

Perspective of Evidence-Based Medicine among Egyptian Family Physicians in Egypt

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Abstract

Objective: To assess family practitioners' attitudes toward and awareness of evidence-based medicine in Egypt.

Introduction: Evidence based medicine (EBM) is a systematic approach to medicine in which health care professionals use the best available scientific evidence to help make decisions about the care of individual patients. The use of evidence-based medicine may help plan the best treatment and improve quality of care and patient outcomes.

Methodology: This is a cross-sectional study conducted on 135 family physicians from Rural and urban family medicine centres throughout Egypt that are affiliated with Ministry of Health and the private sector by using self-administered Evidence-Based Medicine Questionnaire distributed between October and November 2020.

Results: With a 100% response rate most of the participants were females 91 (68.9%), aged between 30-39 (73.3 %), and worked in mixed urban and rural settings (53.3%). Most physicians welcomed or strongly welcomed the use of EBM (54.1% and 38.2% respectively). Moreover, 97% of the respondents agreed that EBM is useful or extremely useful.

The majority (98.5%) agreed that EBM improves patient care. . About 71% of the participants thought that the adoption of EBM will add more load on the family medicine practitioners

Conclusion: Egyptian family physicians generally have a good attitude towards EBM, however their general knowledge about it is still insufficient.

Keywords: Guidelines, Standards, Care pathways, Africa, Quality of health care

Introduction

Evidence based medicine (EBM) is “the conscientious, explicit, judicious and reasonable use of modern, best evidence in making decisions about the care of individual patients” (1).

In clinical decision-making, EBM is a paradigm that entails integrating the best available evidence with individual clinical competence (1) , as well as consideration of individual patient rights and preferences (1,2).

There are five major milestones in the application of EBM which start by specifying the problem, obtaining benchmarks from databases and published resources, followed by a critical evaluation of the information retrieved, then validating this evidence, and finally assessing the usefulness and effectiveness of such evidence in the clinical practice setting (3).

Clinicians must be in command of outstanding communication skills, as well as a clear knowledge and understanding of cultural and socioeconomic influences on patient encounters. These traits help doctors better understand their patients’ wants and preferences so that they can better manage their illnesses and choose appropriate interventions. Guidelines and trustworthy clinical pathways based on strong research data can help establish professional standards (4).

Evidence-based clinical practice saves money and improves healthcare quality by bridging the gap between published best-practice standards and day to day care and at the same time it minimises ineffective and harmful therapies (5).

Furthermore, EBM aims to improve the standard of care by promoting best practices and motivating healthcare professionals to test novel approaches while moving away from ineffective ones (2).

In a large systematic review, many physicians across the world reported having weak EBM knowledge and skills. Nonetheless, they were enthusiastic about incorporating EBM into their daily practice (6).

To the best of our knowledge there is a paucity of data on EBM use among family physicians in Egypt. The study group therefore set out to survey a diverse group of Egyptian family physicians to assess their knowledge, attitude and practice of EBM.

Methods

Study design and setting:

Between October and November 2020 a self-administered questionnaire was disseminated among 135 trained and certified or board-eligible Egyptian family physicians. The latter practice medicine nationwide at various institutions such as the Egyptian Ministry of Health, Egyptian military centres, university medical centres, and in the private sector. In order for this survey to reflect actual practices, only physicians actively taking part in care of patients and who are on the current Egyptian Medical Syndicate register were included.

Data collection tool:

The questionnaire was adopted from McColl et al.1998 (7). Personal demographics and clinical work details were collected. In addition, the survey questions covered doctor knowledge of and viewpoints on using EBM, the availability of information resources, and the obstacles they faced while using EBM.

The principle investigator (MA) met with the participants at their place of work to explain the purpose of the survey and to obtain verbal consent. Participants were allowed to ask for clarifications while filling in the questionnaire. After checking for completeness, the participants were thanked for their cooperation.

Data analysis

The data collected were analysed using SPSS, version 23. Tables of frequency and proportion were used to evaluate the variables. Data analysis yielded the following topics: personal data and aspects of clinical practice, attitudes toward EBM, awareness of EBM resources, and knowledge of technical terms used in EBM.

Sufficient knowledge was considered when the participants got a total score more than 50% and a positive attitude was considered when the total score was more than 75%.

Results

We received completed questionnaires from 135 family physicians, making the completion rate 100%. Most of the participants were females 93 (68.9%). Most of the participants' age-group were between 30-39 (73.3 %) and the rest (15.6%) were above 40 years and (11.1%) were below 30 years old. Nearly half of the participants (48.9%) were seeing daily patients fewer than 20 and 38.5% were seeing between 20-49 patients. More than half of the participants were working in mixed urban and rural settings (53.3%). [Table 1].

Regarding their personal attitudes towards EBM, most physicians welcomed or strongly welcomed the use of EBM (54.1% and 38.2% respectively) and physicians felt that their colleagues' approach to EBM was welcoming in 68.1%. Moreover, 97% of the respondents agreed that EBM is useful or extremely useful. However, they showed variation in adopting EBM as 47.4% rated their practice comprising 50-74% EBM and 41.5% rated their practice comprising 75-100% EBM. The majority (98.5%) agreed that EBM improves patient care. More than half of respondents, (52.6%) felt that it is of high value for family medicine despite a lack of scientific literature. Finally, the majority (71.1%) thought that the adoption of EBM will add more workload on the family medicine practitioners. [Table 2].

Most respondents (69- 79.2%) showed that they are aware of some technical terms like relative risk, absolute risk and systematic review. However, there was a marked decrease in awareness for other terms like: odds ratio, meta-analysis, number needed to treat, CI. [Table 3]

Sufficient knowledge was considered when the participants got a total score more than 50% and a positive attitude was considered when the total score was more than 75%.

The total scores reflecting sufficient physician knowledge of EBM were 27% (Figure 1). The total scores representing physician attitudes towards EBM showed a 90% positive adoption (Figure 2).

Participants of age-group between 30-39 showed the most positive attitude and sufficient knowledge, (74.4%) and (70.3 %) respectively. Nearly half of the participants with sufficient knowledge and positive attitude were seeing daily patients fewer than 20 (45.9%) and (49.6%) respectively.

More than half of the participants with sufficient knowledge and positive attitude were working in mixed places of urban and rural populations (56.8%) and (52.1%). Only 28.9% of participants with positive attitude had sufficient knowledge. [Table 4]

There were statistically significant positive correlations between physicians' attitude towards EBM and their total knowledge of it ($P=0.020$). In addition, there were statistically significant positive correlations between physicians' age and their number of daily patients. ($P=0.015$) [Table 5]

Table 1: Socio-demographic characteristics of the participants

Items	No (n=135)	%
Age groups:		
<30	15	11.1
30-39	99	73.3
>40	21	15.6
Sex:		
Male	42	31.1
Female	93	68.9
No. of patients seen daily: No (%)		
<20	66	48.9
20-49	52	38.5
50-74	10	7.4
≥75	7	5.2
Setting:		
Rural	9	6.7
Urban	54	40
Both	72	53.3

Table 2: Assessing participant's attitude towards Evidence based medicine

Items	No (n=135)	%
How would you describe your attitude toward the current promotion of EBM? <ul style="list-style-type: none"> • Do not know • Not welcoming • Welcoming • Strongly welcoming 	8 2 73 52	5.9 1.5 54.1 38.5
How would you describe the attitude of most of your colleagues toward EBM? <ul style="list-style-type: none"> • Do not know • Not welcoming • Welcoming • Strongly welcoming 	18 7 92 18	13.3 5.2 68.1 13.3
How useful are research findings in your day-to-day management of patients? <ul style="list-style-type: none"> • Do not know • Useful • Extremely Useful 	3 88 44	2.2 65.2 32.6
What percentage of your clinical practice do you believe is currently evidence-based? <ul style="list-style-type: none"> • 0-24 • 25-49 • 50-74 • 75-100 	5 10 64 56	3.7 7.4 47.4 41.5
Practising EBM improves patient care <ul style="list-style-type: none"> • Do not know • Agree • Strongly agree 	2 52 81	1.5 38.5 60
Evidence-based medicine is of limited value in family medicine because much of primary care lacks a scientific base: <ul style="list-style-type: none"> • Do not know • disagree • Agree • Strongly agree 	8 71 39 17	5.9 52.6 28.9 12.6
11-The adoption of EBM, however worthwhile as an ideal, places another demand on already-overloaded family practitioners: <ul style="list-style-type: none"> • Do not know • disagree • Agree • Strongly agree 	18 21 79 17	13.3 15.6 58.5 12.6

Table 3: Assessing the knowledge and understanding of some research terms

Technical terms	Don't understand but would like to		It would not be helpful to me to understand		Some understanding		Yes, understand and could explain to others	
	No	%	No	%	No	%	No	%
Relative risk	23	17	5	3.7	52	38.5	55	40.7
Absolute risk	25	18.5	7	5.2	45	33.3	58	43
Systematic review	35	25.9	7	5.2	43	31.9	50	37.0
Odds ratio	44	32.6	11	8.1	45	33.3	35	25.9
Meta-analysis	46	34.1	10	7.4	36	26.7	43	31.9
Number needed to treat	38	28.1	10	7.4	45	33.3	42	31.1
Confidence interval	55	40.7	9	6.7	40	29.6	31	23.0
Heterogeneity	50	37.0	9	6.7	45	33.3	31	23.0
Publication bias	16	11.9	41	30.4	47	34.8	31	23.0

Table 4: Socio-demographic characteristics of the participants with Sufficient knowledge (n=37) and Positive attitude (n=121)

Items	Sufficient knowledge (n=37)		Positive attitude (n=121)	
	No.	%	No.	%
Age groups:				
<30	6	16.2	13	10.7
30-39	26	70.3	90	74.4
>40	5	13.5	18	14.9
No. of patients seen daily:				
<20	17	45.9	60	49.6
20-49	15	40.5	46	38
50-74	3	8.1	9	7.4
≥75	2	5.4	6	5
Setting:				
Rural	0	0	8	6.6
Urban	16	43.2	50	41.3
Both (rural and urban)	21	56.8	63	52.1
Knowledge grade				
• Insufficient knowledge	0	0	86	71.1
• Sufficient knowledge	37	100	35	28.9

Table 5: Correlation between Total attitude, Total Knowledge, Age group and Number of patients daily

Variables		Total attitude	Total Knowledge	Age group
Total Knowledge	R	0.300*	1.00	-0.078
	P	0.020	-----	0.371
Age group	R	0.077	-0.078	1.00
	P	0.378	0.371	-----
Number of patients daily	R	0.002	-0.031	0.208*
	P	0.984	0.721	0.015

Figure 1: illustrating that 27% of participants had sufficient knowledge

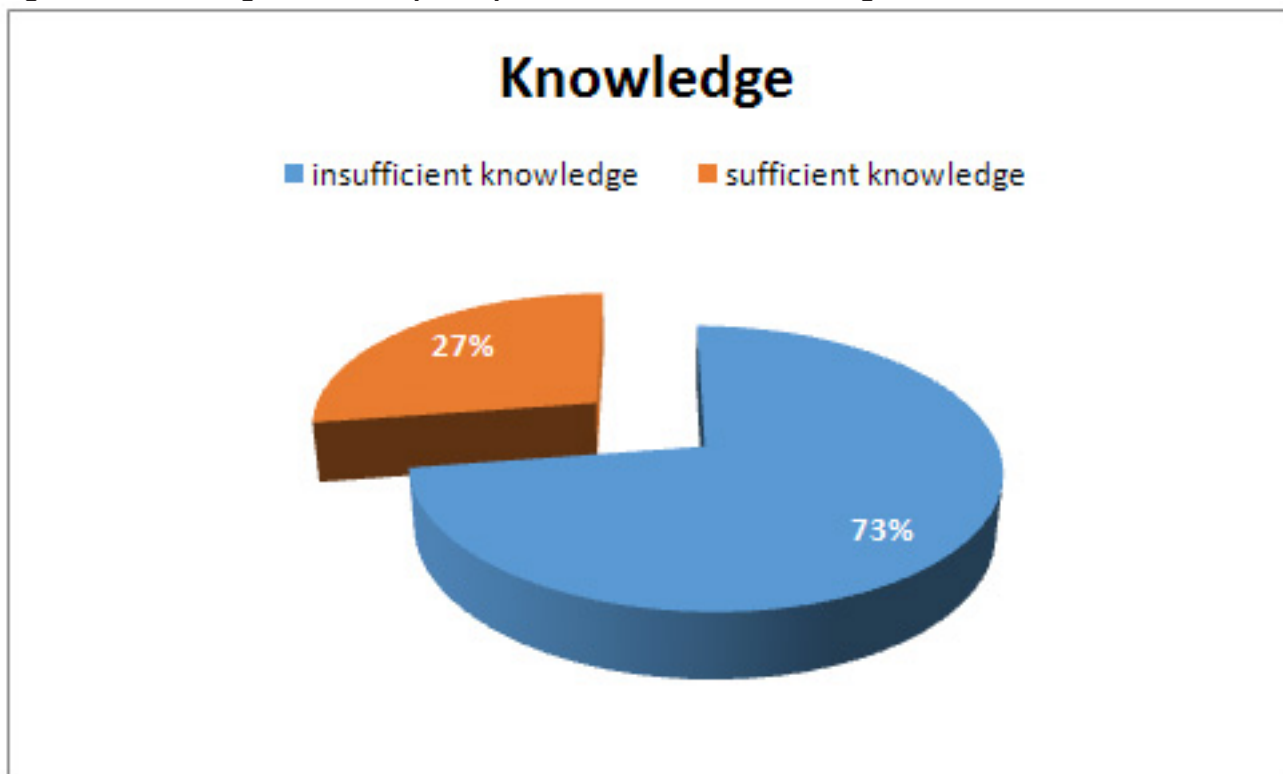
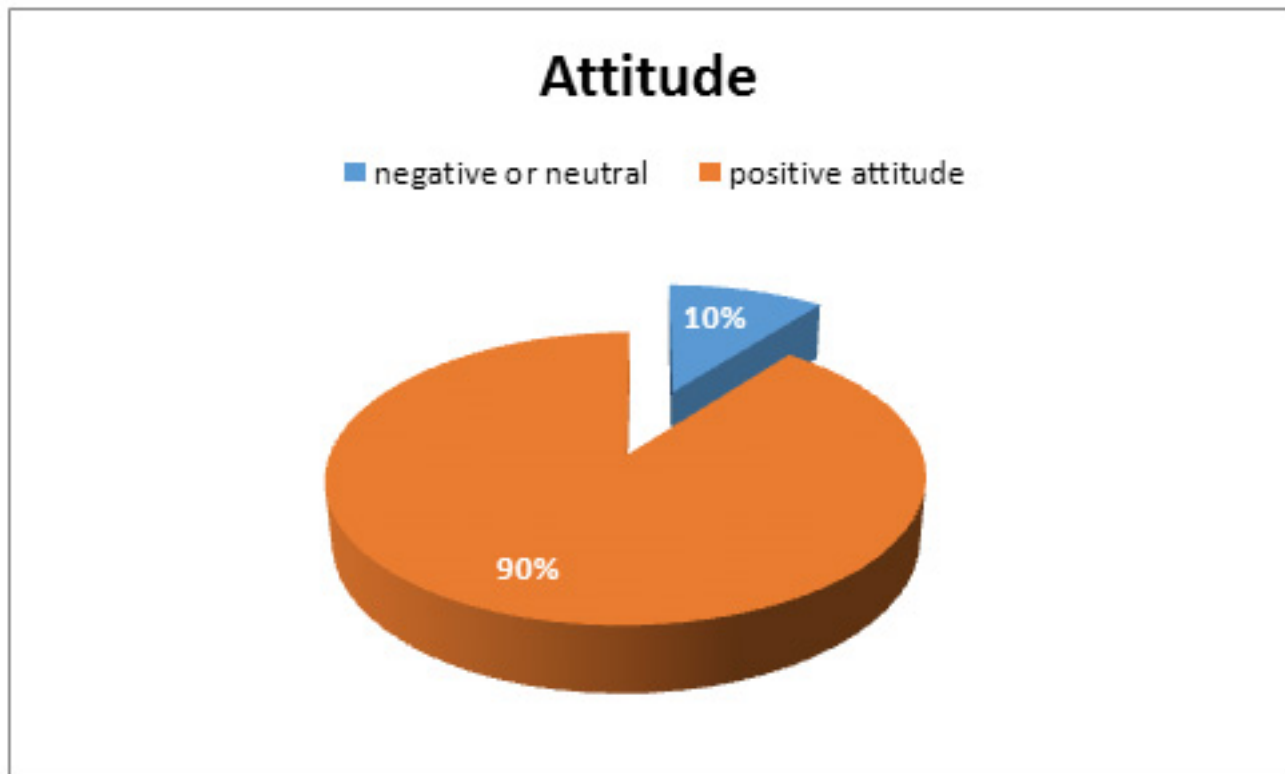


Figure 2: illustrating that 90% of participants had a positive attitude

Discussion

This self-administered questionnaire on family physicians' interpretation and use of EBM in Egypt has yielded some novel insights on this topic. Over 90% of the respondents had a positive attitude toward EBM which is similar to the outcome of two Egyptian studies on the same topic which reported a (76.4%) and (93.2%) acceptance rate respectively (2,8). This contrasts sharply with a cross-sectional study conducted in randomly selected health clinics in Malaysia among primary care doctors where only 12% of the respondents were welcoming towards EBM (9).

These differences could be due to many factors such as the length of work experience as a primary care practitioner and availability and ease of access to online reference applications. We note that differing attitudes toward EBM may be affected by the speciality and subspecialty: a study from Wuhan, China, reported that the specialisations of physicians were linked to their opinions regarding EBM where medical specialities were more amenable to use EBM than their surgical counterparts (10). Similarly in Saudi Arabia, different specialties scored differently towards such attitudes: surgeons scored the lowest while the paediatricians scored the highest (11). A systematic review on inclusion of EBM in formal training curricula found little evidence that it improves patient outcomes in the long term (12). We note however that EBM contributed to and improved knowledge and skills in the short and medium term (12) and this might explain the differences between specialties' attitudes towards EBM. It is challenging to establish the relationship between EBM training and patient outcomes because the latter may be influenced by a variety of factors in the clinical situation.

The current study showed about 98% of participants agreed that research findings are useful (moderately and/or extremely) in patient management, similar to another Egyptian study reporting an 82% response (13) and an Iranian study reporting 80% response (14).

Ninety-nine percent of our respondents agreed that practicing EBM improves patient care which is also in keeping with the 90% response from Hassan et al (13). A contrasting study from Japan reported a much lower rate of 65% (15).

The majority of our respondents agreed that EBM will add more workload to their daily activity in much the same way as their counterparts in a similar Malaysian study (16). This negative perception increases the resistance of acceptance of EBM.

Most of our respondents agreed that research findings were essential to their day-to-day management of patients as did primary care physicians in Jordan (17).

Most of the respondents in the current study (69- 79.2%) were aware of the technical terms used in EBM such as relative risk, absolute risk and systematic reviews. This was mirrored by primary care physicians in Selangor (9) yet contrasted by others from Sri Lanka where fewer than 38% understood some statistical studies such as systematic reviews and meta-analyses (4).

This study found that the participants (46%) who had the fewest patients (20 or less) on a daily basis had the best understanding of and attitudes toward EBM. Additional evidence for this comes from a research from France where 26% of participants believed that EBM practise was

was restricted by a lack of time (18) and a careful review of 56 papers where patient overload was identified as one of the barriers (6).

Conclusion

EBM is the current worldwide gold standard for clinical decision-making and patient care. Despite the fact that primary care physicians involved in the current study had limited awareness, insufficient knowledge about EBM and they did not practice it regularly, the majority of them had a positive attitude towards it. Ideally all primary care physicians should participate in an effective EBM educational and training programme that includes workshops, simulation exercises, and on-the-job training. This means that by increasing their exposure and by implementing a varied approach to training the adoption of EBM in their decision making may increase. We recommend that such an approach be an obligatory part of new doctors' curricula.

Limitations:

We acknowledge several limitations to this study. Having it based on self-reporting and self-judgment on the respondent's own knowledge and practise may compromise the objectivity of the responses and might lead to bias. Furthermore, the small sample size does not allow projections and does not allow comparing differences in practices between one institution and another.

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