

Role of Interactive Lectures for Teaching and Learning Community Medicine - A Comparative Study

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ABSTRACT

Background:

Teaching community medicine to MBBS students begins right from first year and continues till pre final year. Didactic teaching methods may lead to the loss of interest in the subject and then may compromise the learning in future. Involving the students to make them learn could be of help in this regard. The present study aims to fill this by comparing the traditional didactic lecture method with the participatory method by measuring their outcomes in the form of marks obtained in tests and by the feedback obtained from the students.

Aim and Objectives:

Aim –

To compare the impact and perception of interactive and traditional didactic as a teaching learning tool in community Medicine.

Objectives -

- 1) To compare the outcome of traditional and Interactive lectures among the first year MBBS students.
- 2) Assessment of Perception of students for both the methods of teaching and learning.

Methodology:

After the approval from the institutional research and ethics committee, a comparative cross sectional study was done by teaching 4 similar topics in community medicine, 2 with the didactic lectures and 2 with the participatory method of teaching. The marks obtained were analyzed using unpaired t test. A feedback regarding both the methods of teaching was also taken from participants.

Result:

Performance of students after lectures utilizing traditional method as well as participatory method shows that the mean marks obtained after the participatory method of teaching were more than the marks obtained after traditional method of teaching ($p < 0.0001$)

The response of the students on a 5 point scale regarding confidence on the topic after session, engaging ability of the session for the students, ability to increase the attention span, ability for retention of concept after session and finally the overall rating of the session by the students. All the parameters were statistically significant in favour of the participatory method of teaching.

Conclusion:

The difference in the marks obtained after both methods of teaching was found to be highly significant in favour of participatory method with $p < 0.0001$. Majority students were of opinion that the learning, understanding, attention span, retention ability and communication skills improved with participatory method of teaching.

Keywords – Participatory method , Community Medicine, Didactic lectures, traditional method

I. INTRODUCTION

Community medicine is a subject which is to be taught for the longest duration in MBBS curriculum. There are chances that students may lose interest in the subject in this long duration. To keep the interest intact we need certain innovative and newer methods of teaching and learning. Interactive lectures is one such method which actually not only breaks the monotony of the traditional ways of teaching but at the same time enhances the learning process. In addition to cognitive domain the affective domain is also reported to be fulfilled by this method of teaching.

The emphasis on adopting the newer method of participatory teaching methods has come up with the newer dimensions of student teacher relationship and innovative techniques of teaching and learning. (1,2) Depending upon the requirement of clinical cases, seminars, practical experiments, problem-based learning, etc., students are heading towards self-directed learning(3). This in turn increases student-based learning, motivation, retention which ultimately leads to a deeper understanding of content (4).

Previously the main focus was given to the cognitive aspects of teaching, whereas now, research has shown that non-cognitive aspects like the attitude of students towards the subject are equally important. Teaching and learning are having multidimensional approach that includes affective, cognitive and behavioral components (5). Many studies have supported the fact that student's perception towards the subject and their attitude are important when it comes to achieving good learning outcomes (6,7).

Public health education should be an active process which at the same time must be focusing on student's need. Interactive methods with greater incorporation of the latest information and communication technology should be used to fulfill this as they actually acquiring and retaining knowledge is improved with participation and interaction. (8,9)

II. METHODOLOGY

Firstly the approval from institutional research and institutional ethics committee was taken for the proposed project. Informed written consent was then taken from the students for participating in the project after giving them a brief description of the project and its purpose. Four topics of preventive medicine of same difficulty level were chosen. MBBS First year students were the study participants as the college had only one batch at the time of conducting this study. The whole 150 students of MBBS first year were included in the study. 140 had given the written consent to participate in the study but only 123 had attempted all the 4 tests. Team of three teachers was there for taking the lectures. All had done their revised basic workshop training in medical education. The topics selected for teaching were of same difficulty level. Two topics were taught using the traditional lecture method and two topics were taught by interactive method of teaching. In the interactive method techniques utilized were think pair and share and, brainstorming. All the students enrolled were exposed to both the methods of teaching. After completion the particular topic a part completion test was taken after 3 days. Tests comprised of Multiple Choice Questions (MCQ), true and false and fill in the blank. Each test carried 15 marks. Comparison of the marks obtained after both the methods of teaching was done using statistical test of significance. A feedback was also taken from the students regarding the perception of two different methods of teaching. Feedback form was based 5 point likert scale.

III. DATA ANALYSIS

Data was put in Microsoft excel and analyzed for frequency and test of significance. Unpaired t test was applied using online statistical software to assess the outcome of the two different methods of teaching. Descriptive statistics was applied for the assessment of student's feedback for the two teaching methods adopted.

IV. OBSERVATIONS AND RESULTS

Table 1: Comparison of Students' performance for after both the methods of teaching. (N = 123)

Mean test score ± SD	Method of Teaching		Unpaired t test (p value)
	Traditional Method	Interactive Method	
Test 1	7.42 ± 0.355	13.57 ± 0.29	<.0001
Test 2	10.77 ± 0.312	12.60 ± 0.26	<0.0001

Table 1 depicts the performance of students after lectures utilizing traditional method as well as participatory method. The results clearly shows that the mean marks obtained after the participatory method of teaching were more than the marks obtained after traditional method of teaching. The difference in marks was statistically highly significant also with $p < 0.0001$.

Table 2: Comparison of students ratings for Interactive and Traditional teaching methods on a score of 5 (N=123)

No.	Students Perceptions	Newer method Mean \pm SD	TL method Mean \pm SD	t-test, P value
1	Development of Confidence on the topic after the session	3.36 \pm 0.10	1.71 \pm 0.11	p < 0.0001
2	Interactive & participative ability of students in the session	3.43 \pm 0.09	1.43 \pm 0.09	p < 0.0001
3	Ability to increase the attention span	3.28 \pm 0.09	2.10 \pm 0.10	p < 0.0001
4	Ability for retention of concepts after the session	3.34 \pm 0.01	3.34 \pm 0.09	p < 0.0001
5	Overall rating – liking for the session	3.39 \pm 0.10	2.11 \pm 0.11	p < 0.0001

Table 2 shows the response of the students on a 5 point scale regarding confidence on the topic after session, engaging ability of the session for the students, ability to increase the attention span, ability for retention of concept after session and finally the overall rating of the session by the students. All the parameters were highly significant in favour of the interactive method of teaching.

Table 3: Feedback of students for various attributes of interactive teaching method on a 5 point Likert Scale N=123

No.	Attributes of interactive method of teaching	1	2	3	4	5
1	Help in better understanding	0 (0.00)	8 (6.50%)	20 (16.26%)	55 (44.71%)	40 (32.52%)
2	Will help in performing better	2 (1.62%)	3 (2.43%)	10 (8.13%)	43 (34.95%)	65 (52.84%)
3	Motivating for learning	0 (0.00)	0 (0.00)	2 (1.62%)	51 (41.46%)	60 (48.78%)
4	Improves communication skills	1 (0.81%)	5 (4.06%)	15 (12.19%)	46 (37.39%)	56 (45.52%)
5	Organized systematically	0 (0.00)	5 (0)	20 (0)	53 (0)	45 (0)
6	Felt more relaxed as compared to Traditional method	0 (0.00)	0	15 (0)	28 (0)	80 (0)

Summary of results:

The outcome of students learning was assessed by taking tests after taking lectures using both the methods of teaching that is traditional didactic lecture and interactive method. Table 1 depicts that the difference in the marks obtained in the tests for both the methods was statistically highly significant in favour of interactive method. Similarly the feedback of students taken shows that learning, understanding, attention span, retention of knowledge attained, communication skills and confidence all were more with newer method of teaching. Overall rating also went in favour of interactive method.

V. DISCUSSION

In a study done by Beatriz Gal et al entitled Evaluation of participatory teaching methods in undergraduate medical students' learning along the first academic courses, the first year medical students rated more positively the use of participatory methodologies than second year students. A major drawback is detected in the perceived workload. (10)

Research done by Dr. Palash Das entitled study on Participatory Learning among MBBS Students in a Medical College of West Bengal, obtained statistically significant results using skill score and empathy score questionnaire. Knowledge achievement was also encouraging with no statistical difference. the implementation of participatory learning was feasible in medical colleges of West Bengal and found to be more effective and accepted than traditional teaching methodology (11) In present study the difference in outcome after both the type of teaching was highly significant in favour of participatory method.

Misal Devika et al conducted a study on Students' opinions on the prevailing and innovative methods in medical education technology found that 77.70% of the students opined that the present system of medical teaching in pharmacology was satisfactory. 40% of the students thought that interactive sessions are desirable. 52.8% students said that was that seminars can be fun once in a while with 21.35% saying that only the group leaders benefit from seminars (12). The difference in opinion between present study and Devika et al study may be due to the participants belonging to different years of MBBS. Second MBBS students might be having more study load as compared to first year students.

Assessment of innovations in tutorial method of teaching among medical students by Velavan A et al. showed that the mean scores obtained in the pretest increased significantly in the post test from 53.6% to 83.7%. Most of the students agreed upon the various advantages of this method of teaching. About 97% of the students rated this method of teaching as good and above (13). Similar results were obtained in some more studies. (14, 15,) Motivation level was found to be increased with the first year students ($p=0.007$) along with the resulting better learning ($p<0.0001$) as compared to the second year students. According to second year students the newer participatory methods are imposing more work load on them.(10)

VI. CONCLUSION

- 1) The difference in the marks obtained in the tests shows that the outcome of learning after participatory method of teaching was statistically more significant.
- 2) The feedback of the students suggests that the learning understanding, attention span, retention of knowledge acquired, confidence, participation and interaction, improvement in communication skill was more with the participatory method of teaching as compared with the traditional didactic lecture.

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