Original Research Article

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Perception of medical undergraduate students about teaching learning methods and assessment tools used in a medical college in India

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ABSTRACT

Background: New teaching-learning methods and assessment tools can be used to enhance the learning among the medical students. But their views are important for the faculty members who are holding the decision making posts. Methods: The duration of teaching session was 2 hours 5 minutes using six teaching-learning methods. Out of total 119 students the perception and level of awareness of 96 students were recorded about the six teaching-learning methods and five assessment tools in the pre and post-tests. Descriptive analysis was done. The students paired "t" and ANOVA were used for statistical analysis and "p" value < 0.05 was taken as statistically significant.

Results: Vertical integration was strongly agreed upon as the best method and among the three traditional teaching methods the case demonstration was the most liked method of teaching by the students and. Among the interactive teaching methods, the case based learning was the most liked method by the students. Out of total five assessment tools the MCQs was the most liked. Similarly, OSCE and DOPS were considered to be better assessment tools as compared to others (P-value significant being <0.05).

Conclusions: Vertical integration will be more helpful in real professional life scenario than in passing the exams which should be incorporated in medical curriculum.

Keywords: Medical students' perception, Teaching-learning methods, Assessment tools

INTRODUCTION

Teachers "sacrifice learning for drilling students in the things that they will be held accountable" and this claim needs to be treated carefully because the accountability of teachers for the long-term and short-term may vary.1 Recent assessment approaches are attempting to increase the correspondence between what students need to learn and what is expected for them.² The researchers have been constantly pouring the news ideas and innovations in the pond of medical sciences and converting it into ocean of biological sciences. Due to excess of educational contents the students find it difficult to recall at the time their clinical practice in the real scenario of life.

Integrated Teaching means bridging connections between academic knowledge and practicals.³ In order to make students competent, medical students to make competent clinical decisions based on sound scientific principles, they must be able to retain knowledge from the preclinical phase of their medical course.⁵⁻⁸ It is the need of the hour to teach our students to correlate the various subjects to create better doctors. It includes teaching different aspects of a topic by faculty members of relevant departments instead of one department will better assimilate the knowledge which will impart the basic knowledge of the topic for better understanding of the various aspects of the diseases which will create better doctors in society who will provide good health care services for community needs. Therefore in order to

improve effective diagnosis and better treatment of the patients and to improve the quality of student's learning, integrated learning becomes a requisite.

Meaningful learning occurs with the active participation of the learners where they have the opportunity to take control of their own learning. This means that teaching should focus on developing learners' strategies to gain knowledge and understanding. It follows, then, that assessment tasks should be engaging and integral to the learning/teaching process. Assessment processes should provide feedback to students to know the degree to which students transfer their learning to new settings.

The objectives of the present study were to evaluate the medical students' perception about the integration of the teaching in medical sciences, to assess the perception of medical students about the teaching-learning methods and to estimate the knowledge of medical students about the assessment tools.

METHODS

First approval for the research was taken from the IEC. The questionnaire was validated using pilot testing among the students attending the clinical posting in a small group before conducting the cross sectional study design.

Settings and design

The indexed study was conducted from April 2015 to September 2015 among the M.B.B.S. students of Rohilkhand Medical College and Hospital, Bareilly.

Inclusion criteria were all the M.B.B.S. IInd year students of 2013 batch were included in the study.

Exclusion criteria were the M.B.B.S. students who were absent on the day of study were excluded.

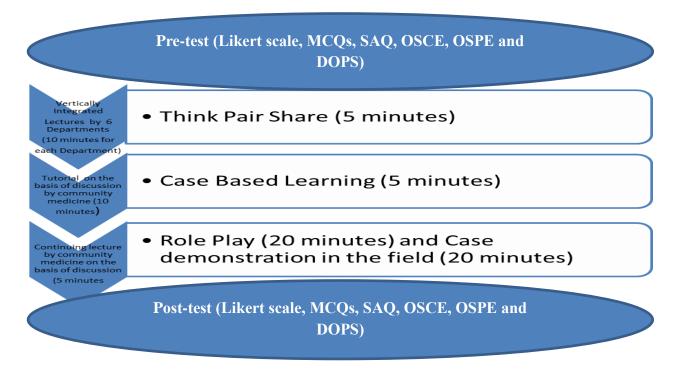


Figure 1: Flow chart of the study.

Questionnaire based survey used before and after the students subjected to the various teaching-learning methods and assessment tools. Their perceptions and level of awareness about the teaching-learning methods and assessment tools were recoded using five point one Likert's scale.

Ninety six out of 119 second MBBS students had undergone vertically integrated sessions by six departments of a medical institute on assessment and management of diarrhoea using four interactive methods and traditional teaching methods. Competency of

students was assessed using competency based assessment methods i.e. OSCE, OSPE, DOPS, SAQ and MCQs and their perceptions recorded using Likert's scale. Also, the perception of the students on the best teaching-learning method and best interactive method was also taken. The analysis was done using SPSS version 24 and data was represented in graphs and tables.

RESULTS

Vertical integration was strongly agreed upon as the best method by 45.8%. Vertical integration will be more

helpful in real professional life scenario than in passing the exams was agreed upon by 42.7%.

Among the three traditional teaching methods, namely lecture, tutorial and case demonstration the case demonstration was the most liked method of teaching by the students as in the pre-test 59.4% students liked it and in the post-test 71.4% liked it.

And out of three interactive teaching methods namely think pair share, case based learning and role play the most liked was case based learning 53.1% in both the pre and post-tests. Out of total five assessment tools namely

MCQs, SAQs, OSCE, OSPE, DOPS. The MCQs was the most liked i.e. 54.2% and 45.8% pre and post-tests. The affinity about MCQs was decreased in the post test i.e. by 8.4% (54.20%-45.80% =8.4%). DOPS was the next most liked assessment tool and in post-test the affinity was increased among the students (34.4%-20.8% =13.6%).

Lecture, tutorial and case demonstration have been found to be useful and interactive and better comprehended for the better use of knowledge. P value being <0.05 i.e. highly significant. Similarly, OSCE and DOPS were considered to be better assessment tools as compared to others (p value significant being <0.05).

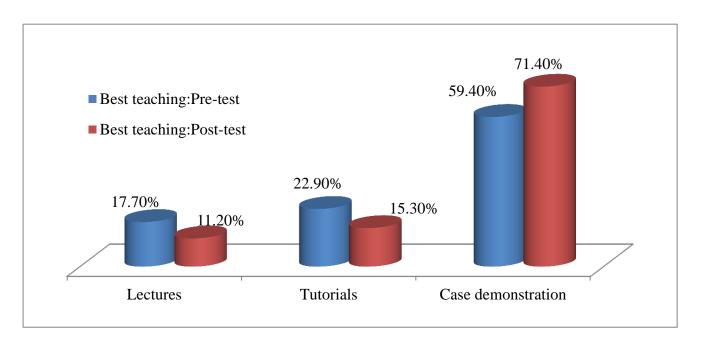


Figure 2: Traditional teaching methods used.

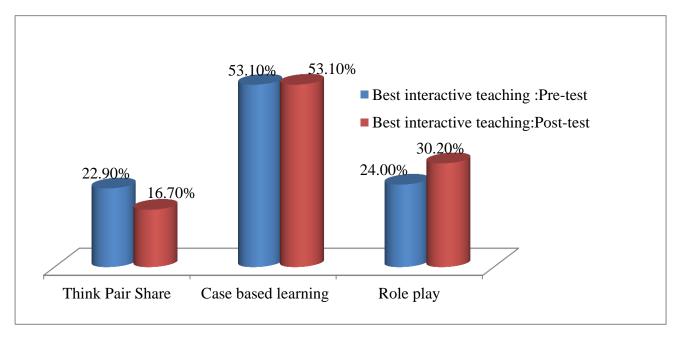


Figure 3: Interactive teaching methods used.

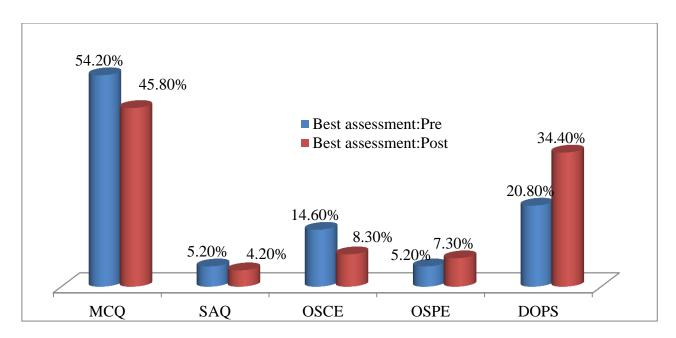


Figure 4: Assessment tools used.

Table 1: Descriptive and analytical statistics of the best teaching method, best interactive teaching and best assessment tools.

	N _{pre}	Mean _{pre}	Standard deviation _{pre}	Standard error mean _{pre}	N _{post}	Mean _{post}	Standard deviation _{post}	Standard error mean _{post}	t-value	Sig.
Best	96	2.59	0.828	0.085	96		0.680	0.069	-2.715	0.008
teaching						2.82				
Best	96	2.08	0.763	0.078	96		0.871	0.089	-3.857	0.000
interactive										
teaching						2.49				
Best	96	2.33	1.639	0.167	96		1.822	0.186	-2.174	0.032
assessment						2.80				

DISCUSSION

Studies show that students have achieved higher scores in undergraduate courses when teaching style was designed according to their learning style preferences. Rochford found significantly higher achievement when instruction material was prepared in response to learning style at an urban community college. Miller observed a significant improvement in examination scores as well as in students' attitude towards learning when information delivery style matched students' learning styles.

In the indexed study, vertical integration was strongly agreed upon as the best method by 45.8%. Vertical integration will be more helpful in real professional life scenario than in passing the exams was agreed upon by 42.7%.

Similarly, among the three traditional teaching methods, namely lecture, tutorial and case demonstration the case demonstration was the most liked method of teaching by the students as in the pre-test 59.4% students liked it and in the post-test 71.4% liked it. And out of three interactive teaching methods namely think pair share, case based learning and role play the most liked was case based learning 53.1% in both the pre and post-tests.

Out of total five assessment tools namely MCQs, SAQs, OSCE, OSPE, DOPS. The MCQs was the most liked i.e. 54.2% and 45.8% pre and post-tests. The affinity about MCQs was decreased in the post test i.e. by 8.4% (54.20%-45.80% =8.4%) DOPS was the next most liked assessment tool and in post-test the affinity was increased among the students (34.4%-20.8% =13.6%).

Teamwork was highly appreciated by students. Borkar et al introduced interactivity in community medicine and found that all students were in favor of interactive lecture. The most liked (76%) teaching learning method was a small group discussion. ¹⁰

A study comparing traditional and interactive teaching methods in a UK emergency department used computer assisted learning (CAL) and revealed that though there was no significant difference in the marks, all CAL users found MCQs assessment useful, compared with 83% of lecture participants. Some researchers have also introduced the electronic voting equipment for lectures to obtain feedback and perceive the benefits of interactive engagement. 11,12

Interactive teaching is tried by all teacher researchers and it is found that it helps in better understanding and should be incorporated into the curricula for teachers of various fields.¹³

Majority (42.8%) of the students chose PBL as a reliable teaching method whereas around (44.4%) of them chose case studies to be the reliable teaching method. Very little difference was observed in PBL (34.6%) and case studies (33.3%) when development of ability to understand the topic better was asked students supported case studies (52.8%). Similar trend was seen when asked about the method that provides the better learning experience with medical students considering PBL (45.5%) whereas other students favoured case studies (39.1%). The medical students preferred PBL (36.4%) while other students preferred case studies (37.7%). The similar observation was observed with respect to the teaching method which is more interesting and interactive as medical students chose PBL (34.9%) and other students (48.5%) chose case studies.

Lecture is used to deliver information to larger masses but it is usually a one-way communication and involves minimal engagement of the students.¹⁴

Interactive lectures takes active involvement of the student with the subject matter to develop understanding that is mostly not achieved in the lecture halls.¹⁵ Several studies have shown that students consider video based demonstrations as an effective learning tool.^{16,17} Video conferencing and video streaming have proved its effectiveness in delivering lectures to off campus students. 89% students agreed that online lectures through video conferencing could play a promising role in higher education.¹⁸

The role of problem based learning in actively involving the students in learning process is identified in several studies. Problem based learning (PBL) has largely replaced formal teaching method and has become a popular approach to learning in medical curricula worldwide and is an active learning process, which uses hypothetical medical case scenarios as the basis for learning. Discussion helps students identify the learning issues necessary to understand the case scenarios and leads them to seek information through individual, self-directed study. Another study conducted in India attempted using the PBL along with the didactic lectures

and proved its effectiveness in creating motivation in students to do self-directed learning. ²²

CONCLUSION

On the basis of the above findings it can be concluded that the vertical integration will be more helpful in real professional life scenario than in passing the exams. After exposure the increased liking was observed among students about case demonstration, role play, OSPE and DOPS in the post-test. So we can recommend these methods and tools for using and incorporating in medical curriculum for teaching and in assessments.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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