Comparison of Traditional Non-Interactive Tutorial and Interactive Small Group Discussion (SGD) in Pharmacology

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ABSTRACT

Introduction: With the increasing changes in teaching trends, students prefer to learn with interactive teaching instead of traditional one-way teaching lectures and tutorials.

Objective: The objective of this study was to investigate the comparative role of traditional tutorial teaching and small group discussion on student's learning.

Study design and Setting: This is a cross sectional questionnaire-based study, conducted in the Department of Pharmacology and Therapeutics of Shaikh Khalifa Bin Zayed Al Nahyan Medical and Dental College for a period of 1 week

Methods: 90 students of 3rd year pharmacology were selected out of which 54 students participated in the study. For tutorial 3 batches of 30 students were taught for 2 hours, whereas for SGD each batch was further subdivided into three batches of 10 students per group. A validated questionnaire was given to students after each teaching strategy. All the students who were present and willing to participate in this study were included.

Results: In our study > 70% students found SGD to be interactive, had better learning, relevant to the topic, improved their confidence level and they were better able to solve the problems.

Conclusion: SGD is a better way of conducting a tutorial as compared to the traditional way, in which no of students per group is much bigger. Students find it more interactive, therefore staff should be trained to conduct SGD on a regular basis.

Keywords: Interactive, Lectures, Pharmacology, Traditional, Tutorial, Small Group Discussion (SGD)

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INTRODUCTION

Over the decades Pharmacology is taught via didactic lectures, to transmit as much knowledge as possible. Most of the time the major focus is to complete the course work. Pharmacology itself is a challenging subject to teach due to its diverse course content and has multiple clinical applications. As a teacher it should be our goal to understand and evaluate the current opinion and perceptions of students in every relevant field of subject. This approach is important to modify the teaching strategies according to the needs of the students. (Taylor D et al., 2008) (Seluakumaran, K et al 2011). The traditional discipline-based lectures and tutorials are associated with a heavy emphasis on acquiring knowledge only. In this modern era of e-learning, we have better opportunities to enhance the learning process due to accessibility, interactivity, and variability to mix and match the teaching learning styles (Chee T et al 2011). Intelligent and timely modifications of teaching tools can enable the students to develop better understanding of core concepts and knowledge not only about the theory but also about the clinical skills. This approach at undergraduate level can enhance their ability in future to prescribe medicines with better efficacy and safety. Therefore, teaching reforms are the need of hour (Thistlethwaite, J. E et al 2012) (Maxwell, S., and Mucklow, J. 2012).

Teaching tools and methods which are welcomed by the students can increase their motivation and can explore their hidden potential (Schmidt., 2011). Replacing the traditional lecture type tutorials with small group discussion might be more fruitful. It is a student-centered approach, where the teacher plays the role of a facilitator. Over the last four decades, SGD has brought a revolution in medical teaching. This term SGD can be used for seminars, small tutorial batches and problem-solving groups (Dolmans D., 2014). A small group can be comprised of 8 to 30 participants, with face-to-face interaction. Commonly implied and preferred methods for small group teaching in the medical schools are case-based learning (CBL), problem-based learning (PBL), and team-based learning (TBL). These teaching methodologies are learner-centered instructional approaches. The core of all such pedagogies is active learning. Peer learning, discussions, leadership professional etiquettes and problem-solving skills are the mainstay in small groups (Tayyeb R., 2013).

SGD enables every participant to freely communicate with the facilitator and other participants. The less the number of students per group, the more the interaction and understanding. It is also a beneficial mode for teachers because it is more organized and disciplined. By spending less time in managing the students, more time can be saved for fruitful learning (Burgess, A., and Mellis, C., 2015).

For the proper effectiveness of SGD facilitator should know how to inspire and motivate the students for critical thinking, higher order cognition, interpretation of evidence, analysis, and synthesis. They can develop this habit by asking questions, brainstorming techniques. Students can be inspired to support their hypotheses based on their previous knowledge. Similarly, they can be persuaded to develop evidence based concept maps.
Critical thinking by articulating and reflection on action can further enable them for cognitive learning (Burgess A and Matar E., 2020).

Due to these facts most of the medical schools are incorporating SGD as a frequently used teaching tool in their curricula. The importance of small group discussion SGD has already been emphasized in literature (Kitchen M., 2012) but its comparison with didactic lecture based on student feedback is lacking. Therefore, the present study was designed to compare the traditional didactic lectures with SGD with the help of student's feedback.

METHODS

This study was conducted on 3rd year students in Shaikh Khalifa Bin Zayed Al Nahyan Medical and dental college Lahore from 1st June 2021 to 5 June 2021. It was approved by the institutional Review Board (IRB) letter no SZMC/IRB/internal/365/2021.

54 students of 3rd year pharmacology were included in this study. Only students willing to participate were included. Students of other disciplines and students not willing to participate were excluded from the study. Instructors were properly guided beforehand how to prepare their traditional tutorials and SGD according to criteria laid down in questionnaire, to minimize the bias. A validated questionnaire was used for data collection by distributing it among the students after using each method, which had 15 questions about the effectiveness of tutorial and SGD (Savkar, M., et al 2016). 54 students were divided into 3 batches, each having 18 students. Each batch was exposed to the traditional tutorial lecture on PowerPoint of one-hour duration. At the end feedback proforma was given to the students and collected. For SGD, batch of 18 students was further subdivided into three small groups, having 6 students in each group. 3 instructors were allocated to supervise each small group. Students were able to discuss the topic with each other and with the corresponding facilitator. They were able to use the internet facility and solved the questions by mutual discussions. At the end a questionnaire was given to each small group and data was collected.

STATISTICAL ANALYSIS

The data was managed by using SPSS version 20.0. Data for the agreement of students with statement was presented by using frequency and percentages for two methods. The scores were considered “1” for disagree, “0” for neutral and “1” for Agree. The total score was calculated out of 15. Then the total scores were measured for the 15 factors and were presented by using and median (IQR) for traditional and SGD from same students. The comparison between scores obtained for SGD and traditional method of teaching was done by using Wilcoxon signed rank test. P-value ≤0.05 was considered significant.

RESULTS

The data for 54 students initially learned through traditional methods was arranged as per their liking to the methods as agree, neutral or disagree. The same students when underwent the SGD learning system were asked the same questions on same scale and are presented in table 1. Graphical representation of data in percentage response can be seen in Graph 1 and 2 for SGD and Traditional tutorial session respectively. It can be observed that for almost every statement the percentage of student agree increased for SGD over traditional method and this percentage change varied between approximately 12.0% and 35%. The largest change was observed for improved confidence.

The total score for traditional method was 5(0 – 9) presenting a lot of variation, while for the SGD the median total score was 10 (7 – 12) which shows clear inclination of the students for SGD as compared to traditional with an average difference of 5 points. This difference was highly significant with p-value < 0.001 as shown in Table 1.

Graph 1 shows clear inclination of students in favour of SGD as majority of the students agreed to the questions regarding their learning, confidence and multiple other student related factors proving the superiority of this teaching style. When these results are compared with response of students towards questions for traditional tutorial there is a decrease in positive response from students and majority of the students disagree with multiple factors asked in the questionnaire. These results strongly suggest that students are in more favor of teaching in small groups.

Table 1. Response of students to statement about different learning aspects with on three-point Likert scale (-1, 0, 1)
As far as medical education is concerned, SGD is a better way to achieve high standards of learning. It is because of the reason that it provides a platform for improved knowledge, exchange of ideas, and higher cognitive learning (Hofer, M., et al 2008). The results of our study showed that small group discussions provide a better chance to the learners for active participation, improvement of confidence, ability to attempt the assessments and problem-solving skills. The findings are like those of a study in University of Central Florida School of medicine, where 8 SGD sessions were given to 3rd year students instead of 33 lectures. Student’s scores and percentile ranks were better than the previous class taught by traditional tutorials (Cendan, J. C et al., 2011). According to one study conducted at Chennai Medical College Hospital India showed, 70 % of the students found that SGD was more interactive, friendly, student-centred and innovative. SGD enhanced their thinking, brainstorming skills and helped them for better communication (Annamalai, N et al., 2015). These results are consistent with our results as > 70 % students found SGD to be interactive, had better learning, relevant to the topic, improved their confidence level and they were better able to solve the problems. In another study the performance of pharmacology students after SGD was evaluated. They found that the summative assessments were much improved after small group discussions when compared with the summative assessment of students who had no group discussions (Arja, S. B et al., 2020). Humayun, L found in their study that most of the students in SGD found it a good teaching learning method (P < 0.001). Students enjoyed the teamwork, interaction with the teachers and active participation. It improved their attention span, understanding basic principles and better memory (Humayun, L., (2020). Inspite of the emerging effectiveness of small group discussions, there are few reservations and noticed flaws in this strategy. A study showed that 35.1 % of the students were not satisfied with the role of facilitator in SGD, according to their statements the facilitators ultimately converted the SGD into the traditional didactic lecture because of their active participation during the session. Therefore, it is suggested that carefully planned frequent training sessions and workshops should be conducted for the instructors to maintain the true spirit of SGD (Roshni M., and Rahim A.., 2020). Shetty A et al suggested that the literature relevant to the topic of SGD should be timely provided to the participants as well as to the facilitators for better outcomes. According to her observation framing of learning objectives, venue of SGD, proper arrangements of literature resources like laptop, print outs, chits, handouts, assignments, time division and feedback can enhance the effectiveness of this methodology (Shetty A., et al 2022). Sessions of SGD can be further evaluated by the formative and summative assessments during and at the end of sessions. However, the purpose of an evaluation is to help participants improve their cognitive and learning skills. This mode of teaching and learning also enables the participants and facilitators to develop their management and leadership skills (Ferris, H. A., (2015). This change from lecture tutorials to small group teaching requires training of the instructors and learners. Although it is a well-established technique in higher education, SGD is ineffectively used in our medical colleges due
to a shortage of trained staff. So, we should focus on training workshops for our instructors to learn PBL and small group discussions.

LIMITATIONS OF THE STUDY

This study can be conducted for all the subjects of basic sciences to have a precise idea of the effectiveness of SGD over traditional didactic tutorials. Secondly this comparison can be studied for all the units of Pharmacology to minimize the bias of inclination towards the different organ systems.

CONCLUSION

Small group discussion is a better way of conducting a tutorial as compared to traditional way, in which no of students per group is much bigger. Students find it more interactive, therefore staff should be trained to conduct SGD on a regular basis.

DECLARATION OF INTEREST

The author declare no conflict of interest.

REFERENCES


AUTHOR’S CONTRIBUTION

1. S.M: Main idea conception and execution
2. T.Z: Manuscript writeup, manuscript setting according to journals requirement, Data Collection and all the changes required by reviewers were done by her
3. Z.U.S.Q: Statistical analysis of the data and results write up
4. M.M: Proof reading and correction of grammatical error and typographical mistakes