge and practical clinical skills. In these laboratories, medical students not only acquire clinical skills but also gain confidence and valuable experience essential for their future careers in the medical profession.

This study aimed to evaluate students' perceptions regarding skill lab training. Over 90% of the students expressed a preference for practicing in skill laboratories before interacting with real patients. More than two-thirds of the students believed that practical skills training significantly enhances learning, a sentiment supported by a study conducted in Nepal by Narata et al.[10] Students felt that their learning was optimized when skills were initially demonstrated by mentors, and they desired to perform these skills under the guidance of welcoming and supportive mentors. These findings were consistent with observations from Merel et al,[11] and Ingebjorg et al., emphasizing the importance of teamwork, practical skills training, and mentorship in enhancing learning.[12]

The majority of students in our study found skill lab training to be highly beneficial, increasing their motivation to excel as clinicians. This aligns with the findings of Rizwan Hashim et al., indicating that skill lab training not only boosts students' motivation to pursue a medical career but also provides tangible benefits to their skill development.[13] Other studies by Soliman et al., Ingebjorg et al., and Dorte et al. also supported the notion of the usefulness of skill lab training before clinical practice.[11,14,15]

Students reported that their confidence levels significantly increased after participating in skill lab activities. Similar conclusions were drawn by Rahul et al. and Ayse Demiray et al., who noted improvements in communication skills, self-esteem, and confidence following skill lab training.[16,17]

The consensus among students was that skill lab training should be a mandatory component of medical education, commencing from the first year of study to integrate theoretical knowledge with practical performance. This viewpoint was shared by Rahul et al. and Trung Quang et al., emphasizing the importance of early exposure to skill lab training in medical education.[15,18]

A secure and protected environment is crucial for effective learning of clinical skills, and students felt a strong sense of security while practicing on manikins. This sense of security was noted in studies by Ingebjorg et al. and Rizwan Hashim et al., where students felt confident in their training environment without the risk of harming real patients.[12,13]

In conclusion, skill lab training should be promoted in medical institutions from the outset of medical education to foster professionalism, boost confidence, alleviate anxiety, and enhance the learning and refinement of clinical skills among medical students.

CONCLUSION

The study concluded that students were supportive of skill lab training and viewed it as extremely valuable. They expressed that skill lab training provided them with a sense of contentment and served as an inspiration for them to strive towards becoming competent doctors.

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