

THE RELEVANCE OF THE PRECLINICAL CURRICULUM DURING CLINICAL PRACTICE: INTERNS' PERSPECTIVE IN A GOVERNMENT MEDICAL COLLEGE

Seema Deepak ^{*1}, K.R. Dakshayani ², Manjunatha S.N ³.

^{*1} Associate Professor, Department of Anatomy, M.M.C & R.I, Mysore, Karnataka, India.

² Professor & Head, Department of Anatomy, M.M.C & R.I, Mysore, Karnataka, India.

³ Associate Professor, Department of P & S M, M.M.C & R.I, Mysore, Karnataka, India.

ABSTRACT

Background, context and the purpose of the study: Majority of the Indian medical colleges are following conventional discipline based curriculum with least interdisciplinary integration. Medical educators are of the opinion that lack of integration in the traditional curriculum has resulted in poor learning outcomes and students perceive the basic science subjects as irrelevant during their clinical practice. The present study was undertaken to explore interns' perception about the relevance of preclinical curriculum during clinical practice.

Objectives: To analyze interns' perception about the relevance of preclinical subjects and practical training during clinical practice.

Materials and Methods: This cross sectional study was conducted at Mysore Medical College and Research Institute, Mysore using a pre validated, predesigned questionnaire containing 37 items administered to 50 interns. Descriptive statistics was applied and the results are presented as percentages.

Results: 70% of our students perceive preclinical subjects provide basic foundation for clinical skills / procedures. 46% feel that the curriculum lacks clinical relevance. 90% had to refer basic science subjects during their later years. 54% felt the need for clinical exposure in the first professional year. With regard to the practical training, the students are of the opinion that the basic clinical examination skills that were taught were very helpful. Further the students prefer to interpret the results than to perform some of the practical exercise that requires technical skills.

Conclusion: The study revealed the positive perception of students towards preclinical subjects and the areas for improvement.

KEY WORDS: Preclinical Curriculum, Medical Students, Perceptions.

Address for Correspondence: Dr Seema Deepak, Associate Professor, Department of Anatomy, M. M.C & R.I, Mysore- 570001. Karnataka, India. Ph: 9844616603

E-Mail: seemadeepakmysore@gmail.com

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INTRODUCTION

Majority of the Indian medical colleges are following conventional discipline based curriculum with least interdisciplinary integration. Extensive review of literature yielded plenty of

articles reflecting the feedback of experts in the field of medical education that lack of integration in the traditional curriculum has resulted in poor learning outcomes making them incompetent in clinical skills and students have

informally indicated that the basic science subjects do not seem to be relevant in their future medical practice [1-4]. Evaluation of the curriculum by students is a very important and logical step which is recommended as part of the teaching learning process as they are at the receiving end [5]. Preclinical subjects and training form an important foundation for the patient examination and clinical reasoning skills. The present study was conducted to explore the perception of interns regarding the relevance of the preclinical curriculum during clinical practice, especially in the Indian context. Their feedback becomes significant for modifying the existing curriculum.

Objectives:

- 1) To obtain students view about the importance, need, clinical relevance, vastness, timeframe, with regard to the preclinical subjects.
- 2) To obtain students view regarding the current practical skill training.
- 3) To invite suggestions for improvement.

MATERIALS AND METHODS

This descriptive, cross-sectional study was conducted at Mysore Medical College & Research Institute, Mysore using a predesigned questionnaire which was duly modified to suit the local situation and keeping the Medical Council of India vision 2015 document in mind [6-10]. First part (Question No.1-12) of the questionnaire related to importance of basic science subjects, time duration, vastness, clinical applicability, recall aspects, which were to be answered on a 5 point Likert scale (strongly disagree, disagree, neutral, agree, strongly agree). Part 2 of the questionnaire (Question No.13 -35) contained a comprehensive list of current practical training sessions for which the student had to choose from four options (A to D).

A = Need to perform skill and interpret the result

B= Need not perform the skill but should be able to interpret the results

C= It is enough for the student to only observe the skill/ procedure

D= Skill / procedure is not essential for clinical practice

At the end of the questionnaire space (Question No. 36 -37) was provided for additional comments and suggestions.

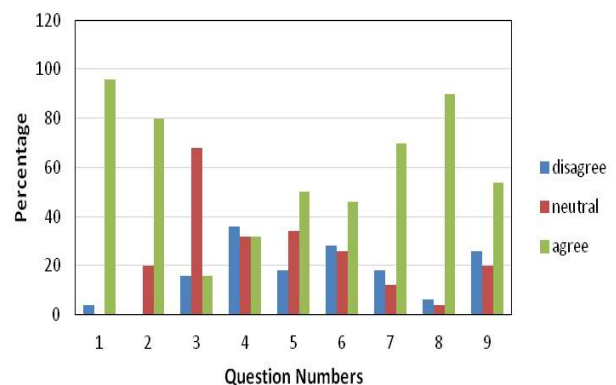
The survey questions were prevalidated by the preclinical department staff. Further a pretesting was conducted with 20 students to check on the content and clarity of the questionnaire. Necessary modifications were made as per the feedback received.

After obtaining institutional ethical clearance, data was collected from 50 student (intern) volunteers (23 males and 27 females) working in hospitals attached to Mysore Medical College & Research Institute, Mysore. Only those who had completed at least six months duration of internship were included in the study. Written consent was obtained from the participating interns.

Five point Likert scale was reduced to 3 points (disagree, neutral, agree) for ease of understanding. Descriptive statistics was applied and the results are presented as percentages after grouping the questions into four categories.

- 1) Perception of preclinical subjects (Fig 1)
- 2) The relevance of preclinical curriculum in skill development (Fig 2)
- 3) Use of preclinical skills in examination of patient (Fig 3)
- 4) Use of preclinical skills for diagnosis and assessment of patient condition (Fig 4)

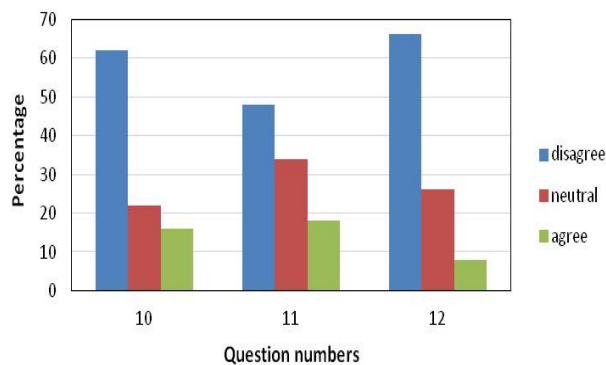
Fig. 1: Perception of pre-clinical subjects.



1. Preclinical subjects are important/ useful in your clinical work.
2. Preclinical subjects are interesting to learn.
3. My aim was just to pass the exams.
4. Preclinical curriculum is too vast.
5. Timeframe (1 yr) for preclinical course is too short.

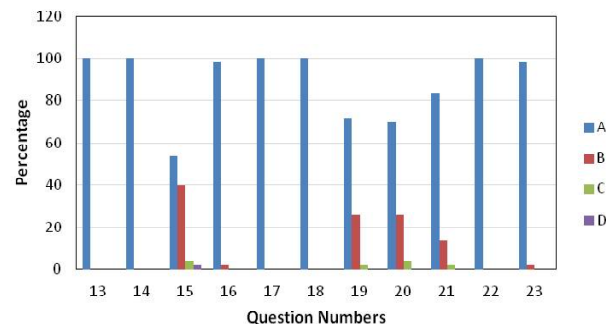
6. The content of preclinical course lacks clinical relevance.
7. Preclinical course provided relevant foundation for clinical skills/ procedure.
8. You had to refer the preclinical subjects during your clinical postings.
9. Feel clinical cases should be introduced in the 1st year.

Fig. 2: The relevance of preclinical curriculum in skill development.



10. Preclinical curriculum helped me in developing communication skills.
11. The preclinical course helped me developing skills for team work.
12. The preclinical course helped me in developing leadership skills.

Fig. 3: Use of pre-clinical skills in examination of patients.

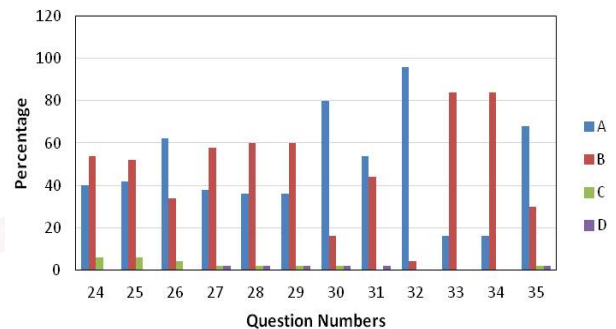


13. Clinical examination of CVS
14. Clinical examination of respiratory system
15. Perform spirometry using student's spirometer & interpret.
16. Clinical examination of sensory system.
17. Clinical examination of motor system/ tendon jerks.
18. Clinical examination of cranial nerves.
19. Recording of ECG.
20. Field of vision using student's perimeter.
21. Acuity of vision using Snellen's & Jaeger's charts
22. Surface marking of superficial structures.
23. Surface marking of viscera

Note:

- A** = Need to perform skill and interpret the result
- B**= Need not perform the skill but should be able to interpret the results
- C**= It is enough for the student to only observe the skill/ procedure
- D**= Skill / procedure is not essential for clinical practice

Fig. 4: Use of preclinical skill for diagnosis and assessment of patient condition.



24. Estimation of hemoglobin by Salhi's method.
25. Manual RBC & WBC counting using Neubauer's chamber.
26. Preparation and staining of peripheral blood film
27. Identification of biochemically important substances in urine.
28. Quantitative experiments in urine sample.
29. Quantitative experiments in serum sample.
30. Demonstration & interpretation of GTT.
31. Analysis of normal and pathological constituents of urine.
32. Dissection & identification of structures.
33. Interpretation of plain x radiographs.
34. Interpretation of contrast radiographs.
35. Identification & interpretation of histological slides.

Note:

- A** = Need to perform skill and interpret the result
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- D**= Skill / procedure is not essential for clinical practice

RESULTS

The present study revealed that majority of the students perceived the preclinical subjects as

important and interesting to learn as it provided relevant foundation for clinical skills and procedures. However they feel that one year time frame is less for the curriculum and the content lacks clinical relevance. Majority of the students opined that preclinical curriculum did not help them in developing skills necessary for communication, leadership or teamwork.

Regarding practical training, majority have expressed satisfaction with the ongoing practical training with respect to anatomy. Dissection, surface marking and radiological anatomy are all important for examination, assessment and also clinical diagnosis of patient condition.

On analyzing the questions related to physiology practicals, it was evident from the choice of options that the basic clinical examination skills that were taught were very helpful. Both in physiology and biochemistry, the students prefer to interpret the results than to perform the practical exercise that requires technical skills. Some suggestions were to include interpretation of basic investigation reports – urine sugar, protein, serum electrolytes, LFT, RFT for practical classes. Few students felt the need to include lab / ward rounds involving them in drawing blood, to do CBG, recording BP and pulse. Additional feedback was exclusion of experiments like manual RBC, WBC counting and estimation of hemoglobin as they feel they are obsolete. In theory, most students emphasized the need to include acid base balance, exclusion of metabolic cycles in Biochemistry and integration of subjects specially anatomy and physiology.

DISCUSSION

This study is the first of its kind to be conducted in our institution. Our students have voiced a similar opinion as few studies undertaken in other medical colleges in the India covering some aspects of the preclinical curriculum [6,7]. This study is important as it reflects the view of the students on the questions based on the comprehensive list of ongoing practical training in preclinical departments. Further students are in their internship and they are more likely to understand the merits and demerits of the present curriculum.

The major weakness of the traditional method

of teaching is that the subjects are taught unconnected to other disciplines hence the students perceive them as clinically not relevant. The main aim of the students then becomes to get through the qualifying examination by rote learning which naturally fades much faster from their memories. Studies have indicated that integrating basic science subjects in clinical context not only improves comprehension and recall but eases application as well [11]. Exposure to clinical material early and reemphasis on basic science in later years have been reported to have their own advantages. Early introduction of clinical skills like physical examination techniques, if correlated with anatomical structures, help in deeper understanding of anatomy. It also gives student the opportunity to act like physicians [12]. Reintroducing basic science in later years serves to correlate better between disease and its features [13].

A few Indian studies have shown the benefits and feasibility of integrated problem based learning in the conventional curriculum [14-15]. It has been reported that when students are motivated to learn on their own, it improves reasoning skills and enhances group participation. Even the 'quiet' students can be made to participate. Integrated approaches provide information cutting across the limits of the various disciplines and filter out irrelevant information thus saving time and avoids information overload.

The experience of two Indian medical colleges with regard to the foundation course has shown positive results [16-17]. The students have evaluated the programme as successful, especially with respect to the communication skill component. This proves that a structured foundation course when implemented would definitely help students coming from different learning environments to acquire the necessary knowledge and equip them with skills for medical practice.

The current practical curriculum has some redundant components and considerable time is spent on teaching skills which may not be essential for clinical practice. This calls for exclusion of obsolete experiments.

CONCLUSION

We conclude that students have a positive perception of the preclinical subjects and

appreciate that a thorough understanding of basic sciences gives a solid foundation for clinical practice. Such a feedback reveals the areas for improvement and provides us with better opportunity to be able to train them to become better doctors.

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Conflicts of Interests: None

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