Knowledge and Attitude of Medical Students and Lecturers Toward Evidence-Based Medicine: Evidence from Shiraz

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Abstract

Background and purpose: *The application of diagnostic, therapeutic, and prognostic evidence in day-to-day management of patients has been in constant focus during the last two decades. This study is an attempt to investigate attitude and knowledge of post-graduated medical students and lecturers towards evidence-based medicine (EBM) and assess their preferences to clinical practice guidelines.*
Methods: *The designed questionnaire was posted to the randomly selected post-graduated medical students and lecturers of medical department at Shiraz University of Medical Sciences.*
Results: *There were one hundred sixty subjects (60%) who answered the questionnaire. Sixty nine percent were male, 46.3% were lecturers, and 53.2% were post-graduated medical students.*
About 66% of the respondents have heard of the term of EBM. Only 7.8% of the respondents have already attended to a course to learn the skills of EBM and one hundred twenty five (78.1%) like to attend a course to learn the skills of EBM. The most common perceived reason for use of EBM was lack of enough motivation.
Conclusion: *They have not yet integrated the use of EBM into their practices widely. Their knowledge is at a high risk of becoming out of data. Education of EBM should be a hot topic among educational planning programmers until it becomes a part of university educational curriculum in Iran.*
Keywords: *Post-graduated medical student, lecturer, knowledge, attitude, evidence-based medicine, Iran.*

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Introduction

To improve delivering of more consistent and higher quality care for all patients, clinical practices should be deemed by good research evidence. The application of diagnostic, therapeutic, and prognostic technologies in day-to-day management of patients has been called evidence-based medicine (EBM) (1). This is in order to be aware of the evidence on which physician's practice is based, the soundness of the evidence, and the amount of strength of inferences which the evidence permits. It requires a thorough search of the literature relating to the questions; critical appraisal of the evidence and its applicability to the clinical situation; and finally a balanced application of the conclusions to the clinical problem (2). EBM de-emphasizes intuition and unsystematic clinical experiences (3). In another word, it isn't a simple translation of the results of medical research into clinical practice

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but it is the creative application of evidence to a specific patient's unique situation (4).

Surveys addressing physicians' attitude towards EBM is little in Middleast. A study in Saudi Arabia showed that only 40% of the physicians of primary health care centers have heard about the concept of EBM (5). In another study in England, only 40% of general practitioners knew Cochrane Database of Systematic reviews and 71% reported "lack of personal time" as a main barrier to practices EBM (6). Another study in Canada in 1998 on general physicians showed that only 8% of them conducted MEDLINE literature searches when they faced with a difficult clinical problem (7).

Knowing and using important resources and ability to interpret these resources are important keys to find evidences to address practical questions in EBM. The degree to which the professionals know about EBM, their attitude towards the resources, and their skills to enable them to use them is unclear. If progress towards empowerment of the professions is to be made, identification of the various barriers of EBM implementation is a preliminary goal to try to overcome these barriers.

To our knowledge there is not any published study that addressed EBM in post-graduated medical students and lecturers of any university in the Middleast. Therefore, this is the first study about EBM in Iran. This survey was conducted to provide its results for development of future information strategies for post-graduated medical students and lecturers of the university.

Methods

The post-graduated medical students and lecturers were chosen by a random sampling technique from a list of all of the post-graduated medical students and lecturers that all of whom were known to the authors.

A self reported questionnaire was made on the bases of some prior studies (5,6). Its face validity was approved by the four different specialists. After a pilot study, the test-retest reliability of the final version was r=0.9.

The anonymous questionnaire with a letter of instruction was posted directly to every subject. It was issued with an envelope to encourage responding and respondents were asked to return the questionnaire in the provided envelope to the medical school. Confidentiality of the responses was emphasized. In some cases, the reminder letters were sent.

The questionnaire which was used included questions about demographic characteristics such as age, sex, educational situation (post-graduated medical students and lecturers). Also, they were asked: "Have you ever heard of the term Evidence-Based Medicine before filling in the questionnaire?", "Have you ever attended a course to learn the skill of EBM?", and "If there is a course to learn the skill of EBM are you willing to attend?" Their attitude towards the EBM was studied by the six statements (Table-1). These statements had a likert responses that a score 1 was for strongly disagree, 2 for dis-agree, 3 for I don't know, 4 for agree, and 5 for strongly agree. The maximum total score could be 30.

Also, their knowledge to the technical terms used in articles about EBM including: relative risk, absolute risk, systematic review, randomized control trial, odds ratio, Meta analysis, clinical effectiveness, number needed to treat, confidence interval and publication bias were asked. The respondents ticked the appropriate response. The score for the responses were: 1 for "it would not be helpful to me to understand", 2 for "Don't understand but would like to", 3 for "Some understanding", and 4 for "Yes, understand and could explain to others". The total score ranges from 10 to 40.

Also, they reported their familiarity and usage of each of the following information resources: Evidence base medicine, Best Evidence, The Cochrane data base of systematic reviews, and Medline.

The possible barriers of use of the EBM which were asked included: feeling that it was too time consuming to look up evidence, pressure of load of high patients number, imitation to access to the information resources, and lack of enough motivation for use.

Analysis

Data were analyzed using SPSS 11. Simple descriptive statistics were used for the demographic characteristics, familiarity with EBM, willingness to attend a course of training of EBM, familiarity and use of the information resources, and barriers of use of the EBM.

Results

Of the 160 (60%) respondents, 69.2% were male. The age range of the respondents was 27 to 69 and the mean age was 37.6 (SD=7.6). The qualifications of the respondents were post-graduated medical students 58.7%, lecturers 41.3%. The characteristics and reason for lack of cooperation of the non-responders was unknown.

Table1 shows the attitude of subjects who already have heard about EBM. The mean score of the attitude towards EBM was 20.08 (SD=1.8) with a range of 16 to 26.

Table 2 shows the knowledge for the technical terms in subjects who already have heard about EBM. The mean score of the knowledge was 28.2(SD=5.8) with a range of 10 to 40. A very minority believed that knowing these terms don't help them. However nearly half of them responded don't understand but would like to know the terms.

There was a correlation between the total scores of attitude and knowledge in the respondents (P<0001).

Table 3 shows familiarity of respondents with the clinical practice information resources that the MEDLIN was the most familiar resource which they have usually used it.

The frequency of the perceived barriers for use of EBM were: lack of enough motivation for use 40.3%, lack of enough time 31.5%, high frequency of patients 22.1%, and limitation to access to the information resources 14.1%.

Discussion

This survey suggests that many post-graduated medical students and lecturers' willing is to set up the infrastructure and develop their skills to make best use of available information resources and research evidence.

The score of attitude was very low. In addition, a minority believed that knowing the terms don't help them and nearly half of them would like to know more about the terms. It may shows that

Table1. Attitude of post-graduated medical students and lecturers towards EBM who already have heard about it

Variables	Strongly Disagree		Disagree		Don't know		Agree		Strongly Agree	
	n	%	n	%	n	%	n	%	n	%
Quality of care is improved by practicing EBM	0	0	0	0	22	22.2	62	62.6	12	12.1
Health care cost can be reduced by EBM	0	0	0	0	32	32.3	50	50.5	13	13.1
EBM brings about quick knowledge update	0	0	4	4	24	24.2	51	51.5	16	16.2
EBM is focused on patient's values	0	0	2	2	50	50.5	37	37.4	4	4
The adoption of EBM places another demand on already overloaded residents and specialists	3	3	35	35.4	40	40.4	15	15.2	3	30
EBM is of limited value in clinical practice	1	6.1	58	58.6	26	26.3	5	5.1	1	1

Table 2. Percent of responses of the subjects to the technical terms in subjects who already have heard about EBM.

Options / Subject	It would not be helpful to me to understand	Don't understand but would like to	Some understanding	Yes, understand and could explain to others
relative risk	2.2	25	43.5	29.3
absolute risk	2.2	25.3	46.2	26.4
systematic review	2.3	33	42	22.7
Randomized control trial	2.2	22	34.1	41.8
odds ratio	4.4	36.3	31.9	27.5
meta analysis	2.2	33	38.5	26.4
clinical effectiveness	1.1	29.3	44.6	25
number needed to treat	3.3	55.4	30.4	10.9
confidence interval	3.3	42.9	39.6	14.3
publication bias	2.2	52.8	31.5	13.5

Table 3. Familiarity and use of the information resources

Clinical practice Guidelines	Know and familiar		Usually use	
	Number	%	Number	%
Any of the below resources	114	71.3	81	54.7
Evidence base medicine	33	22.3	23	15.5
Best Evidence	6	4.1	8	5.4
The Cochrane data base of systematic eviews	25	16.9	13	8.8
Medline	103	69.6	66	44.6

the low attitude score is due to low knowledge to the technical terms or their lack of attending to any course of EBM training. Also, limitation in accesses to the resources is not a common self-reported reason. Lack of motivation to use the information is a leading cause of use (6). Therefore, they are at a high risk of becoming out of data especially with their low attitude score, low EBM knowledge, and lack of motivation to use it. It seems to be necessary to incorporate EBM course into the medical education program of post-graduated medical students and also provide it for the lecturers to develop their skills that are necessary to make best use of available research evidences. If EBM is to be used in future healthcare practice, then the barriers such as lack of sufficient motivation will need to be more tackled by further studies.

In addition, there is a need for further investigations into the reasons why about 30% of respondents are not familiar with any of the available information resources and why nearly half of the respondents don't use the information resources in their clinical making decision (7).

It should be cautious in generalization of the results because the participants were knowledgeable individuals. It is expected that they are generally motivated towards new innovations in medical practice. So, their views, attitude, and knowledge are highly selective. Also, the physicians who did respond may have been more positively or negatively toward EBM .

Conclusion

Overall, it does seem that the challenge is not favorability of EBM but is more to develop strategies that will influence post-graduated medical students and lecturers' ability to interpret and use the informational resources. Also, some strategies should be provided to overcome the lack of motivation to use EBM in order to increase the impact of EBM on their clinical decision making.

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