



Original Research Article

Group MBBS Students Seminar: A Facilitation & Evaluation Way to Learn Community Medicine

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ABSTRACT

Background: The present study was taken up to introduce a novel interactive seminar: “group student’s seminar” for the enhancement of the teaching-learning process in Community Medicine.

Methods: Study subjects were 82 third year MBBS students of a North Indian Medical College. Multiple choice questions were derived from the topic to be presented in seminar. A pretest questionnaire was circulated amongst the students before the seminar & a post test questionnaire after the seminar. Performance with the key points of Community Medicine was assessed. Perceptions of the students on the use of pre and post-test in learning Community Medicine were obtained by administering a questionnaire.

Results: The mean score of the pretest group was 4.2 ± 1.28 SD and that of the post test was 7.0 ± 1.8 SD. Statistical analysis was done by using z test with 95 % confidence interval for difference, which showed a very high statistical significance with a p value ≤ 0.001 . Although both males and females showed highly significant improvement in post-test scores, but improvement in post-test score was more significant in the males. This showed that group student’s seminar adds to the more knowledge of the male students.

Conclusions: The introduction of a pre and post-test in a didactic seminar proved to have significantly achieved the objective of our study by facilitating attentiveness of the students to the seminar and hence better understanding of the key concepts of Community Medicine.

Keywords: Pre-test, Post-test, MBBS Students, Community Medicine

INTRODUCTION

Teaching learning process has been evolving though different interactive sessions designed for the students. Interactive seminars enable active participation, peer interaction, questioning the minds of students, handling of debatable issues, effective presentational skills, presenting opinions. [1] Small study groups foster interactive learning and positive

cognitive effects, such as activation of prior knowledge, recall of information, individual and collaborative knowledge construction, and cognitive conflicts leading to conceptual change. Small group learning was also reported to have a direct positive effect on students’ motivation to learn and motivation has been shown to play a central role in promoting group productivity, elaboration of knowledge, and interaction in different

settings. Finally, interactive learning has been evaluated more positively than formal lecturing by medical students and medical professionals alike. [2-8]

Pretests with multiple choice questions enhance learning. [9] By comparing pre and post tests, teachers can see what students actually learned from the lessons that were developed. In addition to assessing learning, pretests can enhance learning. Pretesting may be beneficial because it encourages more active involvement in learning, perhaps by increasing general interest in the topic. In addition, the pretest may help students to recognize what information is most important or what type of information the teacher is likely to test later. Hamaker suggests that a pretest may lead to better recall for the previously tested information because it directs attention to the need to encode that information when encountered again during subsequent study. [10] Pretests can give students a preview of what will be expected of them. This helps students begin to focus on the key topics that will be covered. Kornell, N in his study has observed that even if students cannot retrieve correct answers in pre-tests, it enhances subsequent learning. [11] J Steven Cramer and Martin C Mahoney have observed that the introduction of a pre-test/post-test instrument supported achievement of the learning objectives with a better understanding and utilization of the concepts of evidence based medicine in journal clubs. [12]

The intention of administering a pre-test before the seminar was to both analyse how much the students are aware of the topic and most importantly to make the students be more focused to the seminar and a post-test after the seminar was to evaluate students learning of the key concepts of topic (Reproductive & Child Health). The present study was undertaken to determine the perceptions of third year MBBS students about pre and post-tests; to determine if they

were effective in enhancing attentiveness and learning concepts of Reproductive & Child Health and to determine if there was any gender wise difference.

Seminars were conducted in the department of Community Medicine, SRMS Institute of Medical Sciences, Bareilly (UP) & the involvement of the students was limited. This educational seminar was taken up to ensure active involvement of all 82 students and benefit them academically as well as professionally in the year 2014.

MATERIALS AND METHODS

This study was conducted in a rural medical college, SRMS Institute of Medical Sciences, Bareilly (UP) during the month of November 2014. Out of the total 103 third year MBBS students, 21 students were absent so the number of students were 82 (35males & 47 females) for this study. One small topic for seminar from Community medicine subject was declared 1month prior to the actual date of seminar. The students were given time to read & prepare. The 4 to 5 presentators were included by freewill. The time allotted for presentation and discussion was 15 minutes and 5 minutes respectively. The seminar of the third MBBS class in Community Medicine was restructured with introduction of a pre-test before the seminar and a post-test at the end of the seminar. There were 20 multiple choice type questions in total all with 4 options including single best option which was considered as correct response. 1/2 mark was awarded for each correct response. There was no negative mark for incorrect response. No response was considered as incorrect response.

The pre-test administered contained 20 items of multiple choice type covering the key points pertaining to the seminar to be presented. The seminar was presented for about 90 minutes, following which, a post-test comprising a similar set of questions as the pre-test was administered. A

questionnaire seeking the student's perception about the effectiveness of pre-test in improving their attentiveness to the seminar & encouraging them to come prepared for the subsequent seminars for better understanding also was administered.

The questionnaire was pilot tested to ensure understanding of the items, wording and adequacy of response. Means and standard deviations were calculated. Paired student 't' test was used for comparing pre and post-test scores while unpaired student 't' test was used for comparing the perceptions of male and female students and p values were calculated using IBM SPSS 20. p value < 0.05 was considered as significant.

RESULTS

82 third year MBBS students took up the pre-test & post-test out of which, majority of the students perceived that pretest helped them to be more focused to the seminar and hence helped them to answer the post-test questions which they could not answer in pre-test.

Table 1- Pre test and post test marks obtained according to Achievement level

Marks Obtained	Achievement level	Pre test	Post test
1-4	Low	48	10
5-7	Medium	34	39
8-10	High	0	33

Table 1 shows that all the students got 2 to 7 marks in pre-test and hence they belong to low-medium achievement level while majority of the students 72(88%) got 5 to 10

marks in the post-test belonging to medium-high achievement level.

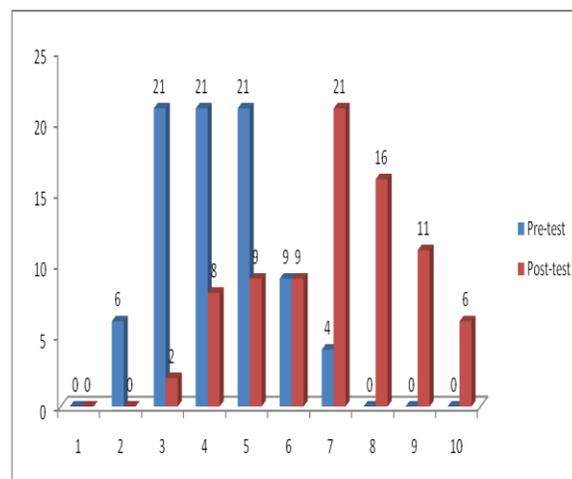


Figure 1. Pre-test and Post-test marks obtained.

This figure shows that majority of the students 63 (76.8%) got 3 to 5 marks in pre-test while majority of the students 48 (58.5%) got 7 to 9 marks in the post-test and none of the students obtained less than two mark in the post-test.

Table 2- Pretest & post test score analysis

Group	Quantity	Mean marks obtained	Standard deviation
Pre test	82	4.2	1.28
Post test	82	7.0	1.8

This table shows that mean mark obtained by students in pre-test and post-test was 4.2±1.28 marks and 7.0±1.8 marks respectively. From the application of z test on pre & post test it is found to be highly significant. This proves that group student's seminar adds to knowledge of the students.

Table 3- Comparison of the student's scores in the pre-test and post-test

	Pre test		Post test		Increase		't' value	d.f.	'P' value
	Mean	SD	Mean	SD	Mean	SD			
Males(n=35)	3.91	1.26	7.57	1.73	3.66	2.05	10.56	34	< 0.0001*
Females(n=47)	4.44	1.26	6.51	1.71	2.07	1.6	8.86	46	< 0.0001*
Total(n=82)	4.2	1.28	7.0	1.8	2.7	1.97	12.4	81	< 0.0001*

*Highly significant.

This was evidenced by the overall mean scores which showed a highly significant improvement in the post-test scores of all the students compared to their

pre-test scores (Table 3). Results are expressed as mean and standard deviation of the total scores obtained in pre-test and post-

test. Significance (p value) obtained using a paired 't' test.

Table4 - Comparison of the level of improvement in post-test scores between the males and females

Gender	Mean	S.D.	Difference	't' value	d.f	'P' value
Males(n=35)	3.66	2.05	1.59	3.8	62	0.0003*
Females(n=47)	2.07	1.6				

*Highly significant.

Although both males and females showed highly significant improvement in post-test scores, further analysis revealed that the improvement in post-test score was more significant in the males (Table 4). Results are expressed as mean and standard deviation of the level of increase in post-test scores of males and females. Significance (p value) obtained using an unpaired 't' test.

DISCUSSION

The present study was conducted to determine the perceptions of 3rd year MBBS students about pre and post- tests; to determine if they were effective in enhancing attentiveness and learning Community Medicine and to determine if there was any gender wise difference.

These perceptions of better performance after the pre- test were also confirmed to be true by actual pre and post-test scores as their overall mean score in post-test (7.0 ± 1.8 marks) was significantly higher (p value ≤ 0.001) compared to their mean score in pre-test (4.2 ± 1.28 marks). This finding is in agreement with the findings of J Steven Cramer and Martin C Mahoney who have observed that the introduction of a pre- test/post-test supported achievement of the learning objectives. [12] Little and Bjork also stated that Pretests with multiple choice questions enhance learning. [9]

Post-test scores (7.0 ± 1.8 marks) compared to mean scores in the pre-test (4.2 ± 1.28 marks) also substantiate that the students were attentive to the seminar and so were able to understand the key points of the seminar. Majority of the students also agreed that pre and post-test is a useful method to learn the important points of the

seminar. Post-tests normally would give an instant feedback to the students about their level of understanding of that seminar topic. Elsewhere, multiple choice questions have been the mainstay of undergraduate examinations for a long time. Multiple choice questions also trains the students for in depth learning of the subject.

Gender wise analysis of the results of our study showed that although both males and females showed highly significant improvement in post-test scores, the improvement in post-test score was more significant in the males, while in another study done by Muthukumar S shows that the improvement in post-test score was more significant in the females. [13] Results of our study therefore seem to prove that male students benefitted more in comparison to female students from introduction of pre and post-test in seminar.

CONCLUSION

Group students' seminar could be implemented successfully as a learning process. All 82 students were actively involved as presentators, judges, team members, time keepers, recorders, reporters. Our results suggest that taking a pre-test is beneficial for learning. The student's perception about pre-test improving further study was proved to be significant by actual post-test scores. Since this method has yielded better attentiveness of the students to the seminar and focused learning of the important aspects of community medicine, it is worthwhile to continue the effort. Presentational skills, peer involvement were also achieved through group discussion.

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