

ORIGINAL ARTICLE

PERCEPTION OF MEDICAL ALUMNI REGARDING INTEGRATED VS NON-INTEGRATED SYSTEM OF EDUCATION

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Background: Memorization without any concept is the major impasse of traditional educational system in Pakistan. The extensive syllabus lacking concepts, pressure of assessments and forceful turnout in lectures divert the focus of medical students which leads to misconception and incompetence in clinical field. Aim of this study was to assess the perception of medical graduates/undergraduates regarding flaws and beneficence of non-integrated and integrated system respectively. **Methods:** This cross-sectional study was conducted at CMH & LMDC from August, 2015 to September, 2015. The sample size was 225 with response rate of 98%, non probability convenient sampling method was used. A modified version of questionnaire tailored from Usmani *et al* and Farida *et al* was used to collect data online through Google forms which was sent to potential candidates to more than 20 medical colleges of Punjab, Pakistan. Five (5 point) Likert scale and SPSS-22 was used to assess the responses. **Results:** Mean age of the respondents was (22±1.83). Only a small number 34 (15.4%) said that they are satisfied with current system of education while 42 (19%) were of the view that current system is total failure. Majority 173 (78.3%) said they attend lectures for the sake of attendance similarly major proportion 198 (89.5%) agreed that clinical rotations are better than lecturers. Regarding usefulness of Problem-based Learning (PBL) system, majority 194 (87.8%) were in favour of its implementation especially respondents who belong from Government medical institutes. **Conclusion:** It is the indispensability to implement integrated system to meet up the rising standards of medical education keeping in view the assessed positive response among medical graduates for the system which will not only make collaboration more effective but also increase accessibility and improve approach for learning medicine.

Keywords: Traditional system, medical education, problem based learning, integrated learning system

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INTRODUCTION

The field of medicine is rapidly advancing. In order to cope up with the advancements the curricula in medical schools around the world are evolving. Their prime objective is to produce graduates with strong core concepts and enhanced inquisitive skills enabling them to deal with the enormous clinical work. Integrated curriculum has gained popularity for this concern.¹

Integrated curriculum is a concept in which the basic and clinical knowledge is connected together unlike traditional system in which there are barriers between basic and clinical sciences and their respective specialties too. According to Henry P O'connel, medical curriculum is less fragmented and it promotes a cross discipline approach to diseases. This enables students to learn in context, and enhances their problem solving skills. They are able to apply their knowledge. This system puts into background the irrelevant information.² The fact that learners are able to apply their knowledge imparts more enthusiasm and interest in them.

In Pakistan, majority of medical colleges are following the traditional non-integrated system with a couple of exceptions. The subjects are taught separately in a conventional style lectures. There is a trend of cramming up knowledge without building concepts. This hinders their ability to apply their knowledge.

The medical graduates produced by such system have reduced problem solving ability. It does not bring about the best out of students. With this traditional outdated curriculum we are producing medical graduates with outdated knowledge skills and attitudes. The frustration seen among medical graduates is justified; they spend years in a medical school working hard up to the requirements of this system only to find out as they graduate, that their knowledge does not match the requirements of the profession.³

Cognitive psychology shows that gaining knowledge and skills in the context in which they will be used leads to better recall and application. Applying this finding in medical teaching and molding our curricula accordingly will produce graduates with up-to-date knowledge, better retention and increased motivation to learn. It will develop cognitive and problem solving skills for self directed lifelong learning and competence to analyse and interpret clinical findings and apply them in diagnosis and treatment.^{3,4} Integrated system of curricula is the solution to all these needs and issues.

Since its development in 1960 Problem Based Learning (PBL) has been the most influential innovation in medical education. Essentially, problem-based learning is a small group teaching method that combines the acquisition of knowledge with the development of

constructive skills and attitudes. There is a rising trend of PBL in Pakistan as well as a few medical schools in Pakistan are turning towards PBL.^{5,6}

Many well-known experts in the field of learning and instruction have been stressing over the point that acquiring thinking and problem-solving skills is a primary objective of education. Allan⁷ as well as Bowden and Marton⁸ confirm this by describing the aims of higher education in terms of desired learning outcomes such as subject-based, personal transferable and generic academic outcomes. With the rapid ongoing development in this competitive era the graduates are expected to have not only the knowledge base but also the skills to solve problems, analyse, synthesise, coach, lead, present and evaluate.

Conventional educational practices are not able to develop these prerequisites of professional expertise. Renkl *et al*⁹ indicate the problem that students often acquire inert knowledge in traditional forms of instruction. Students have the knowledge but they cannot use it to solve complex problems of daily working life. The important challenge for today's higher education is the development and the implementation of instructional practices that integrate domain-specific knowledge with the personal-transferable and generic academic skills.¹⁰

Since PBL learning styles are different from those of traditional, didactic, lecture-based courses, there is a need to take feedback from the students and to develop the tools for analysis and assessment of this strategy. McGaghie defined feedback as 'information that gives learners knowledge of the results of their study and clinical work'.¹¹ Through feedback, individuals recognize areas of deficiency in their knowledge and skills and seek a course of action to rectify them.¹²

Our targeted population of students are learning in a system which delivers knowledge through a combination of PBL with conventional lectures. In order to determine the perception of students regarding pros and cons of PBL and Conventional non-integrated system of education an evaluation was carried out. The rationale of our study was to find out the flaws in the present system and whether the students prefer integrated system or not. Objectives of our study were to assess the perception of medical students regarding integrated versus non-integrated system and to analyse the students feedback regarding integrated curriculum.

METHODOLOGY

This cross-sectional study was conducted at CMH Lahore Medical College and Lahore Medical and Dental College from August to September 2015. Ninety percent of the respondents were from MBBS and BDS and 10% were house officers and PG trainees. Data was collected from more than 20 medical colleges of Punjab. The sample size was 225 calculated through WHO sample size calculator, 98% was response rate, 4 forms were

discarded because of missing information. Non-probability convenient sampling method was used. A modified version of questionnaire tailored after permission from Usmani *et al*⁵ and Farida *et al*⁶ was used to collect data online through Google forms which was sent to potential candidates through email and social networking sites. The 5 point Likert scale was used which varies from strongly disagree to strongly agree. SPSS-22 was used to assess the responses.

RESULTS

Of the 221 students, 80 (36.2%) were male and 141 (63.8%) were female. A vast majority (168, 76%) had urban background while 35 (15.8%) had semi-urban and 18 (8.1%) belonged to rural back-ground. Respondents belonged to government (94, 42.5%) as well private institutions (127, 57.5%). Almost all the respondents were studying on local seats (207, 93.7%) compared to 11 (5%) on foreign and 3 (1.4%) on over-seas seats. Data was equally distributed across all the classes, house officers and post-graduate trainees. Mostly (197, 89.1%) were single, 16 (7.2%) were in a relationship or engaged and 8 (3.6%) were married. About half (118, 53.4%) were day scholar and 103 (46.6%) were hostilities.

When asked whether traditional system of education is wastage of time, 72 (32.6%) did not have any say and 104 (47%) agreed that current system is of no use while remaining disagreed. When asked about the current system of education regarding its helpfulness related to research, 164 (74.2%) agreed that traditional is not helpful at all while 33 (14.9%) were neutral and 24 (10.9%) disagreed. Mostly (173, 78.3%) respondents said they attend lectures just for the sake of attendance, 27 (12.2%) disagreed to this and 21 (9.5%) were neutral. Respondents had mixed views about the statement "Lectures destroy creativity"; 80 (36.2%) disagreed, 51 (23.1%) did not have any say and 90 (40.7%) agreed to the notion that lectures destroy artistic approach of the students. Quite amazingly, 145 (65.6%) disagreed to the statement "Lectures are irrelevant to the knowledge to be learnt", 42 (19%) were neutral and only 34 (15.4%) agreed with the statement. When asked about the usefulness of self study over lectures about half 106 (48%) agreed that self study is more helpful as compared to 61 (27.6%) who disagreed and remaining 54 (24.4%) had no opinion about this.

When asked whether lectures helped in thinking critically 100 (45.3%) were of the view that they are of no use while only 61 (27.6%) disagreed while rest had no opinion. Majorly (198, 89%) respondents agreed that clinical rotations are much better than lectures because of greater exposure to patients and clinical cases. Likewise, 135 (61.1%) were of the view that labs are way better than lectures because of interactive study sessions. Mean difference in responses according to institutes shows students from

government institute had more negative views about the traditional system (Table-1).

When asked about the performance of teachers in the classroom, respondents had different views; 68 (30.7%) disagreed that they do not teach effectively, 66 (29.9%) did not have any opinion and 87 (39.4%) agreed. Similarly when inquired about the competency of teachers in clinical years, 122 (52.2%) agreed that they are more competent in clinical years as compared to teachers of basic medical sciences (anatomy, physiology and biochemistry), 56 (25.3%) did not have any say and 43 (19.5%) disagreed with this notion.

Majority (174, 78.7%) said traditional system of education should be replaced with problem-based learning or integrated system of education. Likewise 196 (88.7%) respondents said that PBL strategy seems to be interesting as compared to the conventional lectures. Similarly, 188 (85.1%) of the respondents were of the view that PBL stimulates the undergraduates in doing research. There were significant differences in means of responders studying on different seats (Table-2).

About 164 (74.2%) said that PBL increases one's ability to manage time effectively; majority (194, 87.8%) said that PBL might help in improving decision making skills. A large proportion of respondents (189, 85.6%) were of the opinion that PBL helps to convert from passive to active life-long learner. As PBL is becoming one of the leading strategies to teach at undergraduates, 193 (87.4%) respondents were of the view that proper training should be given before its complete implementation. A large number (169, 76.5%) thought that implementation of integrated system will definitely help them to perform better in university examination while 41 (18.6%) neither disagreed nor agreed with this statement and the remaining disagreed.

When asked a general question, "Are you satisfied with the current system of education?" majority (145, 65.6%) said no and 42 (19%) even said that current system is a total failure. When asked "If you have option to study in integrated system of education, will you study?", 194 (87.8%) said yes, they will definitely like to study in such system.

Table-1: Difference in means of perception regarding integrated vs traditional system of education in government and private institutions (Mean±SD)

Statements	Category of Colleges		Total
	Government	Private	
Traditional system of education is wastage of time	3.42±1.09	3.30±1.01	3.35±1.04
Traditional system of education is not helpful for research	4.0±0.94	3.8±1.04	3.9±1.00
Lectures are attended just for the sake of attendance	4.2±1.02	3.9±1.1	4.11±1.08
Lectures are irrelevant to the knowledge which is to be learnt	2.4±0.99	2.3±0.99	2.3±0.99
Self-study is helpful better than lectures	3.3±1.1	3.2±1.0	3.3±1.1
Labs are better than lectures because of interactive study	3.7±0.97	3.5±1.02	3.6±1.00
Teachers do not teach effectively in class room lectures	3.2±1.06	3.0±1.1	3.1±1.1
Teachers in clinical years are more competent than non clinical teachers	3.7±1.08	3.3±1.1	3.4±1.1

Table-2: Perception of respondents regarding Integrated/PBL system studying on local, foreign or overseas seats (Mean±SD)

Seat on which student is currently enrolled	PBL stimulates doing research	PBL increases ability to manage time effectively	PBL improves decision making skills	PBL helps to convert from passive to active life long learner	proper training of PBL should be given before its implementation	This teaching tool will help you to perform better in university exams
Local	3.77±0.59	3.8±0.98	4.1±0.69	4.1±0.71	4.2±0.71	3.8±0.78
Foreign	3.9±0.30	3.9±0.83	4.3±0.80	4.0±0.94	4.1±0.75	4.0±0.83
Over seas	4.0±0.00	4.0±1.0	4.3±0.57	4.6±0.57	4.3±0.57	4.3±0.57
Total	3.7±0.57	3.8±0.97	4.1±0.69	4.1±0.72	4.2±0.71	3.9±0.78

DISCUSSION

Medical education in Pakistan is rapidly changing. Majority of the private medical institutions are engaging into integrated modular system of learning. Whereas in government medical colleges still didactic lecture system is more or less is the ongoing system. According to our study, majority of the students who were in favour of integrated system belonged to government and foreign background. As this method is innovative, student centred, problem and community based. There are different strategies for transformation from a complete traditional model to a more innovative SPICE model.¹³ These transformations are a blend of horizontal and

vertical integration between the different disciplines; it helps to avoid unnecessary repetition of the subject and encourages the students to effectively manage time throughout the 5 years of education to enhance process of learning.

In this study students showed positive response towards the integrated system, these results are similar to a study conducted by Khan H *et al*¹². This study was an effort to see the perception of medical students who agreed that integrated modular system increased their ability to solve the problem, and turned them from a passive to an active learner, which is in line with another study by Basu *et al*¹⁴.

In a study by Kalpana Kumari *et al*¹⁵ medical students found integrated modular system (ILS) more useful and interesting and agreed that it improves their performance in exams which is in concordance with our results. Ghosh *et al*¹⁶ revealed that from students point of view ILS is very useful in acquiring knowledge, which is concordance with our study.

Majority of the students in our study were of the opinion that traditional way should be replaced by student-centred, problem-based learning method, as it is conducive for research which demands critical thinking. This system is best for acquiring clinical skills and problem solving attitudes which is expected from medical graduates once they are passed and pursue for their clinical training.¹⁷

CONCLUSION

It is need of the hour to implement integrated system based on assessed positive response and perception of medical graduates and under graduates. This system will meet up the rising standards of medical education and facilitate our students and physicians to compete in world arena, by saving their time and energy and will provide better insight into basic and clinical subjects.

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