



EVALUATION OF IMPACT OF POWER POINT VERSUS CHALKBOARD BASED LECTURES ON MEDICAL STUDENT'S KNOWLEDGE AND THEIR PREFERENCES

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ABSTRACT **Introduction:** Pharmacology teaching lectures were based upon teaching aids like chalkboard, PowerPoint (PPT) but the superiority of these aids over one another has not been proven. The present study was conducted to evaluate the impact of the PPT and chalkboard based lectures in pharmacology teaching on medical students in Government thiruvavur medical college. **Material and methods:** Study was conducted at Department of Pharmacology, Government thiruvavur Medical College, Tamilnadu, India in 2017. Ninety nine medical students of second MBBS were randomly divided into two groups and a selected content-based lecture was delivered. For one group lecture was delivered using chalkboard, for second group using PPT presentation. Single-best Multiple Choice Questions [MCQs] paper was used for assessing the knowledge gained. Two direct question to note student preferences for these aids was included on the MCQ paper. The difference in the marks obtained in the two groups was analyzed by unpaired student's t test. **Results:** Students who attended the class using chalkboard obtained significantly higher score in MCQ test compared to those who attended the same content based lecture using PowerPoint ($p=0.035$). The power point lectures were preferred by 60 % of the students. **Conclusion:** The results of the present study suggest power point based lecture were preferred by students than the chalk and talk lectures. The scores obtained by students in chalk and talk were more than the power point based lectures

KEYWORDS : Chalkboard, Lectures, Pharmacology, PowerPoint, Teaching aids

1. INTRODUCTION:

Pharmacology is a rapidly changing medical science which trains a medical student to use drugs rationally in treating patients. Pharmacology is considered to be a boring subject as it becomes very difficult for students to memorize the increasing knowledge in this field. The main aim of teaching in pharmacology is to make students understand the drug effects in such a way that they find the subject interesting and at the same time retain this knowledge when they treat patients. With increasing number of medical seats and syllabus, there has been a constant effort to use modern teaching aids in medical colleges. Audiovisual aids (like PowerPoint (PPT)) help to illustrate pathway and mechanism diagrams and impart clarity to the lectures. Chalkboard aid is inexpensive; easy to clean and reuse, allows students to keep pace with the teacher and is not dependent on electricity. But it is time consuming; one cannot go back to what has been erased and is not so effective for large number of students. PPT has the advantage of using colors, fonts, diagrams and animation. Its disadvantage is that dim light causes loss of eye contact; note taking is difficult, has tendency to overload information and needs electricity. One viewpoint is that using PPT improves learning or comprehension whereas other viewpoint states that students remember about the same amount of material following PPT as they do following other media (such as overheads and blackboard). Some studies find that PPT actually impairs learning. [1] Hence several student feedback studies have been conducted in the past in the field of medical education. The superiority of PPT with respect to the traditional chalk and talk method has not been proven. There is a need to evaluate the impact of this change on the knowledge gained by students. Therefore, the present study was planned in Government thiruvavur medical college, Thiruvavur, Tamilnadu, India to compare the impact of the PPT and chalkboard in pharmacology teaching by assessing the knowledge based on the marks obtained and studying student preferences for these aids.

2. MATERIALS AND METHODS:

Study was conducted in the Department of Pharmacology, Government Thiruvavur medical college, Thiruvavur, Tamilnadu, India. A total of 99 medical students who were about to complete their second year MBBS were included in this study. Study objectives were explained to the students and those who were willing to participate were included for the study. A selected content based lecture in pharmacology was delivered in two different lecture halls at the same time. The students were randomly divided into two groups based on odd/even roll numbers. Even roll numbers formed Group I and odd

roll numbers formed Group II. For Group I lecture was delivered using the chalkboard and for Group II using the PPT. The time allocated for the lecture in both groups was one hour. Immediately after the lecture a single best multiple choice questions (MCQs) paper consisting of 10 questions was distributed and students were asked to attempt all the MCQs within the required time. Each question carried one mark. In addition there was two direct question on whether students would prefer PPT or blackboard for lectures in pharmacology. The marks obtained (out of 10) were calculated for each student. The difference in the marks obtained in the two groups was analyzed by independent student's t test using the Statistical Package for Social Sciences (SPSS) version 17. The preference of students for the teaching aids was evaluated in the form of percentages.

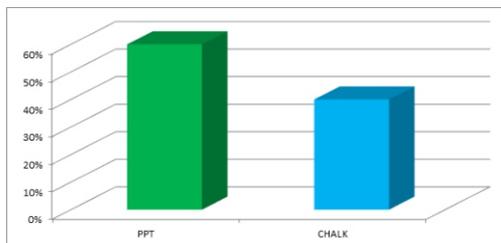
3.RESULT:

All the students completed the study. The analysis of the data collected showed significant higher marks obtained by students who were taught using chalkboard compared to those students who were taught using PPT. 60 % of the students preferred chalkboard whereas 40% of the students preferred PPT.

Table 1: Comparison Of Marks Obtained By Students

	Chalk And Talk(mean± S.d)	Powerpoint (mean± S.d)	
Mark Obtained	8.43±1.23	7.12±1.57	P=0.035

Figure 1: Preference Of Students For Teaching Aids



4. DISCUSSION:

Every lecture topic has some specific facts which the student should retain in his memory. These help them later to develop new knowledge. It is the duty of the teacher to emphasize these facts during the lecture. Use of teaching media plays an important role in this aspect. The type

of media used will decide how much attention will be obtained during the lecture thereby influencing the knowledge retained. In this study, it was observed that the short term retention of facts was less with PPT and hence students in PPT group obtained lower scores. Also more number of students preferred chalkboard (60%) over PPT (40%). This study has been specifically conducted to evaluate the use of teaching aids in pharmacology. The findings obtained may not be true for all subjects in medical curriculum. The preference of students for these two teaching aids may vary from subject to subject and also influenced by the commonest mode of teaching aid used in that department. The main reasons for liking chalkboard could be that it allows sufficient time to take down notes and power failure does not interrupt the lecture. The main reasons for disliking PPT are that it takes longer to set up the projection, power failure interrupts the lecture and students find it difficult to take down the notes. Also the students could be more impressed by the way chalkboard is used as compared to PPT. Several studies in the past have found chalkboard to be a better method of teaching. A questionnaire-based study carried out among 7th semester medical students in Delhi rated chalkboard as best in allowing interaction and helping recall.[2] A study conducted by Banerjee *et al.* Nepal in 2008-2009 reported that chalkboard methodology was found to be the best (60%) followed by LCD Slides (20%).[3] Another study conducted in West Bengal in 2012 concluded that chalkboard was better than PPT according to the second year MBBS students.[4] In a study undertaken to elicit the perception of the 337 MBBS students of different semesters in Orissa in 2013 regarding the teaching methods concluded that 82.83% of the participants agreed that chalkboard teaching is a better mode of teaching.[5] Some studies also support the use of PPT over chalkboard. A study conducted in USA on engineering students retained 15% less information delivered verbally by the lecturer during PowerPoint presentations, but they preferred PowerPoint presentations over traditional presentations. [6] But in our study more students preferred chalkboard and even the memory retention was better with chalkboard. A study conducted on 62 medical students in Jaipur India concluded that 65 % of medical students preferred the use of PPT presentations significantly over other methods.[7] In one study in USA, medical students rated both types of presentation equally and displayed no differences in short- or long-term retention of material.[8] Another study conducted on 93 fifth semester medical students in Gujarat showed that the student had equal liking for both these teaching aids.[9]. Studies conducted in developed countries may show a preference for PPT because they are technologically more advanced. The students are taught using these technologies much before they enter professional colleges. In India most of students are used to chalkboard type of teaching before they enter professional colleges.

5. CONCLUSION:

The results of the present study suggest that chalkboard has the advantage of a better recall besides being the most preferred aid among medical students. There is a need to discuss as to why a traditional method has more preference over a new method. This study should be considered as a guide by all streams of medicine to improve the use of PPT and to consider it a supplement to the chalkboard teaching.

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