

Original Research Article

A prospective study of perceptions and preferences of medical students regarding teaching aids in teaching Pharmacology in a Medical College from India

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Abstract: To enhance successful communication, medical teachers are increasingly using teaching- learning media. To determine medical students' perception of blackboard(BB), overhead projector(OHP), Power Point Presentations(PPT) and there combination and to generate recommendations for their optimal use, a cross sectional questionnaire-based study was carried out among 5th semester medical students of the Bidar Institute of Medical Sciences, Bidar. Students made a forced choice between the three media and combination on 21 questions regarding their advantages and disadvantages. Resulting data was analyzed using percentages. Combination of BB & PPT was rated as best in allowing interaction (41.86%) and helping recall (55.81%). The BB+PPT were the best in providing information point wise (56.51%). More subject matter could be covered per lecture fast through PPT (44.19%). BB+PPT were best in imparting clinical details (62.79%), but BB alone was sleep inducing (39.53%). Overall preferred teaching aid was BB+PPT (83.72%). BB+PPT were best for problem based teaching (58.14%); stresses on relevant and increases thinking and understanding ability (55.81% each). Better perception of diagrams and concept understanding is best with BB+PPT (58.14% each). Students enjoy the lecture delivered by combination of blackboard and power point presentation. The study suggests that the using best available combination of teaching-learning media could make the lecture more interesting. It encourages the students to be attentive and actively participate in gaining better knowledge and allows interaction to take the lecture to the next level of excellence in future.

Keywords: Perception, Teaching Aids, Medical students, Pharmacology, Black Board, Power Point Presentation

INTRODUCTION:

A medical college in India provides both education and skilled training related to medical care. Lecture is among the oldest teaching methods and still remains the most common mode of instruction in higher education. Students learn from lectures by listening, observing, summarizing, and note taking. Lectures can be supplemented with audiovisual aids for better illustrations, clarity, and learning [1].

Lectures are useful when a large number of learners must be taught at one time and for covering a large amount of theoretical information. It integrates and organizes the complex information into simple points [2].

Traditionally formal lecturing of a subject has been the presentation of a large "bolus" of knowledge, swallowed and often only partially digested during the

year of study. Delivering a lecture is made easy and better by use of audiovisual aids (AV aids) such as BB, an OHP, and PPT [3].

The use of electronic media has become common in medical colleges and universities. Microsoft PowerPoint is now the most popular package used out of all electronic presentations [4, 5] and of course, the distribution of preprinted support material and handouts [6].

There is no conclusive study stating the superiority of one method over the other. There is a mixture of views based on recent studies. This study was undertaken to know the students preference & perception on various AV aids and their role in medical pharmacology education at undergraduate level with an aim to improve their use in didactic lectures in teaching Large Classes.

AIMS & OBJECTIVES:

To find out students liking regarding the various audio visual aids at Bidar Institute of Medical Sciences, Bidar, Karnataka which can improve the Pharmacology lecture classes in future

MATERIAL AND METHODS

Study design and the participants:

This was a cross sectional questionnaire based study was carried out at Bidar Institute of Medical Sciences, Bidar, Karnataka between June – July 2015.

DATA COLLECTION:

The information and data collected includes demographic details such as gender (male and female). The purpose and procedure of the study was explained clearly to the students and the informed consent was obtained. The printed copies of the study containing 21 close ended questions were distributed to the students to know the students' preferences of various teaching aids such as, BB, OHP, PPT and the combination of black-

board and OHP (BB+OHP) and black-board and PPT (BB+PPT). Institutional Ethics Committee (IEC) clearance was obtained.

Inclusion criteria: Out of 78, 60 fifth term medical students participated in the study. 43 students completed the questionnaire completely and their responses were evaluated which gives an overall response rate of 71.67%.

Exclusion criteria: The questionnaire was rejected based on the incomplete filling of the form and absence of the students from the class. 17 questionnaires were rejected based on the above mentioned criteria.

STATISTICAL ANALYSIS:

The data collected was analyzed using Microsoft Excel and expressed in as percentages and represented in the form of charts and tables.

RESULTS AND DISCUSSION:

Table 1: Medical undergraduate’s perception on various teaching aids and teaching methods

Sl.no	Parameters Male: 28(65.12%)/Female: 15(34.88%)	BB (%)	OHP (%)	PPT (%)	BB+OHP (%)	BB+PPT (%)
1.	A-V aids during didactic lectures	4.65	4.65	25.58	13.95	51.16
2.	Better perception of diagrams	4.65	6.98	23.26	6.98	58.14
3.	Better perception of flow chart	6.98	6.98	30.23	16.28	39.53
4.	Understanding of topics is best with	16.28	4.65	11.63	9.30	58.14
5.	Best aid for taking notes during class	13.95	9.30	27.91	25.58	23.26
6.	Best aid for listening and understanding	16.28	2.33	13.95	13.95	53.49
7.	Which is best for imparting clinical details?	6.98	4.65	16.28	9.30	62.79
8.	Which best allows interaction between student and teacher	25.58	4.65	16.28	11.63	41.86
9.	Which best allows information to be presented point wise	6.98	6.98	27.91	11.63	46.51
10.	Which allows a lecture to finish fastest?	4.65	13.95	44.19	2.33	34.88
11.	Increased ability to think and understand	25.58	4.65	2.33	11.63	55.81
12.	Better able to cope with teaching speed of teacher	20.93	4.65	20.93	16.28	37.21
13.	Stresses relevant and important information	9.30	6.98	27.91	2.33	55.81
14.	Aroused interest in learning	11.63	2.33	18.60	4.65	60.47
15.	Which is the most sleep inducing?	39.53	30.23	11.63	6.98	11.63
16.	Which helps in better recall	9.30	4.65	18.60	11.63	55.81
17.	Which is useful for practical class	20.93	6.98	9.30	11.63	51.16
18.	Which is best for traditional/lecture based teaching	44.19	4.65	6.98	6.98	37.21
19.	Which is best for problem based teaching	11.63	9.30	11.63	9.30	58.14
20.	Best to summarize lecture	11.63	6.98	32.56	6.98	41.86
21.	Overall preferred teaching aid?	2.33	4.65	2.33	6.98	83.72

*BB - Black Board, OHP - Over Head Projector, PPT - Power Point Presentation

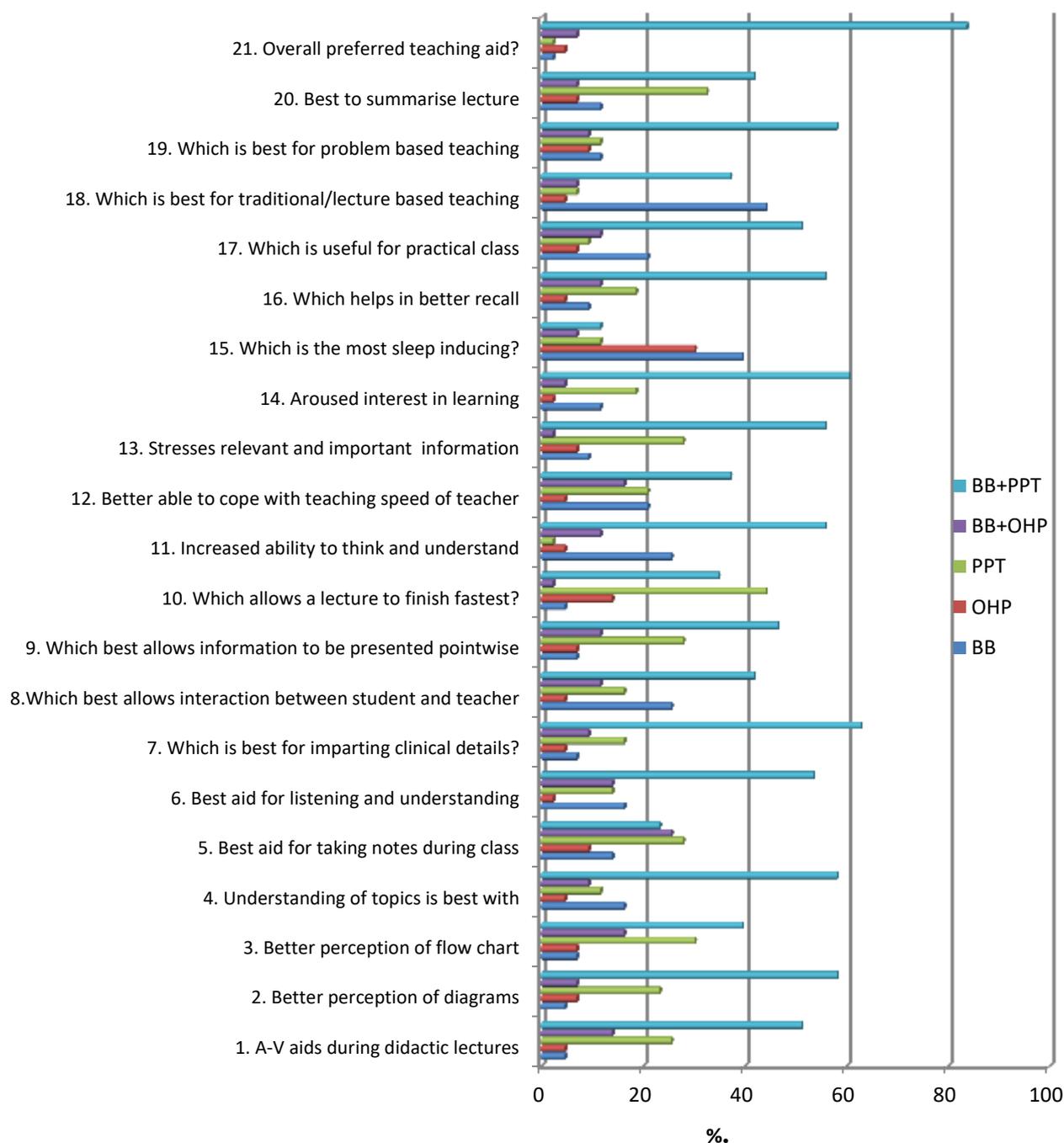


Fig1: Medical undergraduate’s perception on various teaching aids and teaching methods.

The study which was conducted was a cross sectional Questionnaire based study. Questionnaires are being used commonly as a tool to evaluate teaching and learning among the students. In our study the best teaching aid preferred by 83.72% of students was combination of BB and PPT for learning Pharmacology. It was evident from our study that the students showed a preference for the use of a combination of visual aids i.e. BB and PPT 51.16 % followed by PPT 25.58%, BB+OHP 13.95%, and BB 5.9% in class room. It was Similar to Mohan L *et al.*;[3] which showed that Mixed

Aids 54.9% is the best method of audiovisual aids to teach Pharmacology followed by PPT 20.9% and BB and OHP are 19.6% and 4.9% respectively.

Our finding is parallel to a study done by Banerjee I *et al.*;[7] , Kumar A *et al.*;[8] in India also reported that combination of teaching aids is the best method of teaching and learning methodology. Thus the reason for combinations approach is, it might help the students to be alert and to make them actively involved during class.

In the present study 58.14 %, 39.53 %, 58.14% of student's showed that understanding of concepts through diagrams, flow charts and understanding the topics respectively was possible with combining both the BB and PPT. So that subject could be made very interesting and at the same time basic concepts are made very simple to understand and concepts becomes strong and was similar to Banerjee I *et al.*;[7], Baxi SN *et al.*;[9] study, but in our study there was mixed response for taking notes and 27.91% preferred PPT method in comparison to combination in other study. Baxi SN *et al.*;[9]. In our study 53.49% opined that best aid for listening and understanding was combination of BB & PPT, but 45.37 % in Vangala N *et al.*;[10] study preferred BB. A BB lecture allows the student to follow the hands of the teacher and copy the diagrams, conceptualize the information. Structures and procedures linked through visualization are likely to be retained in the long-term memory when combined with PPT, it allows various information to integrate and organize it in a systematic way. Thomas M *et al.*;[1]

62.79% reported that the aid which is best for imparting clinical details was BB+PPT followed by PPT i.e., 16.28% which was in parallel to study done by Gupta Arvind K. *et al.*;[11] where 80% preferred only PPT.41.86% and 46.51% said BB+PPT allows interaction between student and teacher as well as allows information to be presented point wise which was contradictory to Gupta Arvind K *et al.*;[11] where 91.11% preferred BB for interaction and 50% for OHP to present point wise respectively. 44.19% reported PPT allows a lecture to finish faster, this point was similar to Gupta Arvind Ket *al.*;[11] 39.53 % said BB was most sleep inducing but Gupta Arvind Ket *al.*;[11] study 58.88% reported PPT was more sleep inducing.

55.81% said BB+PPT helps in better recall, but 85.55% in Gupta Arvind Ket *al.*;[11] study opined BB. Majority of them in our study preferred combination of BB+PPT because it can arouse interest, increases thinking and reasoning capacity, it stresses on important points, students can cope with the lecture speed and useful for teaching practical's. This is because combining BB+PPT can integrate the text, the pictures, and images which is a great advantage and improves the educative value of the subject. One disadvantage of PPT seems to be that the student becomes a passive observer rather than an active participant. This can be overcome by combining PPT with BB [12, 13].

41.86% in our study felt summarizing is best with BB+PPT, 32.56% with PPT and only 11.63% with BB, which was parallel with Manoj Kumar *et al.*;[14] where 99.2% liked being taught using BB with PPT being used to summarize the lecture and Petimani MS *et al.*;[15] study where 53% preferred PPT and 42.8% for BB.

In present study 44.19% and 58.14% students reported that lecture based teaching would be best with BB and problem based teaching would be best with PPT+BB. But few students 37.21% liked to go with BB+PPT for traditional based teaching. This could be due to integration and organized process to include the required contents with PPT including good visual impact on learning and retaining with better explanation of additional contents through BB [12, 13]. Our study also found that an overwhelming majority of the students preferred problem based learning would reinforce the students' interest as they felt that it enhanced their lateral thinking, gives a better correlation between theory and clinical postings and also improved student interactions among each other as well as the teacher. Thus Audio visual aids should be used to enhance and complement the lectures. The whole exercise should motivate, enthuse, and encourage the students to think and not overload them [12].

LIMITATIONS OF THE STUDY:

The study has some limitations. This research is based on the finding of a single medical college with small number of students; the results cannot be extrapolated to all medical students of all medical institutions. A multi centric study with higher sample size will be beneficial to assess the best teaching aids used in teaching Pharmacology all over Karnataka and India.

CONCLUSION

Conclusion drawn from the study is that a combination of different Audio visual aids, viz. blackboard presentation and power point presentation together can improve the lectures and will facilitate the medical student to understand Pharmacology in a better way. Lectures using different teaching aid are common phenomena. But there need to be appropriate and discrete mix of both PPT and BB teaching in the classroom for optimum benefit to the students.

ACKNOWLEDGEMENT

We are very grateful to all persons directly or indirectly involved in the study.

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