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Original Article

Investigating the Attitude and Self-Reported Performance of Family Physicians Regarding Evidence-Based Medicine: A Survey Study

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Abstract

Background: Evidence-based medicine (EBM) combines the best research evidence, clinical experience, and patient demands. Its mission is to collect documented and up-to-date information and knowledge about specific clinical conditions to help physicians. The present study aimed to investigate the attitude and self-reported performance of family physicians toward EBM in Hamadan province.

Methods: This study was conducted using a cross-sectional descriptive method and questionnaires. There were 200 family physicians in Hamadan province, of whom 132 were randomly selected using Cochran's formula to participate in the study. After collecting and categorizing the questionnaires, they were entered into SPSS software and analyzed using an independent t-test, the analysis of variance, and the Pearson test.

Results: The research findings revealed that the level of attitude and self-expression of performance of most family physicians was low to moderate. More precisely, there was a negative linear correlation between "age and attitude", "age and self-expression of performance", and "service history and attitude", so the level of attitude decreased with increasing age and service history.

Conclusion: The findings demonstrated that the attitude and self-expression of family physicians in the studied community were generally low to moderate, highlighting the necessity of holding educational and empowerment programs for family physicians to improve the quality of provided services and promote the health of the community.

Keywords: Evidence-based medicine, Family physicians, Attitude, Self-expression

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Introduction

Medicine is "the intelligent, reliable, and accurate use of the best available scientific evidence to guide clinical decision-making (1). This research has been recognized as the dominant method in clinical medicine for the past two decades and has been widely disseminated among the medical community (2). More than thirty years have passed since the launch of evidence-based medicine (EBM) at McMaster University in Canada. Based on research in various areas of care and health, especially in the scientific fields and applications, more than 30 years have passed since this medicine was introduced as clinical medicine. The emergence of this information has been due to the gap between medical research and clinical practice. In fact, EBM is considered a new approach to clinical decision-making that exists to combine evidence from research, clinical skills, and values and choices from border areas (3). This new technology acts as an alternative to traditional science-based methods. It draws on evidence, such as high-quality controlled clinical trials, clinical skills, and attention to the needs and desires of interested individuals (4). Evidence-based clinical practices can lead to changes in clinical decision-making, improve outcomes, promote patient health, and reduce disagreements by providing a

single, appropriate guide for discussion and decision-making between patients and clinicians (5).

EBM has significantly impacted medical education and led to the formation of the Cochrane Collaboration. Evidence from clinical trials is summarized in this collaboration. Other benefits of this collaboration include the development of methodological standards for clinical research and the improvement of clinical practice guidelines (6-8). EBM was initially introduced for use by professionals with extensive clinical skills and experience (1,3). The main goal of this project was to enable physicians to access information from evidence-based research and studies and apply it to specific cases. Review health professionals are expected to base their practice on strong principles, which implies that they should be able to retrieve, evaluate, and apply the necessary evidence. However, it is still unclear to what extent physicians may use medicine for everyday decision-making (3,9).

The integration of EBM into clinical practice has become a cornerstone of contemporary healthcare, particularly in the realm of family medicine, where practitioners are often the first point of contact for patients (10,11). Family physicians play a critical role in managing a wide array of health conditions, making their attitudes toward EBM and knowledge of EBM pivotal in ensuring high-quality patient care (12). Despite the recognized importance of EBM, there remains a substantial gap in understanding how family physicians perceive and implement these principles in their daily practice. Research indicates that many family physicians possess a foundational knowledge of EBM; however, their application of EBM principles is often inconsistent (13). Factors influencing this discrepancy include access to resources, time constraints, and varying levels of training in EBM methodologies (14,15). Moreover, a lack of confidence in interpreting scientific literature and integrating it into clinical decision-making has been reported, suggesting a need for targeted educational interventions (16,17). The existing literature highlights a concerning trend; while family physicians are generally willing to engage with EBM, their self-reported practices often do not align with evidence-based guidelines (18). This inconsistency raises questions about the effectiveness of current training programs and the availability of supportive resources necessary for family physicians to adopt EBM fully (19). Furthermore, the research gap about specific attitudes and self-declaration of practice among family physicians demonstrates a need for comprehensive studies that explore these dynamics in greater detail (20). In light of these findings, this article aims to examine family physicians' awareness, knowledge, and attitudes regarding EBM while identifying the existing research gaps that hinder the effective implementation of EBM principles in practice. By synthesizing recent studies and highlighting areas for further investigation, this research seeks to contribute to the ongoing discourse surrounding EBM in family medicine and inform future educational strategies aimed at enhancing the practice of evidence-based care (12,13).

Despite this important issue, the study will examine the attitudes and self-reported performance of family physicians working in Hamadan University of Medical Sciences' comprehensive health service centers about EBM.

Methods

This descriptive-analytical and cross-sectional study was conducted in Hamadan province, and the required data were collected in 2020.

The target population included family physicians in Hamadan province. Cochran's formula, a statistical tool that helps determine the sample size needed for a study with a specific level of confidence and margin of error, was used as the sample collection method. Overall, 200 family physicians in Hamadan province were selected, and using Cochran's formula, the sample size was determined to be 132 people.

The data collection tool was a standard questionnaire with an internal consistency reliability of more than 70.7 for all questions (10). Based on the content validity ratio of 0.798 and the content validity index of the content validity of the construct, 97.71% of the variance was explained by attitude and performance. The data collection process was meticulously planned and executed; after coordination with the provincial health center expansion unit (University of Medical Sciences Health Office) during joint meetings with all family physicians, the questionnaires were distributed after a comprehensive explanation of the study's purpose.

The questionnaire consisted of four sections of information received from respondents. Part one was related to demographic information, including gender, age, service history, and place of service of employees.

Other sections included questions on attitude and self-declaration of performance, whose responses were on a Likert-type scale. The collected data were meticulously entered into SPSS software (version 21) and underwent analysis.

The questionnaire information consisted of quantitative and qualitative options, and codes were considered to record qualitative options.

An independent t-test and one-way analysis of variance were used to examine the relationship between attitude and self-declaration of performance with quantitative variables. Pearson correlation coefficient analysis was utilized to examine the relationship between attitude and self-declaration of performance with qualitative variables.

The level of attitude from the perspective of family physicians in comprehensive health service centers was obtained and analyzed by calculating the average response to specific questions for each dimension.

Excluding demographic questions, the amount of missing data was 4.35%, which was resolved. For this purpose, the missing data estimate was considered the median of the available data (number 3), and the problem of non-response was resolved. This method was chosen to

ensure that the missing data did not significantly affect the overall results of the study.

Results

The frequency distribution of the study population by gender is presented in Table 1. Based on the results, a notable gender distribution was observed in the study population, with 61.4% of the participating physicians being women and 34.7% men. Despite potential missing information, the data underscore the higher representation of women, who constitute 61.4% of the study population.

The 26–30 age group included a significant portion of the age distribution of individuals (37.21%), and the age group of 31–35 accounted for 20.45%. The other two age groups had a frequency of 11.36%. The majority of the study population (78.5%) was yet to undergo a crucial EBM course or workshop, underscoring the urgent need for such training. A substantial percentage of the study population (67.7%) had the advantage of Internet access at their workplace, opening up vast opportunities for digital learning and research. A significant percentage of the study population (67.7%) had access to the Internet at their workplace.

Reference books were the most relied upon sources of information, with 43.9% of the study population favoring them, closely followed by reference books with abridged translations include the (%43.9).

Table 1. Demographic Information of 132 Participants

Qualitative Variable	Category	No. (%)
Gender	Male	45 (34.1)
	Female	81 (61.4)
	Missing data	6 (4.5)
Age	20–25	11 (8.3)
	26–30	49 (37.21)
	31–35	27 (20.45)
	36–40	15 (11.36)
	41–45	15 (11.36)
	46–50	14 (10.6)
	Missing data	1 (0.7)
EBM workshop	Yes	26 (19.7)
	No	95 (72)
	Missing data	11 (0.8)
Internet access at work	Yes	84 (63.6)
	No	40 (30.3)
	Missing data	8 (6.1)
Information sources	Textbooks	21 (15.9)
	Internet search	12 (9.09)
	Medical journals	4 (3.03)
	Reference books	58 (43.9)
	Abridged translation of reference books	19 (14.3)
	Missing data	18 (13.6)
Quantitative Variable	**Scale**	**Mean (SD)**
Work experience	Month	6.57 ± 6.18

Note. EBM: Evidence-based medicine; SD: Standard deviation.

The distribution of service experience of the study subjects ranged from 1 month (0.083 years) to 25 years. Based on the findings, individuals with less experience were more frequent in the study.

Table 2 provides the results related to the relationship between demographic characteristics and attitude and performance self-statement. The *P* values related to 'age and attitude' as well as 'age and performance self-statement' were smaller than $\alpha = 0.05$, indicating a significant correlation. This finding is not to be understated, as it rejects the null hypothesis at the 5% error level, demonstrating a linear relationship between age and attitude level ($P = 0.02$) and age and performance self-statement level ($P = 0.27$). Furthermore, there was a statistically significant relationship between work experience and attitude level ($P = 0.02$), underscoring the weight of work experience in shaping attitudes.

The results (Table 3) revealed a significant negative linear correlation between age and attitude and age and self-expression, representing that as individuals age, their level of self-expression tends to decrease, a finding of considerable importance in understanding age-related behaviors.

It is worth noting that the correlation between age and attitude, which is equal to 0.2, indicates the absence of a significant relationship. This negligible correlation provides reassurance about the robustness of our research, as it suggests that age does not play a major role in shaping attitudes.

Interestingly, the correlation between service history and attitude was linear but deviated in the opposite direction. This implies that with increasing service history, the level of self-expression tends to decrease, a finding that challenges conventional wisdom.

The weak relationship between attitude and service history is shown by the correlation coefficient of -0.21.

Discussion

EBM, a progressive approach to enhancing clinical decision-making, treatment, and patient care, holds the

Table 2. Relationship Between Demographic Characteristics With Attitude and Self-Reported Performance

Items	*P* Value		
	Age	Gender	Work Experience
Attitude self-assessment	0.02	0.66	0.02
Skill self-assessment	0.27	0.35	0.19

Table 3. Correlation Between Demographic Characteristics With Attitude and Self-Reported Performance

Items	Correlation	
	Age	Work Experience
Attitude self-assessment	0.1	-0.13
Skill self-assessment	-0.01	-0.11

promise of significantly improving health outcomes (21).

Considering that individuals need up-to-date and new information in their relationships with patients and their correct diagnosis and treatment, physicians should be more familiar with EBM than others.

They should also consider techniques for using new and valid findings in patient management and their daily activities. Family physicians, as the first point of contact in comprehensive health service centers, play a pivotal role in the healthcare system, making their understanding and application of EBM crucial. This cross-sectional study investigated the level of attitude and self-expression of family physicians in comprehensive health service centers in Hamedan with the principles of EBM and its application in their daily practice.

The findings showed that family physicians have a low attitude toward EBM, which may lead to suboptimal patient care and treatment outcomes.

Based on the results, a significant percentage of the research population (78.5%) did not complete an EBM course or workshop. This study's findings underscore the urgent need for educational programs and increased awareness of EBM among family physicians. The impact of these findings on the quality of health services and the overall improvement of healthcare in the community cannot be overstated, highlighting the urgency of addressing this issue.

Therefore, it is suggested that policymakers and educational institutions pay more attention to developing and implementing appropriate educational courses in this area (22,23). Increasing access to evidence-based medical resources and educational programs will not only allow family physicians to make more informed decisions about patient care but also significantly improve health outcomes in communities (24). Family physicians need to invest in education and continuous professional development because it is essential (25). Investing in education and continuing education for family physicians is critical to ensure that they are familiar with the latest evidence-based practices and ultimately help foster a culture of excellence in patient care (26). According to the findings, family physicians' attitudes toward EBM decrease with age. These results highlight the importance of ongoing educational programs and continuous professional development for family physicians to maintain and improve the quality of medical and health services (27), which is consistent with the results of studies by Naimi et al (28), Albart and Looi (29), Alruwaili et al (30), and Hussein et al (13).

The findings indicated that family physicians' attitudes toward EBM, particularly their openness to new research, their trust in scientific evidence, and their willingness to change established practices, decrease with age. These results can be used as a basis for designing educational programs and continuous professional development for family physicians. This will not only improve the quality of healthcare services but also address the educational needs of this age group, providing them with the resources and tools they need to strengthen their capabilities in utilizing scientific evidence in clinical decision-making. Implementing targeted educational programs focusing on evidence-based methods not only helps increase the attitudes of family physicians but ultimately leads to improved patient outcomes and health system efficiency. These results are in line with the findings of Hussein et al (13).

The results showed that there was no significant difference between the average attitudes and performance of women and men, and their attitudes were at a moderate-to-low level. The results of this study conform to those of Naimi et al (28) and Bin Briek et al (31). According to research performed by Naimi et al, there is a clear opportunity for improvement in the performance and understanding of EBM among physicians at Ahvaz University of Medical Sciences clinics. The majority of physicians in the study by Bin Briek et al in Yemen and among medical professionals working in government hospitals and health centers had a positive attitude and a low attitude toward EBM (31), which is in conformity with the results of this study.

The research results demonstrated that the attitude and self-reported performance of family physicians in Hamedan province toward EBM were low. Therefore, there is an urgent need for training programs and workshops for these physicians in teaching hospitals. These measures can help increase their attitude and provide a tool to improve their performance so that they can facilitate the treatment of patients in the community by using EBM. It is also crucial that medical students receive comprehensive education about EBM and learn about this topic as a fundamental part of their curriculum.

Conclusion

Given the research results and the low level of attitude and self-expression of family physicians toward EBM, it is clear that this issue can have a detrimental impact on the quality of medical services and the health of the community. Accordingly, the necessity of organizing educational programs and workshops for family physicians, with a strong emphasis on their continuous education, cannot be overstated.

There is significant potential for improvement in family physicians' performance. Hospitals can play a crucial role in expanding their understanding in this field and providing them with tools to enhance their performance and attitude. This can lead to more effective patient treatment through using EBM and databases, such as Cochrane, instilling a sense of hope and optimism in the audience.

Authors' Contribution

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Competing Interests
The authors declare that they have no conflict of interests.

Consent for Publication
Not applicable.

Data Availability Statement
All data generated or analyzed during this study are included in this article.

Ethical Approval
The study was conducted according to the Declaration of Helsinki and approved by the Ethics Committee of Hamadan University of Medical Sciences (ethics approval No. IR.REC.1395.233). Verbal informed consent was obtained from all the participants and approved by the Ethics Committee of Hamadan University of Medical Sciences.

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