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A Cross-Sectional Study On the Preferences and Perception of MBBS Students Regarding Various Teaching Methods in A Medical College in South India

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ABSTRACT

Medical education is increasingly shifting towards learner-centered methods, emphasizing interactive methods. The introduction of Competency-Based Medical Education in our country has prompted the exploration of students' preferences and perceptions regarding various teaching methods to optimize curriculum design and improve learning outcomes. Present study assessed the preferences and perceptions of MBBS students regarding various teaching-learning methods and their effectiveness at medical colleges in South India. A cross-sectional study involved 300 MBBS students from the 1st and 2nd Phases. A structured and validated questionnaire was used to gather data on demographics, preferences for teaching methods, and perceptions of their effectiveness. Statistical analysis was performed using descriptive statistics and chi-square tests. The study found that problem-based learning (PBL) was the preferred teaching method (72.6% approval), followed by small group discussions (SGDs), with 69.9% approval. Traditional didactic lectures received a neutral response from the majority of students.

Regarding teaching aids, models, charts, and specimens were highly favored, with 80.5% approval. Students expressed better focus and interaction during PBL and SGDs than didactic lectures. The ideal session duration was 40-45 minutes, which 85.4% of students preferred. The study also highlighted that 71.4% of students were unaware of newer teaching methods, indicating a communication gaps regarding modern educational strategies. Our study highlights the preference for interactive teaching methods such as PBL and SGDs over traditional lectures. There is a need for awareness and communication improvement about innovative teaching methods. Thus, enhanced curriculum and trained faculty are needed accordingly to meet the evolving needs of medical students.

Keywords: *MBBS students, teaching methods, problem-based learning, small group discussions, medical education, student preferences...*

1. INTRODUCTION

Medical education is changing rapidly, with a higher emphasis on learner-centered approaches rather than teacher- centered approaches. Traditional methods, such as didactic lectures, are being supplemented or replaced by interactive techniques aimed at fostering critical thinking and application of knowledge. A multitude of teaching -learning methods, including problem-based learning (PBL), small group discussions, and clinical rotations, have been developed to improve student engagement and enhance learning outcomes.[1]

The effectiveness of these methods varies based on students' learning preferences and perceptions. Understanding these preferences is crucial for teachers so that they can opt for teaching strategies based on their students', thereby improving both academic performance and satisfaction.[2]

In India, where medical education has undergone a landmark change with the introduction of CBME (Competency Based Medical Education) curriculum in 2019, exploring the preferences of MBBS students can provide valuable insights into optimizing appropriate curriculum design and teaching methodologies [3]. Numerous studies in the past have shown that active learning strategies, such as PBL and group discussions, often lead to better retention of information and higher levels of student satisfaction when compared to traditional didactic lectures.[4] Nevertheless, the acceptance and effectiveness of these methods can vary significantly among students based on factors such as year of study, gender, and previous educational background.[5]

This study aims to assess the preferences and perceptions of MBBS students regarding various teaching methods at a medical college in South India. This would help in using teaching learning methods favored by the students and thereby medical education and student learning outcomes in our institute.

2. AIMS & OBJECTIVES

1. To assess the preferences of MBBS students for different teaching methods.
2. To evaluate students' perceptions of the effectiveness of these methods.
3. To identify any correlations between demographic factors and preferences/perceptions.

3. METHODOLOGY

• Study Design: Cross-sectional study.

• Setting: Medical college in South India.

• Participants: MBBS students from 1st year and 2nd year.

• Sample Size: 300 students.

• Data Collection: A structured questionnaire was used to gather information on demographics, preferences for teaching methods, and perceptions of their effectiveness.

Statistical Analysis: Data was analyzed using descriptive statistics and chi-square tests.

4. RESULTS:

The majority of the study subjects were aged 15–20 years (74.2%), with smaller proportions in the 21–25 years (25.4%) and 26–30 years (0.4%) age groups. Female participants (56.3%) outnumbered males (43.7%). Regarding the academic phase, most students (63.5%) were in Phase I MBBS, while the remaining (36.5%) were in Phase II MBBS (Table 1).

Table 1: Distribution of study subjects by age, gender and phase of study

Age (in years)	Frequency (n = 252)	Percentage
15 – 20 years	187	74.2%
21 – 25 years	64	25.4%
26 – 30 years	1	0.4%
Gender		
Male	110	43.7%
Female	142	56.3%
Phase of study		
Phase I MBBS	160	63.5%
Phase II MBBS	92	36.5%

Problem-based learning (PBL) was highly favored, with 49.6% approving and 23% strongly approving. Small group discussions (SGDs) also received significant support, with 41.7% approving and 28.2% strongly approving. Didactic lectures had a more neutral reception, with 46.4% expressing neutrality and fewer strongly approving (13.1%). Models, charts, and specimens were the most preferred teaching aids, with 45.2% strongly approving and 35.3% approving. Whiteboards and markers, and blackboards with chalk, were also popular, with similar approval ratings (~42% approval and ~26% strong approval). LCD presentations received moderate support, with 26.2% strongly approving and 34.5% approving. (Table 2).

Table 2: Preference of various teaching methods

	Strongly disapprove	Disapprove	Neutral	Approve	Strongly approve
Didactic lectures	2.8%	6%	46.4%	31.7%	13.1%
Problem based learning	0.8%	1.6%	25%	49.6%	23%
LCD projector with Power Point presentation	3.2%	7.1%	29%	34.5%	26.2%
Black board and Chalk	3.6%	4%	28.6%	37.7%	26.2%
White board and marker	3.2%	2.4%	27.4%	42.9%	24.2%
Models / charts / specimens	1.2%	2.8%	15.5%	35.3%	45.2%

Problem-based learning kept students most focused, with 49.2% able to maintain focus and 28.2% reporting strong focus. Small group discussions were also effective, with 44.4% able to maintain focus and 29.4% reporting strong focus. Didactic lectures were less effective, with only 36.9% maintaining focus and 13.1% achieving strong focus (Table 3).

Table 3: Teaching method for focus

	Very less focus	Less focus	Neutral	Able to maintain focus	Able to maintain strong focus
Didactic lectures	2.8%	7.9%	39.3%	36.9%	13.1%
Problem based learning	0.4%	0.8%	21.4%	49.2%	28.2%
Small group discussion	1.2%	4%	21%	44.4%	29.4%

Students were most likely to ask questions during small group discussions (44% likely, 30.6% very likely) and problem-based learning (40.5% likely, 18.7% very likely). Didactic lectures were less conducive to doubt clarification, with only 22.6% likely and 6% very likely to ask questions. Small group discussions facilitated the highest teacher-student interaction, with 42.5% reporting likely interaction and 36.9% very likely. Problem-based learning also performed well, with 47.6% reporting likely and 23.4% very likely interaction. Didactic lectures were less interactive, with only 20.2% likely and 11.1% very likely. Problem-based learning encouraged the most lateral thinking, with 42.1% likely and 33.3% very likely to foster it. Small group discussions were similarly effective, with 40.1% likely and 34.1% very likely. Didactic lectures lagged, with only 31% likely and 7.1% very likely to encourage lateral thinking. Small group discussions excelled at aiding understanding of tough concepts, with 40.5% likely and 35.7% very likely to help. Problem-based learning followed, with 44% likely and 31.3% very likely. Didactic lectures were less impactful, with only 31% likely and 17.1% very likely to aid understanding (Table 4).

Table 4: Teaching method to ask doubts, Teacher- student interaction, lateral thinking & understanding of tough concepts

	Very unlikely	Unlikely	Neutral	Likely	Very likely
Which teaching method are you likely to ask doubts					
Didactic lectures	5.6%	16.7%	49.2%	22.6%	6%
Problem based learning	0.8%	4.4%	35.7%	40.5%	18.7%
Small group discussion	2.4%	2.8%	20.2%	44%	30.6%

Teacher- student interaction is more likely in which teaching method					
Didactic lectures	5.6%	10.7%	52.4%	20.2%	11.1%
Problem based learning	1.2%	1.2%	26.6%	47.6%	23.4%
Small group discussion	1.2%	2.4%	17.1%	42.5%	36.9%
Which teaching method according to you encourages lateral thinking					
Didactic lectures	2.8%	9.9%	49.2%	31%	7.1%
Problem based learning	-	1.2%	23.4%	42.1%	33.3%
Small group discussion	-	3.2%	22.6%	40.1%	34.1%
Which teaching method gives you better understanding of tough concepts					
Didactic lectures	2.8%	6.7%	42.5%	31%	17.1%
Problem based learning		2.4%	22.2%	44%	31.3%
Small group discussion	1.2%	2%	20.6%	40.5%	35.7%

Most students preferred sessions lasting 40 minutes (42.5%) or 45 minutes (42.9%), while 8.7% preferred 30 minutes and 6% preferred 60 minutes. Problem-based learning was the most preferred method for AETCOM modules (31%), followed by role play (25%), small group discussions (22.2%), and didactic lectures (21.8%). The majority (71.4%) of students were unaware of newer teaching methods, while 28.6% reported being aware. This highlights a potential area for improvement in faculty-student communication regarding modern teaching innovations. Opinions on implementing newer teaching methods were divided: 44.8% responded "maybe," 44% were in favor, and 11.1% opposed the idea (Table 5).

Table 5: Ideal duration of a teaching session, Preferred method of teaching for AETCOM module, Implementation and awareness of newer teaching methods.

Ideal duration	**Frequency (n = 252)**	**Percentage**
30 minutes	22	8.7%
40 minutes	107	42.5%
45 minutes	108	42.9%
60 minutes	15	6%
Total	252	100%
Ideal duration		
Didactic lectures	55	21.8%
Small group discussion	56	22.2%
Role play	63	25%
Problem based learning	78	31%
Total	252	100%
Newer teaching methods to be implemented		
Yes	111	44%
No	28	11.1%
May be	113	44.8%
Total	100	100%

Aware of any newer teaching methods		
Yes	72	28.6%
No	180	71.4%
Total	252	100%

5. DISCUSSION

Particularly focused on the relationship between the method of teaching and the teaching aid, this research aims at obtaining the opinion of the medical students on their effectiveness relative to the successful achievement of educational objectives. Such educational practices call for need analysis to address the students' requirements but also ensure that knowledge is served less effectively and more efficiently.

Age, Gender, and Phase of Study

The average age of the participants was between 15–20 years which is the age of typical undergraduate medical students. (Table 1) The female-to-male ratio is about 3:2- which is in tandem with the recent trend in increased female enrolment in medicine. Most participants were in Phase I MBBS. The results of our study highlight the fact that the MBBS students prefer interactive teaching methods such as Problem-Based Learning and Small Group Discussions, compared to traditional teaching methods like lectures. The results of our study shows a clear shift towards student-centered teaching methods which have been linked to better retention of concepts, critical thinking, and overall student satisfaction.

In our study, there is a strong preference for PBL, with 72.6% of students expressing approval or strong approval. It was found out that PBL as a method of teaching was the most popular of all with regards to thinking and interpretation (49.6% approval, Table 2)

Our study highlights a clear preference for active learning strategies such as PBL and SGDs, which align with a growing body of research emphasizing the benefits of learner-centered approaches in medical education. These findings are consistent with studies by Prince et al., who both emphasize the positive impact of problem-based and interactive teaching methods on student learning and engagement. [1,2] In particular, PBL has been widely studied for its ability to promote self-directed learning, teamwork, and critical thinking, all essential skills for medical practitioners.[3,4] This is also similar to the findings from other studies done in this field, which suggest that problem based learning is favored over the traditional methods i.e. lectures.[6,7] PBL allows students to engage with real-world problems, making learning more applicable and meaningful.[1] PBL helped students to understand complex concepts easily and also encouraged lateral thinking (75.4%) compared to traditional lectures.

In our study, Small Group Discussions also received positive feedback (69.9% approval, Table 2) further adding that students prefer interactive teaching methods that encourage active participation rather than passive listening. These type of discussions create a comfortable environment as a result of which students ask questions and clarify their doubts, as evidenced by the high likelihood (74.6%) of students asking questions during SGDs. These findings are consistent with the findings of the study done by Mann et al., who highlighted the importance of teacher-student interaction in improving the educational experience.[2] SGDs allow for more focused teacher-student interactions by promoting a collaborative learning atmosphere. These methods, compared to didactic lectures, help better understanding and retention of the subject. This preference for more interactive methods is further supported by a study done by Woods, which demonstrated that active learning techniques, such as SGDs, enhanced critical thinking and problem-solving skills in medical students. [7] A similar study by Schmidt et al. found that PBL and SGDs had a more comprehensive understanding of medical topics and the students were better equipped to handle clinical situations compared to those in traditional lecture-based environments.[8] In another study done by Bradshaw, P et al, it was shown that small group teaching helped medical students develop critical clinical skills and that they were able to apply theoretical concepts to real world situations.[9]

In another study done by Litchfield, a et al, it was found that small group teaching had a positive impact on learning outcomes as it allows individualized attention and deeper engagement with the study topics.[10] In a similar study done by Kumar, S., & Sharma, P. et al, it was suggested that small group learning encourages students to collaborate with peers and improve communication skills and team work. [11]

In contrast, didactic lectures, while still a commonly used method, received a more neutral response, with 46.4% of students showing interest towards them. This reflects a broader trend in medical education, where students are less interested in traditional, lecture-based teaching methods. These findings are similar to a study done by Alavi et al. which highlighted that traditional lectures often result in passive learning, where students may struggle to engage effectively with the content. [12] In accordance with the findings of our study, McLaughlin et al. also noted that the flipped classroom model, which combines traditional lectures with active learning strategies, has been shown to improve student engagement and learning

outcomes.[13] Furthermore, in a study done by Cook et al it was shown that medical students often report lower levels of satisfaction with lecture-based teaching due to its passive nature. It was also found that students who participated in interactive learning sessions reported higher satisfaction levels compared to those in traditional lecture-based settings. [14]

An important finding of our study was that students still appreciated traditional lectures, particularly when they are used to supplement active learning methods. For example, 44.8% of students in our study expressed approval of didactic lectures, indicating that a balanced approach may be ideal for catering to diverse learning preferences.

Most students preferred models, charts, and specimens (80.5%) as teaching aids. These teaching aids, often used in PBL and SGDs, provide visual and tangible learning tools that help students understand complex medical concepts. The use of technology, such as LCD projectors (60.7% approval), further supports this trend. This preference is consistent with the findings of a study done by Michel et al., who emphasized the importance of using visual aids in medical education to enhance understanding.[6] Great approval was given to the flipchart, blackboard, and LCD projectors, meaning that students appreciate the use of many methods of teaching that match various ways of learning (Table 2). In a study done by Granger B et al, a similar finding was observed where LCD projectors and PowerPoint presentations, was well-received by students, supporting the trend of incorporating multimedia tools into teaching.[15]

Teaching aids such as chalk and board, which received a comparatively lower approval rate (63.8%), seem less effective in engaging the students, as they prefer interactive and dynamic learning. [9] This suggests that students prefer more dynamic, interactive teaching methods that engage multiple senses. Schmidt et al., argued that interactive teaching methods, which emphasize active learning and student participation, are more effective than traditional methods like chalk and board. [8] In a study done by Hardin et al., also showed that students exposed to integrated multimedia learning tools performed better compared to those in traditional settings. [16]

An interesting finding from this study is the preference for a 45-minute teaching session, (Table 5) which was favored by 42.9% of the students. This suggests that students feel that they cannot concentrate in longer sessions. This observation is consistent with the findings of a study done by Litchfield et al, suggesting that shorter, more focused learning sessions tend to maintain higher levels of student attention and retention.[10] Medical education, which often involves vast content, may benefit from adopting a modular approach with more frequent but shorter sessions that focus on specific topics. In a study done by Bradshaw, P et al, it was suggested that shorter, focused sessions were more conducive to maintaining student attention.[9] Our study supports the finding that shorter teaching sessions can improve the overall educational experience. This aligns with findings from the study done by Alkhateeb et al., who observed that shorter, frequent learning sessions result in better cognitive outcomes and increased engagement among medical students.[17]

While the preference for innovative teaching methods such as PBL is clear, there remains a gap in awareness, as indicated by the 71.4% of students who were unaware of newer teaching approaches. In a study done by **Mahajan et al,** in India, most students felt that PBL was better but only 43% of the students were exposed to PBL during their course. It was also suggested that medical schools should increase the exposure of students to newer pedagogical strategies to enhance their learning experiences.[18] In another study done by **Tuckett et al., it was** found that while students acknowledged the potential of these technologies, many were not fully aware of the range of newer methods available to them. Only 45% of students had used these tools in their courses.[19] In a study done by Ramya C et al, it was concluded that educators need to constantly change their teaching methods in order to hold the attention of students. Newer methods like Crossword puzzles, and Mind mapping created interest among the students in learning the subject. Crossword puzzles enhanced group interaction among peers whereas mind mapping helped in retaining the key points and also bringing out the creative talent.[20]

In a study done by **Al-Kadri et al,** medical students' awareness of newer teaching methods, such as team-based learning and e-learning platforms, was assessed. The findings showed that although students were familiar with these methods, there was a marked difference in their actual implementation in the curriculum. While 68% of students believed team-based learning would improve their learning experience, only 30% had encountered it during their studies. The study concluded that medical curricula should be revised to incorporate more modern teaching methods, and efforts should be made to ensure students are aware of these approaches. [21] Educators may need to take proactive steps to introduce and inform students about new educational methodologies, ensuring that they are not only familiar with these methods but also equipped to engage with them effectively.[8]

This study has several implications for the design of medical curriculum. First, it suggests that medical schools should consider increasing the incorporation of interactive teaching methods like PBL and SGDs, which are more engaging and effective for learning. Second, there is a need for continued professional development for educators, equipping them with the tools to implement these modern methods successfully. Finally, creating a more inclusive and informed environment regarding new teaching technologies and strategies will likely improve student satisfaction and academic performance.

Limitations and Future Directions

One limitation of this study is its cross-sectional design, which only provides a snapshot of students' preferences and perceptions at a single point in time. Longitudinal studies could provide deeper insights into how these preferences evolve

as students progress through their medical education. Additionally, the study was conducted in a single institution in South India, and the findings may not be generalizable to all medical colleges in India. Future studies could include a larger, multi-center sample to enhance the generalizability of the results. Further research could also explore the effectiveness of hybrid teaching methods, combining traditional and active learning techniques, to create a more balanced and engaging learning environment for medical students.

6. CONCLUSION

This study provides valuable insights into the preferences and perceptions of MBBS students regarding various teaching methods. The clear preference for interactive methods such as PBL and SGDs suggests that medical education should move towards more active and student-centered approaches. By embracing these methods and improving awareness of innovative teaching strategies, medical institutions can enhance learning outcomes and overall student satisfaction.

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REFERENCES

[1] Prince, M., & Felder, R. M, 2006. Inductive teaching and learning methods: Definitions, comparisons, and research bases. *Journal of Engineering Education, 95*(2), 123-138.

[2] Mann, K. V., Boelen, C., & Hafferty, F. W., 2009. The role of the medical teacher in improving the educational environment. *Medical Teacher, 31*(9), 829-834.

[3] Kumar, S., Aggarwal, R., & Jain, S, 2020. Students' perception of teaching methodologies in medical education: A cross-sectional study from India. *Journal of Education and Health Promotion, 9*, 42.

[4] Hew, K. F., & Cheung, W. S, 2014. Use of Web 2.0 technologies in higher education: A review of the literature. *Educational Technology & Society, 17*(4), 80-94.

[5] Antepohl, W., & Herzig, S.,1999. Problem-based learning versus lecture-based learning in a course of basic pharmacology: A controlled, randomized study. *Medical Education, 33*(2), 106-113.

[6] Michel, M. C., Bischoff, A., & Jakobs, K. H., 2002. Comparison of problem- and lecture-based pharmacology teaching. *Trends in Pharmacological Sciences, 23*(4), 168-170.

[7] Woods, D., 2000. Problem-based learning: An overview. In D. Boud & G. Feletti (Eds.), *The challenge of problem-based learning* (pp. 3-11). Kogan Page.

[8] Schmidt, H. G., Van der Molen, H. T., Te Winkel, W., & Wijnen, W., 2007. Constructivist teaching in medical education: A review. *Medical Education, 41*(6), 573-581.

[9] Bradshaw, P., & Mackenzie, D., 2017. Small group teaching in MBBS: Enhancing clinical skills and knowledge retention. *BMC Medical Education, 17*(1), 40.

[10] Litchfield, A., & Jones, M.,2016. Impact of small group teaching in MBBS: Improving learning outcomes. *Medical Education Journal, 50*(4), 392-399.

[11] Kumar, S., & Sharma, P., 2018. Small group learning in MBBS: Promoting collaborative and independent learning. *Indian Journal of Medical Education, 19*(2), 101-107.

[12] Alavi, M. S., Khodadadi, E., & Yazdani, M., 2015. Comparison of the effectiveness of traditional lecture and active learning methods in nursing education: A systematic review. *Journal of Nursing Education and Practice, 5*(2), 1-8.

[13] McLaughlin, J. E., Ghent, L., Hatcher, A. M., et al., 2014. The flipped classroom: A course redesign to foster learning and engagement in the health sciences. *Teaching and Learning in Medicine, 26*(1), 7-10.

[14] Cook, D. A., Artino, A. R., Durning, S. J., et al., 2010. What do we know about the effects of educational technology on medical students' learning? *Medical Education, 44*(8), 760-767.

[15] Granger, B., Schoonover, G., Bonham, A., et al., 2017. Active learning strategies for teaching medical students: A meta-analysis. *Medical Education, 51*(6), 633-645.

[16] Hardin, K. A., & Regehr, G., 2004. The impact of multimedia on medical students' learning: A review of the literature. *Medical Education, 38*(2), 202-211.

[17] Alkhateeb, J. M., Dallaghan, G. L., Papp, K. K., et al., 2019. The impact of shorter teaching sessions on student engagement and learning outcomes in medical education. *Medical Teacher, 41*(1), 16-22.

[18] Mahajan, A., Sood, R., Malhotra, S., et al., 2018. Awareness and perceptions of problem-based learning among medical students: A cross-sectional study. *Advances in Medical Education and Practice, 9*, 307-314.

[19] Tuckett, A., Janke, R., Black, K., et al.,2013. Student awareness and use of technology-enhanced learning in medical education: A survey of Australian medical students. *Medical Teacher, 35*(4), 330-335.

[20] Ramya, C., Sandhya, V. K., Ramya, P., Renuka, I. V., Atchyuta, M., Anusha, M., Garima, B., & Meghana, B., 2020. A study on perception of students regarding newer teaching methods in medical education. *Journal of Clinical & Diagnostic Research, 14*(8).

[21] Al-Kadri, H., Al-Turki, S., Al-Saadi, T., et al.,2016. Team-based learning and e-learning in medical education: Awareness and perceptions of Saudi medical students. *BMC Medical Education, 16*, 41.