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ORIGINAL ARTICLE

Assessment of teaching learning methods under CBME among second year medical students

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Abstract

Background: Medical institutions are progressively transforming their medical curriculum from a traditional approach to Competency-Based Medical Education (CBME), which is a student-centered curricular activity. Self-assessment of the teaching methods by the students is an important tool to ensure the best possible academic environment for the students. The main aim of the study was to assess the teaching learning methods under CBME among 2nd-year medical students based on student's feedback, in the Dept of Pharmacology. **Materials and methods:** A cross-sectional study was conducted using a questionnaire distributed to the 2nd year MBBS students who met the inclusion criteria. Data was analysed and expressed as percentages. **Results:** A total of 95 students met the inclusion criteria and all responded to the questionnaire. Majority responded positively towards the current teaching-learning methods. Small group discussion (SGD) seemed to be the preferred teaching learning method garnering a total of 67% vote. Most of the students mentioned their preference of learning in small groups but found the adult learning principles like Self Directed learning (SDL) to be less useful. **Conclusion:** Majority responded positively towards the current methods. It was evident from the study that facilitators need to focus on inclusivity in SGD. Incorporation of teaching learning methods suggested by the students would be an ideal tool to ensure the best academic environment for the students. Implementation of more problem based & critical thinking centric methods may encourage students to utilize the adult learning principles like SDL etc.

Keywords: Small group discussion, Competency based Medical Education, Self directed Learning

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Graphical Abstract

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Background: Medical institutions are progressively transforming their medical curriculum from a traditional approach to Competency-Based Medical Education (CBME), which is a student-centered curricular activity. Self-assessment of the teaching methods by the students is an important tool to ensure the best possible academic environment for the students. The main aim of the study was to assess the teaching learning methods under CBME among 2nd-year medical students based on student's feedback, in the Dept of Pharmacology.

Materials and methods: A cross-sectional study was conducted using a questionnaire distributed to the 2nd year MBBS students who met the inclusion criteria. Data was analysed and expressed as percentages.

Table : Students perception of new teaching modalities under CBME

Sl. no	Question	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
1.	CAL helps me understand ANS better	42%	43%	13%	2%	0%
2.	Injection practices on a mannequin gives me confidence to perform on a real patient	13%	49%	23%	14%	1%
3.	I find AETCOM modules helpful for MBBS curriculum	21%	38%	31%	7%	3%
4.	ADR reporting exercises gives me the confidence to report real cases in the Wards/OPDs	29%	58%	10%	2%	1%

Conclusion: Majority responded positively towards the current methods. Improvements suggested are now incorporated into our teaching learning methods. Focus should be on inclusivity in SGD and implementation of more problem based & critical thinking centric methods.

Introduction

Medical institutions are progressively transforming their medical curriculum from a traditional approach to Competency-Based Medical Education (CBME), which is a student-centered curricular activity. In India, the realm of medical education is currently in the midst of a significant transition, moving away from conventional frameworks towards competency-based medical education (CBME). This method places a strong emphasis on students acquiring tangible skills in a manner centered around the learner, fostering the growth of capable Indian Medical Graduates with a focus on metacognition. At the heart of CBME is the provision of skill-based training, with the overarching goal of preparing physicians who can effectively function as the primary healthcare provider for their community, all the while ensuring their global applicability [1]. Competency based medical education has been implemented by National Medical Commission since August 2019 in medical colleges all over India. The goal of NMC is to streamline medical education across India so that, quality is maintained irrespective of where a student may study. Apart from the conventional didactic lecture, certain teaching learning methods like self-directed learning and small group discussion has been emphasized in this new curriculum [2]. The practical classes also have received a complete make over. For Pharmacology subject, an entire new teaching aid like mannequin for practicing drug administration has been introduced. Students are now exposed to all the common types of injection techniques required for a normal hospital setting. Even the conventional method of learning drug effects using experimental animals has been replaced with Computer Assisted Learning (CAL), making the relevance of animal house obsolete for

undergraduate teaching [3]. Since CBME has now been successfully implemented for two batches in the department of Pharmacology i.e. 2019 and 2020 batches, conducting an assessment to analyse how much the students have benefited with the new curriculum would help the department fill up gaps where it is required. Feedback is an important tool that can help assess the ground reality of newly introduced teaching methods. It will ensure that the department is driven in the right direction to achieve the learning outcome of the course [4]. Hence it is imperative for the department to have a self-assessment of the teaching methods by the students, in order to ensure the best possible outcome for the students. Conducting an assessment to analyse the teaching learning methods in the department of Pharmacology would help the department to identify the shortcomings and help improve the overall teaching method. Moreover, teaching method evaluation by the students in colleges is not a common practice, but is one that may help enormously in gap identification and introduction of new innovative methods in teaching for future batches [5].

Materials and Methods

A cross-sectional study was conducted in the Department of Pharmacology, Zoram Medical College after taking approval from the Institute's Research Committee (IRC No. G.28045/1/2021-ZMC/IRC/48) as well as from the Institutional Ethics Committee (IEC No. F.20016/1/18-ZMC/IEC/104). Questionnaire was framed in the department of Pharmacology by faculties, with a focus on the new teaching methods introduced under competency based medical education (CBME), where majority of the questions were framed on a Likert's scale with few being open ended. The questionnaire was then validated for its relevance and feasibility by

the Institutes research board, as well as Ethics committee. The questionnaire along with consent form was distributed at the end of the university practical exam. The students were not required to fill in their personal information and confidentiality was strictly maintained in an attempt to eliminate bias.

Inclusion criteria: 2020 batch students who were eligible to appear for university exam in 2023

Exclusion criteria: (i) 2020 batch students who were not eligible to appear for university exam in 2023 (ii) Repeater students from senior batch who were eligible to appear for university exam in 2023.

Data collected was entered and analysed using Microsoft Excel and expressed in frequencies and percentages.

Results

There were a total of 95 respondents who met the inclusion criteria. Among the current mode of teaching/learning method, majority (48%) preferred SGD (small group discussion) as compared to didactic lecture and SDL (Self-directed learning) (Table 1). Likert scale was used to evaluate students feedback on the newly implemented practical training module such as computer assisted learning (CAL) and Injection practices on a mannequin. Majority (85%) of the students agreed that CAL exercises helped them in understanding the Autonomic nervous system better while 13% were undecided. Regarding

the route of drug administration exercises on a mannequin, 62% agreed that practicing injections like IV, IM, SC on a mannequin gives them the confidence to perform the skill on a real patient. As the department of Pharmacology is an ADR (Adverse drug monitoring) centre, ADR reporting exercises are given to the Phase 2 students, which also requires them to fill up the report in a PvPI (Pharmacovigilance programme of India) prescribed reporting format. This was included in the questionnaire and 89% agreed that the exercise would help them report real ADRs in the wards & OPDs. However, AETCOM module seems to be the least favourite among the newly introduced teaching aspect of CBME, where 41% of the students were either unsure or disagree with its relevance for their curriculum, (Table 2).

While 37% of the students agreed that the current lecture classes were good enough, 40% suggested the use of more videos, animations & mnemonics. 53% of the students also suggested that grading system after every small group discussion could be beneficial, in order to assess the individual contributions of each group member. Regarding Self-Directed Learning (SDL), only 9% were satisfied with the current method and 83% wanted an improvement either in the form of a more elaborate test, while some wanted more exam oriented topics to be included. (Figures 1-3).

Table 1. Preference of teaching learning methods by Phase II MBBS students

Sl no	Teaching/Learning method	Percentage
1.	Didactic lecture	35%
2.	Small group discussion	48%
3.	Self-Directed Learning	19%

Table 2. Students perception of new teaching modalities under CBME

Sl. no	Question	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
5.	CAL helps me understand ANS better	42%	43%	13%	2%	0%
6.	Injection practices on a mannequin gives me confidence to perform on a real patient	13%	49%	23%	14%	1%
7.	I find AETCOM modules helpful for MBBS curriculum	21%	38%	31%	7%	3%
8.	ADR reporting exercises gives me the confidence to report real cases in the Wards/OPDs	29%	58%	10%	2%	1%

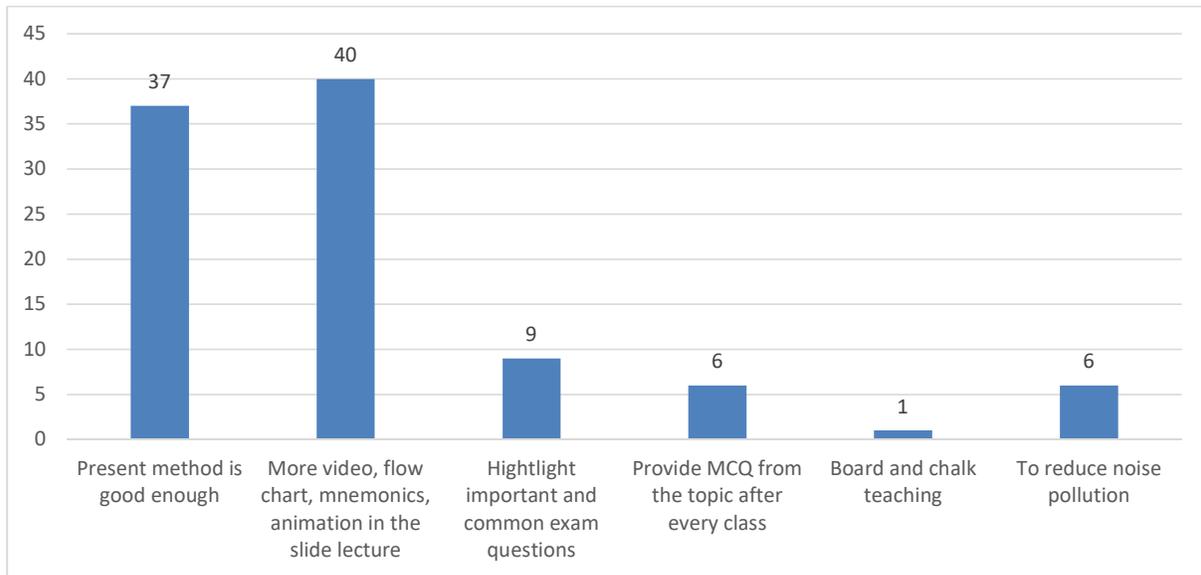


Figure 1. Students suggestion on how to improve Pharmacology theory classes

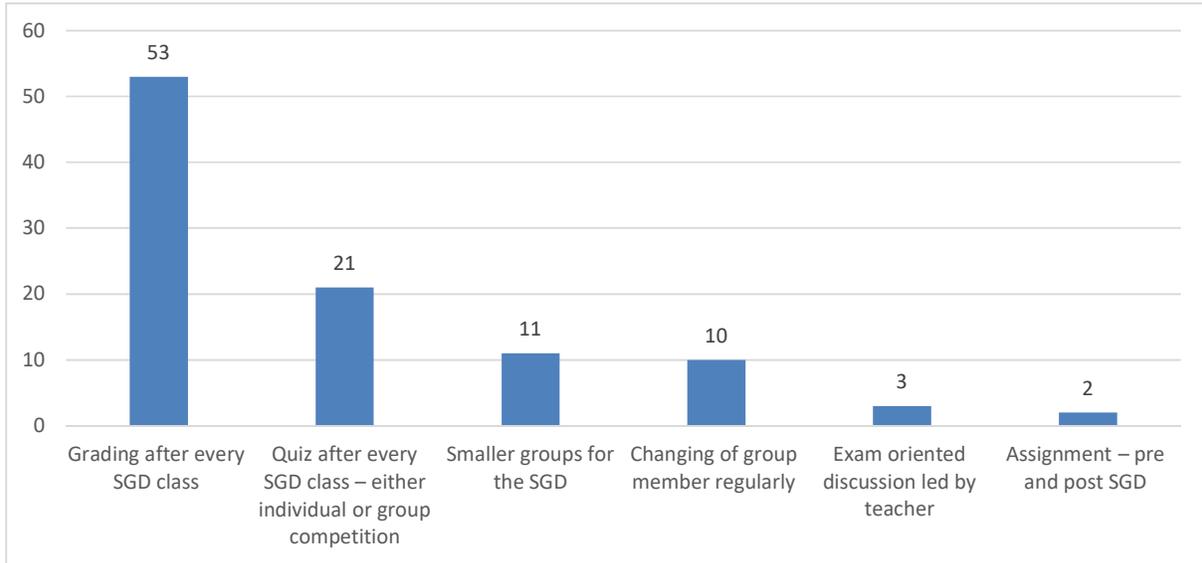


Figure 2. Students suggestion on how to improve SGD

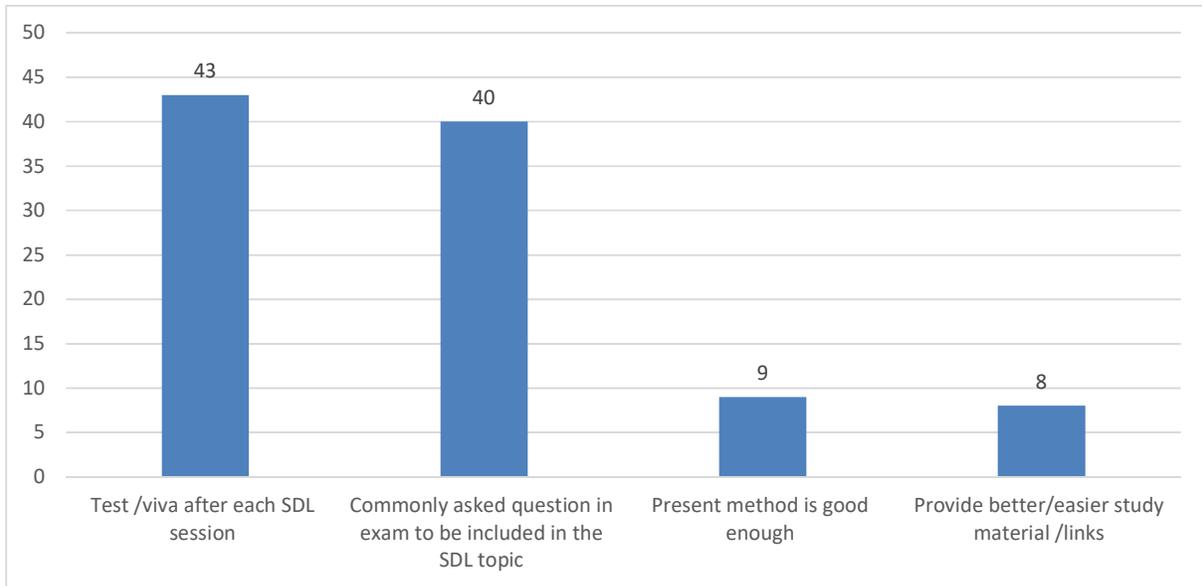


Figure 3. Students perception on Pharmacology SDL

Discussion

This cross-sectional study was conducted to assess the student's perspective on the teaching learning methods in the Department of Pharmacology, after the implementation of CBME. Assessment was done by distribution of questionnaires to Phase II MBBS students who met the inclusion criteria.

Small group discussion garnering a vote of 67% was observed to be the most appreciated method with some suggestions for improvement from the students themselves. Other studies like Thind et al. [6] and Ramanathan et al. [7] also observed that any form of teaching in a small group was ranked high by the students. Chelani & Mahajan [8] also pointed out that students appreciated sessions with direct interaction with teachers, where active participation from students was highly encouraged. Hence, from this study as well as similar ones mentioned, it is evident that students learn better in small groups as it provides a better environment to clear their doubts and spark interest for an extended period of time.

Self-Directed Learning was observed to be the least appreciated teaching-learning method as only 19% chose it as their preferred method. Similar findings were observed by Ramanathan et al. [7] where many students claimed SDL to be time consuming and felt it to be unnecessary for their curriculum. Regarding AETCOM, though roughly 60% of the students responded positively, about 40% were still not sure about the purpose of AETCOM in their curriculum especially during 2nd year, which is during phase II MBBS. However, proper faculty training and student sensitization workshops especially during their 1st year may alleviate some of the negative perceptions towards the adult learning principles incorporated in the new curriculum. Special emphasis has to be given

to self-directed learning, especially with the assessment method used by the facilitator.

The major limitation of the study is that it was conducted among 2nd year MBBS students of a single medical college. Hence the findings regarding students' impression of CBME may have limitations in representation.

Conclusion

This cross-sectional study was conducted to assess the student's perspective on the teaching learning methods in the Department of Pharmacology, after the implementation of CBME. As this new curriculum has only been implemented recently, many medical colleges across India are yet to adhere strictly to all the guidelines. Hence, assessment studies on student's perceptions will be an important tool to facilitate the transition from the old to the new curriculum. It was also an important means for gap identification in the academic activities of the department. The innovative ideas suggested by the students are also planned for later incorporation in the departmental academic activities.

Conflict of interest

The authors declare they do not have conflict of interest

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