Cardiac arrhythmias are a major cause of morbidity and mortality across the world. Learning the science behind the use of antiarrhythmic drugs is essential for all medical graduates. However, many antiarrhythmic drugs are available, and most of them have complex pharmacodynamic and pharmacokinetic profiles. We tried to improvise our teaching by conducting interactive, worksheet-based, small-group discussion on antiarrhythmic drugs with preclinical students of School of Medicine, Taylor’s University, Malaysia. This survey was conducted to analyze the outcomes of worksheet-based, small-group discussion.

KEYWORDS: Antiarrhythmic drugs, small group discussion

INTRODUCTION

Cardiac arrhythmias are a major cause of morbidity and mortality across the world.[1] Learning the science behind the use of antiarrhythmic drugs is essential for all medical graduates. However, many antiarrhythmic drugs are available, and most of them have complex pharmacodynamic and pharmacokinetic profiles.[2] Conventionally, most of the knowledge about antiarrhythmic drugs is acquired by either lectures or seminars in the preclinical phase of the MBBS curriculum. These conventional modes of teaching give less time for attributes such as problem-solving and critical thinking. The gap between theory and practice becomes evident when most of the junior doctors fail to prescribe these drugs due to lack of precise knowledge.[3] We tried to improvise our teaching by conducting interactive, worksheet-based, small-group discussion on antiarrhythmic drugs with preclinical students of School of Medicine, Taylor’s University, Malaysia. This survey was conducted to analyze the outcomes of worksheet-based, small-group discussion.

MATERIALS AND METHODS

Worksheet-based scaffolding has been examined in various studies to know the levels of student understanding in a problem-based learning environment in a small-group setting. In a study conducted by Simons and Klein, it was observed that student achievement levels were significantly higher in those who used scaffolds in the form of worksheet and produced highly structured output with a higher percentage of entries directly relevant to the problem. These findings suggest that scaffolds in the form of worksheet may enhance inquiry and performance, especially when students are required to access and use them.[4]

First-year MBBS students were selected for the study. The small-group, worksheet-based interactive teaching was done as part of the cardiovascular module in semester two of year one. A worksheet comprising 15 integrated questions was developed in a way that all the learning outcomes of the session were covered. The questions were arranged in a stepwise manner to integrate the knowledge and understanding of basic anatomy (conducting pathway) and physiology (cardiac action potential and cardiac cycle) with mechanism of action, therapeutic uses, and side effects of antiarrhythmic drugs.

ADDRESS FOR CORRESPONDENCE: Dr. Ameya A. Hasamnis, School of Medicine, Taylor’s University, Malaysia. E-mail: ameyadoc@gmail.com

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Reference material was uploaded on e-learning portal of the university a week ahead of the session. The students were informed to read this material before the session. They were divided into small groups (12 each) for the session. A group leader was selected to coordinate activities. At the start of the session, the students were given hard copies of worksheet on antiarrhythmic drugs to search and discuss answers to the questions asked. Each group was given about 1 h for this activity. Lecturers only acted as facilitators, and no active teaching was conducted during this period. Model answers to questions were made accessible to students after this period. An interactive discussion-cum-feedback was initiated by the lecturers. The discussion with the students was based on reasoning, discussing, and debating the use of appropriate antiarrhythmic drugs.

Feedback of the students was obtained using the Dundee Ready Education Environment Measure (DREEM) questionnaire after the session, and results were analyzed to see the effectiveness of this teaching methodology[4]. The DREEM gives a global score out of 200 for the 50 items it contains.[5]

RESULTS

In our study, the average DREEM score was 139.7, with a range of 102–158, which indicated “more positive than negative feelings” about the teaching of antiarrhythmic drugs in small-group discussion. The DREEM score also has five subscales:[4] perception for learning subscale score was 35.64 ± 2.17, which indicated “more positive approach to teaching”; perception for teacher’s subscale score was 30.67 ± 3.62, which indicated “moving in the right direction”; academic self-perception subscale score was 22.03 ± 1.59, which indicated “feeling more on the positive side”; perception of atmosphere subscale score was 33.05 ± 3.27, which indicated a “more positive atmosphere”; and social self-perception subscale score was 25.34 ± 3.97, which indicated “feeling more on the positive side.”

CONCLUSION

Overall, the scores indicated that students appreciated, enjoyed, and liked the teaching of antiarrhythmic drugs in small-group discussion. Most of them also understood the core content of the study during the session. Teaching complex topics such as antiarrhythmic drugs in the early years of the MBBS curriculum is a challenge and conducting worksheet-based, small-group discussion can be a way forward for the benefit of the students.

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Conflicts of interest
There are no conflicts of interest.

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