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Original Research Article

Assessment of educational outcomes of small group discussion versus traditional lecture format among undergraduate medical students

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ABSTRACT

Background: In present scenario, medical students are over burdened with high academic load making learning more complicated than simple. In the recent past a lot of importance has been given for active learning by implementing various approaches like tutorials, seminars, small group discussions etc. Small group discussion enhances student-faculty interaction, improves communication skills and provides a platform to exchange of ideas, which will result in deeper learning and better academic achievements by students. Present study was conducted to find out educational outcomes of SDG. The objectives of study were to assess and compare the educational outcomes of student's performance by 2 methods of teaching- Didactic lectures versus SGD and to assess student's perception towards small group discussions in Community Medicine.
Methods: Total 140 students of 7th semester participated in educational experimental quasi study. These participants were divided in to two groups on bases of systematic random sampling. Group A (Roll.no. 1 to 70) and Group B (Roll.no. 71 to 140). For conducting effective SDG, students were divided in 7 subgroups (10 students in each group). Demography (for group A) and family planning (for group B after cross over) topics were selected for SGD. Feedback from students were also recorded.
Results: The post test scores of SGD, group A (15.6±3.55) were higher in comparison with that of the lecture session of group B (8.81 ± 2.8). After the crossover, the students exposed to SGD, group B (13.85±3.81) scored more than the students exposed to the lecture group, group A (9.08±2.94).perception of feedback on SGD shows that 80% of the students strongly opine that SGD has improved their performance.
Conclusions: Result has shown that SGDs had a positive impact on performance of the students, the mean values in post-tests of both groups were statistically significant. Around 80% of student strongly agreed that SGD is comprehensive tool for in-depth learning by teacher-student interaction and 79% felt that SDG is better than didactic lecture. Significant changes in student's performance and retention capacity were observed.

Keywords: SGD, Didactic lecture, Educational outcomes

INTRODUCTION

In recent time non–interactive lectures (Didactic lectures) as a method of teaching and transmitting the knowledge have come under criticism, on other hand Interactive learning techniques actively engages the students in wrestling with the knowledge & material. It reinvigorates the classroom for both students and faculty. When the didactic lectures are changed in to small group discussions, then students and teachers become partners in the journey of knowledge acquisition.

Now a days the students are over burdened academic load. Medical colleges are also changing their educational

programs and teaching strategies, at national and international levels, to ensure that students have active responsibility for their learning process and are prepared for life-long, self-directed learning.[1] The effort toward developing active learning was based on meaningful learning which ensures understanding and applying concepts rather than memorizing only which is rote learning.[2] Meaningful learning involves the acquisition of "useful" knowledge so that it can be accessed from different starting points and has to correlate with previous knowledge with multiple representations (mental models).[3] Among so many teaching learning methods, lecturing is one of the oldest forms of teaching. Lectures are considered as efficient means of transferring knowledge and concepts to large groups. It presents many challenges to both teachers and learners because it often promotes passive learning and fails to motivate the students.[4] In the recent past a lot of importance has been given in promoting active learning by implementing various learning approaches in medical education like tutorials, seminars, case based discussions, small group discussions.[5,6] Small group discussion enhances student-faculty interaction, improves communication skills.[7-10] and provides a unique environment which leads to the activation of prior knowledge, exchange of ideas, which are assumed to result in deeper learning and better academic achievements by students.[11] This study was conducted to assess the impact & educational outcomes of small group discussions in community medicine among the M.B.B.S final year part-I, students and also to analyze the feedback from them to identify intricacy so that better learning can be facilitated in future.

METHODS

Present educational experimental quasi study was conducted in the Department of Community Medicine, S.V.S Medical College, Mahabubnagar, between October 2017 to March 2018, after obtaining the institutional ethical approval. Total 140 students of 7th semester participated in this study. These participants were divided in to two groups on bases of systematic random sampling. Group A (Roll no. 1 to 70) and Group B (Roll no. 71 to 140). Demography (for group A) and family planning (for group B) topics were selected for SGD.

All 140 students of 7th semester were explained the purpose of the study and its usefulness for academic improvement along with the scope of future intervention. Group A further was divided into seven sub groups and only these were provided with specific learning objectives for the topic and after a week they were taught the topic in the form of 2 small group discussion sessions over a period of 2 weeks. The facilitator was monitoring the group dynamics, motivating and guiding the students. The facilitators ensured that all the group B participants were involved in the discussion. The facilitators guided the students with relevant questions and will make sure that whole topic is covered and well understood by the students. The group A was remained as a whole group and underwent the lecture for the same topic over 2 weeks. After completion of small group discussion and lecture respectively, after a week post test was conducted with the 20 MCQ for both the groups. The marks were noted for both the groups. After 15 days the test was conducted with the same MCQs to test the retention capacity of the students. Then to avoid the bias & also on ethical ground a crossover was done for both the groups with a different topic. To evaluate the students perception towards the SGD, we administered a qualitative questionnaire with Likert scale consisting of ten questions. The questionnaire was validated prior to implementation. The response was obtained in the terms of strongly agree, agree, disagree, strongly disagree, neither.

Data was analyzed by Graph pad prism software 6.01 version. Data was summarized by mean±SD for continuous data and percentages for categorical data. Comparison between two independent groups was done by unpaired 't' test Perception of the students was done by proportion. All p values <0.05 were considered significant.

RESULTS

The results of the study shows that the post test scores of SGD, group A (15.6±3.55) were higher in comparison with that of the lecture session of group B (8.81±2.8). After 15 days when the same test was conducted to assess the retention capacity of the students, the students in the SGD group A (14.13±3.31) scored more than in comparison with that of the lecture group students, group B (8.06±3.06). Later after the crossover, the students exposed to SGD, group B (13.85±3.81) scored more than the students exposed to the lecture group, group A (9.08±2.94). Even after 15 days, the retention capacity of the students with SGD (12.73±3.21) was more in comparison with that of the lecture group (8.49±2.59) (Table 1 and Figure 1).

Table 1: Shows mean, standard deviation and p value of post test scores for both the groups A &B.

Post test after sessions	Groups	Mean±SD
After 7 days	A (SGD)	15.6±3.55
	B (DL)	8.81±2.8
After 15 days	A (SGD)	14.13±3.31
	B (DL)	8.06±3.06
7 days after cross over	A (DL)	9.08±2.94
	B (SGD)	13.85 ±3.81
15 days after cross over	A (DL)	8.49±2.59
	B (SGD)	12.73±3.21

In our study, analysis of perception of feedback on SGD shows that 80% of the students strongly opine that SGD has improved their performance, 93% of the students would like to have similar sessions again, 80% of students strongly agree that the role of the teacher is very

important during SGD sessions, 79% strongly agree that SGD is better than lecture, 88% students strongly agree that SGD helped in understanding MCQs, 92% strongly opined that SGD helped in understanding the topic in a better way, 79% opined that SGD led towards self directed learning, 87% SGD helped in clarification of the doubts, 72% students opined that SGD help them in enhancing their communication skills, 76% opined that blended learning was very interesting (Table 2). Around 76% students opined that didactic lecture should be followed by SGD sessions.

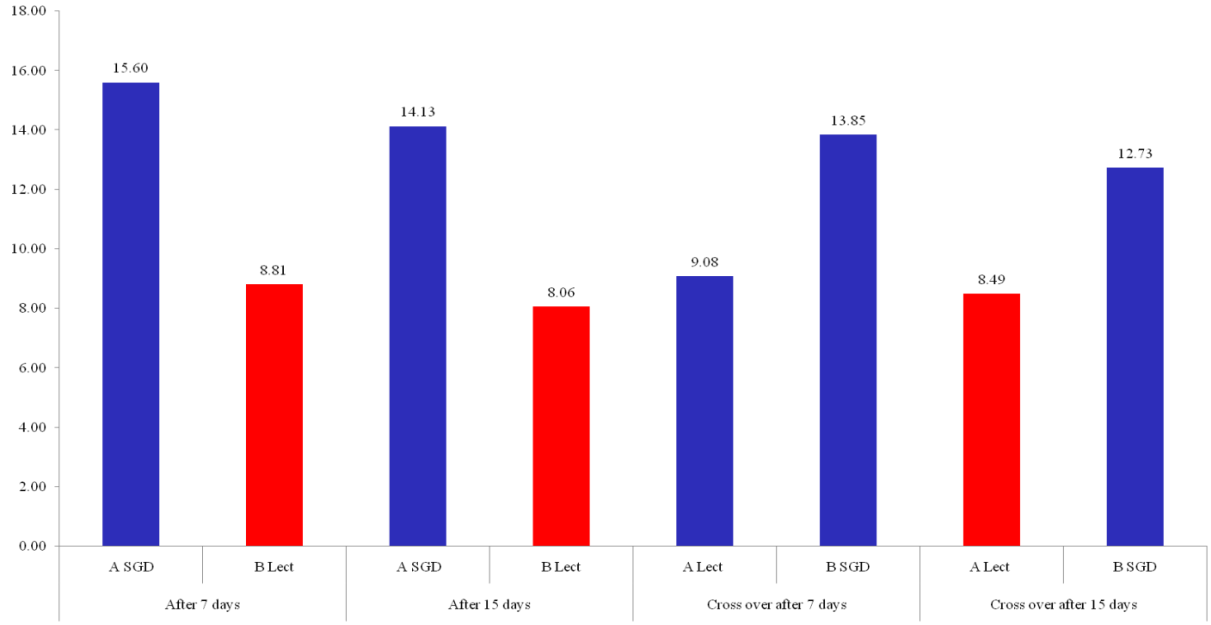

Figure 1: Bar diagram showing post test scores of both the groups A & B.

Table 2: Feedback questionnaire.

Questions	Feed Back				
	Strongly agree	Agree	Disagree	Strongly disagree	Neither
1.SGD has improved performance	80	61	2	0	1
2.SGD has increased communication skills	72	69	0	0	3
3.SGD helped in doubt clarification	87	52	4	1	0
4.SGD motivated to learn & remember	79	65	0	0	0
5.SGD is helpful to understand topic easily	92	50	1	0	1
6.SGD helped in answering MCQ	88	49	3	0	4
7.SGD is better than the didactic lecture	79	61	2	2	0
8.Role of teacher is SGD important	80	64	0	0	0
9.Shall we conduct more such SGD sessions	93	48	0	0	3
10.Didactic lecture should be followed by SGD sessions	76	63	3	2	0

DISCUSSION

It has been observed by various studies that interactive teaching techniques like SGD helps to overcome the problems like lack of attention, disinterest, poor understanding of topics, inadequate development of independent thinking and limited opportunity for the student to self-assess in didactic lecture. When we compare the learning outcomes in larger groups with that of the smaller groups, learning is always better with the smaller groups as less are the number of the students in a group, more can be the attention given to them

The educational outcomes of our study were more or less quite similar with the finding of Forristall et al, O'Neil et al, Steinert et al in their study.[7-10] Students perception & feedback in present study was very significant & relatively similar perception was observed by Pal et al.[12] Our results are also comparable to the ones obtained from the study by Hammed et al where the undergraduate medical students of one batch were taught by small group discussions (SGD), it was found that they performed better than their previous batches who were taught by traditional lecture methods.[13] Similar results were also found in studies conducted by Tiwari et al.[14] These

findings may be considered in line with findings by Cendan et al, where in students reported more satisfaction with the small group teaching environment.[15] Regarding the feedback of the students, majority students agree that SDG improved learning, remembrance, and performance in examination, increased thinking and communication skills and SGD method was better than the Didactic lecture method.[10]

Active participation and involvement is a prerequisite for learning beyond the recall of facts, and that students must be attentive and motivated for learning to occur. SGD can facilitate problem solving and decision making, communication skills and `thinking on your feet'.

CONCLUSION

Our study clearly indicates that, small group discussions help the student's perform better, when compared with that of regular didactic lectures. Small group teachings increase active participation of learners, increases the teamwork ability, help in retention of knowledge and there by a helps in giving a better performance. It helps to improve the student- teacher relationship, which is proved to enhance the cognitive growth of the student. SGDs had a positive impact on performance of the students and are a comprehensive tool teaching & learning process can be made interesting by using various active techniques. SGD is very interesting, effective & useful interactive teaching method for in-depth teacher-student interaction. Study has shown significant changes in performance & retention capacity.

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