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Prioritizing the Factors Affecting Evidence-based Medicine in Physicians Affiliated to Iranian Health Insurance

Farnaz Mohamadhoseinzadeh Hashemi [1], Mehrnoosh Jafari [*1], Seyed Mojtaba Hosseini [1]

1. Department of Health Services Management, North Tehran Branch, Islamic Azad University, Tehran, Iran

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Corresponding Author:
Mehrnoosh Jafari
mehr_j134@yahoo.com

ABSTRACT

Introduction: The utilization of the medical research results is one of the most important indicators in the development of this profession, which provides effective care to patients and improves the quality of care. However, performing based on the evidence-based results has been unsuccessful in some cases. This study aimed to investigated and prioritize the factors affecting evidence-based medicine among physicians affiliated to Iranian Health insurance.

Methods: This descriptive cross-sectional study was conducted on 150 physicians affiliated to Iranian Health insurance in Tehran city in 2018. The simple random sampling method was used to collect the data. The data collection tool was a questionnaire containing of three parts: demographic questionnaire, Fonk (1995) evidence-based medical barriers questionnaire that included four domains and 25 questions, as well as a researcher-made questionnaire that prioritized the factors influencing evidence-based medicine implementation. Data were analyzed by SPSS version 21 and Expert Choice software using hierarchical analysis method.

Results: Most physicians were male (53.3%) and worked as an official employee. Among four dimensions, the highest mean and standard deviation was related to organizational impact, while the lowest was related to the quality of research and possible outcomes. Regarding the factors of organizational impacts, the highest weight or priority was attributed to the feeling of insufficient independence to change care methods with a weight of 0.259. Among the factors related to the research quality, the highest weight and priority was related to the factor of methodological defects in the research with a weight of 0.192. Considering the factors related to the skills of conducting research, the highest priority and weight was attributed to the lack of documentary evidence for the performance change with a weight of 0.320. Moreover, regarding the factors related to communication and access to the findings of the research, the highest weight and priority was in the factor of unavailability of actual articles (0.475).

Conclusion: The findings of this study showed that physicians considered problems and barriers related to organization, individual, and quality of research studies. Therefore, facilities should be created for using research findings as well as the conditions for updating physicians' knowledge, skills, and attitudes to use the research results.

Key words: Evidence-Based Medicine, Physicians, Insurance

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Introduction

Caring is the most important part of the physicians and nurses' performance, which constitute the largest professional members of the health team. The medical staff is responsible for the patients' care and should provide the safest and most appropriate care (1, 2). Application of evidence and research findings will provide effective care to patients, improve the quality of care, and make them to be responsible to individual performance (3). Application of the research results will not only improve the quality and standards of the services, but also provide personal and professional growth for them (4). Research in medical science is defined as application of the results in all aspects of a physician's work and is one of the most important indicators of development in the medical profession (5).

The results of the studies indicated that many organizational and human factors played role in the barriers to using research results in practice including inadequate time to read articles, heavy workload, insufficient experience, and lack of resources (6-8). Other studies, pointed out several barriers to using results in clinical practice. Therefore, investigation and identification of these factors is considered as the first step (9-11). However, few studies have been conducted on Evidence-based Practice (EBP) among physicians in this area.

Therefore, in care units, where the patient's condition is complicated and the patient is at high risk of mortality, showing the effectiveness of the care is of great importance. Application of the evidence-based medicine in Iran medical activities is in its early stages and application of research findings requires a proper understanding of available capabilities and identifying the main obstacles in using the evidence-based medicine (12).

Furthermore, identifying barriers and facilitators in using the evidence-based medicine is a key issue that should be taken into account by planners in order to present and apply the results of the clinical studies. Accordingly, this study was conducted to investigate and prioritize the barriers of the factors affecting the performance of the evidence-based medicine among physicians affiliated to Iranian Health insurance.

Methods

The present study was descriptive, exploratory, and cross-sectional. The study environment was the health organization of Tehran province and the research community consisted of all general practitioners, specialists, or sub-specialists, who had contracts with this organization in Tehran city. Accordingly, the research community included 4,200 physicians. To estimate the sample size, since the dependent variable of the study was expressed as a mean, the following formula was used.

$$n = \frac{z^2 \cdot s^2}{d^2}$$

In this formula, the confidence coefficient was 95%, d was 0.05, and Z was 1.96. Based on the previous studies (13), the standard deviation of evidence-based medical barriers was reported between 0.38 and 0.44. Therefore, the average value was set as the standard deviation in the above formula. Accordingly, the sample size was 188.

The data collection tool was a questionnaire consisting of three parts. The first part contained questions that examined the demographic characteristics of respondents such as age, gender, degree, marital status, service record in the department, position, etc. The second part of the questionnaire was divided into four fields and 25 questions including organizational effects (7 questions), research quality and its results (8 questions), research skills and beliefs (6 questions), and the relationship, and access to the research findings (4 questions). Furthermore, a 5-point Likert scale was provided for this questionnaire, so that the options ranged from totally agree to totally disagree. This questionnaire was based on the scale developed by Funk (14) and its validity and reliability (α = 0.89) was investigated by Shayestefard et al. The third part of the questionnaire was designed to prioritize the factors influencing the implementation of the evidence-based medicine. Moreover, the factors related to each four domains were prioritized using the Analytic Hierarchy Process (AHP) method and the pair comparison. Therefore, physicians were

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asked to compare each of the studied criteria with other criteria and to determine its significance related to other factors. The significance of the criteria was shown by scales of 'absolutely more important', 'very more important', 'more important', 'a little more important', and 'the same', with numbers 9, 7, 5, 3, and 1, respectively. The validity of Factors Prioritization Questionnaire was examined through content analysis method and Content Validity Ratio (CVR) calculation, so that the amount of this index for validity of the priority questionnaire was 80%. Given that the questionnaire was analyzed using Expert Choice software, the reliability level was considered as the inconsistency rate in which values less than 0.1 represent the reliability of the questionnaire.

The questionnaires were provided to physicians in Tehran province. A brief explanation was given about the objectives of the study before distributing the questionnaire and enough time was devoted to them to complete it. The questionnaires were provided to physicians at the clinics or in hospitals.

The data were analyzed by SPSS version 21, after completion and codification of the collected information. Furthermore, descriptive statistics, frequency, percentage, mean, and standard deviation were utilized in the analyses. To prioritize factors, Expert Choice software and the hierarchical analysis method were used.

Results

Out of 188 distributed questionnaires, 150 questionnaires were completed and returned (response rate = 79%). In terms of gender, most of the physicians were male (53.3%), married (75.3), and worked as an official employee. According to ANOVA test, research quality and possible results had a significant relationship with age and organizational effects had a significant relationship with education status. No significant relationship was observed between gender, marital status, and type of membership with all components (Table 1).

Table 1. The relationship between causes of not using research in clinical performance with demographic variables

Variable		Organizational effects		Research quality and possible results		Research skills		Relationship and access to research findings	
		Mean±SD	N (%)	Mean±SD	N (%)	Mean±SD	N (%)	Mean±SD	N (%)
Age	21-30	3.48±0.53	22(14.7)	3.03±0.7	22(14.7)	3.25±0.71	22(14.7)	3.27±0.82	22(14.7)
	31-40	3.52±0.67	45(30)	3.31±0.84	45(30)	3.39±0.71	45(30)	3.47±0.63	45(30)
	41-50	3.64±0.63	60(40)	3.53±0.65	60(40)	3.47±0.67	60(40)	3.51±0.7	60(40)
	51-60	3.67±0.62	23(15.3)	3.61±0.66	23(15.3)	3.66±0.63	23(15.3)	3.5±0.84	23(15.3)
P-value		0.60		0.01		0.21		0.60	
Level of education	General practitioner	3.53±0.62	61(40.7)	3.25±0.69	61(40.7)	3.44±0.68	61(40.7)	3.45±0.71	61(40.7)
	Specialist	3.43±0.57	55(36.7)	3.45±0.65	55(36.7)	3.36±0.66	55(36.7)	3.47±0.72	55(36.7)
	Sub-specialist	3.94±0.59	34(22.7)	3.61±0.89	34(22.7)	3.58±0.73	34(22.7)	3.47±0.75	34(22.7)
P-value		0.001		0.07		0.33		0.98	
Gender	Male	3.57±0.63	80(53.3)	3.76±0.79	80(53.3)	3.47±0.66	80(53.3)	3.41±0.76	80(53.3)
	Female	3.60±0.62	70(46.7)	3.44±0.67	70(46.7)	3.42±0.71	70(46.7)	3.52±0.67	70(46.7)
P-value		0.82		0.56		0.66		0.37	
Marital status	Single	3.61±0.39	37(24.7)	3.23±0.74	37(24.7)	3.36±0.61	37(24.7)	3.46±0.67	37(24.7)
	Married	3.58±0.68	113(75.3)	3.46±0.73	113(75.3)	3.47±0.71	113(75.3)	3.46±0.74	113(75.3)
P-value		0.82		0.10		0.42		0.99	
Type of membership	Temporary	3.53±0.6	18(12)	3.34±0.61	18(12)	3.48±0.52	18(12)	3.41±0.66	18(12)
	Official employee	3.63±0.65	67(44.7)	3.52±0.71	67(44.7)	3.5±0.69	67(44.7)	3.46±0.72	67(44.7)
	Contractual employee	3.55±0.61	65(43.3)	3.3±0.78	65(43.3)	3.37±0.73	65(43.3)	3.48±0.74	65(43.3)
P-value		0.72		0.1		0.54		0.94	

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Among the four studied components, the highest mean was related to the dimension of organizational effects, whereas, the lowest mean scores were related to the research quality and possible results dimensions (Table 2).

Table 2. Mean and standard deviation of the causes for not using research in clinical performance

Components	Mean	SD
Organizational effects	3.58	0.62
Research quality and possible results	3.4	0.73
Research skills	3.44	0.69
Relationship and access to research findings	3.46	0.72

Based on the hierarchical analysis method and paired comparisons in organizational factors, the highest weight or priority was due to lack of independence to change care methods with a weight of 0.259, while the lowest weight or priority was due to the unwillingness to carry out changes with a weight of 0.066 (Figure 1).

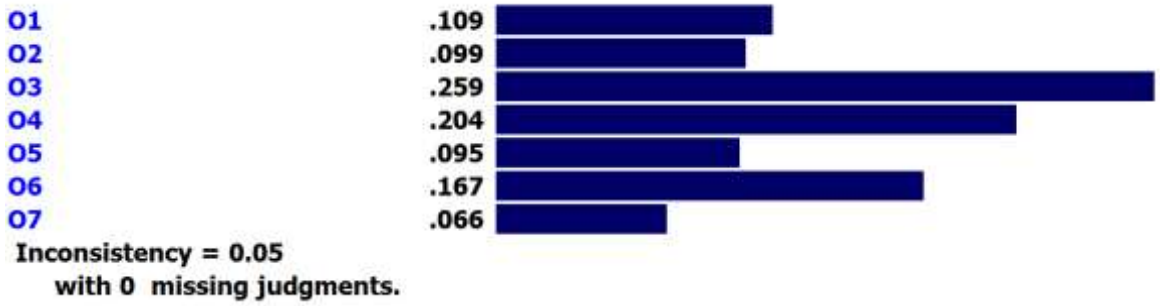

Figure 1. Prioritizing and weighting of reasons related to organizational factors

Among the factors related to the research quality and the probable results, the highest weight and priority was due to the presence of methodological defects in the research with a weight of 0.192 (Figure 2).

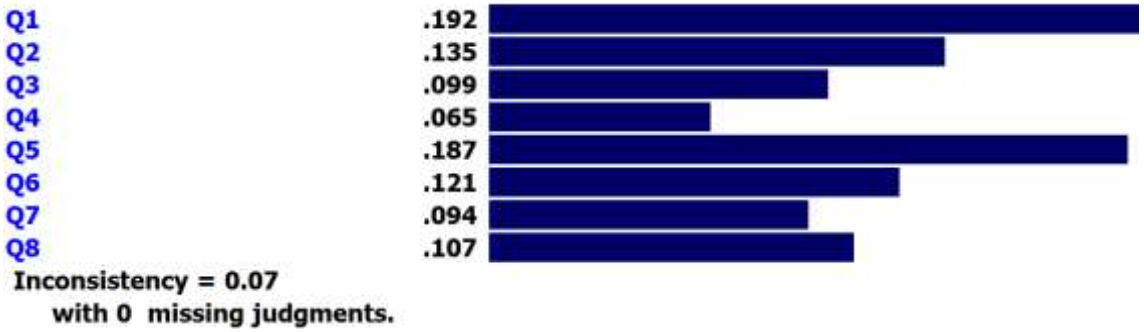

Figure 2. Prioritizing and weighting of reasons related to research quality and possible results

Among the factors related to research skills, the highest priority and weight was related to lack of documentary evidence for changing the performance with a weight of 0.320. The lowest priority and weight was observed in a large amount of information obtained from the research in the medical profession (0.093) (Figure 3).

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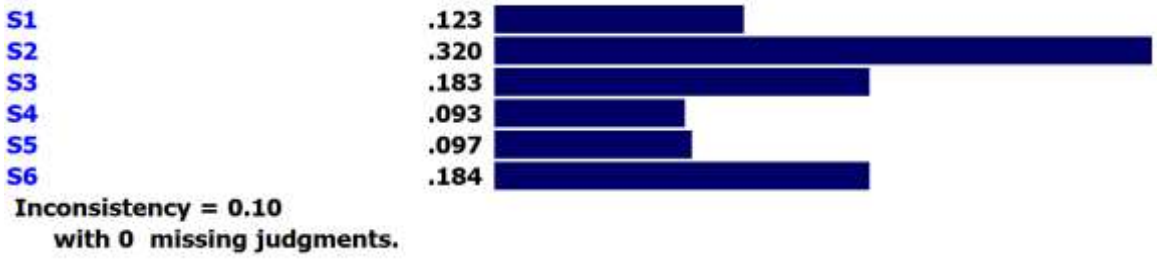

Figure 3. Prioritizing and weighting of reasons related to research skills

Regarding the factors related to the relationship between and access to the research findings, the highest weight and priority was observed in inaccessibility of actual articles (0.475) and the lowest weight and priority was related to the results' publication in most of the English studies (0.144) (Figure 4).

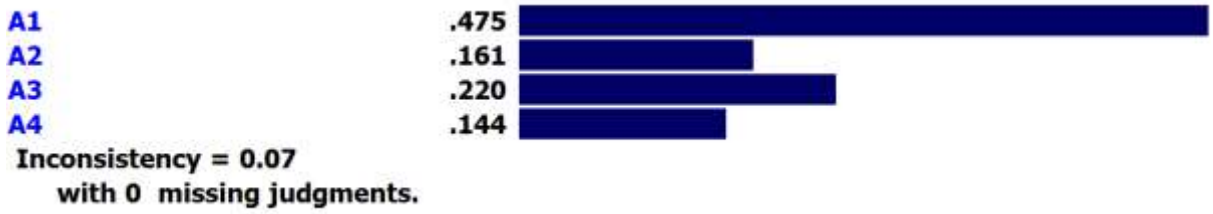

Figure 4. Prioritizing and weighting of reasons related to the relationship and access to research findings

Discussion

In the present study, 25 components, considered as the barriers to use research results, were examined from the physicians' viewpoint. The results showed that from the studied physicians' point of view, the most important barriers to practical application of the results were: lack of authority and power to change the care methods and patterns, lack of enough implementation facilities, methodology defects, physician's low trust in the research results, lack of time to implement new ideas, and lack of access to articles. Tan et al. (2012) conducted a study in Turkey and said that lack of time in the workplace to implement new ideas, lack of willingness and power to change the care methods, and lack of time to read research studies were the most important barriers perceived by the studied participants in using the results of a research, respectively (15). In Oh's study (2008), factors such as lack of research implications transparency, lack of time in the workplace to implement new ideas, lack of documentary evidence based on changes in therapeutic procedures, inadequate facilities for conducting research in practice, and lack of time to study research studies had the highest scores as the barriers to using research in critical care units in Korea (16). In a study by Chien et al. (2013), lack of time in the workplace to implement new ideas, inadequate research facilities, as well as lack of sufficient time and knowledge to read research studies (17) were identified as the most important barriers to research in China. The factors mentioned in these studies are consistent with the results of the present study. However, the most important barrier to use the results of the research in practice is lack of time, motivation, facilities, and authorities' support. Most physicians believe that heavy and intensive working does not provide enough time and energy to implement new ideas. They also mentioned that they did not have enough authority to manage their time. Considering the

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heavy workload and organizational climate of departments in Iran, physicians prefer to take care of the patient in a routine and traditional framework. Therefore, they devote most of their time to other routine care activities and feel that they do not have enough time to implement new ideas.

Kadu et al. (2015) (18) in a systematic study and Bahadori et al. (2016) in Iran (19) stated that although lack of motivation, lack of trust in results, low staffing skills, as well as lack of time to read the research and implement new ideas were not the main barriers, they affected using the research results. The discrepancies in the present results can be explained in the context of each organizational environment and strategies for providing patients' care. Lack of sufficient facilities for conducting research, low personal profits for physicians in research, and lack of authority and power to change the methods and care patterns were also among the important barriers to the study. Various studies indicated lack of power to change the caregiving methods and inadequate facilities of conducting research studies as the barriers to research. Components such as lack of awareness from the research value in clinical practice, unwillingness to make changes, and lack of documentary evidence for changing did not receive significant attention from the studied physicians' viewpoint. In Oh's (2008) study, barriers such as lack of self-profit in conducting a research and worthless research studies had the least importance (16). Bahadori et al. (2016) reported barriers such as the unreliability of the research results and lack of relatedness of the research to the physicians' performance (19). Chien (2013) indicated that the ineffectiveness of research had the least importance (17) .

Limitations: Self-report questionnaire was used to obtain the data, which can introduce information biases. In addition, selection of physicians from one insurance firm was considered as another limitation.

Conclusion

The studied physicians believed that the most important barriers that prevented them from using clinical research studies are lack of adequate skills, lack of support from authorities and colleagues, lack of time to read research studies, lack of time to implement new ideas, lack of implementation facilities, and lack of authority and power to change the methods and care patterns. Therefore, based on the results of this research and other studies, it is necessary to pay close attention to the development of strategies by health care centers to overcome these barriers.

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Conflict of Interest

The authors declare no conflict of interests for this study.

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