

# Evidence Based Practice: Perspectives of Iranian Urologists

Sakineh Hajebrahimi,<sup>1</sup> Fatemeh Sadeghi-Ghyassi,<sup>2</sup> Nahid Olfati,<sup>2</sup> Saeed Dastgiri,<sup>3</sup> Leili Maghbouli<sup>2</sup>

<sup>1</sup> Urology Department, Drug Applied Research Center, Tabriz University of Medical Sciences, Tabriz, Iran

<sup>2</sup> Iranian Evidence Based Medicine Center of Excellence, Tabriz University of Medical Sciences, Tabriz, Iran

<sup>3</sup> Community Medicine Department, Iranian Evidence Based Medicine Center of Excellence, Tabriz University of Medical Sciences, Tabriz, Iran

Corresponding author:

Fatemeh Sadeghi-Ghyassi, MSc  
Iranian Evidence Based Medicine  
Center of Excellence, Faculty of  
Medicine, Tabriz University of Medi-  
cal Sciences, Tabriz, Iran

Tel: +98 411 3342219  
Fax: +98 411 3342219

E-mail: ghyassif@tbzmed.ac.ir

Received March 2011  
Accepted July 2013

**Purpose:** To determine the attitudes and beliefs of Iranian urologists toward Evidence Based Medicine (EBM) and investigation of the barriers of evidence based practice (EBP).

**Materials and Methods:** A self-administrated, Likert scale questionnaire designed in Persian and filled up by censuses selected urologist from Iranian Urology Association (IUA). Data were entered to Predictive Analytics Soft Ware version 18.0 and descriptive statistics were obtained for all parts of the questionnaire.

**Results:** A total of 111 out of 500 Iranian urologists who attended in IUA annual meeting, responded to the questionnaires. Mean attitude score of respondents was 30.4 (SD: 5.7, range 16-40). Attitude score showed statistically significant association to previous participation in EBM workshops ( $P = .01$ ). Of participants 96% believed EBP will improve patient care and 76.2% of them appreciated the impact of use of research utilization and application of evidence based guidelines on clinical decision making and the outcome of surgery. The main barriers to EBP stated as lack of time (64.8%), facilities (53.4%), and training in EBM (29.4%).

**Conclusion:** The urologists have positive attitudes towards EBP. However, regarding lack of time, pre-appraised databases or EBP guidelines can be helpful. Evidence based workshops and familiarity with evidence databases is recommended for Iranian urologists. In addition, health care system and policy makers could play a major role to provide a culture of EBP.

**Keywords:** evidence based medicine; decision making; urology; attitude of health personnel; practice guidelines as topic.

## INTRODUCTION

The birth of term “Evidence-based medicine” was in 90’s of the twentieth century,<sup>(1)</sup> although it was introduced by Rhazes and Avicenna,<sup>(2)</sup> two Iranian scientists, in very early ages. More than twenty years have passed and during this time evidence-based practice (EBP) concepts are coming more popular and acceptable by experts. It has entered in some medical schools’ curriculum, and consequently, in practice and patient care.<sup>(3,4)</sup> Alongside these developments, pre-appraised evidence databases such as Turning Research Into Practice (TRIP), Cochrane established, developed and grew progressively. Now, after two decades, it seems that most of practitioners including surgeons have heard about EBM. But it doesn’t seem that attitudes toward and knowledge of EBM is growing so fast in surgical fields such as urology.<sup>(5,6)</sup> This might be due to some barriers such as lack of time or very busy clinics. Some studies showed that most of urologists in the survey population have not enough knowledge about EBM concepts;<sup>(5,7)</sup> nevertheless, there is raising tendency among urologists toward learning of evidence-based practice.<sup>(7,8)</sup> Beside lack of time, there are some known barriers for implementing EBP by practicing physicians and clinical staff. In many clinical disciplines, studies have been conducted to find these barriers as well as in urology.<sup>(5,6,9,10)</sup> Factors such as lack of high quality evidence in the surgical practice field,<sup>(11)</sup> lack of formal educational curricula of EBM for residents<sup>(12)</sup> and surgical cultures have been reported as barriers of EBP by surgeons.

Limited studies have evaluated attitude and knowledge of EBM among urologist in developed countries.<sup>(5,6,9,10)</sup> Although various studies have evaluated Iranian practitioners’ implementation of EBM and the barriers as a developing country;<sup>(13-19)</sup> but Iranian urologists’ perspectives have not evaluated and presented in a structured study. The aim of this study is to assess Iranian Urology Association (IUA) members’ attitudes and beliefs toward EBP using a standard questionnaire, and thereby, to form appropriate evidence based educational and training basis of Iranian urologists in the future.

## MATERIALS AND METHODS

The study was a cross-sectional, questionnaire based survey performed during the Annual Congress of Iranian Urology Association (April 2009). The questionnaire was designed based on a literature review in Persian language including 34 Likert scale items.<sup>(18)</sup> In most sections respondents were asked to select an option among a 5-point Likert scale. A “no opinion” option was also offered. The questionnaire consisted of 8 sections including attributes, attitude/beliefs, research utilization, terminology, research utilization skills. Descriptions of these sections and the related questionnaire item(s) are demonstrated in Table 1.

Expert validation of the questionnaire was performed by experts in the Iranian Center for EBM and a number of urologists. Results of the reliability analysis are shown in Table 1.

Distributors took a stand in the congress and invited participants to fill in the questionnaire. Study subjects were selected and invited by censuses from almost 500 participants. Accepting to participation was counted as consent. One hundred eleven of participants filled in the questionnaire by censuses selection and all included in the analysis. Data were analyzed using Predictive Analytics Soft Ware (PASW) version 18.0 and descriptive statistics were obtained for all parts of the questionnaire (percent for data on nominal or ordinal scale and means and SDs for interval scale data). Inferential statistics were used where applicable.

## RESULTS

Mean age of respondents was 43.62 (SD, 9.77; range, 26-68). Most participants were male (82.7%). Mean years of clinical practice were 13.03 (SD, 8.26) (Table 2).

Almost all urologists acknowledged the current information overload (98.1%) and the need to be familiar with evidence (92.3%). They as well appreciated the impact of research utilization and use of practice guidelines on clinical decision making and quality of health services and the outcome of surgery (76.2%). On the other hand, urologists

**Table 1.** Questionnaire items and reliability analysis.

Section	Description	Cronbach $\alpha$
Attributes	Including age, gender, years of clinical practice as an urologist, university of post-graduate study, work situation.	N/A
Attitude/beliefs	21 questions (Table 3), for example: There is information overload in the field of medicine: strongly disagree, somewhat disagree, neutral, somewhat agree, strongly agree	0.77
Research utilization	Four questions assessing the overall, direct and indirect research use. For example: Overall, in the past year, how often have you used research in the non-direct way in some aspect of your clinical practice? (1 = never to 5 = very often)	N/A
Terminology	Eleven questions: How much do you understand the following terms? (1 = I don't understand, 2 = Don't understand but would like to learn, 3 = It would not be helpful to me to understand, 4 = Some understanding, 5 = Understand and could explain to others): ... Sensitivity ...relative risk ...number needed to treat ...level of evidence ...confidence interval	0.76
Organizational support	Eight questions: What percentage of your clinical practice do you feel is currently evidence-based? 1 $\leq$ 25% to 5 $\geq$ 75%	0.74

almost believed that, clinical expertise is a major source of knowledge; they acknowledged that urology journals are the most informative sources of evidence. More than half of participants believed that research utilization is costly and time consuming (62.8% and 64.3%, respectively) but they stated that it won't violate physicians' autonomy or clinical expertise (69.1% and 61.6%, respectively). Less than 40% of urologists stated that they don't use research in practice because they hardly understand statistics whereas about 50% of them mentioned "unfamiliarity with information sources" as a reason. Beside, 53.4% agreed that there are not enough facilities to practice evidence based. However about half (56.0%) expressed the idea that all their urologist colleagues use EBM in practice (Table 3).

In the attitudes section, scores calculated for each participant by adding up scores on each question. Score 1 assigned to "somehow" and "strongly disagree" points of positively worded statements; score 2 to "somehow" and "strongly agree" points of positively worded statements, and 0 for "neutral". Reverse scores were assigned to negatively worded questions (i.e. score 2 to "somehow" and "strongly disagree" points of negatively worded statements; score 1 to "somehow" and "strongly agree" points of negatively worded statements, and 0 for "neutral". Mean atti-

tude score of respondents was 30.4 (SD, 5.7; range, 16-40). Attitude score showed no statistical association to sex ( $P = .2$ ), workplace ( $P = .5$ ) and years of clinical experience ( $P = .09$ ); whereas association to previous participation in EBM workshops was significant ( $P = .01$ ). Although 96% believed that EBP will improve patient care, 70.6% stated

**Table 2.** Demographic characteristics of study subjects.

	Numbers	Percent*	Mean (SD)
Gender	Female	18	17.3
	Male	86	82.7
	Missing	7	
Age (year)	$\leq 30$	5	5.3
	31-40	39	53.2
	$> 40$	50	8.8
	Missing	17	43.62 (9.77)
Years of practice	$< 5$	12	12.8
	5-10	34	36.2
	11-15	16	17.0
	$> 15$	32	34.0
	Missing	17	
Place of practice	Only hospital	33	32.4
	Only private office	21	20.6
	Private office and hospital	47	46.1
	Missing	10	

Key: SD, standard deviation.

\* Valid percent.

**Table 3.** Urologists Attitudes toward Use of Research Evidence.

	Strongly disagree	Somehow disagree	Don't know	Somehow agree	Strongly agree
There is information overload in the field of medicine.	0	0	1.3	12.8	85.3
Urologists should be able to differentiate erroneous methodologies.	1.9	1	4.8	26	66.3
Use of research will facilitate decision making.	1.0	4.9	5.8	42.7	45.6
Using guidelines is the best exercise for health quality improvement.	1.0	1.0	10.5	41	46.7
Clinical expertise could make a major source of knowledge for urologists.	1.9	11.1	3.7	48.1	35.2
Medical practice is not based on research.	63.3	17.4	3.7	11.9	3.7
Evidence based practice will improve the surgery outcome.	1.0	3.8	19.0	36.2	40
Urology journals are the most informative sources of knowledge for urologists.	0.0	10.7	15.5	53.4	20.4
EBM is in contrast with autonomy.	29.9	39.2	16.5	10.3	4.1
Use of research causes spending more time per visit.	5.1	19.4	11.2	43.9	20.4
Use of research is costly	3.8	17.1	16.2	43.8	19.0
It's difficult to understand statistics so I can't use evidence.	26.5	35.3	13.7	16.7	7.8
EBM is in contrast with clinical expertise.	23.2	38.4	19.2	14.1	5.1
There are many socioeconomic factors that hinder research use.	2.9	15.5	25.2	36.9	19.4
All my urologist colleagues are using EBM in the management of patients.	7.5	14	22.4	33.6	22.4
I can't use information resources so I can't use evidence.	19.8	34.7	15.8	26.7	3.0
There are not enough facilities and resources to practice evidence based.	15.5	19.4	11.7	37.9	15.5
I don't have knowledge to use evidence.	20.6	30.4	19.6	25.5	3.9
Use of research is not practicable in the real world	23.5	25.5	27.5	18.6	4.9
I don't have authority to change practice.	9.9	23.8	21.8	29.7	14.9
EBM is supported by non-clinicians.	13.6	14.6	34	24.3	13.6

Numbers are in percent.

Key: EBM, evidence based medicine.

that they avoid using evidence in their practice because they think they don't have authority to do so.

Although 52% reported that they have used evidence in at least half of their practice in the past year, this number dropped to 48.5% when we asked for the number of times they used research finding to answer their clinical questions and raised to 55.8% when we asked for indirect use of evidence.

Urologists were asked to say how much they are familiar with common terms used in clinical research papers. Findings are presented in figure 1. For confirming the self-rated knowledge of related terms, we asked them to sort study designs in order of their level of evidence (Figure 2). About half (43.4%) rated randomized controlled trials as the highest level and 30.3% gave case-controls the fourth position.

Urologists were asked to rate their level of familiarity with evidence databases, including PubMed, Ovid, TRIP Database, Cochrane Library and also Google. Forty two (49.4%) have used Google in their practice, and 37 (41.6%) have used PubMed. The similar numbers were 19 (23.8%), 4 (5.5%) and 13 (15.9%) for Ovid, TRIP Database and Cochrane Library, respectively. Thirty five (39.3%) have heard about or read something about PubMed but didn't use that in practice. The same data were 30.1%, 28%, 37.8% and 44.7% for Ovid, TRIP Database, Cochrane Library and Google, respectively (Figure 3).

Using Likert scale questions, Participants were asked to rate their skills regarding the use of evidence. About half (45.9%) reported that they are more than 50% positive in estimating their own research utilization skills and 54.5%

noted that more than half of their practice is based on evidence results. Considering use of research by other surgeons, 54.9% had somehow or strongly positive attitudes towards use of research by their colleagues. Nearly all (91.1%) urologists said that they want to learn and practice EBM.

## DISCUSSION

In this study, the most common barriers in EBP mentioned by Iranian urologists were time consuming, high costs, socioeconomic factors and lack of facilities and resources. Although participants stated that EBP can improve patient care, but they believed that they were not allowed to apply the best evidence in their practice. Whereas more than half of Iranian urologists found socioeconomic factors, costs and lack of authority as barriers in EBP; in contrast to this finding, Scales and colleagues showed that less than 10% of American urologists had same beliefs.<sup>(6)</sup> It might be related to some legal issues which lead the urologists to be more conservative. It seems that medical councilors and policy makers' role is crucial in EBP in developing countries.

Similar to the results of this study, lack of time has been mentioned in some of the related studies as a main barrier.<sup>(20,21)</sup> It seems insufficient referral system in Iran, has resulted in busy urology clinics. On the other hand, 53% of the American urologists concerned about lack of high quality evidences as an important barrier.<sup>(6)</sup> Cabana and colleagues categorized barriers to implementation of clinical practice guidelines into three: knowledge, attitudes and behavior. They also argued that there are other "external factors" (i.e. environmental/guideline/patient factors) that may affect these three categories.<sup>(22)</sup> Among external factors, lack of time, high costs and lack of facilities were the major barriers which we found in current study. All of these barriers are categorized in the environmental factors which can affect all three categories of knowledge, attitudes and behavior.<sup>(22)</sup> There was a significant relevancy among urologists' attitude and their previous attendance in EBM workshops ( $P = .01$ ). It means that education and knowledge may have a direct correlation with attitude. This issue has been con-

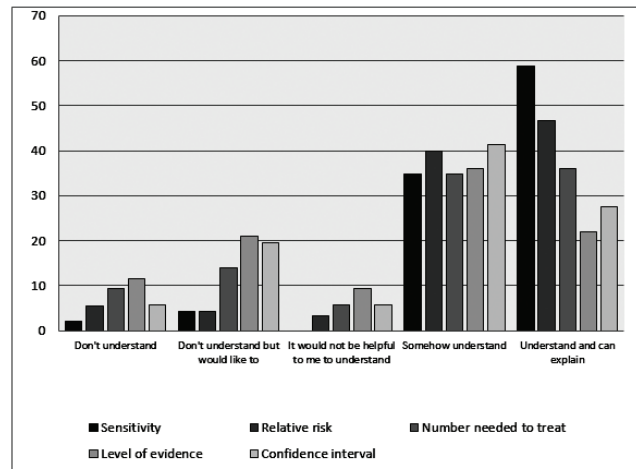


Figure 1. Understanding of research-related terms.

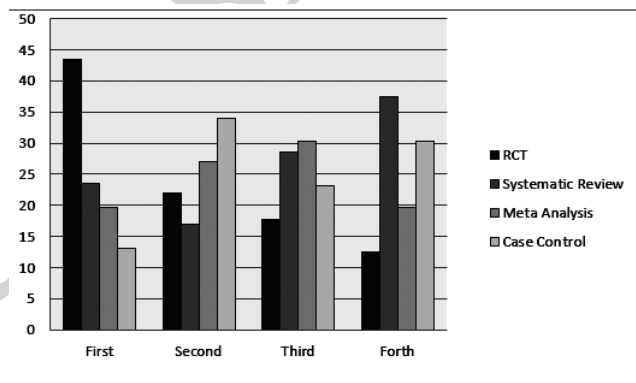


Figure 2. Rating of study types based on validity by urologists  
Key: RCT, randomized clinical trial.

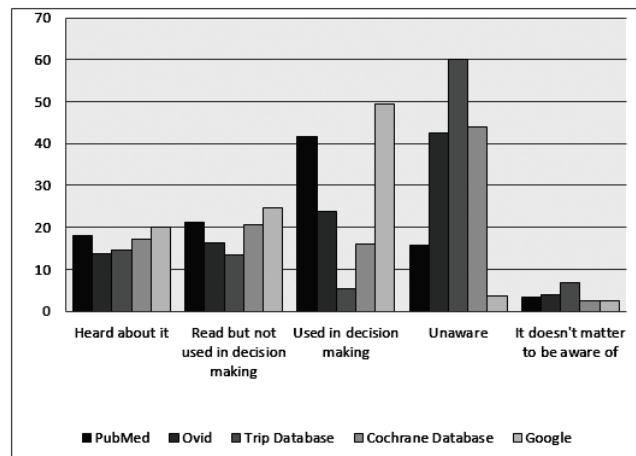


Figure 3. Use of different sources of knowledge.

firmed by other studies.<sup>(16,23)</sup> Meanwhile, regarding that almost all of the urologists (91.1%) expressed their interest in learning and practicing EBM, it seems that Iranian Urology Association should plan to hold EBM workshops in general and specific aspects. As well, medical schools' role in EBM education for medical students can be defined in the long term. The authors had provided a practical guideline for EBP in urology departments, in their previous review.<sup>(24)</sup>

At this study, according to the results, it seems there is a contrast between attitudes toward use of evidences to answer the clinical questions and familiarity with evidence databases. Almost all of the urologists were aware of current information overloads and the need for appropriate search skills in order to find relevant evidence. In addition, they believed that relevant evidence could able them to facilitate decision making in routine clinical practice. Nevertheless unfortunately only less than 16% of urologists were familiar with and used pre appraised recourses of high quality evidences like TRIP database and Cochrane Library. It should be noted that other studies reported an average of 4.3%-16% for above mentioned two databases.<sup>(25-28)</sup> We also conducted another survey for all health care professionals in Iranian center for EBM which indicated 18.7% usage of Cochrane and 10.8% usage of TRIP database which is rather same as this study.<sup>(29)</sup> However the gap between the rate of familiarity with these two databases and using them was high in these two studies (TRIP, 28% vs. 16.4%; Cochrane, 37.8% vs. 18.2%). Regarding that these two studies conducted in approximately same time, urologists need to be familiar with evidence databases and search strategies to improve their EBP.

Most of urologists in this study believed that EBP can improve their surgical outcomes but it is time consuming and costly. It can be solved by developing and using clinical guidelines. There is no debt that it takes often more time implementing of research findings in clinical practice as Balas estimated approximately 17 years for fully integration of clinical research into everyday practice.<sup>(30)</sup> Given that urologists appreciated the impact of guidelines and level of evidences, health policy makers can play a crucial role by

supporting national practice guidelines and other high quality evidences. Evidence based clinical guidelines should be adopted in Persian and distributed among all Iranian urologists.

Iranian urologists showed fractional understanding of the EBM terminology which is similar to another studies.<sup>(5,9,20)</sup> However the validation of self-rating skills is not explicit, but the good point is the interest of Iranian urologists for implementation of the practice guidelines, which makes the understanding of EBM terminology much easier.

## CONCLUSION

In summery the urologists have a positive attitude towards EBP. However, this study identified a need for spend adequate time to EBM in daily urology practice. In addition the health system should provide an easy access to evidence databases. Meanwhile evidence based workshops and pre-appraised recourses may play an important role.

## ACKNOWLEDGEMENTS

This study conducted by grant of Iranian center for evidence-based medicine and research vice chancellor of the Tabriz University of Medical Sciences. Their great help is appreciated. Also we would like to thank Dr. Jalil Hosseini the secretary general of Iranian Urology Association for his support.

## CONFLICT OF INTEREST

None declared.

## REFERENCES

1. Evidence-Based Medicine Working Group. Evidence-based medicine. A new approach to teaching the practice of medicine. *JAMA*. 1992;268:2420-5.
2. Shoja MM, Rashidi MR, Tubbs RS, Etemadi J, Abbasnejad F, Agutter PS. Legacy of Avicenna and evidence-based medicine. *Int J Cardiol*. 2011;150:243-6.
3. Widyahening IS, van der Heijden GJ, Moy FM, van der Graaf Y, Sastroasmoro S, Bulgiba A. From west to east; experience with adapting a curriculum in evidence-based medicine. *Perspect Med Educ*. 2012;1:249-261.

4. Kotur PF. Introduction of evidence-based medicine in undergraduate medical curriculum for development of professional competencies in medical students. *Curr Opin Anaesthesiol.* 2012;25:719-23.
5. Dahm P, Poolman RW, Bhandari M, et al. American Urological Association Membership. Perceptions and Competence in Evidence-Based Medicine: A Survey of the American Urological Association Membership. *J Urol.* 2009;181:767-77.
6. Scales CD Jr, Voils CI, Fesperman SF, et al. Barriers to the Practice of Evidence-Based Urology. *J Urol.* 2008;179:2345-50.
7. Roth K, Siemens DR. The status of evidence-based medicine education in urology residency. *Can Urol Assoc J.* 2010;4:114-20.
8. Dahm P, Preminger GM, Scales CD Jr, Fesperman SF, Yeung LL, Cohen MS. Evidence-based medicine training in residency: a survey of urology programme directors. *BJU Int.* 2009;103:290-3.
9. Sur RL, Scales CD Jr, Preminger GM, Dahm P. Evidence-Based Medicine: A Survey of American Urological Association Members. *J Urol.* 2006;176:1127-34.
10. Stapleton AM, Cuncins-Hearn A, Pinnock C. Attitudes to evidence-based practice in urology: results of a survey. *ANZ J Surg.* 2001;71:297-300.
11. Antes G, Sauerland S, Seiler CM. Evidence-based medicine - from best research evidence to a better surgical practice and health care. *Langenbecks Arch Surg.* 2006;391:61-7.
12. Bhandari M, Montori V, Devereaux PJ, Dosanjh S, Sprague S, Guyatt GH. Challenges to the practice of evidence-based medicine during residents' surgical training: a qualitative study using grounded theory. *Acad Med.* 2003;78:1183-90.
13. Mittal R, Perakath B. Evidence-based surgery: knowledge, attitudes, and perceived barriers among surgical trainees. *J Surg Educ.* 2010;67:278-82.
14. Mozafarpour S, Sadeghizadeh A, Kabiri P, Taheri H, Attaei M, Khalighinezhad N. Evidence-based medical practice in developing countries: the case study of Iran. *J Eval Clin Pract.* 2011;17:651-6.
15. Ahmadi-Abhari S, Soltani A, Hosseinpanah F. Knowledge and attitudes of trainee physicians regarding evidence-based medicine: a questionnaire survey in Tehran, Iran. *J Eval Clin Pract.* 2008;14:775-9.
16. Kouhpayehzadeh J, Baradaran H, Arabshahi KS, Knill-Jones R. Clinical teachers' attitudes toward the efficacy of evidence-based medicine workshop and self-reported ability in evidence-based practice in Iran. *J Contin Educ Health Prof.* 2006;26:210-4.
17. Hatmi ZN, Tahvildari S, Dabiran S, Soheili S, Sabouri Kashani A, Raznahan M. Teaching evidence-based medicine more effectively. *Acta Med Iran.* 2010;48:332-6.
18. Olfati N, Dastgiri S, Hajebrahimi S, Jahanbin H. Factors influencing evidence-based practice by Iranian general practitioners. *Int J Health Care Qual Assur.* 2013;26:360-74.
19. Ghanizadeh A, Imaniyeh M, Kadivar M. Knowledge and Attitude of Medical Students and Lecturers toward Evidence-Based Medicine: Evidence from Shiraz. *J Med Educ.* 2009;9:65-69.
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. Barghouti F, Halaseh L, Said T, Halim-Mousa A, Dabdoub A. Evidence-based medicine among Jordanian family physicians-Awareness, attitude, and knowledge. *Can Fam Physician.* 2009;55:e6-13.
22. Cabana MD, Rand CS, Powe NR, et al. Why don't physicians follow clinical practice guidelines? A framework for improvement. *JAMA.* 1999;282:1458-65.
23. Khader YS, Batayha W, Al-Omari M. The effect of evidence-based medicine (EBM) training seminars on the knowledge and attitudes of medical students towards EBM. *J Eval Clin Pract.* 2011;17:640-3.
24. Hajebrahimi S, Mostafaie A. How to teach evidence-based medicine to urologists. *Indian J Urol.* 2011;27:490-3.
25. Hider PN, Griffin G, Walker M, Coughlan E. The information-seeking behavior of clinical staff in a large health care organization. *J Med Libr Assoc.* 2009;97:47-50.
26. Lai NM, Nalliah S. Information-seeking practices of senior medical students: the impact of an evidence-based medicine training programme. *Educ Health (Abingdon).* 2010;23:151.
27. Young JM, Ward JE. General practitioners' use of evidence databases. *Med J Aust.* 1999;170:56-8.
28. Cullen RJ. In search of evidence: family practitioners' use of the Internet for clinical information. *J Med Libr Assoc.* 2002;90:370-9.
29. Sadeghi-Ghyassi F, Nosraty L, Gojazadeh M, Mostafaie A. Evidence databases application: Comparison of University faculties versus clinical residents in a developing country. *J Eval Clin Pract.* 2013;19:292-97.
30. Balas E. Information systems can prevent errors and improve quality. *J Am Med Inform Assoc.* 2001;8:398-99.