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ALICE: An Innovative Teaching and Learning Activity

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ABSTRACT

An innovative teaching learning program involving 200 first year undergraduate medical students was planned and executed over a period of four months. The students were divided into groups and teams. Some teams were exposed to live patients in the hospital to learn. The teams worked together and one of them presented their findings to the audience comprising all the students and the preclinical faculty. Specific faculty from the departments including relevant clinical departments guided the teams of students. All the presentations were done by the students and assessed objectively by panels of faculty. All presenting students were rewarded with certificates. The best performer for each day was given a prize. Feedback on the program was got from all the students and analysed.

Keywords: *Innovative, Active learning, Integration, Clinical exposure, Teamwork, Presentations, Feedback*

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INTRODUCTION

Medical Education is undergoing a paradigm shift in most of the world today. The Medical Council of India (MCI) has recommended the integration of disciplines – both horizontal and vertical, as well as early clinical exposure as measures, which will enrich undergraduate medical education as per their vision 2015 document (1). The Task Force of medical education for the National Rural Health Mission, Government of India had suggested that integration and clinical exposure need to be interwoven into the medical course (2).

As of now, first year undergraduate medical students learn the theory of preclinical sciences with no exposure to their clinical relevance. Clinical exposure at this phase makes this learning valid to them. It is also interesting as this is what they would be looking forward to in their future career. Littlewood et al. and Dahle et al. have opined that integrating early clinical exposure into basic sciences helps students internalise content matter better (3, 4).

Integration co-ordinates the activities to ensure harmony in the educational processes (5, 6). Imaginary walls exist between the disciplines say of Anatomy, Physiology and Biochemistry, which can be broken down effectively by horizontal integration as in the case of Problem Based Learning. It is in this context that this innovative program termed ALICE (Active Learning with Integration and early Clinical Exposure) was conceived and executed.

METHOD

All 200 students of the first year medical undergraduate course in our institution were involved in this program, which was

executed between January and April 2017. All of them were briefed about this program in January 2017. They were divided into five groups of 40 each as per their roll numbers. Each group of 40 was allotted a clinical condition from amongst: Acute Myocardial Infarction (AMI), Chronic Obstructive Pulmonary Disease (COPD), Diabetes Mellitus (DM), Jaundice and Pregnancy. Each group was further subdivided into four working teams of ten students each. Each of these teams was allotted to one of the four departments: Anatomy, Physiology, Biochemistry and Clinical. The clinical departments selected were, Emergency Medicine, Pulmonology, General Medicine, Pediatrics and Obstetrics. The division of students was as per Table 1.

A faculty member of the respective department guided each working team. Faculty from the clinical department were involved for guiding the students of the clinical teams. The students began working in their teams two to three weeks prior to the date of presentations. The faculty who guided assesses the team members objectively by observing their presentation skills and selected one student to be the presenter. All other students were given tasks to assist the team presenter.

On the day of presentation, each of the four teams was given 15 minutes time. The Clinical team presenter shared the history; clinical features investigations ordered and the provisional diagnosis first. Then the three preclinical teams presented the anatomical, physiological and biochemical aspects. Finally the clinical team presenter wrapped up these aspects and presented the Investigation results along with the final diagnosis. This was followed by a question answer session where the faculty (judges) questioned the presenters. The judges used a rating scale and objectively assessed the presenter for the following criteria: Subject relevance, Fluency and diction, Non verbal communication, Management of time and media, and Response to questions. In addition to the judges ten randomly selected non-participating students (Out of 160) were involved in a spot poll to choose the best presenter. Based on inputs from the judges and the spot poll, one best performer of the day was selected from amongst the four and was awarded.

At the end of the five days of presentation, a qualitative open-ended feedback taken from all the students. About 192 responses were obtained and analysed.

RESULTS

The ALICE program as a whole was well appreciated by the participating and audience faculty members of both preclinical and clinical departments. The students as a whole seemed to be more enthusiastic about participating in this program probably because it was an active learning for them. From the feedback taken, predominantly positive messages were recorded with a few suggestions for improvement. Prominent positives include enhancement of teamwork and knowledge. The Table 2 lists the positive statements in the feedback with the number of students opining.

The few suggestions given are tabulated in the Table 3.

Table 1: Allotment of students for ALICE program

Condition	Roll numbers	Anatomy	Physiology	Biochemistry	Clinical
AMI	1–40	31–40	21–30	11–20	1–10
COPD	41–80	41–50	51–60	61–70	71–80
DM	81–120	101–110	111–120	81–90	91–100
Jaundice	121–160	151–160	141–150	121–130	131–140
Pregnancy	161–200	161–170	171–180	181–190	191–200

Table 2: Feedback from students on ALICE (n = 192)

S No.	Item	Number (%)
1	Working together in teams, coordination	84 (43.75)
2	Improved in-depth knowledge in the topics	66 (34.38)
3	Clinical exposure very helpful	36 (18.75)
4	Improved our presentation skills	24 (12.5)
5	Interesting, amazing, excellent program	22 (11.46)
6	Helped us integrate subjects	21 (10.94)
7	Learnt Power Point making skills	21 (10.94)
8	Improved our interaction with faculty	16 (8.33)
9	Very useful program on the whole	15 (7.81)
10	Boosted our self confidence	14 (7.30)
11	Helped us develop communication skills	14 (7.30)
12	Helped us overcome stage fear	10 (5.21)

Table 3: Suggestions regarding ALICE from students (n = 192)

S No	Suggestion	Number (%)
1	All students to see clinical cases	7 (3.65)
2	Team members to interact more	6 (3.13)
3	Improve the audio system in the hall	2 (1.04)

DISCUSSION

Out of the 200 students, at least 20 were involved as presenters. The others contributed to team learning. Ten of them were involved in compering the program, which was totally a student run program. So this was a program wherein the maximum number of students took active part by contributing to the teaching learning experiences. So it can be definitely termed as an active learning program. Informal feedback also confirmed the positivity the students felt about this ALICE program.

As is clear from the analysis of the feedback, most students valued the teamwork they did and the in-depth knowledge they got as a result of the active process of learning. Clinical exposure also was well appreciated, as it was a novel and valid experience for them. Surprisingly they valued the opportunity to develop their presentation skills and overcome stage fear also. Thus another important skill development also took place because of this program, that of development of communication skills.

As four aspects of the condition namely the Clinical, Anatomical, Physiological and Biochemical were addressed on the same day; both horizontal and vertical integration was experienced by the students who have mentioned this as a positive. This is in similar to other studies elsewhere (6).

The use of a clinical case, which was from the hospital, added a lot of value to the validity of the exercise and as all the students here were from the first year, this was a case of early clinical exposure. These students go on to become medical graduates and Physicians of first contact. This program is a good starting point for their long time learning process.

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