

Introduction of Integrated Teaching Learning Module in Second M.B.B.S. Curriculum

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ABSTRACT

Introduction: An integrated approach is an effective educational strategy to teach Under Graduate Medical students. Yet, this has not been incorporated in most of the medical colleges in India. Aim and objectives of the research were to introduce the Integrated teaching learning method, to study the effect of an integrated teaching learning process among undergraduate medical students and to get feedback regarding integrated teaching learning method of students and faculty.

Material and methods: It was Cross sectional Interventional study conducted in NSCB Medical College, Jabalpur for 4th Semester MBBS students over the period of 6 month. Topics for integrated teaching were Pneumonia and Diarrhoea. Vertical and horizontal integration was adopted. Paediatrics, Community Medicine, Microbiology and Pathology departments were included for this project.

Results: Thirty seven per cent students obtained more than 60% marks while 21% students between 50-60% and 42% students <50% marks. More than half of the students strongly agreed with statement that they were attending class for optimal learning. Almost all students agreed that it was more interesting compare to Conventional way of teaching. More than half of the students strongly felt that understanding of topics was better by integrated teaching. Almost all students found integrated teaching more useful while 2/3 also said that conventional method is also a useful tool. All faculty were agreed that Integrated teaching can improve the quality of learning among UG student.

Conclusion: It is possible to adopt an integrated learning methodology in medical undergraduate teaching under a conventional curriculum in spite of all the challenges.

Keywords: Integrated Teaching Learning, Pneumonia, Diarrhoea

INTRODUCTION

"Knowledge Learnt in Isolation is Rapidly Forgotten"

Here comes the importance of integration. Integration is defined as *organization of teaching matter to interrelate or unify subjects frequently taught in separate academic courses or departments*.¹

In another definition, the term integration in education means coordination in the teaching learning activities to ensure harmonious functioning of the educational processes.²

Teaching medical curriculum is not an easy task as from student's site they have to learn many subjects at a time and teachers also having multiple roles to perform apart from teaching like administrative work, research work etc In doing so, in most of the medical colleges teachers impart knowledge in conventional way not in integrated way. Therefore, Medical Council of India desires to incorporate the of integration of medical curriculum for teaching undergraduate

students with the specific objective of providing knowledge in a holistic ways rather than fragmented learning ways.³

As it was understood that Integrated thinking leads to individualize the learning in effective way,⁴ and hence the method of integrated teaching that encouraged us to adopt this concept atdin this project and thus, we designed to introduce the method of vertical and horizontal integration for teaching undergraduate medical students for the first time in our Institution.

It has been felt that this method will enhance the skill of clinico- pathological as well preventive aspect.

Moreover, this method also helps to improve the cognitive and psychomotor domains of the students.

Aims and objectives of the research were to introduce the Integrated teaching learning method through four departments (Community Medicine, Microbiology, Pathology and Paediatrics) of NSCB Medical College, Jabalpur, to study the effect of an integrated teaching learning process among undergraduate medical students while delivering a community health topics i.e. Diarrhoea and Pneumonia and to get feedback regarding Integrated teaching learning method of students and faculty

MATERIAL AND METHODS

This was a Cross sectional Interventional study, conducted in NSCB Medical College, Jabalpur for 4th Semester MBBS students. This study was completed over the period of 6 month. Topics selected for integrated teaching were Pneumonia and Diarrhoea. For this innovation department of Paediatrics, Community Medicine, Microbiology and Pathology were included. This was Vertical and horizontal integration, where predesigned, pretested, structured self-administered questionnaire containing both open ended and close ended questions; student feedback forms and faculty feedback forms were used. The self-administered questionnaire consisted of 52 questions; among those, 14 were multiple choice question (MCQ) type and 38 were open questions; 48 questions carried 2 marks each and 4 question carries five marks each; thus the total possible scores in the test was 116. The

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study tools were developed in consultation with 5 experienced teaching staffs atleast 1 each from all participating 4 disciplines: namely Community Medicine, Microbiology, Pathology and Paediatrics.

Feedbacks form for students were designed based on LIKERT scale while for Faculty feedback SWOT analysis of Integrated Teaching was done.

Study implementation plan

- Ethical clearance was taken from Ethical committee of the NSCB Medical College.
- Project was shared and discussed with all HODs of concern department.
- HODs nominated and assigned the task to their Colleague.
- Many meetings were organised to finalized the curriculum, time table and plan to execute the lectures.
- Finally it was decided that 12 hours will required for integrated teaching (6 hours for each topic) and another two hours for assessment and Feedback session, which was conducted after completion of planned module.
- It took four weeks to complete the topics.
- Feed back was taken on integrated teaching as well routine conventional teaching.
- Feedback from Teachers were also taken.
- knowledge and skill was also assessed after completion of the topics.

RESULTS

In the assessment and Feedback session 43 students participated. It was conducted to assess the knowledge of students where Objective types questions, descriptive, one line answer, case based assessment was done. Feedbacks of students were taken on following parameters:

- Attending class for Optimal Learning
- More Interactive
- Better Understanding
- More Useful
- More interesting
- Time managed by faculty
- Appropriate imparting of knowledge and skill and ensuring their acquisition

STUDENTS' FEEDBACK

More than half of the students were strongly agreed with statement that they were attending class for optimal learning in Integrated Teaching while similar numbers of students told that they were some what agreed for conventional way of learning.

Almost all students were agreed that integrated teaching was more interesting compare to Conventional way of teaching. More than half of the students strongly felt that understanding of topics was better by integrated teaching method compare to those 1/3 students said some what agreed for conventional method.

Almost all students found integrated teaching more useful while 2/3 also said that conventional method is also a useful tool.

2/3rd students said that integrated teaching was very interesting while 1/3rd were disagreed for conventional teaching,

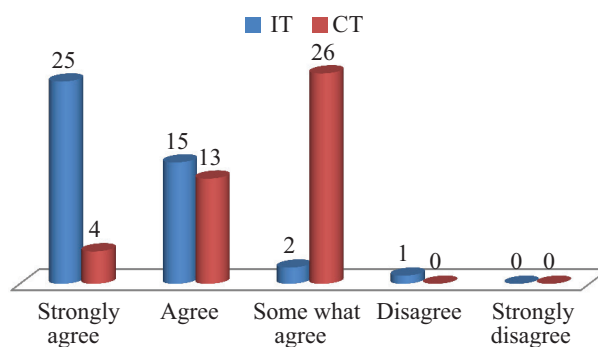
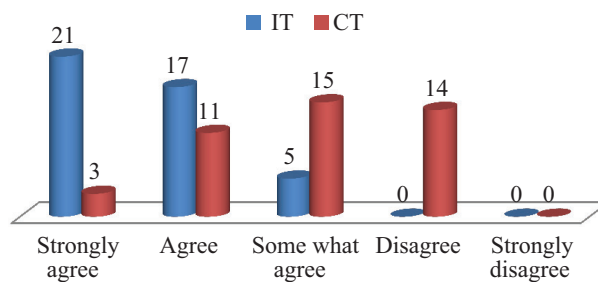
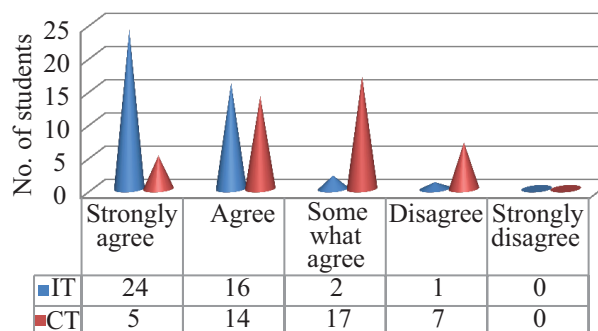


Figure-1: Attending class for optimal learning



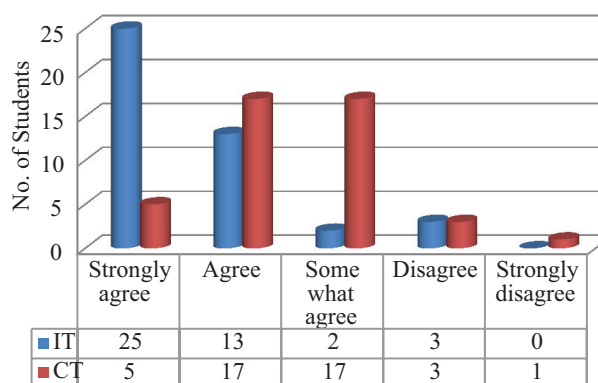
(Chi-square= 33.61, df=1, P value=<0.0001)

Figure-2: More Interactive



(Chi-square= 26.59, df=1, P value=<0.0001)

Figure-3: Better Understanding



(Chi-square= 17.65, df=1, P value=<0.0001)

Figure-4: More Useful

which was found statistically highly significant with, Chi-square= 27.25, df=1, P value=<0.0001.

Time was well managed by conventional teachers said by maximum number of students. Almost half of the students were strongly agreed that appropriate knowledge and skill was imparted by integrated method and similar proportion

of students were agreed with the statement for conventional method. It was also found to be statistically highly significant (Chi-square= 14.80, df=1, P value=<0.0001).

STUDENTS liked the BEST in Integrated teaching (Students' view points)

- Each disease taught by each aspect, each direction gave lots of better understanding
- It was Interactive and Informative
- Videos and Role play were very interesting and good teaching and learning method
- Visual AIDS were very good
- Practical aspects were taught very well helped to develop skills very effectively
- Felt that we are competent to tackle Diarrhoea and pneumonia very well.
- We could integrated knowledge of topics
- Learned well by video exercises and by doing case analysis
- Integration made learning easy
- It increased the power of understanding
- Active learning facilitated by teachers
- Looking forward for more such interactive sessions
- Good way to remember the things about diseases
- Teachers attending the class of other subjects
- Now I don't need to open many copies for these two diseases in four subjects

STUDENTS' SUGGESTIONS

- Should distribute notes of the topics.
- Black boards and chalk can be used.
- Sharing of PPT with students.
- Some time class become boring if extended too much.
- Assessment should be done in between.
- Pharmacology was missed here.
- More classes should be taken by this method.
- Want to learn Tuberculosis by this method.
- All lectures should be integrated.
- No theory classes post lunch.
- Can be done by reading by students and discussion after that.
- All important diseases should be taught by integrated pattern will help each one of us for future clinical practice.

STUDENTS' PERFORMANCE IN TEST

Thirty seven per cent students obtained more than 60% marks while 21% students between 50-60% and 42% students obtained <50% marks. One interesting thing we found that the topics covered by multiple teaching learning aid were understood and attempted well while the topics covered through one teaching learning aid i.e. didactic lecture were attempted poorly.

TEACHERS' FEED BACK

Strengths of Integrated Teaching most of the faculty told that,

1. Those were very effective sessions for effective learning of the topics as a whole.
2. Theory with demonstration made learning effective.

3. All aspects of the topics were covered simultaneously and that helped students for better understanding.
4. It was time saving approach as repetition was avoided.
5. Interaction with other department's faculty was appreciable
6. Less time required to execute the topics.

Weaknesses were

1. Case Demonstration in wards was missed.
2. Time taking to prepare time table and plan of execution of classes.
3. Difficult to introduce during normal planned schedule.

Opportunities of integrated teaching

1. Good opportunity for integration and learning deeply.
2. Opportunity for good interaction among teachers.
3. Brings faculty together for students' welfare.
4. It can be planned in better way in future with other departments and for other topics or system too.

Threats of integrated Teaching

1. Cooperation of other departments.
2. Need a very good neck to neck coordination, lacking which all programme may fail.

All faculty agreed that this program improved understanding and application of integrated teaching learning method in Undergraduate Medical curriculum. It was felt by faculty that though this was a challenging effort but outcome is appreciable. It was also felt that though it took lot of efforts for interdepartmental coordination, learning wise it was like a refresher course for faculty too. All the faculty felt that this program will help these students perform better in later days of clinical training. They all want this to be incorporated in UG curriculum in future.

DISCUSSION

In medical education many innovative methods have been introduced like self-directed learning, problem-based learning, integrated teaching (IT) and community orientation.⁵ Integration of teaching is defined as the organization of teaching matter in such a way where it interrelate or unify the subjects which are frequently taught in separate academic courses or departments.^{1,6}

Integration can be done in horizontal way means that two or more departments teaching simultaneously merge their educational identities and vertically means integration between disciplines traditionally taught in the different phases of curriculum. There are four major components in it namely:

1. Integration of experience,
2. Social integration,
3. Integration of knowledge,
4. Integration as a curriculum design.⁷

Harden described 11 steps of the integration ladder - A tool for planning, implementing and evaluating medical curriculum.⁸

As Medical education is related to health care; so our aim should be to teach our undergraduate students in such a way, where they can correlate the various subjects and we can make them better doctors. Teaching different aspects of a topic by faculty members of relevant departments instead of one department will better enhance the knowledge. Ulti-

mately this 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. Thus to improve effective diagnosis and better treatment of the patients and to improve the quality of student's learning, integrated learning is the need of an hour.

Medical Council of India has adopted an integrated curriculum which de-emphasize compartmentalization of disciplines.⁹

At present in our institution, we have non-integrated system of the undergraduate curriculum for MBBS, which is discipline-based where teaching activity mostly involves lecturing.

It was found that integrated method was well accepted by all faculty who participated in the project and Head from respected departments. Feedbacks from student revealed that all the aspects like Attending class for Optimal learning, More Interactive, Better Understanding, More Usefulness, More interesting, Appropriate imparting of knowledge and skill and ensuring their acquisition were significantly accepted except time managed by teachers.

It happened because in integrated teaching we took extra hours due to completion of topics in planned time schedule. While in Conventional teaching teachers know that they have one hour to finish his/her topic.

Statistically extremely significant results were obtained for Students' Feedbacks on integrated teaching ($P < 0.0001$).

Thirty seven per cent students obtained more than 60% marks while 21% students between 50-60% and 42% students obtained <50% marks. One interesting thing we found that the topics covered by multiple teaching learning aid were understood and attempted well while the topics covered through one teaching learning aid i.e. didactic lecture were attempted poorly.

More than two third of the students expressed their view that this new method was very good for their learning, better understanding, and useful for future in clinical practice. Similar findings were observed by study done by Basu M et al where they found that overall rating by students about IT was very good new method. Two third of students expressed their view that this new method was very good; 16% told that it was excellent followed by 10% as good. However, nobody gave any negative feedback about IT methodology.

In our study 100% faculty were agreed that this new integrated method of teaching as very useful for students though it was time consuming with syllabus burden in conventional teaching. They told that they are interested in increased integration, but that the current level of integration was not adequate it needs lots of effort, neck to neck support, acceptance by administrators. Other previous studies also addressed this topic.¹⁰⁻¹⁵

The present study was an attempt to improve the quality of medical education with the innovative curricular strategy to teach Pneumonia and Diarrhoea in an integrated manner which revealed that IT was better than CT based on feedbacks received from students and faculty. The results of which was similar to some other previous studies,^{1,10,17-18,20} Similar studies at Seth GS Medical College, Mumbai, Maha-

rashtra by Joglekar et al.¹ at MGM's Medical College, Navi Mumbai, India by Kate et al.,¹⁶ at Pramukhswami Medical College, Karamsad, Gujarat by Ghosh and Pandya;¹⁷ at Jawaharlal Nehru Medical College, Belgaum Karnataka by Dandannavar¹⁰ and at Terna Medical College, Nerul, Navi Mumbai by Nikam and Chopade.¹⁸ revealed that the marks obtained by the students who had undergone IT was statistically significantly greater than those who did not. But unfortunately we could not compare it in present study.

However in a study done by Kadam and Sane in Maharashtra¹⁹ no significant impact of integrated lectures was found between the evaluation after integrated and traditional lectures.

In our study, the students felt a positive attitude of Integrated teaching, they told that it had enhanced the student's understanding of the topic, they recognized that integrating the medical subjects was useful and of interesting to them, and that it should be continued; they felt that there was a positive interaction which helped them to correlate whole aspect of topic, which was similar to studies by Dandannavar at Karnataka,¹⁰ Nikam and Chopade at Mumbai,¹⁸ Soudarssanane and Sahai at JIPMER,²⁰ Kadam and Sane at Maharashtra,¹⁹ Kumari et al. at Bangalore,²¹ Mahajan et al. at Ahmedabad²² and Rehman et al. at Pakistan.²³

The findings and the experience of our study supports the view of other studies that Integrated Teaching Learning Method help to increase quality learning of topics and avoids fragmented manner of teaching where teachers are not aware of what is taught in other subjects. It also develops interest in the topic.

CONCLUSIONS

Integrated Teaching was found to be more effective than the conventional one as statistical significant results were obtained by comparing feedbacks on integrated with the conventional method; which was well accepted and appreciated by students as well as faculties. It was suggested by both students and faculty to introduce it in whole curriculum. In spite of all the challenges there is possibility to adopt integrated learning methodology in medical undergraduate teaching.

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