ASSESSMENT OF KNOWLEDGE ABOUT EVIDENCE BASED MEDICINE IN MEDICAL STUDENTS AND DOCTORS IN A PAKISTANI HEALTH CARE SETTING

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Background: Evidence based practice promotes self assessment and ensures delivery of up to date care to patients. The concept of Evidence Based Medicine (EBM) in developing countries is still in its infancy where strong opinions drive patient care. **Methods:** We conducted a cross sectional survey to explore the knowledge, perceptions and attitudes regarding EBM in final year medical students and physicians of our institution. The survey was distributed to all students and residents of the college and the affiliated hospital. **Results:** The response rate was 57% (74/130). Seventy-one percent (53/74) of respondents were not aware of EBM. Out of these, 38 were medical students and 15 were house officers. Only 16 (9 students and 7 doctors) admitted that they had heard about EBM. Those who heard about EBM recognised its importance in patient care. Teaching at both under- and postgraduate level was strongly suggested. Participants recognised the need for EBM skills and expertise. Financial constraint was considered as the main hindrance in practicing EBM. **Conclusion:** The concept of EBM is still alien to most of the students and residents at our institution. There is need for incorporating formal teaching of EBM at all levels of medical education.

Keywords: Medical education, Evidence based medicine, Undergraduates

INTRODUCTION

Evidence-based medicine (EBM) is defined as the 'conscientious, explicit, and judicious use of current best evidence'.[1] Evidence-based medicine has emerged as a new paradigm for medical practice. It involves integrating individual clinical expertise with the best available external clinical evidence and compassionate use of individual patients' rights and preferences in making clinical decisions about their care. Awareness of the latest scientific evidence and the ability to critically appraise literature and assess its applicability has been identified as integral to the practice of EBM.[2]

The term EBM entered the lexicon in 1992. Since then, it has become the latest focus in the search for improved health care.[3] The use of EBM in clinical practice is a key strategy to improve primary health care services.[4]

The utilisation of research, which is the backbone of evidence-based medicine, is still in its infancy in developing countries. A recent study conducted in a hospital in Pakistan found that only 20% of residents read medical journals monthly, only 12% had ever written for medical journal publication, and 12% had never read a medical journal.[5] A number of other studies are also conducted to assess the knowledge of students and doctors about EBM in Pakistan.[5,6]

The state of the production of research is also not encouraging. In all disciplines of science and technology, India and Pakistan combined have 208 researchers per million citizens; the comparable figure for the United States is 4,526 researchers per million.[7]

In this study an attempt is made to assess the knowledge, perceptions and attitudes of final year medical students and doctors towards EBM that gives a snapshot about the level of awareness and thus guide to design methods for better promotion of EBM.

MATERIAL AND METHODS

A cross sectional study was carried out in August 2009 on students and doctors of Wah Medical College. We used a self administered, structured questionnaire containing 14 questions including basic information like specialty, gender, age, year of education, qualification and year of residency. Questions on EBM were divided into primary categories and sub categories. The details of these are shown in Table-1.

Table-1: Primary categories and sub-categories addressed in the questionnaire

Primary categories	Sub categories
Knowledge of EBM	• Understanding of EBM • First exposure to EBM when/where • Workshop on EBM • Comparison of EBM guidelines with other sources • Sources for updating knowledge
Practice of EBM	• Source of evidence for clinical practice • Accessibility of resources • Practice auditing required/not required • EBM experts in practicing environment • Obstacles in practicing EBM in Pakistan • Disadvantages for not practicing EBM
Role of EBM	• Role of EBM in undergraduates
Need for EBM	• Discussion on need of EBM-how Frequent • Need for EBM in Pakistan

RESULTS

The response rate was (57%, 74/130), non-respondents were those who didn't return the questionnaires despite many reminders. The respondents continued the questionnaire only if they responded 'yes' to first question. Seventy-one percent (53/74) of respondents

stopped at the 1st question which asked whether they had any knowledge about EBM. Amongst them 51% (38) were students while 20% (15) were House Officers. Seven percent (5) of the questionnaires were excluded from final analysis due to incomplete responses. Total of 21% (16) responses were complete and included for analysis which included 12% (9) of students' and 9% (7) of doctors. Table-2 depicts basic information about the respondents.

Table-2: List of respondents

Specialty	Gender	Age	Year of graduation	Qualification	If resident, year of residency
House officer	Female	24	2009	MBBS	
Resident	Male	30	2002	MBBS, FCPS	4th year
House officer	Male	24	2009	MBBS	
Consultant	Female		1992	MBBS, FCPS	
Consultant	Male	35	1999	MRCP CH 1 (A & B)	
Resident	Male	31	2002	MBBS, DCH, FCPS	1st year
House officer	Female	24	2009	MBBS	
Student	Male	24	2010	MBBS, final year	
Student	Male	23	2010	MBBS, final year	
Student	Female	22	2010	MBBS, final year	
Student	Female	22	2010	MBBS, final year	
Student	Female	23	2010	MBBS, final year	
Student	Male	22	2010	MBBS, final year	
Student	Male	24	2010	MBBS, final year	
Student	Female	24	2010	MBBS, final year	
Student	Female	24	2010	MBBS, final year	

KNOWLEDGE OF EBM

According to respondents EBM pertains to practices and decisions supported by best relevant evidence obtained from meta-analysis of RCTs in the best benefit of patient. A postgraduate trainee described EBM as *"Clinical findings supported by laboratory investigations is EBM"* and a student as *"we practice medicine based upon evidence and experiences"*

Most of the students and house officers first heard the phrase EBM either from their teachers or read in their textbooks of clinical subjects, while few students heard this term via internet, newspaper, and magazines. Postgraduates and consultants heard this term during their clinical practice especially after the year 2003.

Only 25% of the respondents had attended workshops on EBM arranged by Shifa College of Medicine, Islamabad, and University of Health Sciences, Lahore. Only two participants commented on comparison of EBM. One participant explained: *"Evidence based guidelines are reliable as compared to other sources of evidence because of surety about the efficacy of practices and prevent blind and injudicious use of out dated therapies"*. Another response from a consultant was *"EBM gives similar care to the patient with equal benefits and less harm"*

Participants used internet based resources, books, and journals for updating their knowledge in the descending order. A few utilised other sources as well like seminars, CPCs workshops, newspapers, magazines, pharmacopoeias, media and clinical practice.

PRACTICE of EBM

All of the students had textbooks as their first preference as a source of knowledge except for 2 who had teachers' opinions and journals as their preference. The most easily accessible electronic resource available to participants was internet.

All participants except for one had consensus about the fact that doctors' practices must be audited. Few of the participants thought that practicing doctors should undergo Continuing Medical Education (CME) program through grand rounds, workshops and seminars.

The students who didn't agree with the idea of auditing clinical practice wrote *"No, in my opinion they should have all the right to perform their duties freely with no fear of accountability. This is what I call FREEDOM WITH RESPONSIBILITY.'*

When asked to identify practicing EBM role models in their environment, several could recall at least one physician practicing EBM. One student knew about couple of nurses practicing evidence based nursing.

One of the students and consultant didn't find any obstacle in practicing EBM in Pakistan while others identified financial restraints as the main hindrance. The other important obstacles were lack of awareness, time, motivation to update knowledge and inconvenience in leaving deeply rooted practices.

Participants thought that practicing traditional medicine promote injudicious use of interventions which may be harmful for the patients.

ROLE of EBM

Participants thought that EBM should be introduced in the undergraduate medical education as this will enable students to develop a habit of updating their knowledge and encourage students to play their part in research work.

NEED for EBM

All of the participants agreed upon the need for EBM in Pakistan and consider it as one of the basic requirements for raising health standards in our country and provide our patients with benefits of best evidence and practices.

DISCUSSION

Our survey confirms the notion that practice of evidence-based medicine is still in its early stage in Pakistan. The exposure to this paradigm is institution dependent as most of the participants attended workshops at two institutions only. The overall response rate to the survey was 57% which was much less than what others have observed.[8–10] This reflects lack of awareness about importance of EBM and CME activities.

Even those who had some idea about EBM, consider EBM equivalent to experts' opinions, eliciting clinical findings and ordering laboratory investigations. Postgraduates and consultants had introduction to EBM during their clinical practice. Most of the present students and fresh doctors learnt about EBM from teachers, evidence-based textbooks or from internet. This shows more awareness at an early level mainly due to change in the format of textbooks and accessibility to web-based resources.

The concept of EBM is still alien because of lack of formal training and practicing role models.[9] This would require a major initiative at all three levels of education, i.e., undergraduate, postgraduate and CME. Various strategies can be adopted to bring the awareness and improve the skills regarding practice of evidence based medicine. These need to be targeted at all levels of medical education. EBM workshop is an important tool. This can quickly build the required knowledge, skills and attitudes pertaining to EBM. Such workshops have worked in Pakistan for both under graduates and practicing students.[11,12]

Practicing role-models are an imperative for this way of practicing to disseminate as a paradigm. Once the faculty members start using this during their routine practice and point of care, the trainees and students will see EBM as part of their routine patient encounters. Availability of resource is another limitation which is highlighted in literature especially in developing countries. Web-based resources are easily available and details of this have been presented elsewhere in the literature.[13] Though internet was the most easily available and commonly utilised resource but textbooks remained the 1st source of knowledge for all students and so incorporating EBM guidelines in textbooks should be a first and foremost step of introduction to EBM. Most of the modern textbooks are utilising EBM methodology. The online availability of these textbooks has made updating of knowledge very easy.

All of the participants agreed that clinical audits must be done. This can potentially serve as a way for self-assessment and can stimulate the desire to modify practices to improve health care outcomes. Such a strategy can institutionalise the practice of evidence-based health care.

The students rarely talk about EBM during their clerkships while some don't even know of any practicing role-model in their environment. This necessitates the need for formal teaching of EBM at undergraduate level. Besides point of care, other avenues for EBM could be morning reports[14], clinico-pathologic conferences, journal clubs and evidence based case write-ups during patient encounters.

The 1st most common barrier identified in practicing EBM in Pakistan was lack of financial resources in terms of costly medicines. It is important to emphasise that EBM is a 'mindset' and using this methodology does not necessarily mean that costly medications, which at times are not even available in Pakistan, need to be prescribed. Following evidence-based guidelines can actually save huge amount of money by eradicating several non-evidence-based ineffective therapies which are rampant in our medical culture.

Lack of investment by health authorities was a second commonly identified barrier to practicing EBM.[15] In Pakistan a great amount of resources are spent on tertiary care which is extremely costly for both government and general population. Evidence-based policy making can divert the limited resources towards health promotion and disease prevention.

Another notion about EBM is that it is time consuming for finding and assimilating this evidence.[8,16–20] One way of addressing this issue is by incorporating formal teaching and practices at all levels of medical education so they get fully acquainted to this way of practice. This problem is also dealt by development of pre-appraised ready to use evidence in the form of guidelines, computer based decision support systems, and creation of systematic reviews and concise summaries of the effects of health care (epitomised by the Cochrane Collaboration).[21]

CONCLUSION

EBM is relatively a new concept and implementation in Pakistan is in infancy. Using evidence and incorporating patients' values and preferences is extremely important for this paradigm of medical practice. EBM is an essential competency for modern day medical education which has positive impact on health care outcomes. It has well been recognised by Pakistan Medical and Dental Council as an important component of undergraduate education. Similar initiative needs to be

taken by College of Physicians and Surgeons Pakistan to enhance the practice of evidence-based medicine.

REFERENCES

1. Sackett DL, Rosenberg WM, Gray JA, Haynes RB, Richardson WS. Evidence-based medicine: what it is and what it isn't. BMJ 1996;312(7023):71–2.
2. Mears R, Sweeney K. A preliminary study of the decision-making process within general practice. Fam Pract 2000;17(5):428–9.
3. Evidence-Based Medicine Working Group. Evidence-based medicine. A new approach to teaching the practice of medicine. JAMA 1992;268 (17):2420–5.
4. General Practice Strategy Review Group. General practice. Changing the future through partnerships. Canberra, Australia: Commonwealth Department of Health and Family Services; 1998.
5. Aslam F, Qayyum MA, Mahmud H, Qasim R, Haque IU. Attitudes and practices of post graduate medical trainees towards research –a snapshot from Faisalabad. J Pak Med Assoc 2004;54:534–6.
6. Khan H, Khawaja MR, Waheed A, Rauf MA, Fatmi Z. Knowledge and attitudes about health research amongst a group of Pakistani medical students. BMC Med Educ 2006,6:54.
7. Aslam F, Shakir M, Qayyum MA. Why medical students are crucial to the future of research in South Asia. PLoS Med 2005;2(11):e322.
8. Al-Ansary LA, Khoja TA. The place of evidence-based medicine among primary health care physicians in Riyadh region, Saudi Arabia. Fam Pract 2002;19(5):537–42.
9. Al-Omari FK, Al-Asmary SM. Attitude, awareness and practice of evidence based medicine among consultant physicians in Western region of Saudi Arabia. Saudi Med J 2006;27:1887–93.
10. Young JM, Ward JE. Evidence-based medicine in general practice: beliefs and barriers among Australian GPs. J Eval Clin Pract 2001;7(2):201–10.
11. Iqbal M, Zaidi Z. The 'ripple effect' of introducing Evidence-based medicine into a curriculum. Med Educ 2009;43:475.
13. Zaidi Z**,** Iqbal M**,** Hashim J**,** Quadri M**.** Making EBM Doable in Developing Countries: Experience with a locally tailored workshop for Evidence Based Medicine in a Pakistani Institution. Educ Health 2009;22(1):176.
14. Zaidi Z, Hashim J, Iqbal M, Quadri KM. Paving the way for Evidence-based medicine in Pakistan. J Pak Med Assoc 2007;57:556–60.
15. Iqbal M, Quadri KHM. Initial experience with learner-centered evidence based format morning report. J Pak Med Assoc 2007;57:120–2.
16. Amin FA, Fedorowicz Z, Montgomery AJ. A study of knowledge and attitudes toward the use of evidence-based medicine among primary health care physicians in Bahrain. Saudi Med J 2006;27(9):1394–6.
17. Chan GC, Teng CL. Primary care doctors' perceptions towards evidence-based medicine in MELAKA State: a questionnaire study. Med J Malaysia 2005;60(2):130–3.
18. Barghouti F**,** Halaseh L**,** Said T**,** Mousa AH**,** Dabdoub A**.** Evidence-based medicine among Jordanian family physicians: Can Fam Physician 2009;55(7):e6–e13.
19. Sackett DL, Stauss SE. Finding and applying evidence during clinical rounds:the "evidence cart". JAMA 1998;280:1336–8.
20. McColl A, Smith H, White P, Field J. General practitioners' perceptions of the route to evidence based medicine: a questionnaire survey. BMJ 1998;316:361–5.
21. Scott I, Heyworth R, Fairweather P. The use of evidence-based medicine in the practice of consultant physicians. Results of a questionnaire survey. Aust N Z J Med 2000;30(3):319–26.
22. Cochrane. Update Software. In. Issue 2 ed: Oxford: 1999.

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