Knowledge, Attitude, Behaviour and Decisions/Outcomes of the Surgical and Non Surgical Faculty Members

Hadi Zekavati[1], MSc; Peigham Heidarpoor[2], MD; Armin Shirvani[3], MD; Mostafa Alavi Moghaddam[4], MD

[1]Department of Medical Education, School of Medical Education, Shahid Beheshti University of Medical Sciences, Tehran, Iran
[2]Assistant Professor, School of Medical Education, Shahid Beheshti University of Medical Sciences,Tehran, Iran
[3]Candidate of Medical Education, School of Medical Education , Shahid Beheshty University of Medical Sciences, Tehran, Iran
[4]Emergency of Medicine Department, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Abstract

Background: Evidence-based practice the clinical decision-making process which integrates the best evidence of research with patients' values and opinions of clinical professionals. The faculty members are the most important decision-makers in clinical, medical, and therapeutic centers, and play a significant role in the use of evidence-based medical concepts in daily activities, decision making and information transfer to residents. The purpose of this study was to evaluate the knowledge, attitudes,behaviour and decisions/outcomes of faculty members in the Surgical and Non Surgical wards of Imam Hossein Hospital, based on the evidence based practice adjusted tool (KABQ) in 2016.
Methods: This is a cross-sectional descriptive study using the convenient sampling method among 66 faculty members in the Surgical and Non Surgical departments of Imam Hossein Hospital in Tehran. Anadjusted evidence based practice questionnaire(KABQ) was used after the approval of its original designer (Dr. Johnston) and checking its reliability by calculating the Cronbach's alpha coefficient to be 0.85. SPSS software version 23 was used for data analysis. The variables were analyzed using descriptive statistics and T-test. The statistical significance of all tests was considered at $P<0.05$.
Results: It was found that 93.9% of the subjects believed in their ability to use evidence-based practice. A total of 97% of them made 62.22% of their decisions based on clinical research evidence. The Surgical and Non Surgical groups believed in the effectiveness of evidence-based practice in the proposed treatments with a mean of 5.48 and 6.16, respectively. However, unlike the Non Surgical group, the Surgical group believed that there was similar validity for clinical trialsand observational methods to prove the effictiveness of the treatment. It was necessary for the Surgical and Non Surgical groups to search for clinical evidences 5.76 and 10.16 times a week, respectively. Over 90% of them found clinical evidences through textbook once a week, through the original research papers every 12 days, every 24 days through the Cochrane database, and almost every 28 days through secondary research resources. The Surgical and Non Surgical groups were referred to the evidence 1.95 and 3.27 hours per week, before, or during treatment. They spent 3.47 and 4.97 hours per week searching for evidence, and 4.23 and 7.16 hours per week reading new research evidences, respectively. Over 92% of them considered the use of evidence-based practice because they believed it improved the outcomes

***Corresponding author:** Peigham Heidarpoor, MD
Assistant Professor, School of Medical Education, Shahid Beheshti University of Medical Sciences, Tehran, Iran
Phone/Fax: +98 (21) 26210092
Email: pheidarpoormd@sbmu.ac.ir

for patients.
Conclusion: The results of this study showed that both the Surgical and Non Surgical faculty members of Imam Hossein Medical Center (Shahid Beheshti University of Medical Sciences) had good knowledge about evidence-based practice and had a positive attitude toward its medical effect, but they are less likely to use this approach. Thus, to enhance the skills of faculty professionals and adapt their decisions to the best available evidence, a collaborative action plan is required.
Keywords: KNOWLEDGE, ATTITUDE, EVIDENCE-BASED PRACTICE

Journal of Medical Education **Fall 2017; 16(4):228-238**

Introduction

Many sudies have investigated and compared the performance of clinicians in different geographical regions and with respect to different types of diseases, indicating a gap between science production and its application (1). On the other hand, after graduating from medical school, phycisians might not have up-to-date knowledge and it is necessary for them to gain novel information for the better treatment of patients (2). Moreover, physicias' inability to critically appraise information, the delay in information transfer to physicians, and varying decisions made by different physicians on a specif patient has led to the lower use of information (3). Evidence-based medicine (EBM) is one of the strategies designed to change clinical performance and information use; and if it is based on the recognition of obstacles and facilitators, it could be succesfully applied (4). Therefore, in recent years evidence-based care has been approved by health policymakers as a means of enhancing healthcare standards (5). However, evidence-based practice is challenging (6). Despite various studies on evidence-based practice in Iran, we have no accurate and clear information about it in different medical fields. Therefore, summarizing and presenting organized and useful information based on the results of previous studies could play an important rol in this regard (7).
Currently, the ultimate goal of most healthcare systems in the world is to enhance the quality of services and health-related care (8). To reach this aim the foundations of high quality medical care should be provided in the country. For this reason the best and most accurate local evidence in various healthcare fields should be at hand, which would lead to evidence-based medicine and ultimately effective and sage services (9). Since faculty members have a crucial role in clinical decision making in educational centers, and can implement evidence-based medicine in their daily clinical activities and transfer these information to residents, the present study aimed to assess the Knowledge, Attitude, behaviour and decisions/outcomes of the Faculty Members of the Surgical and Non Surgical wards of Imam Hossein Hospital Based on the adjusted (KABQ) questionnaire in 2016.

Matterials and Methods

This descriptive cross-sectional study was done during 2016. The required permissions were obtained from the Clinical Research Development Center of Imam Hossein Hospital, Tehran, Iran. A list of 120 faculty members with different specialties were provided. A sample size of 27 faculty members for each group was calculated, and we considered 33 for each group considering possible dropout using the convenient sampling method.
The KABQ was used in this study which was initially devised by Johnston and colleagues (10) and modified again by Dr. Johnston in 2013 (11). After obtaining his permission and consent, two independent traslators forward translated the questionnaire and then the two translations were merged and then backward translated by two independent

native english editors. Then for assessing the construct validity, it was send again to the main developer of the questionnaire and after it was confirmed data collecetion began. The internal consistency and reliability of the Persian version of this questionnaire was calculated to be 0.85 using Cronbach's alpha. The KABQ has five sections. The first two sections describe the study and assess the demogrphic characteristics of the participants. In the third section awareness is assessed using six items socred on a seven-point Likert scale (item three is reversely scored) and items seven and eight are open-ended questions. The fourth section has three open-ended questions and five items scored on a 5-point Likert scale as well as four other questions about patient consequences and participants' decisions, and assessed evidence-based practice level. Ultimately, the fith section has 13 items scored on a 7-point Likert scale from 1 (completely disagree) to 7 (completely agree). The target population were asked to score each item based on their own opinion about evidence-based practice. Items 21, 23, 24, and 25 were reversely scored.

The questionnaires did not contain the names of the participants and were handed to them in person. For ethical considerations, the aim of the study was expalined to the faculty members before giving them the questionnaires.

Data were analyzed using SPSS sotware, version 23. Descriptive statistics such as frequency, mean, percentage, and standard deviation were used. Moreover, t test was used as appropriated. $P<0.05$ was considered as statistically significant.

Results

In this study, 33 faculty members were in the surgical group and 33 were in the Non Surgical ward group. 71.2% of the participants were men and 24.2% were women. Most participants (43.9%) were in the 41-50 year-old age group, and the least were in the 61-70 year-old age group (9.1%). Most (53%) were assistant professors, followed by associate (25.8%) and full (13.6%) professors. Most participants (31.8%) had 21-25 years of exerience and only 9.1% had less than 5 years of experience. The mean age and work experience of the surgical ward group was higher than the Non Surgical group. 27 (40.9%) of the participants had previously participated in EBM courses; 13 (39.3% in the surgical ward group and 14 (42.2%) in the Non Surgical ward group. Moreover, 3 (4.5%) participants did not answer the sexual state question and 5 (7.6%) did not state their academic rank. Table 1 shows the data related to the awareness dimensions and table 2 indicated the analysis results about the performance dimension. Moreover, table 3 shows the results related to the attitude dimension and table 4 shows the analysis results of each question in total.

Discussion

The role f EBM in attaining desirable clinical outcomes and successful clinical governance has been confirmed in Iranian medical universities and affiliated hospitals (12). the present study aimed to assess the Knowledge, Attitude, behaviour and decisions/outcomes of the Faculty Members of the Surgical and Non Surgical wards of Imam Hossein Hospital Based on the adjusted (KABQ) questionnaire in 2016.

In this study, 93.9% of participants were confident in their ability to use evidence-based practice and 98.5% in the effectiveness of evidence-based practice in the proposed treatments. Considering $P=0.034$, it can be stated that this difference was more significant statistically, and familiarity with evidence-based practice was favorable in both groups. According to the third item, the surgical group, contrary to the Non Surgical group, believed that clinical trial and observational methods had similar validity to prove the treatment's efficacy ($P=0.005$). Given that the more we move from systematic review articles to experts' theories, the level of

Table 1: Shows the data related to the awareness dimensions

Questions	Physicians Fieled	Maximum	Minimum	Number	Mean±SD	Mean Difference	t	P value
I am sure about my ability in using evidence-based practice.	Surgical	7	2	30	5.13±1.68	0.18	0.51	0.615
	Non surgical	7	3	32	5.31±1.06			
The use of evidence-based practice increases the assurance of the effectiveness of the proposed treatment.	Surgical	7	2	33	5.48±1.58	0.67	2.17	0.034
	Non Surgical	7	3	32	6.16±0.77			
Clinical trials and observational methods have the same validity in proving the effectiveness of the treatment.	Surgical	7	1	33	4.45±1.86	1.3	2.92	0.005
	Non Surgical	7	1	33	3.15±1.77			
For me, it is important to search in bibliographic databases to become a useful and effective clinician.	Surgical	7	1	33	5.39±1.60	0.64	1.64	0.106
	Non Surgical	7	2	32	6.03±1.53			
For me, it is important to critically appraise research papers to become a useful and effective clinician.	Surgical	7	1	33	5.39±1.64	0.82	2.34	0.023
	Non Surgical	7	2	32	6.22±1.16			
In clinical decisions, evidence and patients have the same importance.	Surgical	7	2	33	4.88±1.63	0.25	0.61	0.544
	Non Surgical	7	1	32	4.63±1.72			
What percentage of your decisions is based on evidence from clinical researches?	Surgical	100	0	33	58.79±32.86	6.86	1.03	0.306
	Non Surgical	100	30	31	65.65±17.55			
How often do questions regarding patient management which may require research evidence to be answered occur in your mind?	Surgical	70	0	29	5.76±13.03	4.4	1.35	0.181
	Non Surgical	50	1	31	10.16±12.17			

Table 2: Indicated the analysis results about the performance dimension

Questions	Physicians Fieled	Maximum	Minimum	Number	Mean±SD	Mean Difference	t	P value
In general, how often do you get access to clinical research evidence?	Surgical	5	2	33	3.09±1.01	0.68	2.57	0.013
	Non Surgical	5	1	31	3.77±1.12			
How often do you get access to clinical research evidence through a textbook?	Surgical	5	2	33	2.85±0.91	0.4	1.4	0.167
	Non Surgical	5	1	32	3.25±1.37			
How often do you get access to clinical research evidence through original research papers?	Surgical	5	2	33	2.61±0.79	0.39	1.73	0.089
	Non Surgical	5	1	30	3.00±1.02			
How often do you get access to clinical research evidence through Cochrane database?	Surgical	5	1	32	2.28±0.96	0.03	0.13	0.901
	Non Surgical	4	1	28	2.25±0.97			
How often do you get access to secondary research sources? These sources include: 1- ACP 2- POEMs 3 –CAT	Surgical	5	1	31	2.23±0.92	0.23	0.89	0.375
	Non Surgical	4	1	30	2.00±1.05			
On average, how often, before or during treatment do you refer to evidence?	Surgical	6	0	28	1.95±1.63	1.32	2.16	0.035
	Non Surgical	12	0	30	3.27±2.83			
How many hours a week do you spend searching for evidence?	Surgical	14	0.5	31	3.47±2.95	1.5	1.84	0.07
	Non Surgical	12	1	30	4.97±3.40			
How many hours a week do you spend reading the new research evidence?	Surgical	20	1	31	4.23±4.74	2.94	1.45	0.153
	Non Surgical	48	1	31	7.16±10.26			
How much does the usage of evidence-based practice affects your clinical decisions?	Surgical	6	2	33	4.64±1.25	0.04	0.16	0.875
	Non Surgical	6	3	31	4.68±0.75			
How much does the usage of evidence-based practice affects your patient outcomes?	Surgical	6	2	33	4.55±1.20	0.1	0.39	0.699
	Non Surgical	6	3	31	4.65±0.80			
How often does new research evidence leads to changes in your practice?	Surgical	6	2	33	4.00±1.25	0	0	1
	Non Surgical	6	2	32	4.00±0.92			
How sure are you about your clinical decision making?	Surgical	5	4	33	4.61±0.50	0.17	1.16	0.252
	Non Surgical	5	3	32	4.44±0.67			

Table 3: Shows the results related to the attitude dimension

Questions	Physicians Fieled	Maximum	Minimum	Number	Mean±SD	Mean Difference	t	P value
Evidence-based practice is a clinical performance guide which ignores clinical experience.	Surgical	7	1	30	3.63±1.65	0.63	1.43	0.159
	Non Surgical	7	1	33	3.00±1.85			
Finding research is easy.	Surgical	6	1	29	3.52±1.53	0.48	1.17	0.249
	Non Surgical	7	1	31	4.00±1.67			
Evidence-based practice takes a long time.	Surgical	7	1	30	4.53±1.53	0.35	0.87	0.388
	Non Surgical	7	1	33	4.18±1.67			
Evidence-based practice ignores clinical performance art.	Surgical	6	1	30	3.43±1.63	0.8	1.98	0.052
	Non Surgical	7	1	33	2.64±1.56			
Previous clinical experience is more important than research findings in finding the best treatment for a patient.	Surgical	7	1	30	4.10±1.65	0.79	1.88	0.065
	Non Surgical	6	1	32	3.31±1.65			
Evidence-based practice should be an integral part of clinical performance.	Surgical	7	3	30	5.23±1.07	0.89	3.71	0
	Non Surgical	7	4	33	6.12±0.82			
According to my personal experience, I have observed that evidence-based practice is used by my colleagues on a daily basis.	Surgical	7	1	30	4.07±1.34	0.16	0.42	0.678
	Non Surgical	7	1	33	3.91±1.63			
I use evidence-based practice because it improves patient outcomes.	Surgical	7	2	30	5.07±1.48	0.54	1.74	0.086
	Non Surgical	7	3	33	5.61±0.93			
I use evidence-based practice because I believe in it.	Surgical	7	2	30	5.10±1.63	0.71	2.06	0.044
	Non Surgical	7	4	31	5.81±0.98			
I use evidence-based practice because my colleagues use it.	Surgical	6	1	30	3.63±1.52	0.6	1.52	0.134
	Non Surgical	7	1	32	3.03±1.60			
I don't use evidence-based practice because I don't have the time to use it.	Surgical	6	1	30	3.03±1.52	0.67	1.89	0.064
	Non Surgical	6	1	33	2.36±1.29			
I don't use evidence-based practice, because change is hard.	Surgical	7	1	30	3.23±1.63	0.93	2.52	0.014
	Non Surgical	6	1	33	2.30±1.29			
I don't use evidence-based care due to other reasons (state your reasons):	Surgical	6	1	26	3.50±1.65	0.82	1.77	0.083
	Non Surgical	7	1	25	2.68±1.65			

Table 4: Shows the analysis results of each question in total

Questions	Number	Percent	Minimum	Maximum	Mean±SD
I am sure about my ability in using evidence-based practice.	62	93.9	2	7	5.23±1.28
The use of evidence-based practice increases the assurance of the effectiveness of the proposed treatment.	65	98.5	2	7	5.82±1.29
Clinical trials and observational methods have the same validity in proving the effectiveness of the treatment.	66	100	1	7	3.80±1.92
For me, it is important to search in bibliographic databases to become a useful and effective clinician.	65	98.5	1	7	5.71±1.59
For me, it is important to critically appraise research papers to become a useful and effective clinician.	65	98.5	1	7	5.80±1.47
In clinical decisions, evidence and patients have the same importance.	65	98.5	1	23	5.03±2.81
What percentage of your decisions is based on evidence from clinical researches?	64	97	0	100	62.11±26.59
How often do questions regarding patient management which may require research evidence to be answered occur in your mind?	60	90.9	0	70	8.03±12.68
In general, how often do you get access to clinical research evidence?	64	97	1	5	3.42±1.11
How often do you get access to clinical research evidence through a textbook?	65	98.5	1	5	3.05±1.16
How often do you get access to clinical research evidence through original research papers?	63	95.5	1	5	2.79±0.92
How often do you get access to clinical research evidence through Cochrane database?	60	90.9	1	5	2.27±0.95
How often do you get access to secondary research sources? These sources include: 1- ACP 2- POEMs 3 -CAT	61	92.4	1	5	2.11±0.98
On average, how often, before or during treatment do you refer to evidence?	58	87.9	0	12	2.63±2.40
How many hours a week do you spend searching for evidence?	61	92.4	0.5	14	4.20±3.24
How many hours a week do you spend reading the new research evidence?	62	93.9	1	48	5.69±8.06
How much does the usage of evidence-based practice affects your clinical decisions?	64	97	2	6	4.66±1.03
How much does the usage of evidence-based practice affects your patient outcomes?	64	97	2	6	4.59±1.02
How often does new research evidence leads to changes in your practice?	65	98.5	2	6	4.00±1.09
How sure are you about your clinical decision making?	65	98.5	3	5	4.52±0.59
Evidence-based practice is a clinical performance guide which ignores clinical experience.	63	95.5	1	7	3.30±1.77
Finding research is easy.	60	90.9	1	7	3.77±1.61
Evidence-based practice takes a long time.	63	95.5	1	7	4.35±1.60

Evidence-based practice ignores clinical performance art.	63	95.5	1	7	3.02±1.63
Previous clinical experience is more important than research findings in finding the best treatment for a patient.	62	93.9	1	7	3.69±1.68
Evidence-based practice should be an integral part of clinical performance.	63	95.5	3	7	5.70±1.04
According to my personal experience, I have observed that evidence-based practice is used by my colleagues on a daily basis.	63	95.5	1	7	3.98±1.49
I use evidence-based practice because it improves patient outcomes.	63	95.5	2	7	5.35±1.25
I use evidence-based practice because I believe in it.	61	92.4	2	7	5.46±1.37
I use evidence-based practice because my colleagues use it.	62	93.9	1	7	3.32±1.58
I don't use evidence-based practice because I don't have the time to use it.	63	95.5	1	6	2.68±1.43
I don't use evidence-based practice, because change is hard.	63	95.5	1	7	2.75±1.52
I don't use evidence-based care due to other reasons (state your reasons):	51	77.3	1	7	3.10±1.69

evidence decreases (13), it seems that the surgical group were less familiar than the Non Surgical group in this category, which may be, according to Yazdani (14), due to the small number of suitable clinical studies in surgical field (as only 3.4% of the articles published in the surgical journals are RCTs). Another possibility could be, according to Shi (11), the difference in "evidence level" or "quality" of observational studies that may have affected the significance of this option. Respondents may have evaluated large observational studies higher than small trials.

98.5% of participants agreed with the equal importance of evidence and patients in clinical decision-making, and considered searching in library databases and critical evaluation of research articles important in their clinical performance that indicated awareness of both groups about evidence-based practice and P=0.023 in the fifth item was statistically more significant. Of course, since the surgical group accessed clinical research evidence through the Cochran database and secondary research resources, compared to the Non Surgical group, they pointed out less to the importance of critical evaluation of research articles in their clinical performance. In the study of Zare (15), the study population were not familiar with assessment methods and accuracy and validity of evidence and did not know about specialized websites that did not match the results of this study.

The results showed that 58.79% of the surgical group and 65.65% of the Non Surgical group considered their decisions based on clinical research evidence. In the study by Sadeghi et al. (16), about 5.3% of residents used evidence-based decision-making in more than 50% of their clinical work, which indicates better status of the target group in this regard than the mentioned study. The surgical group and the Non Surgical group required research to answer their questions about 5.76 and 10.16 times a week. Of course, it has been stated that in specialized clinics, theyhad one question per 1-2 patients and in the hospital ward, five questions per patient (13), however, due to the high number of outpatient and inpatient visits, admitted by professors, it seems that they fail to answer many of their clinical questions, which could be due to the short time caused by the high

number of clients; regarding the health system development plan and the scientific view of Imam Hussein Medical center or lack of access to information resources on patient's bedside, it seems that disregarding the use of research and relying on experience in health workers have general acceptance, as Bennett (17) showed in his study on an Australian treatment group that 96% of them relied primarily on their clinical experiences for decision-making, during two months, and rarely used research findings, which are consistent with the present study. Also, in another study in Canada (18), the results showed that only 8% of doctors refer to Medline, when they have a problem related to the disease that is consistent with the current study.

Over 90% of samples accessed clinical research evidence, approximately once a week through a textbook, every 12 days through primary original research papers, every 24 days through Cochran database and almost every 28 days through secondary research resources. The Non Surgical group accessed clinical evidence (almost every 3 to 4 days) more than the surgical group (almost every other week) (P=0.013). This difference can be due to the fact that the Non Surgical group needed clinical research evidence more, considering higher number of questions. Evidence suggests that the Non Surgical group could access clinical evidence through textbooks and primary research articles more than the surgical group and the surgical group through the Cochran database and secondary research resources more than the Non Surgical group, but in general both groups had unfavorable performance in this regard and the difference was not statistically significant. The results of the present study were similar to the Kalavani's study (19) in 2016 on 192 reidents of Shahid Beheshti University of Medical Sciences. In this study, 21% of reidents referred to reference books and directories, 5.7% to websites and non-filtered search engines, and only 2.01% used evidence-based medical databases.

In this study, the surgical group referred to evidence 1.95 hours a week and the Non Surgical group 3.27 hours a week before or during treatment (P=0.035), which was probably due to the type of work in the surgical group, as they can refer to evidence less in the operating theater, before or during treatment. Furthermore, the surgical and Non Surgical groups spent 3.47 and 4.97 hours a week to search evidence, respectively, and 4.23 and 7.16 hours a week reading new research evidence, respectively. In a study by Gazerani and collaborators (20), in 25% of cases, evidence search was reported at an average of 2 hours per week, which indicates a better status of the target group than the present study, but in the study of Rangraz-Jeddy et al. (21), physicians searched evidence on the internet at an average of 5 hours a week, which indicates a better status of the research samples in this study compared with their target group.

The results showed that 97% of people acknowledged that application of evidence-based practice principles had a moderate to high effect on their clinical decisions and their patients' outcome, and the Non Surgical group believed in it more than the surgical group. Also, 98.5% of them acknowledged that new research evidence led to a change in their performance frequently, and they believed in their clinical decision-making modertae to high, and the surgical group were confident in their own clinical decision-making more than the Non Surgical group. In the study of AL-Kubaisi et al. (22), 90.1% of physicians agreed that evidence-based medicine was effective in clinical decision-making, which was consistent with the findings of this study. The present study showed that, in general, both groups of faculty members of Surgical and Non Surgical departments of Imam Hossein (AS) Educational-Medical Center, Tehran, had a positive attitude towards evidence-based practice and there was a significant difference between the groups only in few cases. Considering the statement "evidence-based practice disregards the art of clinical performance", the Non Surgical group

disagreed or somehow disagreed, and the Surgical group somehow disagreed or had no idea (P=0.052), which may be, according to Yazdani (14), due to the fact that providing even the best evidence to prove the effectiveness of an operation does not cause a surgeon to perform that kind of surgery. Because the surgeon's experience in conducting an operation is very important and necessary.
Also, in terms of the 26th, 29th, and 32nd items, the Non Surgical group had a more favorable attitude than the surgical group, and the probable cause of significant differences can be, according to Yazdani (14), due to the fact that in many cases, refering to evidence limits the indication and reduces the number of procedures, and this is not pleasant to surgeons. Other studies that are consistent with the present study include Loise and Koohpayeh zadeh (23), reporting that 86.5% of participants used EBM daily and considered it a practical method for daily patient care; in the results of the study by Khoja et al. (24) showed that 93% of GPs considered EBM effective in improving patient care. Finally, Knops and his colleagues (25) showed positive attitude towards evidence-based surgery.

Conclusion

All in all, considering the results described, it was found that faculty members of both the Surgical and Non Surgical departments of Imam Hossein (AS) Educational-Medical Center Tehran, had aapropriate awareness about evidence-based practice and a positive attitude towards the effect of EBM on clinical decision-making; but they used this approach less. Therefore, in order to enhance the professional skills of faculty members and adjust their decisions to the best available evidence, a continuous practical curriculum is requireds, and since the ultimate goal in medical education is behavioral change and performance improvement, in order to promote community health; unfortunately, many of the efforts made so far have been ineffective in achieving this goal, and the pursuit of continuous education courses are less effective due to inactivity, thus, it is recommended that:

1. EBM-based training workshops be hold at regular intervals for active presence of faculty members.
2. EBM courses become necessary for promotion of faculty members.
3. Hold training workshops for necessity of taking EBM courses for promotion of faculty members.
4. Formulate and use clinical audit protocols to ensure the quality of clinical practice in faculty members.
5. Consider strategies for encouragement and appropriate privileges for faculty members that act based on evidence-based medicine.
6. Use Information and Communication Technology (ICT) in clinics, departments, and operating theatres be expanded to ensure easy access to evidence.
7. Hold evidence-based journal clubs, morning reports, and clinic rounds based on applied standards with the presence of librarians and medical informants.
8. Include evidence-based practice topics in the curriculum approved by the specialized disciplines.
9. Plan for empowering faculty members on clinical trials.
10. Use knowledge produced at the national level, and formation of evidence-based practice committee in the ward considering issues requiring knowledge products.
11. Considering that the best time to introduce and learn EBM is during general medical education study period, it is necessary to develop an EBM educational curriculum in Iran's medical sciences universities.
12. Use local evidence-based practice questionnaire of this research, applicable to other clinical groups, in future studies.

Acknowledgment

This article is the result of a master dissertation and the authors thank all faculty members for

the Surgical and Non Surgical wards of Imam Hossein Medical Center, Tehran, who helped us with this research.

Conflict of Interest

The author declares no conflict of interest.

References

1. Sackett DL. Using evidence based medicine to help physicians keep up – to-date. Serials 1996; 9(2):178-81.
2. Bakken S. An informatics infrastructure is essential for evidence-based practice. J Am Med Inform Assoc 2001;8(3):199-201.
3. Claridge JA, Fabian TC. History and development of evidence-based medicine. World J Surg 2005;29(5):547-53.
4. McColl A, Smith H, White P, Field J. General practitioners9 perceptions of the route to evidence based medicine: a questionnaire survey. BMJ 1998; 316(7128):361-5
5. O'donnell CA. Attitudes and knowledge of primary care professionals towards evidence based practice: a postal survey. J Eval Clin Pract 2004;10(2):197-205.
6. Melnyk BM, Fineout Overholt E, Fischbeck Feinstein N, Li H, Small L, Wilcox L, et al. Nurses' perceived knowledge, beliefs, skills, and needs regarding evidence based practice: implications for accelerating the paradigm shift. **Worldviews** Evid **Based** Nurs 2004;1(3):185-93.
7. Ghojazadeh M, Azami-Aghdash S, Naghavi-Behzad M. Evidence-based care in Iran: A Systematic Review. Journal of Birjand University of Medical Sciences 2014; 21(2):142-59.
8. Ravaghi H, Rafiei S, Mohseni M, Heidarpour P, Arab M. Existing challenges in clinical governance establishment evaluation based on national assessors' aspect (a qualitative study). J Hosp 2016;15(3):9-20.
9. Deputy Head of Treatment, Ministry of Health, Medical Education. Regulations on establishment of evidence-based health care centers. 2011. Available from: http://darman.umsha.ac.ir/uploads/15_249_92_mobtani%20bar%20shavahed.pdf (Persian)
10. Johnston JM, Leung GM, Fielding R, Tin KY, Ho LM. The development and validation of a knowledge, attitude and behaviour questionnaire to assess undergraduate evidence based practice teaching and learning. Med Educ 2003;37(11):992-1000.
11. Shi Q, Chesworth BM, Law M, Haynes RB, MacDermid JC. A modified evidence-based practice-knowledge, attitudes, behaviour and decisions/outcomes questionnaire is valid across multiple professions involved in pain management. BMC Med Educ 2014;14(1):263.
12. Ravaghi H, Mohseni M, Rafiei S, Zadeh NS, Mostofian F, Heidarpoor P. Clinical governance in Iran: Theory to practice. Procedia Soc Behav Sci 2014;109:1174-9
13. Soltani A. Evidence based medicine. Tehran: Vista Publisher; 2008. (Persian)
14. Yazdani SH. Evidence-based surgery. Iranian Journal of Surgery 2008;15(4):1-6. (Persian)
15. Zare V. The practice of evidence based medicine among clinical academics. Journal of Tabriz Medical University 2006; 28: 61-6.
16. Sadeghi M, Khanjani N, Motamedi F. Knowledge, Attitude and Application of Evidence Based Medicine (EBM) among Residents of Kerman Medical Sciences University. Iranian Journal of Epidemiology 2011; 7(3):20-6. (Persian)
17. Bennett S, Tooth L, McKenna K, Rodger S, Strong J, Ziviani J, et al. Perceptions of evidence based practice: A survey of Australian occupational therapists. Aust Occup Ther J 2003;50(1):13-22.
18. Olatunbosun OA, Edouard L, Pierson RA. Physicians' attitudes toward evidence based obstetric practice: a questionnaire

survey. BMJ 1998;316(7128):365-6.
19. kalavani A. An Investigation to effective factors for adoption of evidence-based medicine databases among residents of Shahid Beheshti University of Medical Sciences based on the unified theory of acceptance and use of technology (UTAUT). Tehran: Shahid Beheshti University Of Medical Sciences. 2016. Available from: http://research.sbmu.ac.ir/webdocument/load.action?webdocument_code=1000&masterCode=66009010.
20. Gazrani A, Borji A, Delkhosh MB, Gholami A, Shirdelzadeh S, Dashti MA, et al. A survey of Knowledge, Attitude and Practice of Physicians Related to Evidence-Based Medicine in Hakim and 22 Bahman Hospitals of Neyshabur. J Neyshabur Univ Med Sci 2015; 2(5):42-9.
21. Rangraz JF, Moravvji A, Abazari F. Attitude of Physicians toward Applying Evidence Based Medicine and its Related Barriers. Journal of Knowledge & Health 2014;8(4):163-70
22. AL-Kubaisi NJ, AL-Dahnaim LA, Salama RE. Knowledge,attitudes and practices of primary health care physicians towards evidence- based medicine in doha, Qatar. EMHJ 2010;16(11):1189-97.
23. Lavizeh M. Validity and reliability of the attitudes towards and self-reported ability in evidence-based medicine questionnaire. Iranian Journal of Medical Education 2015; 14(11):998-1006.
24. Khoja TA, AL-Ansary LA. Attitudes to evidence- based medicine of primary care physicians in Asir region, Saudi Arabia. EMHJ 2007;13(2):408-19.
25. Knops AM, Vermeulen H, Legemate DA, Ubbink DT. Attitudes, awareness, and barriers regarding evidence-based surgery among surgeons and surgical nurses. World J Surg 2009;33(7):1348-55.