Perceptions, perceived barriers and practices of physicians’ towards Evidence-Based Medicine

Mukhtiar Baig¹, Zaid Sayedalamin², Osama Almouteri³, Mohammed Algarni⁴, Hassan Allam⁵

ABSTRACT

Objective: To investigate physicians’ perceptions and practices towards Evidence-Based Medicine (EBM) and physicians perceived barriers in one institute of Saudi Arabia.

Methods: One hundred seventeen practicing physicians at King Abdulaziz University Hospital, Jeddah were included in the study. A validated questionnaire was used for collecting data. The questionnaire had four parts and included questions addressing perceptions and practices about EBM as well as associated variables and barriers to practicing it.

Results: The majority of the respondents had a positive attitude toward EBM. Only 23.9% of participants reported that they are incorporating EBM into their practice. Knowledge about EBM databases was not good. The most common “regularly” read journal was the New England Journal of Medicine (31.6%), followed by the British Medical Journal (12.0%). Some of the respondents had an understanding and were able to explain to others the technical terms used in EBM such as odds ratio (19.7%), relative risk (22.2%), absolute risk (23.9%) and others. The major perceived barriers to practicing EBM was the lack of free personal time (27.4%), availability and access to information (27.4%), difficulties in involving in whole practice (12.0%) and lack of investment by health authorities (12.8%).

Conclusion: The attitude of the practicing doctors towards EBM was good, but knowledge and practice were not up to the mark.

KEY WORDS: Evidence Based Medicine, Physicians, Jeddah, Saudi Arabia.

do: http://dx.doi.org/10.12669/pjms.321.8841

How to cite this:
Baig M, Sayedalamin Z, Almouteri O, Algarni M, Allam H. Perceptions, perceived barriers and practices of physicians’ towards Evidence-Based Medicine. Pak J Med Sci. 2016;32(1):49-54. doi: http://dx.doi.org/10.12669/pjms.321.8841

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/3.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Evidence plays most important role in judgment and taking further action. The practice of Evidence-Based Medicine (EBM) keeps a doctor up-to-date about the advanced knowledge and by its application doctor’s clinical performance is increased.¹

EBM education has been integrated into medical curricula in western countries.² It generally focuses that trainees should be able to utilize “five-step model: ask, access, appraise, apply, and audit, and it emphasizes the translation of the critically appraised evidence into clinical practice”² Nevertheless, the transfer of evidence into practice is restricted because of several barriers faced by practicing physicians,³⁴ clinical trainers⁵
and trainees. Several studies are available in the literature, which emphasize the use of EBM in patient care and management and development of EBM guidelines.

Evidence-based medical practice ensures the correct and best possible patient care according to the international standards. EBM is important for all the practicing doctors in all specialties because it improves diagnosis, clinical judgment, and decision-making.

Generally, physicians treat their patients on the basis of the previous information and understanding they have learned and gained. However, in the medical field, there is exponential increase taking place in the knowledge, and it is a continuous process. Therefore, it has become obligatory for all practicing doctors to have up to date knowledge of new diseases and their management and knowledge of new diagnostic tools and techniques. It is mandatory for the physicians to continuously update his/her knowledge otherwise they will be unable to deliver the patient care services efficiently.

In the present era, the physicians are very busy in the hospitals and their private clinics, and they hardly have sufficient time to read or search some literature related to their field. Therefore, EBM is gaining more importance day by day.

Even though several similar studies have been published from the Kingdom but only a few studies have been published in the last five years. In the present digital era, several EBM resources are available on Smartphone devices, which are commonly used by the doctors, so we assumed that the knowledge and practice of EBM have been improved a lot. Therefore, the present study was designed to investigate current perceptions and practices of physicians’ towards EBM and their perceived barriers in a tertiary care hospital in Jeddah, Saudi Arabia. The results of the present study would help to develop the policy to update practicing doctors’ knowledge and use of EBM in patient care and for overcoming the barriers to practicing EBM.

METHODS

The present cross-sectional study was conducted among 117 practicing physicians at King Abdulaziz University Hospital, Jeddah, Saudi Arabia, in January - March 2015. The questionnaire was adopted from previously published studies. The questionnaire had four parts and included questions addressing perceptions and practices about EBM as well as associated variables and barriers to practicing it. The first part of the questionnaire included data on the personal characteristics of the physicians: age, gender, qualifications, nationality, and years since graduation and practicing experience. The second part addressed practicing characteristics of the physicians: ever-use of resources for clinical decision-making, use of journals and understanding of medical terms. The third part asked about attitudes towards EBM: welcoming current promotion of EBM, colleagues’ positive attitudes towards EBM, whether EBM is useful in daily management, whether EBM improves patient care and if EBM places additional demands on overloaded physicians. The last part included information about barriers to EBM faced by the physicians in obtaining and searching for data. The data was collected by a questionnaire, almost all the participants filled the questionnaire in the presence of the researcher, and the Ethical Approval Committee of the Faculty of Medicine, Rabigh, King Abdulaziz University, Jeddah, approved this study. The verbal informed consent was taken from all participants, and it was assured to all participants that their identity would not be disclosed. The frequency and percentages for categorical data and mean and standard deviation for age were calculated on SPSS 21.

RESULTS

A total of 117 physicians participated in this study, and the mean age of the respondents was 41.40±11.45 years. In the present study, 47.9% participants were males and 52.1% were females (Table-I). The majority of the respondents had a positive attitude toward EBM, 60.7% were welcoming, and 37.6% were extremely welcoming. The current promotion of EBM was welcomed almost by all the participants (98.3%). Only 23.9% of participants described the incorporation of EBM in their daily practice, 71.8 % mentioned they are doing it sometimes. Only 18.8% of the participants were extremely agreed on the usefulness of research finding in daily patients management (Table-II). The most common “regularly” read journal was the New England Journal of Medicine (31.6%), followed by the British Medical Journal (12.0%)
while the Middle East Medical Journal (3.4%) and Lancet (3.4%) were the least accessed (results are not shown in the table).

Some of the respondents had a better understanding and were able to explain to others the technical terms use in EBM such as systemic review, odds ratio, relative risk, and absolute risk, (28.2%), (19.7%), (22.2%) and (23.9%), respectively (Table-III). The major perceived barriers to practicing EBM was the lack of free personal time (27.4%), availability and access to information

Table-I: Characteristics of the participants.

| Variables               | N  | %   |
|-------------------------|----|-----|
| Gender                  |    |     |
| Male                    | 56 | 47.9|
| Female                  | 61 | 52.1|
| Age                     |    |     |
| 25-35 yrs               | 84 | 71.8|
| 36-45 yrs               | 22 | 18.8|
| 45-55 yrs               | 6  |  5.1|
| 55-65 yrs               | 5  |  4.3|
| Working position        |    |     |
| Consultant              | 22 | 18.8|
| Specialist              | 23 | 19.7|
| Resident                | 69 | 59.0|
| General practitioner    | 3  |  2.6|
| Year of working in KAUH |    |     |
| 1-5 yrs                 | 85 | 72.6|
| 6-10 yrs                | 18 | 15.4|
| 11-15 yrs               | 4  |  3.4|
| 16-20 yrs               | 4  |  3.4|
| > 21 yrs                | 6  |  5.1|
| Nationality             |    |     |
| Saudi                   | 81 | 69.2|
| Non-Saudi               | 36 | 30.8|

N= numbers of respondents, %= percentages, KAUH=King Abdulaziz University Hospital

Table-II: Current attitude towards EBM.

| Questions                                          | N  | %   |
|----------------------------------------------------|----|-----|
| Attitude towards the current promotion of EBM      |    |     |
| Extremely welcoming                                | 44 | 37.6|
| Welcoming                                          | 71 | 60.7|
| Unwelcoming                                        |  2 |  1.7|
| Usefulness of research finding in daily patients management |    |     |
| Extremely useful                                   | 22 | 18.8|
| Useful                                             | 84 | 71.8|
| Unuseful                                           | 11 |  9.4|
| General attitude towards EBM                       |    |     |
| Extremely welcoming                                | 57 | 48.7|
| Welcoming                                          | 46 | 39.3|
| Unwelcoming                                        | 10 |  8.5|
| Extremely unwelcoming                              |  4 |  3.4|
| Practicing of EBM improves patient care            |    |     |
| Strongly Agree                                     | 33 | 28.2|
| Agree                                              | 69 | 59.0|
| Disagree                                           | 15 | 12.8|
| EBM used in daily patients management              |    |     |
| Yes, always                                        | 28 | 23.9|
| Yes, Most of the time                              | 84 | 71.8|
| Yes, sometimes                                     |  5 |  4.3|
| Ever use of resources for clinical decision-making |    |     |
| Yes, always                                        | 10 |  8.5|
| Yes, Most of the time                              | 45 | 38.5|
| Yes, sometimes                                     | 59 | 50.4|
| Never                                              |  3 |  2.6|
| Awareness of databases relevant to EBM as EBM (from the BMJ publishing group) |    |     |
| Unaware                                            | 10 |  8.5|
| Aware but not used                                  | 41 | 35.0|
| Read                                               | 56 | 47.9|
| Used                                               | 10 |  8.5|

N= numbers of respondents, %= percentages.

Table-III: Understanding of technical terms used in EBM.

| Technical terms        | It would not be helpful for me to understand N(%) | Don’t understand but would like to N(%) | Some understanding N(%) | Understand and could Explain to others N(%) |
|------------------------|--------------------------------------------------|----------------------------------------|------------------------|--------------------------------------------|
| Odds Ratio             | 5(4.3)                                           | 38(32.5)                               | 51(43.6)               | 23(19.7)                                   |
| Relative Risk          | 7(6)                                              | 29(24.8)                               | 55(47)                 | 26(22.2)                                   |
| Absolute Risk          | 2(1.7)                                            | 32(27.4)                               | 55(47)                 | 28(23.9)                                   |
| Systemic Review        | 6(5.1)                                            | 24(20.5)                               | 54(46.2)               | 33(28.2)                                   |
| Meta-Analysis          | 6(5.1)                                            | 28(23.9)                               | 58(49.6)               | 25(21.4)                                   |
| Clinical Effectiveness | 7(6)                                              | 25(21.4)                               | 60(51.3)               | 25(21.4)                                   |
| Confidence Interval    | 8(6.8)                                            | 43(36.8)                               | 46(39.3)               | 20(17.1)                                   |
| Number needed to treat | 7(6)                                              | 40(34.2)                               | 51(43.6)               | 19(16.2)                                   |
| Heterogeneity          | 8(6.8)                                            | 46(39.3)                               | 46(39.3)               | 17(14.5)                                   |
| Publication Bias       | 10(8.5)                                           | 36(30.8)                               | 49(41.9)               | 22(18.8)                                   |

N= numbers of respondents, %= percentage.
DISCUSSION

Our results found the lack of awareness among practicing physicians about related databases, journals, and review publications. Several previous studies in Saudi Arabia have described similar findings\(^3\)\(^{11,12}\) and a study in Qatar also reported similar finding.\(^8\) Moreover, a study from Pakistan reported that 71% of the physicians and final year students were not aware of the EBM\(^13\) and a recent study among the dentist reported that only 23% were practicing Evidence-based Dentistry.\(^14\) Our results show that the lack of awareness among physicians is not changed with the time in spite of easy access to Evidence-Based Medicine literature.

There are several barriers to integration of EBM into clinical practice, which may create a gap between attitude and knowledge of physicians towards EBM. The present study found several perceived barrier to practice EBM and the major barriers were the lack of free personal time, lack of availability and access to information, insufficient investment by health authorities, and unmanageable to involve it in whole practice. Several other studies have reported the physicians’ lack of time is the major barrier to practicing EBM.\(^10,11\)

A recent study, reported a lack of EBM skills, lack of time, lack of resources in the hospital to search EBM resources, were the main perceived barrier.\(^3\) In KSA and Belgium, lack of EBM skills was the main barrier against practicing EBM followed by lack of time.\(^3,15\) In Jordan, Netherland, and the UK, lack of personal time was the main barrier against practicing EBM.\(^4,10,16\) This could be due to high flow of patients in the OPD especially in the government hospitals. However, the medical profession needs a lot of dedication and up to date knowledge to provide the best possible diagnostic and treatment care to the public. Incorrect decisions while treating patients can be very dangerous for patients’ health and life. Therefore, today’s doctor will have to be very careful, precise and accurate for diagnosing and treating the patients. A study suggested that commitment of the hospital administration to patronize EBM practice would be the first step to start implementing EBM in Kingdom hospitals.\(^3\)

It is reported that, “to optimize the transfer of evidence into patient care—through installing EBM education in practice such barriers need to be overcome”.\(^17\)

EBM literature indicates that most physicians’ have a heavy load of patients and therefore, have less time to avail and apply resources of EBM. It is suggested that teaching of EBM skills should be incorporated into the medical curriculum in Saudi Arabia. In the Kingdom, the resources are abundant, and there is need of streamlining of those resources.

In the present survey, less than the quarter participants were extremely agreed on the usefulness of research finding in daily patients management. The welcoming behavior of the respondent was similar to several studies.\(^7,9,10,18\) Our results indicate that most of the participants had an overall positive attitude towards EBM. These results are similar to another study from KSA,\(^3\) while few other studies found better positive attitude among physicians around the globe.\(^7,16\)

A study in Netherland reported a lack of positive attitude of the participants towards participating in research in general practice, and their knowledge and behavior towards EBM was not up to the mark.\(^19\) A recent study in India reported lack of awareness among postgraduate students about EBM.\(^20\)

In our study, some of the respondents had an understanding and were able to explain to others the basic terminology used in EBM, such as systemic review, odds ratio, relative risk, and absolute risk.

| Barriers                                | Frequency | Percent |
|-----------------------------------------|-----------|---------|
| Lack of personal time                   | 32        | 27.4    |
| No financial gain in using EBM          | 3         | 2.6     |
| Personal and organizational inertia     | 13        | 11.1    |
| Availability and access to information  | 32        | 27.4    |
| Lack of investment by health authorities| 15        | 12.8    |
| Lack of hard evidence                   | 6         | 5.1     |
| Difficulties in involving in whole practice | 14      | 12.0    |
| Too much evidence                       | 2         | 1.7     |
| **Total**                               | **117**   | **100.0** |
The certificate of CME should not be given at existing barriers, we have few suggestions. Improving physicians knowledge and overcoming the information and there is some missing link. For several steps taken by the SCFHS and easy access to year, there should be an online test regarding those according to their specialties. At the end of the EBM article monthly to the registered physicians and they should regularly send at least one recent should be established to control CME activities, A separate and independent CME department on a good performance in the test. should give some exceptional raise in their salaries with the passing of the test and for motivating few weeks, and CME certificate should be linked with the passing of the test and for motivating physicians, it would be a good step that authorities should give some exceptional raise in their salaries on a good performance in the test. A separate and independent CME department should be established to control CME activities, and they should regularly send at least one recent EBM article monthly to the registered physicians according to their specialties. At the end of the year, there should be an online test regarding those articles, which had been sent to them throughout the year, and fifty percent of their CME hours should be linked with physicians success in that test. This step would motivate physicians to study and understand recent advances in the field of medical sciences. Attending lectures or seminars do not have the long-term effects but if they would study and learn themselves and know that they would be assessed then they would try to understand and learn things in a different way.

There is a need to take the initiative to make EBM training mandatory at undergraduate level because today’s doctor is tomorrow’s practicing physician. It is already being taught globally in several medical school curriculums.21

Limitations: The present study has few limitations. First, it is a cross-sectional study and sample is not large enough. Second, all of the statements are physicians self-reported and self-judgment; therefore, the results cannot be generalized to all KAUH doctors. Furthermore, it’s one center study so results cannot be generalized.

CONCLUSION

Results of our study show that attitude of the practicing doctors towards EBM is good, but knowledge and practice are not up to the mark. There is a need for the intervention to provide better care to the patients’.

Grant Support & Financial Disclosures: None.

Declaration of interest: No interest to disclose.

REFERENCES

1. Ghojazadeh M, Azami-Aghdash S, Pournaghi Azar F, Fardid M, Mohseni M, Tahamtani T. A systematic review on barriers, facilities, knowledge and attitude toward evidence-based medicine in Iran. J Anil Res Clin Med. 2015;5(1):1-11. doi: 10.5681/jarcm.2015.001
2. Dawes M, Summerskill W, Glasziou P, Cartabelloita A, Martin J, Hopayian K, et al. Sicily statement on evidence-based practice. BMC Med Educ. 2005;5(1):1.
3. Attar AA, Khereldeen MM, Refaat B, Saleh HA. Knowledge and Attitude of Physicians toward Evidence-Based Medicine. Int J Pure Appl Sci Technol. 2014;21(2):17-27.
4. Zwolesman SE, van Dijk N, Te Pas, E., Wieringa-de Waard M. Barriers to the use of evidence-based medicine: knowledge and skills, attitude, and external factors. Persp Med Educ. 2013;2(1):4-13. doi: 10.1007/s40037-013-0039-2
5. Te Pas E, van Dijk N, Bartelink ME, Wieringa-de Waard M. Factors influencing the EBM behavior of GP trainers: a mixed method study. Med Teach. 2013;35(3):e990-e997. doi: 10.3109/0142159X.2012.733044.
6. van Dijk N, Hooft L. Wieringa-de Waard M. What are the barriers to residents’ practicing evidence-based medicine? A systematic review. Acad Med. 2010;85(7):1163-1170.
Mukhtiar Baig et al.

7. Risahmawati RR, Emura SS, Nishi TT, Koizumi SS. Japanese resident physicians' attitudes, knowledge, and perceived barriers on the practice of evidence based medicine: A survey. BMC Res Notes. 2011;4(1):374. doi:10.1186/1756-0500-4-

8. Bradt P, Moyer V. How to teach evidence-based medicine. Clinics Perinat. 2003;30(2):419-433.

9. Al-Kubaist 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):1189-1196.

10. McColl A. Performance indicators for primary care groups: an evidence based approach. Br Med J. 1998;317:1354-1360.

11. Al-Ansary LA, Khoja TA. The place of evidence based medicine among primary health care physicians in Riyadh region, Saudi Arabia. Family Practice. 2002;19:537-542.

12. Khoja TA, Al-Ansary LA. Attitudes to evidence-based medicine of primary care physicians in Asir region, Saudi Arabia. East Medit Heal J. 2007;13:2.

13. Irshad A, Ramzan M, Iqbal M. Assessment of knowledge about Evidence-based Medicine in medical students and doctors in a Pakistani health care setting. J Ayub Med Coll Abbottabad. 2010;22:126-129.

14. Shah SM, Saqib KM, Omer SA, Mirza D, Ali A. Awareness, knowledge & practice of Evidence-based Dentistry amongst dentists in Karachi. Pak Oral Dent J. 2015;35:262-263.

15. Heselmans A., Donceel P, Aertgeerts B, Van de Velde S, Ramaekers D. The attitude of Belgian social insurance physicians towards evidence-based practice and clinical practice guidelines. BMC Family Practice. 2009;10(1):64. doi:10.1186/1471-2296-10-64

16. Farhan B, Lana H, Tania S, Halim MA, Adel D. Evidence-based medicine among Jordanian family physicians: Awareness, attitude and knowledge. Canadian Family Physician. 2009;55:e6-13.

17. Oude Rengerink K, Thangaratinam S, Barnfield G, Suter K, Horvath AR, Walczak J, et al. How can we teach EBM in clinical practice? An analysis of barriers to implementation of on-the-job EBM teaching and learning. Med Teach. 2011;33(3):e125-130.

18. Ghahremanfard F, Nassaji M, Mirmohammadkhani M, Tanha A, Mosavi M, Ghaemi A, et al. Knowledge and attitude toward evidence-based medicine among medical students in Semnan, Iran. J Evidence-Based Med. 2014;7(1):32-37. doi:10.1111/jebm.12084

19. Scholten-Peeters GG, Beekman-Evers MS, van Boxel AC, van Hemert S, Paulis WD, van der Wouden JC, et al. Attitude, knowledge and behaviour towards evidence-based medicine of physical therapists, students, teachers and supervisors in the Netherlands: a survey. J Eval Clin Pract. 2013;19(4):598-606.

20. Pratap K, Padma TM, Sandhya MP, Kalyan VS, Anitha A, Bhargava A. Knowledge and attitude toward evidence-based dentistry among postgraduate students of a dental college in South India. Indian J Health Sci. 2014;7:88-91. doi:10.4103/2349-5006.148806

21. West CP, McDonald FS. Evaluation of a longitudinal medical school evidence-based medicine curriculum: a pilot study. J Gen Intern Med. 2008;23(7):1057-1059.

Authors’ Contribution:

MB: Designed the study, conducted data analysis and manuscript writing.

ZS: Conceived the idea, supervised the data collection, helped in data analysis and manuscript writing.

OA, MA, HA: Conducted the fieldwork and data entry on SPSS, helped in analysis and interpretation of data, writing the final manuscript.