Original Article

Role of small group interactive sessions in two different curriculums based medical colleges

Rehana Rehman,[1] Asma Niaz Khan,[2] Ambreen Kamran[3]

Department of Physiology,[1,3] Department of Anatomy,[2] Bahria University Medical and Dental College, Karachi.

Corresponding Author: Asma Niaz Khan. Email: pbltutor2012@gmail.com

Abstract

Objective: To study students' perceptions of the usefulness of small group interactive sessions in medical colleges using conventional or problem based learning (PBL) teaching.

Methods: A cross sectional descriptive study was carried out from January 2010 to December 2010. Student's perception of the usefulness of small group interactive sessions (SGIS) was evaluated through a questionnaire filled by 100 first year MBBS students, each from two medical colleges using different teaching strategies. The colleges were labeled Group I, PBL Based Medical College (PBL-MC) and Group II; Conventional Medical College (CMC). Incomplete questionnaires (13 from Group 1 and 8 from Group 2 were excluded). Data were entered and compared using SPSS version 15. Differences were considered significant at p values<0.05 after application of chi square test.

Results: Responses of 179 students of Group I and II, revealed importance of small group interactive sessions in the understanding of content and facilitation in active learning. Significant difference in perception was found with respect to better interaction, confidence, clinical application and preparation for university examinations in CMC students.

Conclusion: The importance of SGIS in learning of medical students cannot be overlooked in conventional teaching however in PBL-MC a combination of educational strategies can be employed for better learning of students.

Keywords: Small group interactive sessions, Problem based learning, Conventional medical college. (JPMA 62: 920; 2012)

Introduction

Physiology is a discipline where concepts, terms, and structures are not readily visualized and mechanisms need to be taught using concrete strategies to improve comprehension.[1] The teaching might not be effective if taught only by lectures;[2] "smaller classes are a key ingredient in student success."[3] Small group discussions (SGD) are based on cooperative team based learning which induces positive interdependence, a sense of responsibility, greater learning and better retention of cognitive concepts. Small Group Sessions include laboratory sessions, Problem Based Learning (PBL) seminars and discussion sessions; these may also be called traditional tutorials, interactive sessions or Clinically Oriented Problem Solving Tutorials.

Researchers have found many advantages of teaching students in small tutorial groups. This enables an adult approach toward learning with students taking responsibility for their own learning. Small Group Tutorials are important for learning as they facilitate discussion of previous knowledge, sharpen perceptions of information from books and lectures[4] and clarify misunderstandings of the subject. Many studies have demonstrated that it facilitates the students' performance.[5-7] The distribution of students in small group interactive sessions (SGIS) facilitates individual attention of tutors to encourage equal participation by all students. The encouragement and motivation by tutors may further help in boosting of the confidence and reinforcement of the objective.

The pedagogical effectiveness of teaching tools can be evaluated through student feedback on the active learning strategies implemented by educationists.[8]

In our study the usefulness of SGIS was evaluated by comparison of students' perception, of conventional learning and problem based learning in two different medical colleges. The objective of the study was to promote use of SGIS both in CMC and PBL-MC.

Subjects and Methods

A cross-sectional descriptive study was carried out from January to December 2010 by a self reported questionnaire distributed to 100 students of first year MBBS both medical colleges.87 responses from PBL bsed medical

college (PBL-MC) (Group I) and 92 from conventional medical college (CMC) (Group II) were included, whereas incomplete performas were rejected. The questionnaires were distributed among 100 students of both medical colleges. Eighty seven from Group I and 92 among Group II completed the questionnaire and were included in the study. While 13 students from Group I and 8 from Group II did not complete the performas and were excluded from the study. A comparison was made between responses of students in Group I and students of Group II on usefulness of SGIS in the subject of Physiology. In Group I tutorial sessions comprised of 11 students with one tutor, while in Group II a batch of 33 students were looked after by one tutor. The tutorial objectives were displayed on the departmental notice boards ahead of time in both the groups. The facilitators/tutors involved in sessions of Group I had a pre-tutorial meeting with the Course Directors and discussed the tutorial objectives, format and the plan to generate discussion with the students in integration with the concepts delivered in lectures while, there was no pre-tutorial meeting in Group II. In both groups facilitators instead of being didactic, discussed objectives by Critical Thinking Questions from students and discussed unresolved issues and confusions among the students.

Data was analyzed using SPSS version 15.The responses were graded as poor, good or excellent in physiology especially in terms of the content, relationship with other sciences, confidence to interact and present, work in a group, learn to criticize and become active learners in both groups. Chi square test was applied to evaluate significance of results in both groups.

Analysis of students perception on interactive sessions. Rate the usefulness of following teaching/learning methods employed: Scale 1= Poor, 2= Good, 3= Excellent.

Objective	1	2	3
Helped to learn content of the subject			
Helped to relate Physiology with other subjects			
Helped you to become an active learner			
Motivated self directed learning.			
Learned the skill of working in group.			
Learned skill of critical reasoning			
Learned the skill of Presentation			
Learned skill of interaction during the teaching tool			
Developed confidence			
The teaching tool will help you to perform better in University exams			
Help you to apply knowledge in clinical practice			

Comments & Suggestions:

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Results

In Group I (PBL-MC) 87 students while in Group II (CMC) 92 student responses were selected. Students in Group II demonstrated a greater ability to work in a group with better interaction (p value<000) when compared to Group I. Table-1 shows that critical questions asked in SGIS helped students of Group II to gain confidence and correlate

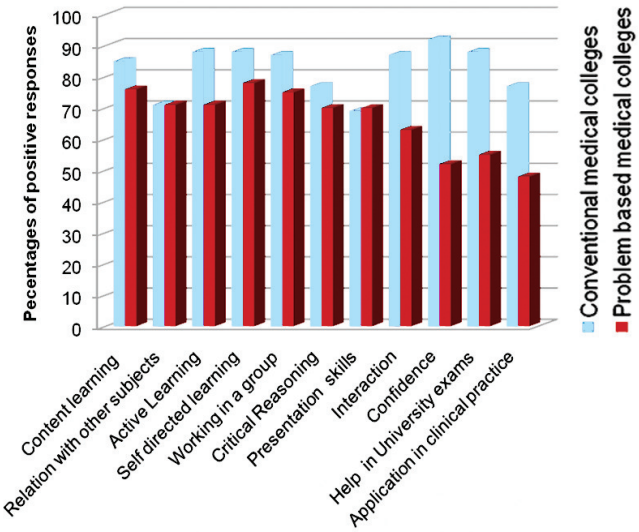

Figure: Comparison of effective role of small group interactive sessions by both medical colleges.

Table-1: Student's responses on usefulness of Small group interactive sessions.

Objective	Group I Problem based medical college			Group II Conventional medical college			P- Value
	Poor	Good	Excellent	Poor	Good	Excellent	
Understanding of content	21	26	40	14	29	49	0.32
Relation with other subjects	26	24	38	27	33	32	0.44
Active Learning	26	19	43	11	22	59	0.01
Self directed learning	20	30	38	12	25	56	0.14
Working in a group	23	35	30	12	13	67	0.001
Critical Reasoning	27	30	31	21	30	41	0.4
Presentation skills	27	26	35	28	24	40	0.76
Interaction	33	23	32	12	23	57	0.001
Confidence	42	45	0	7	15	70	0.001
Better performance in University exams	39	48	0	11	28	53	0.001
Application in clinical practice	45	42	0	21	27	44	0.001

the topics with clinical medicine. The clinical knowledge gained thus helped them in attempting clinical scenarios and enabled them to perform better in university examination with improved results. In both groups however students agreed that SGIS helps in understanding contents and facilitates active learning -Figure 1.

Discussion

A current trend in Physiology education is to highlight ways in which its teaching can be successfully incorporated into medical curricula which is transformed from a faculty-centered, passive learning environment to one that encourages more active student-centered learning.[9] It is recognized that small group discussions (SGD) increase student engagement which leads to changes in attitudes and improvement in learning outcomes.[10] This study assesses utility of SGIS, a form of SGD which is a strategy used by both CMC and PBL-MC. The two curricula, however, vary in respect that students in PBL-MC placed more emphasis on meaning (understanding) and made, use of journals, on-line resources and library sources[11] for self-study than on rote learning and memorization for reproduction which is practiced in CMC.[11]

Collaborative team work is a valued important outcome of SGD. The facilitator plays an important role in determining the small-group tutorial learning environment. Students with more knowledge lead the group, generate discussion with their peers to propagate subject knowledge.[4] Singaram et al, found that working in small groups was neither frustrating nor stressful and students of different social and cultural backgrounds enjoyed learning content of Physiology.[12] In our study, 87% students who were taught in a batch of 33 in CMC declared marked improvement of their working as groups, whereas 75% of PBL-MC; with a smaller group of 11 students accepted to have improvement in working as a group. This shows that SGIS had impact on improvement of working and learning in a team irrespective of type of curriculum.

PBL is generally regarded as an effective learning strategy and an active process of personal cognitive construction. This implies that the individual students are ultimately responsible for their own learning, while faculty (or preceptors)/act as) "learning facilitators".[13] An understanding of Physiology is imperative to understanding the signs and presenting symptoms which provides a basis to "think", "figure" and "work out" outcomes without lists.[14] In our study the students of PBL-MC gave more weightage to PBL group discussions then SGIS for effective learning and in the active process of personal cognitive construction. Interaction between students and facilitator was reported less often by the PBL-MC group (63%), than by the CMC group (87%), the difference in outcome is because of better inter-personal interaction of PBL group during their PBL sessions, while the CMC group have inter-personal interaction only in small interactive sessions. In our study, the students feed back through the questionnaire was that students of CMC gained a lot of confidence from small group interactive sessions, and these sessions have changed their attitudes towards learning.

Nandi[11] found that there are significant differences in the perception of learning in PBL and conventional curricular environments. PBL MC students consider learning to be more stimulating, engaging and useful while in conventional teaching, students feel that learning is non relevant and boring. In another study, students from conventional medical colleges rated their learning lower than that in "modernized" medical schools of Dundee University.[15] SGIE in our study were perceived to facilitate active learning not only in 88% PBL-MC but also in 71% of CMC students

The educational tool helped in exam preparation of 88% and 55% students of CMC and PBL-MC whereas clinical orientation responded to be 77% in CMC was perceived less by PBL-MC (48%). This is because they learn clinical aspects more from PBL's because of presentation of clinical cases in the form of problems

Learning of Physiology through lectures can further be developed or sharpened by discussion with a better of knowledge-acquiring process acquired during SGDs.[4] The opportunity for discussion in small groups was appreciated by students of both groups that helped them to better understand the unclear subject concepts. They felt that they remembered the subject well after discussing it in small groups. The small groups allowed students to discuss about previous knowledge and perceptions on the subject that they gained through books and lectures. In our study the integration of the topic with the clinical knowledge or problem oriented scenarios which are discussed in the small group interactive sessions was more helpful for the CMC group (77%) as compared to the PBL group (48%).This is because problem based learning (PBL) develops a different set of skills in the approach to clinical problems when compared to students following a traditional method.[16]

In comparing responses on SGIS by these two types of medical colleges, it was found that both groups responded to interactive sessions as a useful teaching tool that benefited them in understanding the topics. Educational leaders try their level best to take care of the educational climate and ensure the satisfaction of students with their learning atmosphere.[17] It is a well known fact that complete

transition from conventional to PBL learning which may provide effective training for undergraduate medical students, has its own limitations. Thus SGIS in this context especially with presentation of clinical scenarios can bridge the gap of interaction and problem seeking in two types of medical colleges. Our study had limitations in that the number of students in PBL-MC and CMC groups was not similar; moreover Group II facilitators had no pre-tutorial meeting with a faculty member, nonetheless, results of the study emphasize the importance of SGIS in teaching and learning of Physiology. This study suggests the usefulness of SGIS in two different curriculum based medical colleges.

Conclusion

Our study suggests that SGIS are considered to be an effective teaching tool of Physiology by medical students; predominantly those who follow conventional educational curriculum.

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