

# **Current Medical Curriculum and Teaching Strategies in the Eyes of Students**

**Anwar Ul Haque\*, Mudassira\*, Muhammad Iqbal Khan\*\*, Syed Irfan Ahmed\*\*\*, Rameez Iqbal Hashmi\*\*\*\* and Lubna Naseem\***

\* Department of Pathology, Pakistan Institute of Medical Sciences

\*\* Department of Surgery, International Islamic Medical College

\*\*\* Department of Medicine, Rawalpindi Medical College

\*\*\*\* Department of Anatomy, International Islamic Medical College

## **Introduction**

Continuous self assessment and improvement is a sign of living nations. If amount of time and energy are properly used and appropriate teaching strategies are used, quality of the doctors can be improved markedly. There is a constant and ongoing need to assess the efficacy of the curriculum, teaching strategies and the ethical values in order to be sure that our doctors are fully and adequately trained in all aspects. The entry into the medical college is highly competitive and therefore our medical students constitute the cream of the nation in terms of intelligence, hard work and motivation. The students overcome the gross and severe deficiencies of medical education system by their natural abilities and hard work; but at the same time this masks the deficiencies in our medical education system. This is gradually deteriorating the quality of doctors being produced.

Medical education must undergo significant change in order to better prepare physicians for rapidly evolving health care needs. There is dire need to identify opportunities for improving the four phases of physician education –pre medical, and medical college education, residency training, and continuing medical education. The purpose of this work was to evaluate all components of medical education and to delineate the values, knowledge, attitudes and skills that are essential fundamentals to the field of medical education and must be imparted to the students to transform them into best possible doctors.

## **Materials and Methods**

There are important and pertinent questions regarding medical education such as; what

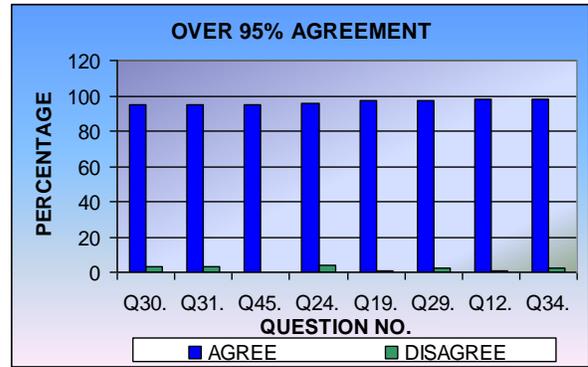
innovations in medical education can improve the health of our patients? How can the knowledge, skills and professionalism of medical students, residents and new doctors be better aligned with the needs and expectations of the public? In order to get input and feed back from doctors and medical students of various medical colleges and hospitals, we conducted a survey on 864 individuals. The survey was in form of a questionnaire comprising 50 questions pertaining to various aspects of medical education. Each question was followed by 5 responses. i.e.; totally agree; somewhat agree; neither agree nor disagree; somewhat disagree; totally disagree.

The respondents were asked to select one option from these responses. The respondents represented all strata of the medical institution and included medical students, post graduate trainees, registrars, fresh consultants and faculty members. The data was entered and analyzed by SPSS software. In order to simplify the results option 1 and 2 were merged as agreement and option 4 and 5 merged as disagreement. Data is presented as percentage of respondents in either category for each question. Table 1.

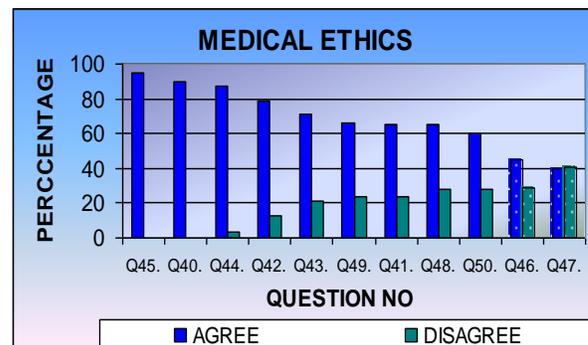
## **Results**

The results are depicted in the graphs 1-7. Nine questions scored more than 95% agreement among the responders (Graph 1). These highlighted the need to introduce problem based learning; short questions for assessments, a regular feedback to the teachers regarding their teaching and tutorials for students to discuss their shortcomings; practical training for both surgical and medical emergency procedures starting right from the undergraduate level.

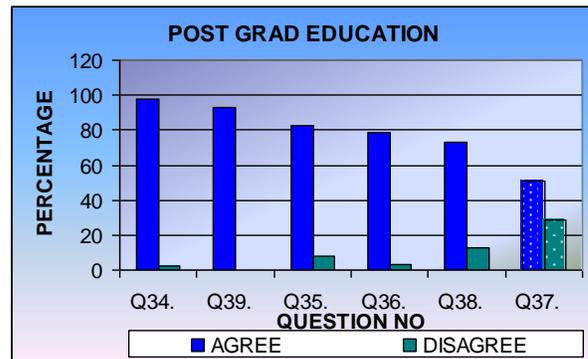
Strong agreement was also observed on the need for a continuous assessment throughout the



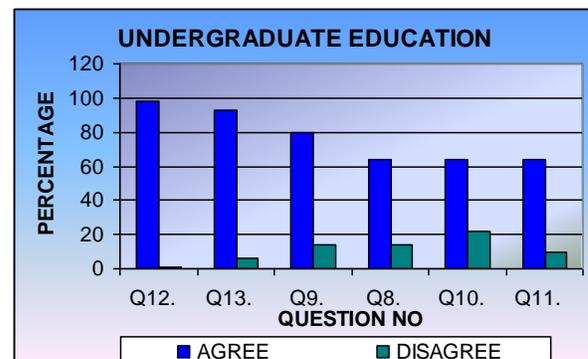
**Graph 1**



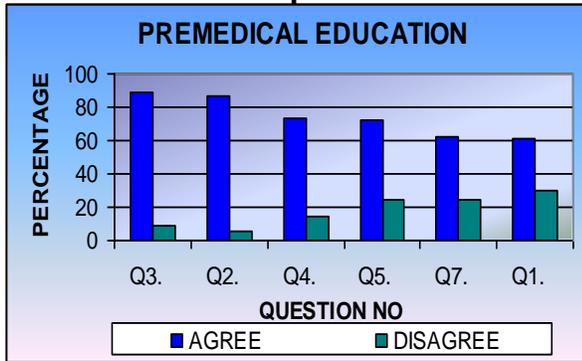
**Graph 2**



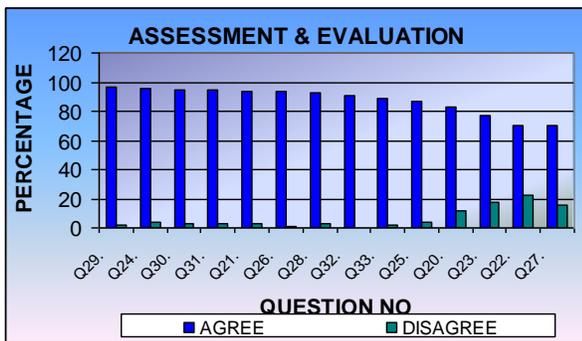
**Graph 3**



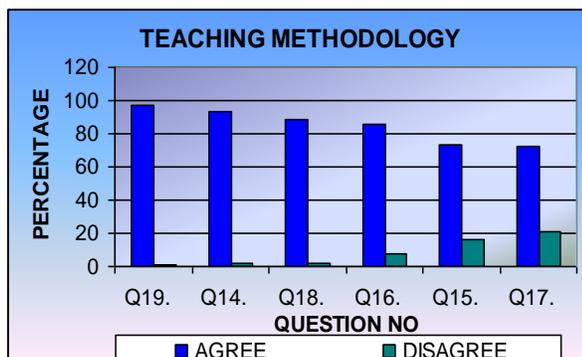
**Graph 4**



**Graph 5**



**Graph 6**



**Graph 7**

whole academic year in contrast to single annual examination; developing a uniform grading system for all medical colleges in the country and including

evaluation of other characteristics like better patient care in addition to academic achievements.

Regarding premedical education, there was agreement on the present lengthy curriculum not imparting effective practical and purposeful knowledge and training but rather incorporating burdensome unnecessary and useless details of botany and irrelevant practicals. The doctors agreed that this should be replaced by a concise, useful and relevant curriculum. The knowledge imparted should lay down a solid foundation for the later medical education. (Graph 2.)

In the undergraduate medical education the issues emphasized upon were the need for integrating basic sciences with clinical subjects. Medical schools and teaching hospitals should include the teaching of rural and remote medicine within the undergraduate medical curriculum. (Graph 3).

Regarding the teaching methodology, a high degree of consensus was seen on issues like institution of problem based learning, integrated tutorials, more frequent use of computers and modern technology to impart knowledge, and teaching the basic sciences by the respective clinical specialists teachers in collaboration with basic science teachers.

To get a better control over the quality of education it was also agreed that the teachers should be penalized for their lack of interest in teaching and rewarded for their hard work, as the current administration policy and remuneration is ineffective in attracting good teachers at Government institutions. (Graph 4).

The majority agreed that the mode of assessment and evaluation should be more objective including multiple choice questions and short questions; instead of essay questions and viva exams as the later are not a uniform and fair means for evaluating a student's knowledge and competence. (Graph 5). Also the number of assessments should be increased and a good feedback be given to the students in the form of tutorials or by giving back the checked answer sheets to the students. Increasing the contents in each assessment was not favored. The need of regular feed back from the residents regarding their experience in the training was highly favored. According to the results obtained the post graduate research activity is not up to the mark because of lack of funds and expert supervision. (Graph 6)

Majority of the doctors responded positively for increasing the emphasis given on ethical issues during the training, learning and awareness of prescribing cost effective medication and ordering

investigations in order of priority. According to the survey only a few doctors were actively involved in highlighting and solving social and national problems and even fewer wrote articles for the same purpose. (Graph 7).

### Discussion

The primary objective of curriculum evaluation is the overall improvement of the medical student's education training and moral uplift. Traditionally, curriculum evaluation has been limited to the whims and inclination of bodies that develop the curriculum and no feedback is taken in general from the doctors, medical students and the faculty members.

The coaching of medical student starts not from the first grade of medical college but from the premedical grade. It makes the basis for the later medical education therefore premedical curriculum should be tailored to provide for all the basic knowledge required for a strong medical foundation. As agreed in the survey the present premedical curriculum is lengthy and the poor student is burdened by details which he would never require during the later medical education. The irrelevant material should be extricated from the curriculum and replaced by useful material. This would require updating the textbooks and training the teachers.

The students seldom look up into the libraries or on the internet for information. The students are not taught to acquire knowledge but smartly they try to

learn the textbooks and lecture notes by heart. This keeps their horizon narrow and kills the spirit and love of seeking knowledge. This attitude must be changed through behavioral training and proper guidance.

The short comings seen in the undergraduate medical curriculum also included lengthy course and too much information most of which the students forget after a year or so<sup>1</sup>. With all the time and money spent on teaching medical students one must wonder how well that investment is paying off. What portion are they retaining in memory? What are they really learning? These seem to be the central questions for medical education<sup>2</sup>. Surely if students are not remembering what they have been taught then the effort was wasted; if students cannot make use of the knowledge they have been taught, if that knowledge becomes inert and inaccessible, then why teach it in the first place<sup>1</sup>.

The objective of the medical training should be to produce better healers and doctors and not merely knowledgeable people. All the knowledge delivered to the students should be integrated with clinical aspects and the practical applications.

Learning should be student-centered. This requires adding problem based learning and tutorials in the teaching methodology, integration of clinical and preclinical studies, coupled with a reduction in the redundant and useless factual knowledge, content and the minimizing the strict boundaries of identifiable

Q.NO	STATEMENT	AGREE	DISAGREE
<b>PRE-MEDICAL EDUCATION</b>			
1.	The premedical course subjects have burdensome and useless details	61	30
2.	There is considerable emphasis on memorization and reproducing exactly what the teacher had taught	87	6
3.	Proper use of library and internet for search of additional knowledge is not optimally encouraged.	89	9
4.	The earthworm and frog dissection should be replaced with more relevant and useful and purposeful practicals in all science subjects	73	15
5.	Botany should be replaced with knowledge of brief human anatomy, hygiene, infections and other diseases	72	24

6.	The Urdu poetry and prose contains many vulgar and cheap ideas and chapters which are embarrassing both for teachers and the students	35	51
7.	The English poems and prose are usually of very poor quality and need replacement with good English literature e.g. writings of Maulana Muhammad Ali Johar, Quai-e-Azam and Allama Iqbal	62	24

**UNDERGRADUATE MEDICAL EDUCATION**

8.	The current curriculum incorporates too many useless and irrelevant details	64	14
9.	The current curriculum of basic sciences is not sufficiently integrated with clinical subjects	80	14
10.	Clinical teachings should start very early in the first year students	64	22
11.	Medical schools and teaching hospitals should include the teaching of rural and remote medicine within the undergraduate medical curriculum	64	10
12.	There should be special tutorials for important emergency procedures like CPR , ambo bagging etc, during undergraduate education	98	1
13.	There should be special tutorials for basic medical procedures like applying sutures, giving injections, drawing blood etc during undergraduate education	93	6

**TEACHING METHODOLOGY**

14.	Important aspects of various subjects should be taught through problem based integrated learning based on tutorials	93	2
-----	---	----	---

<b>Q.NO</b>	<b>STATEMENT</b>	<b>AGREE</b>	<b>DISAGREE</b>
15.	Various modern computer and other methods should be used to impart the knowledge rather than traditional dead body dissections	73	16
16.	The basic sciences should be taught in correlation with clinical education and preferably by clinical teachers e.g. neuroanatomy should be taught by Neurosurgeon and histology should be taught by pathologist	86	8
17.	Gradually the "Basic Sciences" should be merged into clinical sciences .	72	21
18.	Faculty is not rewarded for their hard work and not penalized for their lack of interest in teaching	89	2
19.	The quality of teaching should be assessed and feedback provided to the teachers regularly	97	1

**ASSESSMENT AND EVALUATION**

20.	Essay questions do not sample the knowledge and skill bank of the students	83	12
21.	Essay questions are impossible to be fairly marked by the examiners due to their busy schedule and inability to maintain constant attention	94	3
22.	Viva exam is not a fair system to evaluate the students' knowledge and understanding	70	22
23.	Viva examination produces enormous unnecessary stress	77	18
24.	More short questions should be included in the assessment paper to discourage selective study by the students	96	4
25.	MCQs system is a good way to discourage selective study	87	4
26.	There should be more frequent number of internal assessments	94	1
27.	The contents covered in an assessment should be increased	70	16
28.	The checked answer sheets should be given back to the students after each test	93	3
29.	A tutorial should be held to inform the shortcomings of students in their tests on a regular basis	97	2
30.	A percentage of marks of all assessments during the whole year should be included in the annual exam	95	3
31.	A common grading system for all Pakistan Medical schools should be introduced	95	3
32.	Honors grading should be awarded on graduation for excellence throughout the entire course.	91	0

<b>Q.NO</b>	<b>STATEMENT</b>	<b>AGREE</b>	<b>DISAGREE</b>
33.	The administration policy and remuneration is ineffective in attracting good teachers at Government institutions	89	2
<b>POST GRADUATE EDUCATION</b>			
34.	Post graduate research is not up to the mark because of unavailability of funds and technology	98	2
35.	Post graduate research is not up to the mark because of unavailability of expert supervision	83	8
36.	Supervisors usually lack time for the teaching of post graduate trainees	79	3
37.	Supervisors tend to pay more attention to more learned trainees and over look the others who are lagging behind in training	51	29

---

38.	You very often interact with your consultant with a query pertaining to your studies	73	13
39.	There should be a questionnaire completed by the students at the end of their rotation in which different aspects of resident's experiences are evaluated.	93	0

**MEDICAL ETHICS**

40.	Ethical issues should be woven into the fabric of clinical problems	90	0
41.	No emphasis is made on ethics and humanity during medical training	65	24
42.	Most of the doctors are not taught how to order investigations in order of priority	79	13
43.	Most of the doctors do not consider financial implications of various investigations	71	21
44.	Kick backs and commissions should be taught as extremely immoral act	87	3

---

separate subject courses<sup>3</sup>. Student centered learning helps the students to retain more knowledge, apply it to real clinical problems, improve knowledge, skills, attitudes and behavior which is the real essence of teaching and learning<sup>4</sup>. Quran's format of teaching is problem based learning. Teaching is most efficient when its need is strongly felt. The teachings of Quran were given to Muslims step by step according to the on going needs and emerging problems. Quran's teachings proved to be the most effective as witnessed by the entire world. These laid down the foundation of modern sciences and led to renaissance and the industrial revolution in Europe. We should follow this mode as Allah's sunnah is irrefutable.

"One who assess him self gets successful" (Quran). Therefore the shortcomings of the students should be explained to them. Similarly the feedback given to the teachers by students regarding their teaching method is very important for continuous improvement. A good and knowledgeable lecturer who is compassionate, respectful and active has the strongest influence on students, probably in all cognitive, behavioral and affection aspects. Personality and teaching skills of lecturers have the strongest associations with being a positive role model in clinical teaching.<sup>5</sup> In the survey it was pointed out that our teaching faculty has generally failed to serve as a role model for the students. To get a better control over the quality of education, it is essential that the teachers should be penalized for their lack

of interest in teaching and rewarded for their hard work. It was felt that the current administration policy and re numeration are ineffective in attracting good teachers at Government institutions so it should also be looked into.

Assessment and evaluation also form the foremost part of any form of teaching. One tends to learn only what he is evaluated for. Therefore assessment and evaluation methods should be devised with great care. In the survey it was observed that present evaluation methods are not up to the mark. The viva and theory exams currently in use are not fair and uniform tools to test students' knowledge and training. MCQs and short questions should be used instead. Also the number of evaluations should be increased. The responders however discouraged the increase in contents being covered in a single assessment.

A high agreement was seen for adding up a percentage of marks of all assessments during the whole year into the final yearly results. A uniform grading system all over the country should be developed. It will not only help to improve standards of teaching and to increase competition among institutions; and motivate them to work hard. It will also make it possible to award honors for excellence in graduation.

In the survey it was highlighted that the postgraduate students have problems in their research because of lack of funds and expert supervision. Funds should be allocated for this purpose to speedup the research activities of the students. The suggestion that

a yearly questionnaire should be completed by the residents regarding their experience in the residency program was also highly appreciated.

The resident is expected to develop a level of competence, resulting in certification. However, successful medical practice also depends on competency in non medical areas such as, cost-containment, medico-legal issues, effective communication, professionalism, and ethics. 6. "Without sound morality and ethics man became lowest of the low" (Quraan - Surrah At-teen.) Medicine is a noble profession and must not be used to exploit people's misery. A patient looks up to the doctor as a healer and savior. It is against the dignity of the medical profession to take advantage of this trust the patients have in the man wearing the white coat. The inclusion of medical ethics into the residency curriculum has been advocated as a necessary component in the training of the physician.<sup>7</sup> Kick backs and commissions should be taught as extremely immoral acts. The students should be taught to request investigations and prescribe treatment modalities that are considered necessary and on priority bases from less hazardous and less costly to more painful and more costly. In conclusion this survey on students

provides solid and objective opinion of the trainees on shortcomings and few strengths of prevailing medical curriculum and teaching strategies. The teachers and appropriate authorities should benefit from this to implement necessary modifications and remarkably improve the state of future doctors and over all health system.

## References

1. Marcel F D'Eon. Knowledge loss of medical students on first year basic science courses at the University of Saskatchewan. BMC Medical Education 2006, 6:5
2. Ten Cate O, Snell L, Mann K, Vermunt J: Orienting teaching toward the learning process. Acad Med 2004, 79:219-28.
3. Nash JR. Pathology in the new medical curriculum: what has replaced the subject courses? Pathol Oncol Res. 2000;6(2):149-54.
4. Khalid S Khan Arri Coomarasamy. A hierarchy of effective teaching and learning to acquire competence in evidenced-based medicine. BMC Medical Education 2006, 6:59
5. A Haghdoost and Mohammad R Shakibi Medical student and academic staff perceptions of role models: an analytical cross-sectional study. BMC Medical Education 2006, 6:9
6. Stephen A. Oljeski, Marc J. Homer and Warren S. Krackov Incorporating Ethics Education into the Radiology Residency Curriculum: A Model Am. J. 2004;Roentgenol., 183:569-571
7. Forrow L, Arnold RM, Frader J. Teaching clinical ethics in the residency years: preparing competent professionals. J Med Philos 1991;16:93-112.