

Comparison of Small Group Discussions and Didactic Lectures in Forensic Medicine

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Abstract

The subject of Forensic Medicine is a clinical subject as per the new curriculum based medical education which requires a variety of teaching and learning modalities, similar to other subjects. There is a need for innovative teaching which involves student interaction and participation. A small group discussion (SGD's) is one such method proven beneficial. A randomized crossover comparative study was conducted on II phase MBBS students in Forensic medicine who were exposed to both small group teaching and didactic lectures by dividing into 2 equal groups and then doing a crossover in two sessions. Evaluation was done by pre-test, post-test and feedback questionnaire of students with likert scale. Though there was no statistically significant difference between the marks obtained after Small Group discussion or didactic lectures, the perception analysis showed that majority of the students found SGD's better than didactic lectures in terms of learning, involvement, clearing doubts, increasing self confidence etc. SGD's can be used as an additional form of teaching in Forensic Medicine which help in increasing students' involvement, encourage self directed learning and help in making the teaching learning process more focused. However we need to have more faculties to fulfill this and sensitization of students is also required for this.

Key words: Small group teaching; Didactic lecture; CBME.

Introduction

Forensic medicine is a branch dealing with interactions amongst law, judiciary and police officials. This branch of science of Forensic Medicine is an effective scientific method, which plays a vital role in assisting the Justice Delivery System to render justice to the society, in the administration of Criminal Justice.¹ Due to poor reporting by untrained doctors many a times law and justice suffers. In view of the judicial system requirements of our country, it is extremely important that the curriculum of Forensic Medicine be given a major overhaul and particular changes be brought to the teaching and learning methods used to impart knowledge of this subject at the undergraduate student level.²

Current medical education system provides knowledge to the students in an unbalanced and disproportionate manner. Students do not develop sufficient skills to investigate, diagnose, and treat the patient as a whole.³ The age old and time tested traditional didactic lecture has its own limitations. Students absorb information passively rather than actively. Students do not develop critical thinking, problem solving, and decision making skills. However, active participation and cooperation of students often leads to better, more effective and permanent learning.⁴

The new curriculum designed by MCI focuses on these issues². With interactive teaching and learning methods the knowledge and skills in forensic medicine and medico-legal report writing

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can to be improved. Like other subjects Forensic Medicine too requires multidisciplinary and innovative modern teaching learning methods along with direct observation of students in simulated environment to improve the quality of output of students. Small group discussion (SGD) is one such method which has been frequently compared with didactic lectures.⁵ This study aims to compare these two teaching learning methods and assess the perception regarding the two in Forensic Medicine.

Aims and Objectives

1. To introduce and evaluate the effectiveness of small group discussions over didactic lectures in teaching Forensic medicine to undergraduate medical students.
2. To evaluate the perception of students regarding small group discussions and conventional didactic lectures.

Materials and Methods

This study was carried out in the Department of Forensic Medicine, Government RVRS medical college, Bhilwara in the 3rd week of October 2019. The department lecture hall and demonstration room were used for the purpose. Approval for carrying out this study was taken from the Institutional Research and Ethics committee. After sensitization of the faculty about the entire project and its process, their suggestions were taken before finalizing the topics, time slots, and topics to be covered in the sessions. The topics to be taken for this study were unanimously decided as 'Mechanical injuries classification and Blunt injuries and from Toxicology part 'Agricultural poisons with Organo-phosphorous poisoning', taking into consideration the nearly equal level of difficulty and both were done in a single lecture/session. The topics were chosen by consulting with other subject experts from various institutes who also helped to prepare and validate the pre and post test questionnaires in both topics. The entire division of lecture schedules and SGD's was pre decided to enable smooth implementation of the entire project.

Second MBBS students coming to department of Forensic Medicine were sensitized about small group teaching procedure and ethical aspects

of the study. Totally 64 students were present and all consented to participate freely and fairly. Attendance was taken and considered as usually taken for classes. Informed written consent was taken from all students. They were randomly divided into two equal groups.

Session 1, was conducted as small group discussion for group B and as conventional didactic lectures for group A. Small groups were randomly formed by chit and paper method of 5-6 students in each group. Pre test was conducted prior to both sessions. The time frame was about 1.5-2 hours. At the end of both teaching sessions a pre validated post test session (of 20 MCQ, True/false and fill the blanks) was conducted and answers and results were analyzed.

For the small group discussions sessions, the main topic was divided in to sub topics and each of the sub groups were given a sub-topic in a chronological order and were asked to discuss and learn the same followed by presenting it to the whole small group in their own methods. All the students would be participating along with inputs by the teacher in between as and when required.

In the next session taken after 2 days there was a crossover of the two groups with topic 2 taken in a similar way. Pre test and post test were conducted in each session as before. At the end of both sessions, a feedback questionnaire (of 10 parameters) session of Students was taken to assess their perception towards the two different methods of teaching. The data was analyzed utilizing the Likert scale (5 point -Strongly agree, Agree, Undecided, Disagree, Strongly disagree).

The mean and SD results were analyzed with the help of Statistician. Both groups pre and post test results mean (SD) was analyzed using Paired 'T' test and then for intergroup analysis unpaired 'T' test was done. The feedback about the opinions for SGDs and didactic lectures were analysed by calculating percentages.

Results

A total of 64 students participated in the study. The mean (SD) of the pre-test and post-scores of didactic lectures and SGDs are as shown in the Tables 1-3.

Table 1: Pre and Post test scores comparing SGD's with Didactic lectures for Session 1

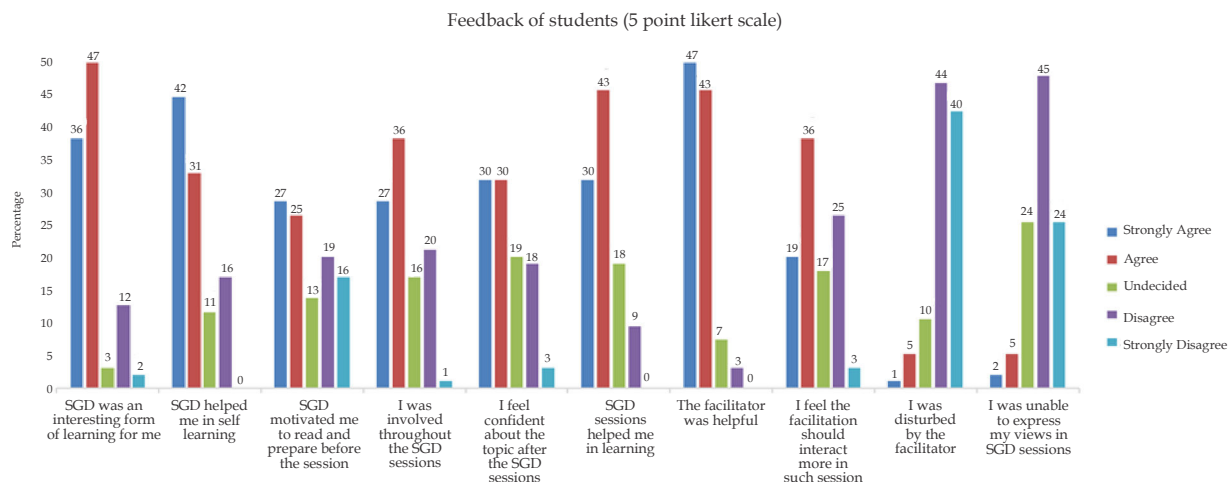
Group	Didactic lectures Mean(S.D)	Small Group Discussion Mean (S.D)	
Pre test	5.64 (± 3.008)	6.06 (± 2.82)	N A
Post test	9.67 (± 3.58)	10.68 (± 3.17)	<i>p</i> value-1.000 Unpaired 't' test Not significant
<i>p</i> value	< 0.0001 (Highly significant)	< 0.0001 (Highly significant)	

Table 2: Pre and Post test scores comparing SGD's with Didactic lectures for Session 2

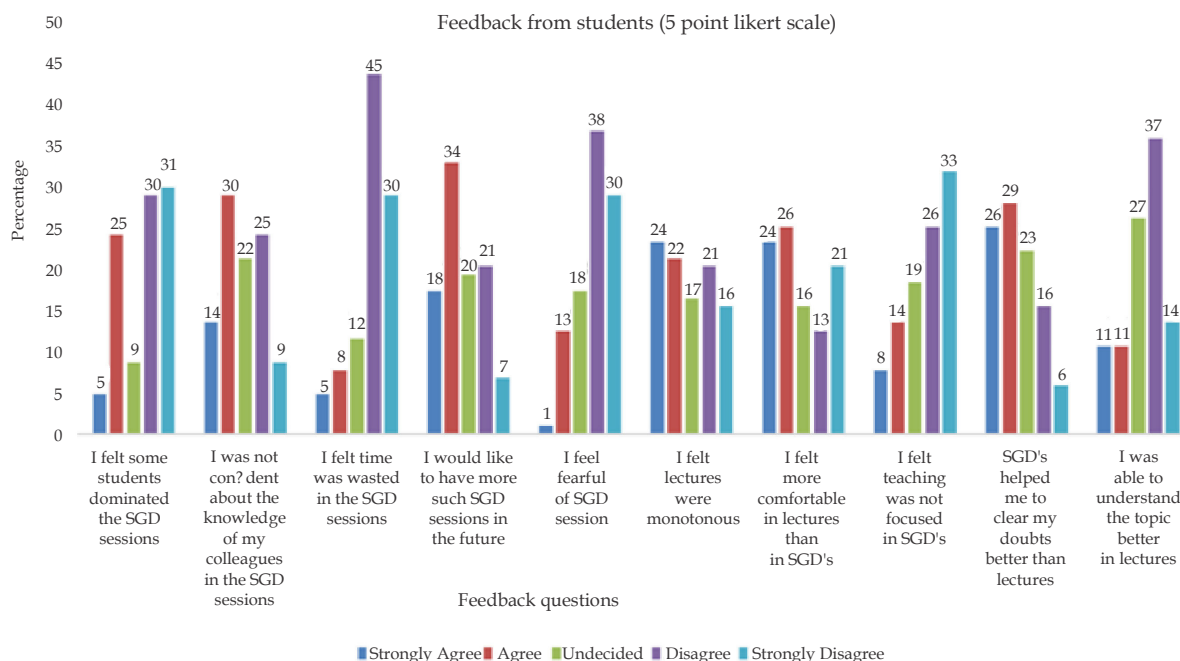
Group	Didactic lectures Mean(S.D)	Small Group Discussion Mean (S.D)	
Pre test	6.75 (2.22)	7.19 (3.059)	N A
Post test	12.35 (2.96)	14.28 (3.148)	<i>p</i> value-1.000 Unpaired 't' test Not significant
<i>p</i> value	< 0.0001 (Highly significant)	< 0.0001 (Highly significant)	

Table 3: Perception of students towards SGD's and didactic lectures.

Statement	Strongly agree		Agree		Undecided		Disagree		Strongly disagree		Total responses
	N	%	N	%	N	%	N	%	N	%	
SGD was an interesting form of learning for me	23	36	30	47	2	3	8	12	1	2	64
SGD helped me in self learning	27	42	20	31	7	11	10	16	0	0	64
SGD motivated me to read and prepare before the session	17	27	16	25	8	13	12	19	10	16	63
I was involved throughout the SGD sessions	17	27	23	36	10	16	13	20	1	1	64
I feel confident about the topic after the SGD sessions.	18	30	18	30	12	19	11	18	02	3	61
SGD sessions helped me in learning. The facilitator was helpful.	18	30	26	43	11	18	5	9	0	0	60
I feel the facilitator should interact more in such sessions.	28	47	26	43	4	7	2	3	0	0	60
I was disturbed by the facilitator.	11	19	21	36	10	17	15	25	2	3	59
I was unable to express my views in SGD sessions.	1	1	3	5	6	10	28	44	25	40	63
I felt some students dominated the SGD sessions	1	2	3	5	15	24	28	45	15	24	62
I felt time was wasted in the SGD sessions	3	5	16	25	6	9	19	30	20	31	64
I was not confident about the knowledge of my colleagues in the SGD sessions.	3	5	5	8	8	12	29	45	19	30	64
I would like to have more such SGD sessions in the future	9	14	19	30	14	22	16	25	6	9	64
I feel fearful of SGD sessions.	3	5	5	8	8	12	29	45	19	30	64
I felt lectures were monotonous.	11	18	21	34	12	20	13	21	5	7	62
I felt more comfortable in lectures than in SGD's.	1	1	8	13	11	18	23	38	18	30	61
I felt teaching was not focused in SGD's.	15	24	14	22	11	17	13	21	10	16	63
SGD's helped me to clear my doubts better than lectures.	15	24	16	26	10	16	8	13	13	21	62
I was able to understand the topic better in lectures.	5	8	9	14	12	19	16	26	21	33	63
	16	26	18	29	14	23	10	16	4	6	62
	7	11	7	11	17	27	23	37	9	14	63



Graph 1: Feedback from Students



Graph 2: Feedback from Students

On comparison of the charts of both sessions, it is observed that there is a significant difference between the scores of pre and post test of session 1 & 2 for both small group teaching and didactic lectures. A highly significant increase in the scores was found using paired 't' test ($p < 0.0001$). When the post test scores of didactic and small group were compared in both sessions, significant difference in the knowledge levels was not found using unpaired 't' test. The difference was not statistically significant ($p = 1.0000$).

On analyzing both the test sessions and test results, overall there is no statistically significant difference between the test results indicating that there may not be a significant difference in actual learning with the two methods of teaching.

The preferences of the students among the didactic lectures and SGDs for 20 parameters are shown in numbers and percentages in Table 3.

On analyzing Table 3/Graph 1/2: The results show that 36% of students strongly agree and 47% agree that SGD is an interesting form of learning for them. 42% & 31% strongly agree and agree respectively that SGD helped them in self learning & 27% & 25% respectively strongly agrees and agreed that SGD sessions motivated them towards reading and preparing before a session. 27% & 36% expressed their agreement of feeling involved throughout the sessions. Similarly large number of students agreed that they were able to clear doubts better in SGD's, and that they felt more confident about a topic after SGD's. 8% & 14%

students strongly agreed and agreed respectively that teaching was not focused in SGD's while 26% & 33% disagreed and strongly disagreed with this.

In comparison 24% & 22% of students felt didactic lectures were monotonous and only 22% (11% each strongly agree and agree) felt that they were able to understand the topic better in lectures.

Although the test scores of SGD's vs. Didactic lectures do not show statistical significance, the perception analysis clearly shows that students find SGD's a better, more interactive form of learning. It encourages self learning, motivates students to come prepared before the sessions and is definitely more interesting than didactic lectures.

Discussion

Outcome

The results of this research have shown that there was no significant difference in the post test scores of small group discussion group or didactic lecture group. A comparison of pre-test and post-test scores of both the groups showed marginal elevation in scores, but the differences in the average scores were not statistically significant. The outcome of our study confirmed the published study of Fischer and colleagues in 2004. In that study, the methods of lecture and small group discussion were compared, and it was reported that although the students significantly preferred the group discussion to the lecture, there was no significant difference in the post-test scores of the two groups.⁶

Though this study though does not show any significant effective difference in results between small group teaching and didactic teaching still students were enthusiastic about small group teaching. This study adds a new dimension to the teaching learning methodology in Forensic medicine subject. The positive perception of the students and their wish for more such sessions ensures that we will have more such sessions in future.^{4,5}

The enhancement of knowledge by SGDs could be due to many reasons as explained in many other research studies such as, they help in more active learning, increase the interest in the subject, motivate the students, foster reasoning and problem solving skills, and better retention.^{6,7} Students develop confidence in themselves to ask questions, raise doubts and express their views. These group discussions also help to improve the communication skills, teamwork ability, organization and

self-directed learning. SGD's facilitate adult style of learning, acceptance of personal responsibility for own progress. Moreover, it enhances student-faculty and peer-peer interaction, improves communication skills and provides opportunity to share the responsibility and clarify the points of bafflement.^{8,9}

Limitations

There was definite shortage of faculty at my institute, being an upcoming new medical college there are only 2 faculties in my department. For this study purpose, a guest faculty from another college had to be invited.

Another limitation was the student attendance. Only 64 students attended both sessions. Though there are 100 students the attendance in classes is only about 60-65% anytime.

Though the available students were extremely enthusiastic, but the test results show that since this study marks were not to be counted in formative assessment they did not take this test seriously which may have given such results. And since feedback was voluntary and anonymous many students did not fill all the rows and columns of the questionnaire.

Strengths: This was a first of its kind study in Forensic subject and shall pave the way for innovative and interactive teaching learning in Forensic medicine and also in other subjects in our institute at Bhilwara and elsewhere.

Conclusion

Results of this study suggest that innovative small group teaching was found more effective and acceptable to students than traditional teaching. Small group teaching should be introduced in undergraduate medical curriculum. Didactic lectures need to be made more interactive and interesting to prevent monotony and boredom.

Implications: A good balance of different methods of teaching is required to benefit the students and ensure good learning, enhanced confidence, healthy interactions between students and faculty and students themselves too.

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