

## Poster Presentation as an Education tool: Use, Views and Reviews from Undergraduate Medical students

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### ARTICLE CYCLE

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### ABSTRACT

**Background:** Medical education has entered its modern era in our country with the new NMC devised Competency Based Curriculum de-emphasizing autocratic teaching techniques and in turn replacing them with continuous stress upon critical thinking, parallel reading, creative expression and information evaluation. **Aims & Objectives:** 1. To assess the use of Poster Presentations as an Educational Tool for Under Graduate (UG) Medical Students. 2. To assess the views of Under Graduate (UG) Medical Students on Poster Presentation as an Educational Tool. 3. To assess the reviews of Under Graduate (UG) Medical Students on Poster Presentation as an Educational Tool. **Methodology:** After ethical clearance and face validity of the questionnaire students who had participated in poster competition, were asked to fill the form for study and analysis of both open and close ended questions was done. **Result:** The average response recorded on Likert scale was of 4.21 ( $\pm$  0.65); Cronbach's alpha for the set of questions asked was found to be 0.914 depicting excellent internal consistency and showing that the data is very much reliable. **Conclusion:** Academic poster competition can be an innovative teaching and learning tool for both academic and soft skills.

### KEYWORDS

Academic Posters; CBME; Teaching Learning

### INTRODUCTION

Medical education has entered its modern era in our country with CBME de-emphasizing autocratic teaching and replacing them with critical thinking, parallel reading, creative expression and information evaluation. (1,2) According to NMC, critical thinking is an indispensable skill which needs to be developed at under grad level to aid better IMG performance at work place. Critical thinking leads to problem evaluation abilities and helps reach creative solutions. These skills will help IMGs to develop effective clinical reasoning and acumen in their practice of medicine. (1,3,4)

A big factor to consider in medical curriculum is its vastness. Multiple subjects and an extensive curriculum can be a strain on student's memory. Students usually feel like everything is stored as a short-term memory and most of the knowledge is lost within a short period of time. (5,6) Interactive tools of learning, like poster presentation, leads to interactive discussions with other team mates and also enable scope for personalized feedback among each other. (7,8,9)

Innovative teaching techniques such as poster presentation improves cognitive ability among students, and also helps to create a relevant and engaging learning environment. An academic poster presentation also improves communication skills and builds confidence in students with direct student involvement. (10-13) A poster can be used not only as a separate learning activity but also during lectures to help students retain and learn faster by serving as a visual aid that helps the students understand any material in depth (14,15). An eye catching and engaging poster also helps students to get engaged within their lessons. It can also be used after the lessons, to remind them of take-home messages or lesson summary. (16-18) Innovative teaching tools have been put to lime light in latest NMC guidelines. Although they have been approved at policy level but things are still changing slowly at ground level as they effort intensive and time heavy tools (10,19). Keeping current medical curriculum changes in mind, researchers conducted a poster making and presentation competition in their medical college. Through this first-hand experience true opinions and review could be obtained from participating students regarding poster presentation as an educational tool.

#### **Aims & Objectives:**

1. To assess the use of Poster Presentations as an Educational Tool for Under Graduate (UG) Medical Students. 2. To assess the views of Under Graduate (UG) Medical Students on Poster Presentation as an Educational Tool. 3. To assess the reviews of Under Graduate (UG) Medical Students on Poster Presentation as an Educational Tool.

#### **MATERIAL & METHODS**

**Study Design:** Cross-Sectional study

**Study Settings:** Subharti Medical College, Meerut

**Study Population:** 2<sup>nd</sup> year MBBS students

**Study Duration:** August 2024 to September 2024

**Sampling Technique:** Purposive sampling

The methodology of this research is based on ADDIE model, which is used for analyzing, designing, developing, implementing and evaluating (20). At the analysis stage, literature review and document analysis were conducted to see the effectiveness of poster presentation as an innovative teaching and learning technique.

Before conducting the study, ethical clearance was taken from institutional ethical committee and the face of validity of questionnaire was done by distributing the questionnaire to senior medical faculty after explaining them the intent of the study. They were then asked to evaluate whether the questions effectively capture the topic under research and whether the question were free of confusing or leading questions.

The final Questionnaire consisted of both closed-ended and open-ended questions for better understanding of the subject matter. The final Questionnaire consisted of student review related questions regarding the activity, barriers students felt with poster presentation as a teaching learning tool and other interactive tools they want to be inculcated in future. Poster topics for presentation were given from pharmacology and students were divided into teams as per their roll numbers. Students filled the questionnaire after (but on the same day) poster presentation and prize distribution of 3 best posters was done. Judgement of the poster presentation was done by two senior professors of the medical college with subject clarity, way of presentation, team involvement and overall look of the poster as deciding points.

#### **RESULTS**

Twenty-two topics was allotted to participating groups for presentation of the poster. (Table 1)

Interpretation of Likert scale on Participant Views on Poster Presentation as an innovative learning tool was high. (Table 2)

Shows analysis chart of Likert scale responses regarding poster activity experience. (Figure 1)

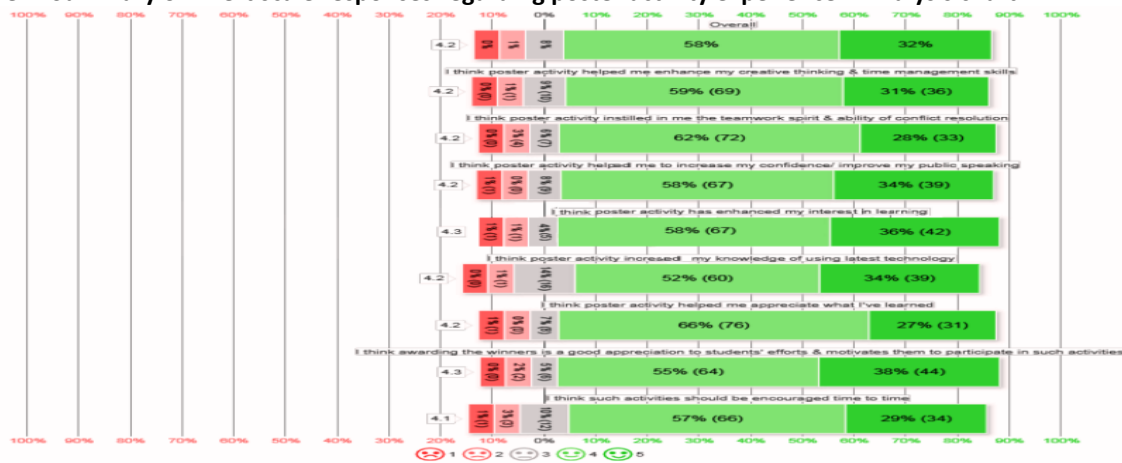
**Table-1: Topics allotted to participating groups for presentation of the poster.**

S No.	Allotted Poster Topics	S No.	Allotted Poster Topics
1	Therapeutic Drug Monitoring	12	Drugs Used In Glaucoma
2	Gout	13	Mechanism Of Action Of Anti-Fungals
3	Drugs In Cosmetic World	14	Good Prescribing Practices
4	Guidelines For Mx Of Hypertension	15	NSAIDS
5	Pharmacovigilance	16	Superbugs
6	Mechanism Of Action Of Anti-	17	Junctures Of Ethical Dilemma
7	Tuberculars	18	Ototoxicity
8	Adverse Drug Reactions	19	Advancement In Cancer Therapeutics
9	Pharmacogenomics	20	Antibiotic Stop Policy
10	Antibiotic Stewardship Program	21	Fixed Drug Combinations
11	Gina Guidelines For Mx Of Asthma	22	Novel Antibiotics

**Table 2. Mean and Standard deviation of Likert scale on Participant Views on Poster Presentation as an innovative learning tool**

S. No.	Items (Statements)	Mean	St. Dev.	Interpretation
1.	I think poster activity has enhanced the interest of students in learning	4.28	0.66	High
2.	I think poster activity helped me understand the topic better	4.40	0.57	High
3.	I think poster activity was fun to do	4.10	0.75	High
4.	I think poster activity increased my knowledge of using latest technology	4.18	0.70	High
5.	I think poster activity helped me improve my soft skills (creative thinking, co-ordination, conflict resolution, time management, decision making)	4.20	0.62	High
6.	I think poster activity instilled the teamwork spirit in me	4.15	0.68	High
7.	I think poster activity helped me to increase my confidence/ improve my public speaking	4.23	0.66	High
8.	I think poster activity helped me appreciate what I've learned	4.17	0.62	High
9.	I think to make the activity, a competition and awarding the winners, is a good appreciation to students' efforts	4.29	0.64	High
10.	I think such activities should be encouraged time to time	4.11	0.75	High
<b>Total Mean</b>		<b>4.21</b>	<b>0.66</b>	<b>High</b>

**Figure 1. Summary of Likert scale responses regarding poster activity experience – Analysis chart.**



**Figure 2. Barriers experienced by the participant in preparation or presentation of the poster.**

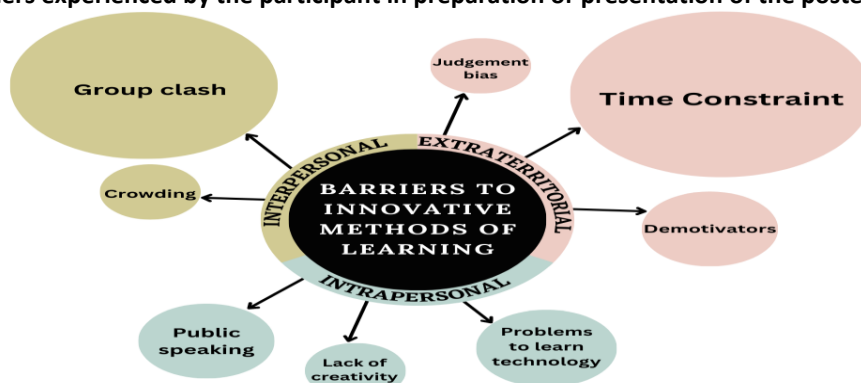
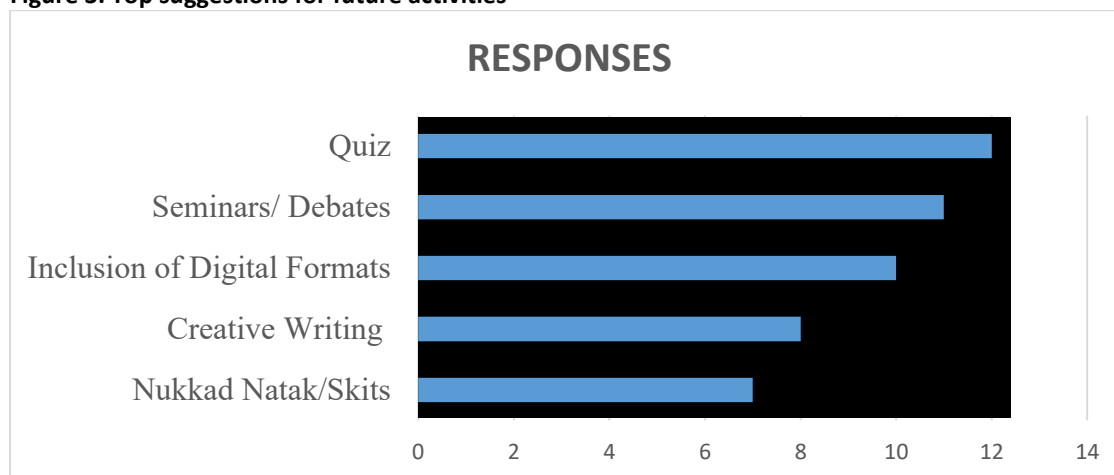


Figure 2 shows the chapati diagram/ bubble map of the barriers faced by the participants in the group activity of poster competition, while preparing and/or presenting. The sizes of the circles are a cumulative representation. Barriers were categorized as: interpersonal (in between the

participants), intrapersonal (faced by self within self), and extraterritorial (other factors; not associated to self or other participants).

The highest suggested future activity should be Quiz. (Figure 3)

**Figure 3. Top suggestions for future activities**



**DISCUSSION**

As shown in Figure 1, the average response recorded on Likert scale was of 4.21 (± 0.65); Cronbach’s alpha for the set of questions asked was found to be 0.914 depicting excellent internal consistency and showing that the data is very much reliable. Almost 90 % of study participants responded positively, agreeing to the statements about poster activity helping them to- hone their soft skills (creative skills, time management, teamwork spirit, conflict resolution, & public speaking), and experience a positive immersive & engaging experience (enhancing their interest in learning, knowledge of using latest technology, & appreciating what they have learned). Interestingly a statistically significant association was found between participant responses of their experience with their attitude towards innovative methods of learning (asked before starting the activity). Interestingly, the ones who were interested in the activity initially gained more out of the poster competition. In studies done on school students (7, 15), accounting courses (8), first year undergraduates (9, 12, 16 and 18) similar findings were seen. All students irrespective of their age or stream found poster presentation as an effective tool for learning and all of them emphasised on team building teachings they got from the experiences. Out of all the barriers, time constraint was found to be the most prevalent. Group clash arising due to difference of opinions in between the group members was also found to be a very

important barrier. Many experienced intrapersonal problems as well, including fear of public speaking, lack of creativity, or hesitating to use technological aids for poster presentation competition. In our reference studies (9, 12) time constraint, lack of self-confidence, tendency to work in homogenous groups, labour intensiveness was found to be a major barrier. Most participants had ideas for future activities. One activity later they seemed more charged to pursue innovative teaching learning methods in future. Quiz and debates were most preferred future activities while other activities like digital competitions, creative writing and skits followed them.

**CONCLUSION & RECOMMENDATION**

Overall, academic poster presentation can be utilised in improving academic knowledge and soft skills in medical graduates. Creativity, team work and communication skills will be enhanced in students with long term impact being an important advantage of the method.

**LIMITATION OF THE STUDY**

Limited sample size and lack of comparison from other innovative methods.

**AUTHORS CONTRIBUTION**

All authors have contributed equally.

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Nil

### CONFLICT OF INTEREST

There are no conflicts of interest.

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### DECLARATION OF GENERATIVE AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

The authors haven't used any generative AI/AI assisted technologies in the writing process.

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