LEARNING THROUGH SMALL GROUP DISCUSSION VERSUS DIDACTIC LECTURES

Mohammad Rashad Qamar, Amina Ahmad*, Khurram Niaz

Quaid-e-Azam Medical College Bahawalpur,*College of Physician and Surgeons Pakistan

ABSTRACT

Objective: To study and compare the impact of didactic lecturing with small group discussion among undergraduate medical students.

Study Design: Sequential mixed method.

Place and Duration of Study: Quaid-e-Azam Medical College, Bahawalpur, from January 2012 to October 2012.

Material and Methods: Results of 2 final year classes comprising 566 students (of sessions 2011 and 2012) were analyzed and 30 students from the existing final year were selected for focus group discussion by non-probability convenience sampling technique. In the first phase, quasi experimental design was employed. Small group discussion(SGD)learning format was used as an intervention on the interventional group(277 students)and results were compared with the scores of previous final year student(historical control group: 289 students) who learnt through didactic lecturing. In the second phase, focus group discussions of current final year was arranged to dig out their views about SGD intervention. The quantitative data was analyzed by using SPSS version 17. Content analysis method was applied for qualitative analysis of focus group discussions.

Results: The mean scores were 1006±60 in interventional group as compared to 1026 ± 57 in non-interventional group (p<0.001). In second phase, the focus group discussion, students (30), found lecturing was a better way of learning than SGD in terms of content coverage according to 15 students (62.5%), senior people teaching: 9(37.5%), who were better prepared: 6(25%). Whereas, the downside of small group discussion was related to the fact that the junior teachers were involved in teaching according to 15 (62.5%) who were less prepared: 11 (45.8%) and lack of uniformity in practicing the intervention in different wards: 10 (41.7%).

Conclusion: Students consider SGD as a relatively less favored mode of information transfer owing to multiple factors influencing the learning process of students as opposed to didactic lecturing in our set-up.

Keywords: Academic performance, Didactic lecturing, Learning, Small group discussion.

INTRODUCTION

The impact of teaching brings a major difference in the learning outcomes in undergraduate's learning. This is more important in providing efficient and effective professionals to our community. Its effectiveness depends on how much has been perceived and comprehended by the recipients: the students. There is an array of modes of information transfer employed by medical schools for transfer of content such as: small group discussions (SGD), seminars, tutorials, class discussions, case studies, brainstorming, videotapes, role playing etc[1]. Lecturing is a traditional way of imparting knowledge to students and is employed frequently in majority of medical schools despite numerous pitfalls[2].

Effective student learning is a primary objective of all medical schools. Student-centered teaching strategies are considered more efficient in motivating and encouraging students to realize their actual potential. One of these strategies is teaching through SGD, which is student-centered where teacher facilitates the process of learning[3].

SGD technique has been one of the highlights of paradigm shift in medical school teaching over the last 40 years[4]. In a way, SGD appears to be abroad term without a clear definition. It encompasses tutorials, seminars and small group problem-solving sessions. A small group is a limited number of people who interact in a face to face situation where the size of the group may vary from a handful of

Correspondence: Dr Mohammad Rashad Qamar, 29-B, Medical Colony, Bahawalpur, Pakistan
Email: drrasadqr@yahoo.com
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students to around 30 participants however, about 8-12 is an optimal number[5,6].

The concept of interactive discussions and small group teaching is not new. Socrates was a great exponent of this method of teaching[7]. The effectiveness of small group teaching against didactic lectures is well documented[8]. Small group teaching helps in creating an atmosphere of free interaction between the teacher and the students and among all the participants themselves. The teacher who acts as the group leader is a facilitator, allowing the participants to express themselves[6]. In short, small group setting provides a near ideal environment for teachers to facilitate active participation of students[5].

Dividing a bigclass into small groups produces many benefits for teachers and students; for example students receive more individual attention, teachers are able to manage students more efficiently, discipline problems are likely to be less and there is more interaction between students and teachers. When the teacher spends less time in managing the students, more time can be utilized in enhancing students' learning[8]. Small group learning has become an increasingly important strategy for undergraduate medical education and many schools with more traditional curricula have incorporated a significant number of SGD sessions into undergraduate teaching for medical students[9].

The traditional lecturing approach has been the core instructional method in majority of medical schools. Several activities and initiatives at both national and individual levels have been adopted for reviewing medical school curriculum and introducing new teaching methods in the country over the last two decades[10]. The same attempt was undertaken in Quaid-e-Azam Medical College (QAMC) Bahawalpur during an academic session where only the final year class (2012) was subjected to this change as a pilot project and morning lecture was replaced by SGD. As a result, all teaching was being done in the respective wards where SGD format was used for transfer of knowledge. The SGD was conducted by the consultants i.e. Professor, Associate professor, Assistant Professor and Senior Registrar. The traditional lecturing or the content-oriented approach is still the core teaching method used for rest of the classes i.e. 1st year to 4th year.

The aim of this study was to compare two different teaching methods i.e. didactic lecture and interactive SGD sessions among undergraduate students of final year (2012 class) at QAMC. This study investigated how the change of learning strategies could influence performance of final year students in terms of summative assessment scores who were initially exposed to didactic lecturing for the last four years and then experienced learning through SGD. The study was also meant to find out the perceptions of students towards this change to ascertain the worth of this intervention for future implementation.

MATERIAL AND METHODS

A sequential mixed method study was conducted at QAMC, Bahawalpur, Pakistan, from January 2012 to October 2012 after approval from the institutional ethical review board.

In the first phase, quasi experimental design was employed. SGD was used as an intervention on the interventional group comprising 277 final year medical students (2012 class) participating in the study.

The SGD was conducted by the teaching faculty including professors, associate professors, assistant professors and senior registrars. The format was discussed both in academic council and conveyed to facilitators in the departmental meeting. The duration of session was 3 hours in each ward.

Academic performance of new final year and old final year was compared in terms of scores obtained in the standard examination (summative assessment) by collecting the record of both classes (2012 class and 2011 class) from college student section after head of the institution's permission. The mean ± SD of their final professional exam scores were compared with the mean ± SD of the final professional exam scores of immediate senior final year student who learnt through didactic lecturing.

Quantitative analysis was done using SPSS version 17 to calculate descriptive statistics such as mean, SD of scores. Independent t-test was applied to calculate statistical difference between the performances of two groups. A *p* value of ≤ 0.05 was considered statistically significant.

In the second phase, focus group discussion (FGD) sessions of current final year (class 2102) were arranged to dig out their views about SGD. Sample for FGD was selected after tabulating results of students in interventional group; three groups according to their ranking based on their scores was done i.e. high achievers, average and below average students were randomly selected from all 3 groups for FGD using lottery method. Each group (A, B &C) had 10 students.

Three focus group discussions were conducted at the regional centre of College of Physicians and Surgeons Pakistan of all groups. The entire sessions were videotaped for subsequent transcription and content analysis to draw inferences from the thick description and were complemented by manually calculated frequencies of various responses in the transcription.

Qualitative analysis was done through data reduction by transcribing video recordings of focus group discussions, followed by word frequency count to identify clusters of ideas grouped under 2 major themes as they appeared in the text.

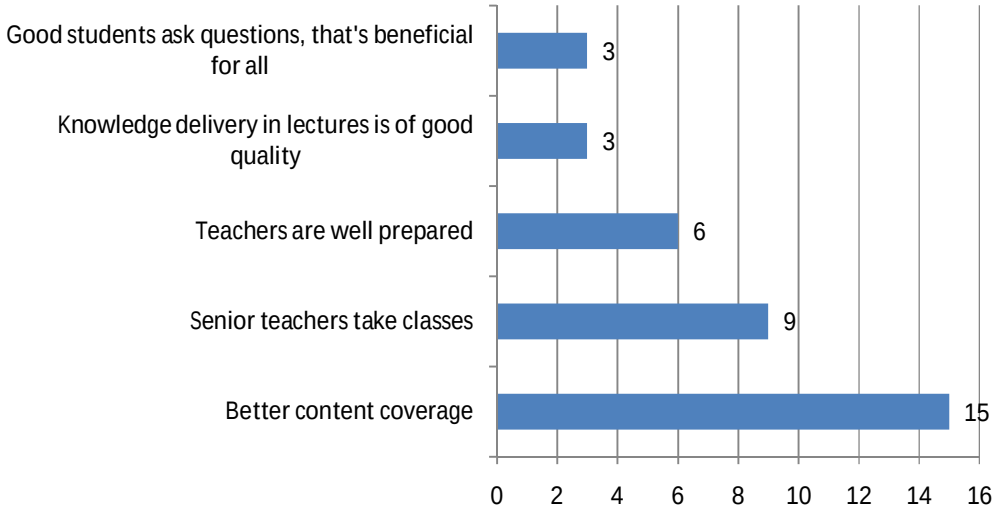

Figure-1: Reasons of adequacy of lectures and inadequacy of small group discussion.

Triangulation of narratives under each theme was done with the help of responses obtained from the survey questionnaire to confirm the accuracy of information presented to the readers.

Conclusions were drawn by adopting a constant iterative process by re-visiting research questions, transcriptions, themes and summaries of narratives under each theme and their verification with survey responses by all researchers after putting each other's interpretation to the test of plausibility, sturdiness and conformability.

RESULTS

Quantitative Analysis:

Adequacy of lectures:

It was identified that better content coverage was perceived as most common (62.5%) advantage of lectures followed by the perception that lectures were taken by senior faculty members (37.5%). Better preparation by the teachers was third most frequent perceived advantage (25%) of lectures as shown in Fig-1.

The most common reason of failure of SGD interventions identified by students was involvement of junior faculty members in teaching (62.5%), less than optimal preparation by the teachers (45.8%) and variation in the process of SGD in different wards (41.7%) as shown in Fig-2.

DISCUSSION

SGD helps in fostering reasoning and problem solving skills among students, which are needed to solve real life problems in clinical practice[8]. However, in the current study, which has its own limitations, it has been observed that lectures were considered better than SGD, something which is contrary to available literature. The results of an MBBS class experiencing SGD intervention showed poor results in terms of their mean scores in final professional exam (1006 ± 60 versus 1026 ±57), their pass percentage (72.6% versus 85.8%) and also in terms of their perceptions i.e. they had reservation regarding the interventionits application and the faculty involved. Some other studies also revealed students' negative perspective regarding the worth of problem oriented interactive sessions. In China, students reported: uncertainty on the accuracy of the knowledge acquired (80%), time wasted during the session (35.4), inadequate focus in teaching (32.9%), and heavy workload on the students (28.2%)[11]. In a Malaysian study, 27.0% of students found problem oriented class to be very stressful[12]. However, in an Iranian study, students believed that they needed extensive discussion on the given topics. All 22 students were satisfied and preferred SGD in terms of evaluation method for the course, participatory learning and team working, effectiveness and developing self-learning skills (p<0.001),and scored higher on topics of SGD (p<0.01), but believed that they needed longer discussion of the topics[13]. In our study, the concern was communicated that junior teachers with less preparation were available and there was no uniformity of teaching. Some topics were repeated many a times and some were not even touched and it was different for different batches. In a study done in Hong Kong; students expressed a preference for learning and interacting with teachers than colleagues but they concluded that effectiveness of small group teaching may depend on the teaching style in small groups. Students in the interventional group showed higher marks than students in the lecture format (p =0.059) but similar to our study there were some negative attitudes like heavy workload on students (55%), and uncertainty about the accuracy of information from colleagues (52%)[14]. In another study done in India, majority of students favored a judicious mixture of didactic lectures and case–oriented problem solving in tutorial classes to be an efficient modality in understanding a system under study[15].

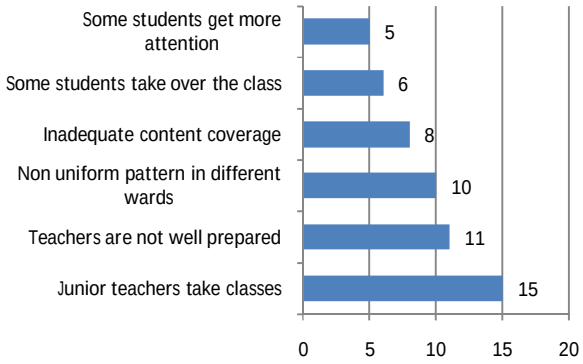

Figure-2: Reasons of small group discussion failure.

Tablel: Academic performance of interventional and non-interventional group.

Performance parameters	Interventional Group (n=277)	Non-interventional group (n=289)	*p* value
Mean± S.D marks (range)	1006 ± 60 (852 – 1265)	1026 ± 57 (865 – 1172)	<0.001
Passing ratio	201 (72.6%)	248 (85.8%)	<0.001

CONCLUSIONS

Students consider SGD as a relatively less favored mode of information transfer owing to multiple factors influencing the learning process of students as opposed to didactic

lecturing in our set-up. Recommendations in a limited exposure to SGD with multiple confounding variables such as faculty's adequate training, students exposure to SGD for substantial period of time, lack of alignment of students' assessment with the way they were taught in SGD suggests that despite historical controls' (learning through lectures) better performance in exams, it is difficult to be certain about the ascendancy of lectures over SGDs. Hence a longitudinal multicenter study is suggested to look into all these aspects to generate more concrete evidence in this context.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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