A study of evidence-based medicine knowledge and use in general practitioners working in Ahvaz hospitals in 2016

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Abstract

Background and Objective: The need for accurate scientific evaluation of clinical performance was increasingly focused on by medical and sociological societies in the second half of the twentieth century. The present study was conducted with the aim of determining the knowledge level, attitude and performance of general practitioners working in hospitals in the city Ahwaz.

Methods: This study was a cross-sectional study conducted for exploring the knowledge and the use of evidence-based medicine in general practitioners working in hospitals in the city, Ahwaz. The sampling method was random and the sample size was estimated to be 123 individuals. The data were analyzed using the statistical software STATA version 14. Descriptive statistical methods and linear regression model were used for data analysis and the significance level in this study was considered to be 0.05.

Results: The results indicated that 93% of physicians participating in the study were familiar with EBM. In the process of practice, 18 person (14.7%) of the total doctors in prospectuses and clinical professor turned to EBM. 45 person (6/36%) of all doctors, search the Internet for information on clinical experience as the preferred method. 61% of doctors in practice refer to books and printed references and 9.4% used domestic and foreign articles and 56 (4.45%) of all participated in EBP sessions.

Conclusion: In this study, the knowledge, attitude and practice in relation to evidence-based medicine was at a low level. Overall, the findings can be explained that doctors working in hospitals and medical centers in Ahvaz make little use of their scientific resources to increase their scientific information, which is required by the authorities of Ahvaz University of Medical Sciences to promote scientific information for doctors such as launches of science centers in hospitals, workshops and scientific resources and to be familiar with latest references.

Key words: evidence-based medicine, general practitioners, hospital

Introduction

The need for accurate scientific evaluation of clinical performance was increasingly focused on by medical and sociological societies in the second half of the twentieth century(1,2). It is claimed that most of physicians' clinical actions are based not on evidence-based medicine but on tradition, newest experiences gained, the materials they have learned several years before in medical faculties and verbal evidence obtained from colleagues (3). In an applied definition, evidence based medicine (EBM) designates the accurate, explicit and informed use of the best existing evidence in decision-making on patient care individually (4). Therefore, EBM is focused on appropriate use of information (types and levels) for appropriate guidance of objectives and professional medical actions (2). This process is a basis for cautious clinical decision making (2, 5, 6). Therefore EBM requires specific, implicit and cautious use of information obtained from the combination of individual clinical skill and experience with the best evidence obtained from review exploration (2, 5, 6, 7). In a more comprehensive definition, EBM can be defined as an approach in decision making in which the physician, using the best existing scientific evidence and in consultation with the patient regarding option(s), makes a decision on the best balanced option that results in good treatment and positive outcomes. This definition pays attention to patient satisfaction and physician commitment. In this method the physician not only makes diagnostic and prognostic decisions, but also educates the patients regarding the therapeutic options and shares care management decision makings with them (2). This approach supports (1) respecting mutual independence of the patient and the physician, (2) the role of patients in informed decision making, and (3), a consultative technique in which the patients participate in their care (5, 6, 7, 8). Several studies have been conducted in Iran on physicians' view of EBM. In one study, Sadeghi et al (2011) explored clinical residents' knowledge of EBM at the Kerman University of Medical Science. The findings of this study indicated that 83.3 percent of the residents believed that the use of EBM is useful in patient care but only 5.3 percent stated that they had used this approach in their clinical work (10). The study by Gazrai et al (2014) on knowledge, attitude and practice of physicians related to EBM in Hakim and 22 Bahman Hospitals of Neyshabur indicated that 80.4 percent of the physicians viewed EBM as useful in the improvement of care and services provided to the patients and 47.8 percent of them would use this approach most often for making decisions related to patients. Considering the importance of the use of evidence-based medicine, the present study was conducted with the aim of determining the knowledge level, attitude and performance of general practitioners working in hospitals in the city of Ahvaz to determine the strengths and weaknesses of this group of individuals with regard to evidence-based medicine so that favorable planning can be done for meeting the information and developmental needs of this approach.

Method

This study was a cross-sectional study conducted for exploring the knowledge and the use of evidence-based medicine in general practitioners working in hospitals in the city of Ahvaz. The sampling method was random and the sample size was estimated to be 123 individuals. The permits for distribution of the questionnaires among the physicians at hospitals were obtained by obtaining the necessary permits for visiting the hospitals, coordination meetings with the heads and internal managers of the hospitals and giving them explanation regarding the study. The data collection tool was a researcher-made questionnaire. The validity of the questionnaire had been explored by some scholars. For this purpose, the questionnaires were given to 3 faculty members and the final version was prepared after making revisions and corrections. The reliability of the questionnaire, using Cronbach's alpha, was determined to be 0.83. The face validity of this study was verified by 3 experts and researchers in the domain of health services. The questionnaire had two sections; the first section consisted of questions on age, sex, expertise and practice history. The second section of the questionnaire consisted of questions on the role of EBM in daily patient treatments, the percentage of evidence-based activities, search in search engines, familiarity with evidence-based medicine, familiarity with resources such as PubMed and Cochrane and the mastery of some highly employed concepts and principles in epidemiology. The data were analyzed using the statistical software STATA version 14. Descriptive statistical methods and linear regression model were used for data analysis and the significance level in this study was considered to be 0.05.

Findings

In this study, 62.6% of those completing the questionnaires were male and 37.4% were female. 62.6 percent of the respondents had completed their education for becoming a general practitioner in Ahvaz, 22.9 percent had completed their studies in Tehran and 22.9% had completed their studies in other universities in Iran. Their mean practice experience was 8.1(±6.7) years, their mean study time on medicine was 3.2(±2.7) hours per day, the mean time since the end of their education was 8.3(±6.5) years and their mean age was 34(±9.7) years.

The results of this study indicate that 93% of the physicians participating in the study were familiar with EBM. About 70% of the individuals who completed the questionnaire were able to provide a definition and description of EBM. Regarding the impact of EBM on patient outcome, only 70% of the participants expressed their views; 87% of these individuals believed that the use of EBM improves patient outcome and 82% of these residents believed in the usefulness of evidence-based medicine. Regarding the negative impact of EBM on the prestige of medicine as a profession (respect and appearance), 7% agreed on its negative impact, believing that the use of EBM in clinical decision makings results in the reduction of respect and apparent status of medicine and should not be used.

In terms of the way of accessing internet, 95% of the respondents would gain access to internet at home and hospital. In the practice process, 18 physicians (14.7%) would refer to clinical professors and pamphlets and 45 physicians (36.6%) would prefer searching the web in order to gain knowledge of clinical experiences.

Table 1 shows the level of familiarity with some key concepts of EBM in the physicians studied
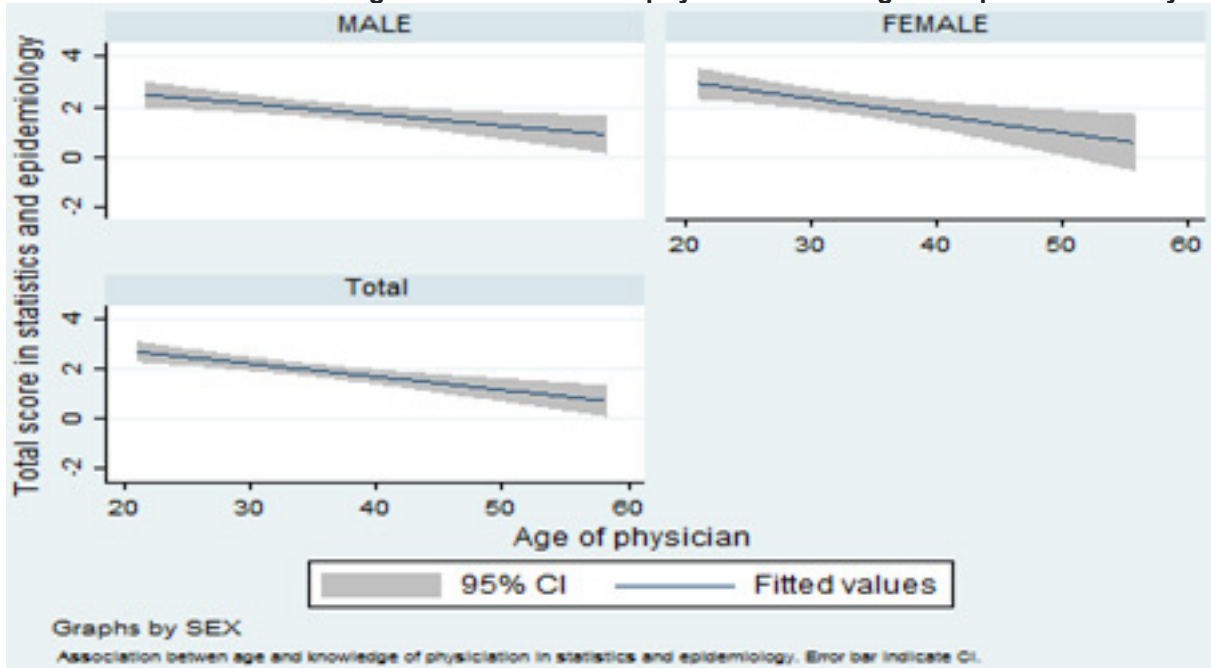
Table 1: the frequency distribution of the residents regarding familiarity with absolute risk and chance ratio

	I don't know but I am willing to know		I know to some extent		I know and I can explain to others	
	number	percent	number	percent	number	percent
Absolute risk	14	11.47	65	53.28	43	35.25
Relative risk	6	4.91	69	56.57	47	38.52
Systematic review	4	3.3	46	37.7	72	59
Like hood ratio	44	36.07	49	40.16	29	23.77
Confidence interval	52	42.63	54	44.26	16	13.11
Publication bias	43	35.25	47	38.52	32	26.23
Relative risk reduction	56	45.9	38	31.15	28	22.95

61% of the physicians would use printed books and resources, 4.9% would use national and international papers and 56 individuals (45.4%) participated in EBP course. Among the general practitioners, 48% were familiar with PubMed, 22% with Update and 4.9% with Cochrane.

Chart 1 shows the level of knowledge and use of EBM in physicians working in hospitals in the city of Ahvaz by age
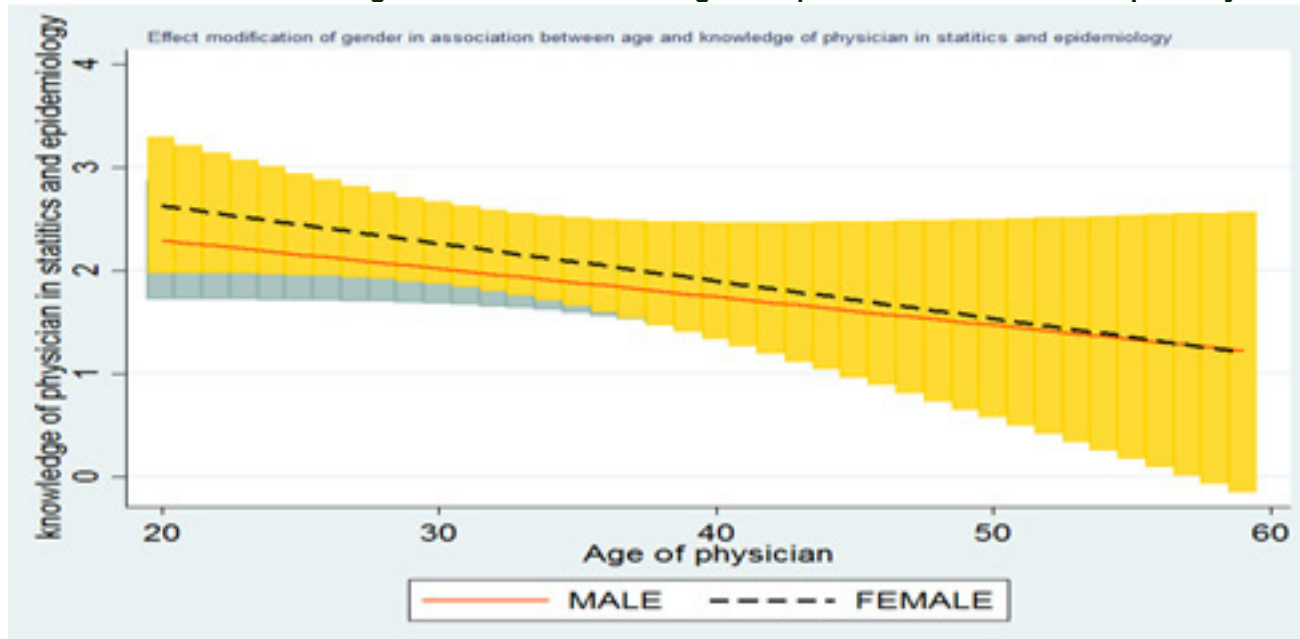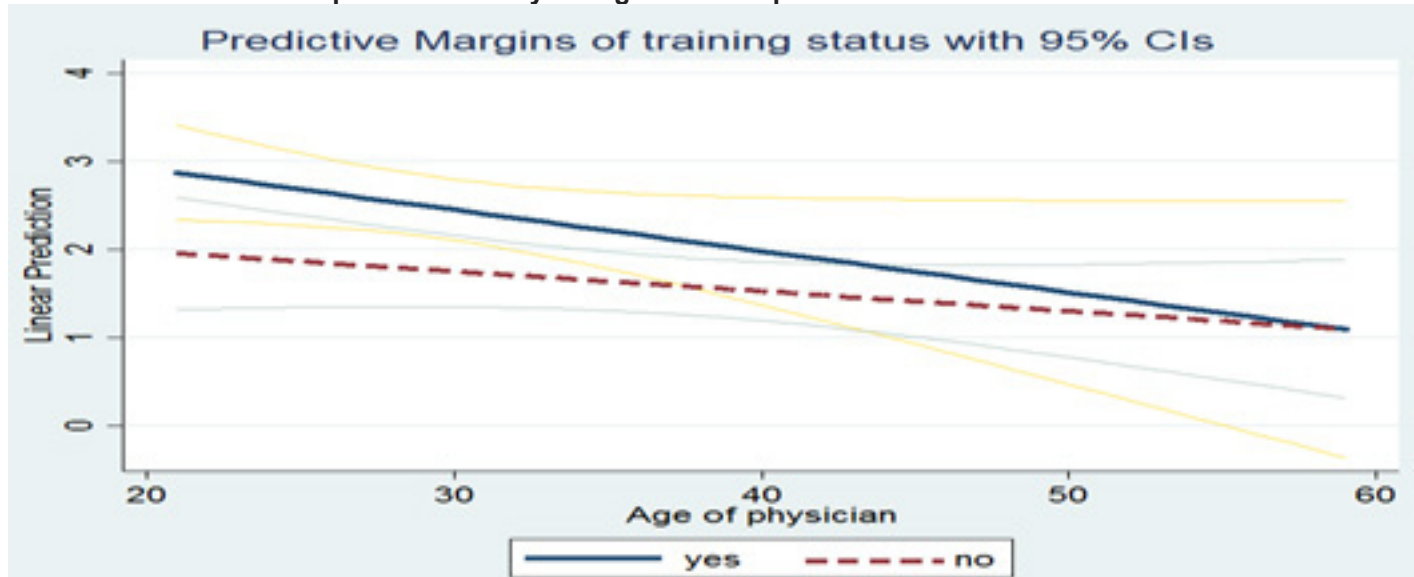
Chart 1: the level of knowledge and use of EBM in physicians working in hospitals in the city of Ahvaz by age

Association betwen age and knowledge of physiciation in statistics and epidemiology. Error bar indicate CI.

According to the above chart, individuals' knowledge is decreased with the increase of age in a way that highest level of knowledge is found in general practitioners ages 20-30 years and the lowest level of knowledge is found in general practitioners ages 50-60 years. In terms of the respondents' sex and knowledge, the knowledge of female physicians is higher than that of the male physicians. Chart 2 (next page) shows the level of knowledge and the use of EBM in general practitioners of Ahvaz hospitals by sex in 2016.

Chart 3 is related to EBM; the physicians were asked whether they had completed an EBM course and their answers were yes or no.

As age as an independent variable was found to impact the score of the physicians, the elements that have impact (synergistic effect or reducing effect) in this regard are explored. As seen in participation in EBM courses it has not been able to reduce the effect of age and duration from the education end and, unexpectedly, the age and knowledge score of physicians who have participated in these courses are significantly and inversely related.

Chart 2: the level of knowledge and the use of EBM in general practitioners of Ahvaz hospitals by sex in 2016

Chart 3: EBM course completion status by the age of the respondents

Discussion and Conclusion

A combination of clinical evidence and research evidence is called evidence based medicine. The decision making on patients may be based on old and outdated information, if this method is not used (13). A review of the literature, especially the experiences of foreign universities shows that, in recent years, EBM has become increasingly prevalent and different and diverse efforts are seen in different countries in this regard.

In this study the level of knowledge, attitude and performance in physicians was at a low level in relation to EBM and general practitioners had a low level of familiarity with EBM, assessment and mastery of use of EBM and assessment of mastery of some highly used principles and concepts in epidemiology. The results of this study are consistent with those of the study by Novack et al in which the level of knowledge, attitude and performance of the physicians with regard to EBM was found to be low (14).

In this study, in relation to the level of knowledge and use of EBM in general practitioners by age, the results indicated that the general practitioners in the age range of 20-30 years had the highest level of knowledge and those in the range age of 50-60 years had the lowest level of knowledge. Most general practitioners had had EBM courses and individuals with a lower age had completed more courses, compared with older general practitioners. The findings of this study are not consistent with those of the study by Al-Baghlie et al that showed that 46 percent of the physicians aged over 50 years, in comparison with 72 percent of the physicians below the age of 35, had more mastery of the use of EBM (15). And the findings are not consistent with the findings of the study by Sadeghi et al either as they found that the mastery of the physicians aged over 40 years was higher than the younger physicians (10).

With regard to familiarity with highly used concepts in statistics and epidemiology and the factors impacting them, the results indicated that the highest mean of physician

knowledge was related to the study of the effect of a new drug on blood pressure with 52 percent of correct answers and the lowest mean of their knowledge was related to a type of statistical test for comparing the prevalence of disease in men and women with 11.4 percent of correct answers. The findings of this study indicate that the physicians are more familiar with highly employed concepts in epidemiology than statistical method. In order to improve this, it is necessary to provide necessary education by statistics experts. The results of this study are consistent with the results of the study by Sadeghi et al on the level of knowledge, attitude and use of EBM in clinical residents at Kerman University of Medical Sciences which showed that the familiarity with statistical tests in scientific papers was less than 20 percent. The results are not consistent with the results of the study by Rouhani et al which suggested that the use of statistical methods for treatment of disease by physicians was 54 percent (10).

Regarding the performance of EBM, the physician had poor skills in the use of specialized search methods, familiarity with search engines and understanding of review papers and their performance in this regard was poor. The lack of investment and material and intellectual incentives for physicians as well as the lack of need for learning new skills are the main obstacles in employing EBM. Considering the results of this study, it is recommended that a short-term course on EBM be held each year for improving the statistical knowledge of physicians. In addition, if possible, an educational course should be created in the domain of EBM in universities of medical sciences. And the need for related workshops in all domains of therapy, diagnosis and care is felt. The limitations of this study included the individual characteristics, the different facility levels in different hospitals for accessing the web, crowdedness of hospitals and the lack of objective study of physician with regard to EBM.

Overall, the physicians working in hospitals and health centers in the city of Ahvaz do not use scientific resources for increasing their scientific knowledge much. Thus, it is necessary for the authorities of Ahvaz Jundishapur University of Medical Sciences to create research centers at hospitals, hold workshops for familiarity with scientific resources and the like for increasing the scientific information of physicians. Among the main causes of limited use of scientific resources by physicians can be heavy workload for general practitioners in public hospitals. Appropriate measure should be adopted to make the number of visits proportionate to the abilities of the general practitioners in order to solve this problem. In addition, as general practitioners need to have enough familiarity with websites, references and scientific indices in order to improve their technical knowledge on EBM, it is necessary to hold workshops once in a few years and when general practitioners begin working.

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