

Physician attitudes towards evidence-based medicine in eastern Saudi Arabia

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BACKGROUND: Because of the growing awareness of the limitations of traditional information on clinical decisions, there is a shift in medical practice towards evidence-based medicine (EBM).

METHODS: We assessed physician attitudes towards evidence-based medicine (EBM) in a cross-sectional study of a random sample of physicians in primary health care centers (PHCCs) and general hospitals in the Dammam area of eastern Saudi Arabia. A random sample of 409 physicians was drawn from the population of doctors. The tool of data collection was a self-administered questionnaire. Only physicians who said they had heard about EBM were included in the study.

RESULTS: Only 108 (39.6%) physicians out of those who responded had heard about EBM. Of those, 71 (65.7%) were in favor of EBM and 89 (90.8%) had a positive attitude towards EBM, as they scored above the cut-off point in the questionnaire. Using multiple linear regression, it was found that critical appraisal knowledge and EBM knowledge scores were the only significant predictor variables of EBM attitude score.

CONCLUSIONS AND RECOMMENDATIONS: There was an overall positive attitude among physicians towards EBM. There was a proportional relation between the knowledge of EBM and attitude towards it. Dissemination of the EBM concept and practice among physicians is highly recommended.

KEYWORDS: Evidence-based medicine, physicians, attitude, knowledge

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Old medical practices depended on unsystematic observations from clinical experience, an understanding of pathophysiologic principles of disease, common sense and clinical experience as a means for building and maintaining knowledge of patient management.¹ According to this paradigm, clinicians had a number of options for sorting out clinical problems. Reviewing textbooks and consulting local experts were considered appropriate ways of obtaining medical information.² However, most medical textbooks are not based on evidence. They tend to be out of date in relation to recent advances in scientific knowledge. In addition, there may be a number of updates in knowledge during the time lag from writing to publication.³ Experienced physicians differ in the making of clinical judgments, which are often not based on evidence.⁴ Traditional continuous medical education does not work in improving professional practice.^{5,6} In addition to the expansion in research and discrepancy in validity,⁷ there is currently an increased interest in narrowing the gap between research findings and their implementation in clinical practice.⁸

Despite the development of rigorous clinical trial methods, people have been aware for decades of the gap between the results of randomized, blinded clinical studies and the practical use of treatments in the usual clinical setting. This gap results in expensive, ineffective or even harmful, deci-

sion making.^{1,9} EBM deals directly with the uncertainties of clinical medicine and has the potential for transforming the education and practice of the next generation of physicians.²

Most studies conducted around the world on physicians' attitude towards EBM have found that there is a belief in its importance.¹⁰⁻¹⁷ In Saudi Arabia, little is known about physician opinions of EBM. We assessed physician attitudes toward EBM in eastern Saudi Arabia.

Methods

We assessed physician attitudes toward EBM in a cross-sectional study conducted in the Dammam area, including the cities of Dammam, Alkhobar and Al-Qatif. The study population consisted of physicians in primary health care centers (PHCCs) and general hospitals. A representative sample calculated using an appropriate formula¹⁸ resulted in 409 physicians. A multistage random sampling technique was used to select the sample from both PHCCs and hospital physicians. Only physicians who had heard about EBM were included in the study. The tool of data collection was a self-administered questionnaire, which included questions on whether they were in favor of EBM, and why if they were not; and whether they would like to be trained in EBM. A Likert scale was used to measure physician attitudes towards EBM. The scale included the following statements: Quality of patient care is improved by EBM, health care costs

Table 1. Characteristics of the participating physicians.

Variables	Description	Number (%)
Sex	Male	127 (46.5)
	Female	146 (53.5)
Place of work	Hospital	153 (56)
	PHC	120 (44)
Qualifications*	Bachelor	169 (62.4)
	Master Degree	25 (9.2)
	Fellowship	27 (10)
	PhD	14 (5.2)
	Board Certificate	36 (13.3)
Title*	Residents	188 (69.4)
	Specialists	39 (14.4)
	Consultants	44 (16.2)
Specialty	GP	99 (36.3)
	Medicine	24 (8.8)
	Surgery	34 (12.5)
	Pediatric	37 (13.6)
	Ob/gyn	27 (9.9)
	Others	52 (19)
Place of graduation*	KFU	124 (47.5)
	KSU	28 (10.7)
	KAU	4 (1.5)
	others	105 (40.2)
Nationality*	Saudi	175 (64.6)
	Non Saudi	96 (35.4)

*Total varies due to missing values

can be reduced by EBM, EBM brings about a quick update in knowledge, EBM is focused on patient values, practicing EBM does not replace clinical experience, and EBM should be taught in medical schools. For each statement a score of 1 was given for the answer “strongly disagree”, 2 for “disagree”, 3 for “I don’t know”, 4 for “agree”, and 5 for “strongly agree”. A total of 30 points were allocated for these questions. Another score was used to assess knowledge of EBM,¹⁹ which included knowledge on critical appraisal, statistical terms used in EBM, knowledge about EBM concepts and knowledge about the steps of EBM. Only the portion of data about knowledge in relation to attitude is mentioned in this paper.

A cut-off point was taken as 19 out of 30 for the attitude score. All variables were checked for accuracy and completeness and coded. Data was then entered into a personal computer and the statistical package for social science (SPSS) version “6” was used for data entry and analysis. The data were double-checked, and multiple linear regressions analysis used to assess the relation between the attitude of physicians and other variables. A *P* value of <0.05 was considered indicative of the level of significance throughout the study.

Results

Responses were received from 273 of 409 physicians for a response rate of 66.7%. Reminders had to be sent in some cases. Demographic characteristics of respondents are shown in Table 1. Of all the respondents, only 108 physicians (39.6%) had heard of the concept of EBM, including 59 (54.6%) hospital physicians and 49 (45.4%) PHC physicians (Figure 1). Of the 108 physicians who said they had heard about EBM, 71(65.7%) were in favor of EBM,

Table 2. Physician attitudes towards evidence-based medicine.

Variables	SD		DA		DK		Agree		SA	
	No	%	No	%	No	%	No	%	No	%
Quality of care is improved by practicing EBM*	0	0	1	1	18	17.8	49	48.5	33	32.7
Healthcare cost can be reduced by EBM*	0	0	4	4	27	26.7	41	40.6	29	28.7
EBM brings about quick knowledge update*	0	0	3	3	21	21	36	36	40	40
EBM is focused on pt's value*	2	2	4	4	47	47	30	30	17	17
Practicing EBM doesn't replace clinical experience*	1	1	7	7	24	24	42	42	26	26
EBM should be taught in medical school*	1	1	2	2	9	8.9	47	46.5	42	41.6

SD: strongly disagree, DA: disagree, DK: don't know, SA: strongly agree

*Total varies due to missing values

Table 3. Relation between EBM attitude and EBM knowledge Score (critical appraisal and total knowledge of EBM components).

Predictors	Regression coefficient (β)	Standard error of β	t test	P value
(Constant)	26.85	3.12	8.6	0.000
Critical appraisal knowledge	1.94	0.50	3.86	0.0002
Knowledge of EBM components	0.18	0.05	3.3	0.0015

9 (8.3%) were not, while 28 (25.9%) said that they did not know. The reasons for not being in favor of EBM were: EBM was difficult to understand for 5 physicians (62.5%), not useful for 4 (50%), replaced experience for 3 (37.5%), while one physician mentioned that it was expensive and another mentioned that he did not know the concept but had heard of it.

The overall mean attitude score was 23.9 ± 3.3 of 30 points among those who had heard about the EBM concept. Most of the respondents had a positive attitude towards EBM; 89 (90.8%) of those who had heard about the concept scored above 19 out of 30 points. In calculating the respondent's answers about the statements used to assess their attitude towards EBM, 81.2% agreed (agreed and strongly agreed) that care given to patients could be improved by using EBM, 69.3% agreed that health care costs could be reduced through EBM, 76% agreed that it would help to update their knowledge, 47% agreed that it focused on patient values, 68% agreed that it could not replace experience, while a majority (88.1%) agreed that it should be taught in medical schools (Table 2).

We found that critical appraisal knowledge and EBM knowledge scores were the only significant predictor variables of EBM attitude score. Table 3 shows the regression model for both critical appraisal and total knowledge of EBM components in predicting the score for EBM attitude. As these scores increased, the total attitude scores increased.

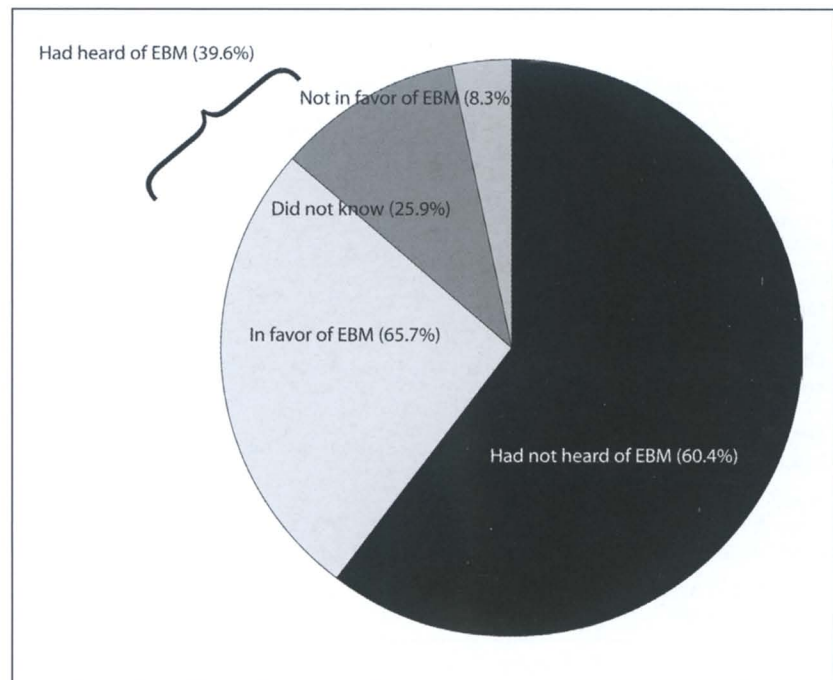
Discussion

This study has shown that most physicians who had heard about the concept of EBM had a positive attitude towards it, with 90.8% scoring more than the cut-off point

for rating the value of EBM. There were more physicians (7.3%) who did not want to be trained in EBM compared to the results of a study done by Wilson et al¹⁹ in which less than 1% did not want to be trained. The higher percentage of refusal to be trained in EBM in our study may be related to the interesting finding that the higher the knowledge about EBM the better the attitude towards it ($P=0.0015$). This demonstrates

that physicians who had no understanding of what EBM really is were the ones who had the negative attitude. This finding is peculiar to our study. We deduced that the poor understanding of EBM concepts could lead to more misunderstanding. Those physicians who misunderstood EBM would be protective of their current way of practicing medicine. Nevertheless, most respondents, including those who mentioned that they did not want to be trained, or were not in favor of EBM, had no doubt about its value and importance.

It is not known whether training in EBM would lead to a change in practical behavior, or whether the positive attitude of the physicians toward EBM would lead to its implementation in practice. However, most of the studies on attitude towards EBM showed that views on it were favorable.^{10,11,16} They all agreed that it improved patient care. This indicates that most physicians are not actually

**Figure 1.** Physician awareness and opinion of evidence-based medicine.

skeptical about the value of EBM, but have certain views that would hamper its implementation.

This study found an overall positive attitude among physicians towards EBM. There was a proportional relation between knowledge of EBM and attitude towards it. This revealed that an understanding of what EBM really was increased awareness of its importance, and how badly it was needed in clinical practice. Dissemination of the EBM concept among practitioner through workshops, seminars

and other activities is highly recommended. Further research is needed to assess knowledge of EBM in all medical practice settings, to determine to what extent clinical practice is evidence-based, and to assess any improvement achieved every five years.

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