

Effect of evidence-based approach on the customer orientation (Case study: Physicians Health Centers in Isfahan province in 2014)

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Abstract

Introduction: The aim of this study was to investigate the evidence-based approach to customer-orientation care physicians in the province, them being the target group.

Research method: This is a descriptive-analytical and cross-sectional design, which was performed in 2014. The statistical society in this study comprised 212 doctors in the health centers. The employed physicians selected 200 patients through a simple random sampling. The measurement tool was the researcher made questionnaire whose validity and reliability were confirmed. In this study, the structural equation modeling and partial least square method were used to test the assumptions and fitness model and the structural model was fit as acceptable.

Findings: The results indicated four cases related to attitude, a behavior which was intended to treat; common sources of evidence were used to retrieve information according to the best evidence and the lack of barriers to the performance of customer orientation approach of evidence-based effects were significant. Two dimensions of the doctor's knowledge, the lack of barriers, and the finding of the evidence of dimensions regarding the customer orientation approach were based on evidence that had no significant effect.

Conclusion: The use of evidence-based education not only improved knowledge, attitude, and skills of the doctors, but also enabled them to respond to the needs of clients in making better decisions and providing a higher quality of care, by reducing treatment costs for patients, attracting patients' satisfaction, and ultimately having a better efficacy for patients and organizations.

Keywords: approach based on evidence, customer orientation, knowledge management, medicine based on evidence

Introduction

Since the first contact doctors are in health centers, therefore, patients in public centers are considered one of the most important groups in providing a key role in the use of the evidence-based approach in their daily activities and clinical decision-making [1]. Combining the best scientific evidence, needs and values, the environment, corporate resources, as well as human resources, can provide appropriate evidence-based decisions [2]. The job of the employees' is the involvement and training in providing effective services to the needs of the customer satisfaction [3].

Theoretical literature research:

A. Evidence Based practice: Evidence can be information or facts that show the definition of default or a belief that is true, valid, or not valid (Concise Oxford). The amount of funds required for the regional evidence is relevant and specific issues should also be. UNFPA is an evidence-based approach that is defined as a "systematic effort to provide the best empirical evidence in decision-making for planning, implementation, and monitoring and evaluation program" [4]. David Lawrence Sackett

described evidence-based medicine as an integrating clinical expertise with the best clinical evidence from systematic research available to the best possible management of foreign patients [5]. Firstly, the need to learn the skills of **Evidence-Based Medicine (EBM)** is represented by a very high volume of medical information and is rapidly increasing. Secondly, physicians may need less time to devote to study. In addition, studies showed that the efficiency workshops are common, so they need to learn methods in order to continue education during lifetime [6].

B. Customer orientation: with the competition in the global arena and in this period, the correct use of resources is regarded as one of the most challenging elements of management and the relationships between the employees and customers are regarded as one of the organization's resources. The organizations should try new concepts of modern marketing, which means the art of finding, keeping and developing customer needs and new demands created for customers in order to avoid the exercise of power, but also using participation and understanding to manage relationships with customers and provide them to ensure their profitability [7].

Managers should find the time and tools available to their employees to an evidence-based approach in their daily activities application. Managers should be able to structure and culture the evidence-based practice in their own organization [8]. Customer relationship management by using information technology and organizational changes tries to re-engineer processes and turn them into customer-centric processes [9].

C. The relationship between the evidence-based practice and the customer orientation on knowledge management strategy, total quality management and customer focus have a special place. The purpose of this strategy is to achieve a superior service that seeks to create a culture of customer orientation with the identification of the needs and expectations of customers and measure their satisfaction to the knowledge, attitudes, skills and behaviors that the employees nurture to achieve its ultimate goal of customer orientation [10].

By providing the necessary resources and evidence, removing barriers to employment, promoting the culture of participation and sharing of staff, staff training encourages and motivates doctors to switch to the use of **EBM**, to take the appropriate decisions in the treatment; the same customer satisfaction being the ultimate goal which can be achieved. Therefore, the main hypothesis of this study was determined: an evidence-based approach of the doctors on the effective customer orientation.

History of research

The results of the study of Heiwe et al. in the field of attitudes, knowledge and behavior of health care professionals, showed that the groups have a positive attitude towards the evidence-based practice in their decision making and clinical practice. The majority of them had the power to analyze and evaluate the existing evidence, guidelines, and instructions that were available. Most of the obstacles regarding their performance problems were expressed. Finally, the researcher supported the Chief Executive Officer concerning the factors affecting the evidence-based performance, evidence-based and outcome performance and satisfaction of patients and contributed to productivity [11].

In a qualitative study performed in the field of evidence-based understanding of nurses, it was concluded that the evidence from research was used in nursing. Nurses needed to understand the value and importance of the research and the application of its results was difficult, the addition to the emphasis on the concept of evidence-based care being suggested, as well as the production of methods, recovery and the evaluation of research evidence in nursing education programs. Incentive policies for nurses with evidence-based

practice, the improvement of their knowledge, skills, and the quality of care should also be considered [12].

In a study of Kermanshahi and Parvinian, the nurses' views on barriers of implementing evidence-based care were examined and the results showed that nurses had barriers in implementing the evidence-based care for management and included the insufficient number of staff and managers' awareness of the importance of evidence-based care. In the personal-care dimension, the lack of enough time of nurses to study the research was one of the most important barriers [13].

The results of the study of Salehi and Abedi regarding the implementation of evidence-based performance on the nurses showed that in terms of performance in the field of evidence-based nursing, the majority of the staff working in this area was weak, the researchers were motivated and the organization supported this weakness [14].

In a semi-experimental study entitled "The impact of evidence-based clinical training on the quality of the patient care and satisfaction". It was found that the evidence-based education was used to promote knowledge, skills and enhance the quality of patient care [15].

There are a few studies performed on the physicians' knowledge about EBM in the Middle East. In 2004, a study of AL Baghil and AL Almaie showed that only 40 percent of Saudi Arabia primary health care physicians have learnt something regarding **EBM** [16].

In another study conducted in the UK, it was reported that 40% of the general physicians had information about the search methods based on evidence and 71 percent of the time, they lacked the most important factor in the decision of not having to use evidence-based medicine [17].

Other studies showed that physicians need a clear understanding of the terms used in evidence-based medicine. In a study in the field of awareness and the use of evidence-based medicine among residents of Shiraz University of Medical Sciences conducted by Amini et al., it was shown that residents with positive attitudes toward medicine based on evidence and the access to Internet for clinical decision making, practically did not use evidence-based medicine and were unaware of specific websites. The reason may be that they were not trained in this field [18].

A study of Dalheim et al. on the factors affecting the development of evidence-based practice of working nurses concluded that the nurses and colleagues' experience was used in evidence-based practice. However, because of the obstacles, evidence from research was rarely used. The most important obstacles in Evidence-Based Practice lacked time and skills to search, records management, research, nursing age, and a number of years as far as the working nurses were concerned [19].

In a study of MacDermid and Graham on a group of practicing midwifery profession after a period of training in EBP, it was found that participants in the study were extremely excited regarding the EBP, at the same time believing that this approach enhanced the critical thinking skills, increased confidence and a better care of the patients [20].

In a study of Morris and Maynard in the field of evidence-based care in midwifery, it was proved that the overall objective was the one of empowering the evidence-based care in identifying and understanding the needs of patients, clients, and midwifery practitioners, in decision-making and the application of scientific findings in the final midwifery care [21].

Table 1. Benefits of using evidence-based practice based on qualitative and quantitative results of studies from 2000 to 2010

Evidence-Based practice Benefits	Row
Improving the quality of services and health care and finding the need [4-22]	1
Increasing public participation and teamwork and brainstorming skills among staff [3-25]	2
In response to the client's decision-making skills and power to serve the needs of clients and evidence into the best performance [3-22]	3
Reduce the gap between theory courses passed in the university and practical work [23]	4
Increase the power of critical thinking and problem-solving skills and services (knowledge, skills and performance) [3-22]	5
Reduce the cost of treatment, reduce the length of hospital stay (time management) [4,26]	6
Increased patient satisfaction regarding the care [24]	7
Increased sense of confidence and flexibility in staff [25,27]	8
Increase accountability of employees [22,24,26]	9
Increase learning skills, use of information technology, especially the use of the Internet [22,28]	10
Skills increase training and transfer of scientific information to clients [23]	11

According to rows 1,3,6,7 and 11 in Table 1, it can be said that in previous investigations, the relationship between evidence-based and customer-oriented approach was proven, but none of them specifically investigated the relationship between these two variables. Therefore, we considered the causal relationship between the two variables in this study.

Research hypotheses

Hypothesis 1: Attitudes of physicians in the field of evidence-based approach, which have a significant positive effect on customer satisfaction.

Hypothesis 2: The behavior of physicians based on evidence-based approach, which has a significant positive effect on customer satisfaction.

Hypothesis 3: The lack of barriers in investigating and finding evidence of a significant positive effect on customer satisfaction.

Hypothesis 4: Getting familiar with the evidence-based approach to customer focus and a significant positive effect.

Hypothesis 5: Lack of barriers in the performance of the best evidence of a significant positive effect on customer satisfaction.

Hypothesis 6: Sources of evidence commonly used to retrieve customer information have a significant positive effect.

Conceptual research model:

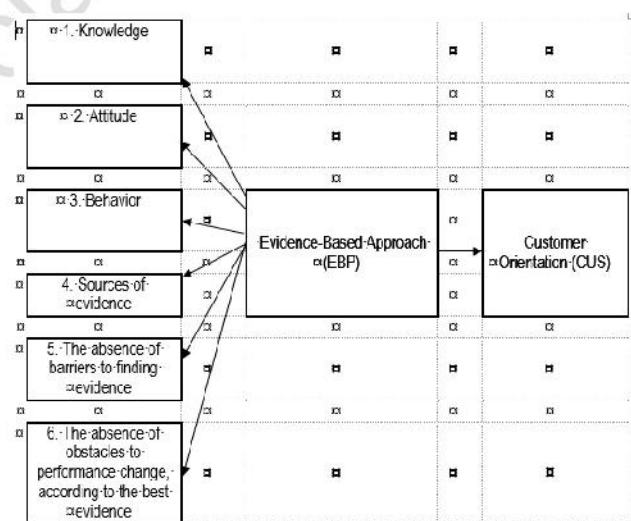


Fig. 1 Effect of an evidence-based approach to customer service (Case study: medical health centers in Isfahan)

Research method

In terms of nature and purpose, the present study is functional and in terms of method of data collection, it represents a descriptive survey of the relationship between the causal variables. Doctors working in the health centers of the province 1 and 2 represented the statistical society studied in this research. The sample was random, the sampling method giving the

minimum requirements for 200 physicians working in health centers 1 and 2 of Isfahan province. 200 questionnaires were distributed between respondents and the same 200 questionnaires were suitable for analysis, identifying a numerous statistical analysis and evidence-based practice to measure the customer satisfaction questionnaire prepared. The first part of the questionnaire included demographic characteristics and the second part evidence-based practice, which consisted of 30 questions. The evidence-based practice consisted of six levels, attitudes and behavioral intention (5 items),

behavior of physicians on evidence-based practice (5 items), lack of barriers regarding the performance based on the best evidence (4 items), knowledge (4 items), lack of barriers regarding investigation and evidence (5 questions), sources of evidence common for data recovery (4 items). The third part of the questionnaire was related to customer questions (3 items) [1-30].

In **Table 2**, the number of measures designed to measure variables, Cronbach's alpha coefficient, and reliability of combined variables were presented.

Table 2. Cronbach's alpha coefficient and reliability of combined research variables

Reliability	Cronbach alpha	code	Variable
0.909	0.875	ATI	Attitude toward evidence-based practice
0.785	0.676	BHV	Behavioral intention and behavior
0.799	0.663	EVI	No obstacles regarding the investigation and evidence
0.821	0.736	KNO	Introduction to Evidence-Based Practice
0.818	0.717	PER	No barriers related to change based on the best evidence
0.761	0.616	RES	Evidence sources commonly used for data recovery
0.713	0.604	CUS	Customer Orientation

As it could be observed from all the variables in this study, Cronbach's alpha coefficient was of at least 0.6, 0.65, remarkably higher. To assess the validity (convergent), the exploratory factor analysis was used for factor analysis, index KMO, Bartlett test, and convergent validity [4-32].

Table 3. Number of measures designed to assess the validity of each variable

Sampling criteria KMO	Approximate χ^2 value	Freedom degree	Bartlett significance	Factorial loading	Items	Name of variable
0.837	545.506	15	0.000	0.674	ATI1	Attitude toward evidence-based practice
				0.634	ATI2	
				0.784	ATI3	
				0.692	ATI4	
				0.520	ATI5	
0.676	212.308	15	0.000	0.3	BHV1	Behavioral intention and behavior
				0.350	BHV2	
				0.579	BHV4	
				0.454	BHV5	
				0.408	BHV6	
0.613	210.630	6	0.000	0.662	PER1	Lack of barrier relates to change based on the best evidence
				0.661	PER2	
				0.482	PER3	
				0.377	PER4	
0.664	210.226	6	0.000	0.375	KNO1	Introduction to Evidence Based Practice
				0.597	KNO2	
				0.602	KNO3	
				0.678	KNO4	
				0.330	EVI2	
				0.425	EVI3	
				0.506	EVI4	
				0.353	EVI5	
0.609	264.172	28	0.000	0.481	RES1	Evidence sources commonly used for data recovery
				0.426	RES2	
				0.456	RES4	
				0.335	RES5	

Sampling criteria KMO	Approximate χ^2 value	Freedom degree	Bartlet significance	Factorial loading	Items	Name of variable
0.553	21.386	3	0.000	0.373	CUS1	Customer Orientation
				0.581	CUS2	
				0.421	CUS3	

Bartlett and KMO test results showed that the index values were desirable. KMO standard variable rate of more than 0.5 and less than 0.05 for the CLS was also determined by Bartlett test. Items that amounted less than 0.03 and which were not compatible with other items were excluded from the analysis. To check the validity of the

(credit) converge in the PLS model, the mean-variance extracted (AVE) was used. As it can be seen in **Table 4** below, all the average variance extracted was of more than 0.5, therefore, an appropriate model of convergent validity was highlighted [33-35].

Table 4. Convergent validity of the constructs of research variables

RES	PER	KNO	EVI	CUS	BHV	ATI	validity
0.654	0.637	0.548	0.502	0.557	0.532	0.667	Convergent validity (AVE) Average of extracted variance

To assess the reliability of each of the markers in the latent variable PLS model, the load factor of each indicator was determined. The value of each hidden variable load factor markers had to be greater than or equal to 3.0.

Table 5. The value of latent variables load factor markers

P values	CUS	RES	PER	KNO	EVI	BHV	ATI	Variable marker	Row
<0.05							0.840	ATI1	1
<0.05							0.797	ATI2	2
<0.05							0.904	ATI3	3
<0.05							0.824	ATI4	4
<0.05							0.707	ATI5	5
<0.05						0.477		BHV1	6
<0.005						0.543		BHV2	7
<0.005						0.844		BHV4	8
<0.005						0.693		BHV5	9
<0.005						0.666		BHV6	10
<0.05					0.625			EVI2	11
<0.05					0.796			EVI3	12
<0.05					0.775			EVI4	13
<0.05					0.620			EVI6	14
<0.05				0.752				KNO1	15
<0.05				0.854				KNO2	16
<0.05				0.622				KNO3	17
<0.05				0.684				KNO4	18
<0.05			0.882					PER1	19
<0.05			0.818					PER2	20
<0.05			0.610					PER3	21
<0.05			0.576					PER4	22
<0.05		0.774						RES1	23
<0.05		0.6						RES2	24
<0.05		0.801						RES4	25
<0.05		0.465						RES5	26
<0.05	0.555							CUS1	27
<0.05	0.758							CUS2	28
<0.05	0.697							CUS3	29

As it could be seen in the above table, all the measures related to the latent variable that housed more than 40%, were marked as shaded. Therefore, the model could measure latent variables that were indicators of reliability in the field. All the amounts of the indicators were likely to be less than 0.05 and the validity of research tools were appropriate.

Findings

100 respondents in the Health Center of Isfahan city [1] and 100 [2] of the city health center were employed (95 males and 105 females). 193 respondents' education level was Ph.D. and 7 were experts. Regarding the position, the organization was responsible for 63 health centers, 120 health care centers and 17 family physicians. Fig. 2 showed the relationship between the 2 variables, the path coefficient of performance evidence-based approach and customer of 0.303 respectively.

Given the probability (p-value), it had a less significant level of 0.05. In fact, a significant number was out of range (1.96, -1.96) (Fig. 3). It can be concluded that the path coefficients were significant, at a significant level of 0.05, meaning that the approach of evidence-based practice had a significant impact on customer satisfaction. With respect to the second hypothesis of the study, the coefficient of correlation between the two variables of tracking customer behavior and behavioral intention was calculated to be of 0.510 (Fig. 1).

Given the probability (p-value), it had a less significant level of 0.05. In fact, a significant number was out of range (1.96, -1.96) (Fig. 3). It can be concluded that the path coefficients were significant, at a significant level of 0.05, meaning that the purpose and behavior of the customer impact were significant. In connection with the third hypothesis study, the coefficient of correlation was calculated between the two variables, no obstacles being encountered on the path of finding evidence and customer orientation and being of -0.067 (Fig. 2).

Given the probability (p-value), it had a significant level of more than 0.05. In fact, a significant number was in the range (1.96, -1.96) (Fig. 3). It can be concluded that this was not a significant factor (0.05) path error, meaning the lack of barriers regarding investigation and finding no evidence of a significant impact on customer orientation. In connection with the fourth research hypothesis, the path coefficient was calculated for the relationship between two variables Introduction to Evidence Based Practice and customer orientation and its value was -0.072 (Fig. 2).

Given the probability (p-value), it had a significant level of more than 0.05. In fact, a significant number was in the range (1.96, -1.96) (Fig. 2). It can be concluded that this was not a significant factor (0.05) path at a significant level; meaning that the familiarity with the practice of evidence-based customer orientation did not have a significant effect. In connection with the fifth research hypothesis, the path coefficient for the

relationship between two variables was based on the best evidence and the lack of barriers to changing customer orientation, being of 0.496 (Fig. 2).

Given the probability (p-value), it had a less significant level of 0.05. In fact, a significant number was out of range (1.96, -1.96) (Fig. 3). It can be concluded that the path coefficients were significant, having errors of 0.05; meaning a lack of barriers in investigating and finding evidence of a significant impact on customer orientation. In connection with the sixth research hypothesis, the path coefficient for the relationship between two variables common sources of evidence used to retrieve customer orientation information, was 0.016 [2].

Given the probability (p-value), it had a significant level of more than 0.05. In fact, a significant number was out of range (1.96, -1.96) (Fig. 3). It can be concluded that the path coefficients were significant; having errors of 0.05, meaning that the most common sources of evidence used to retrieve customer orientation data had a significant influence.

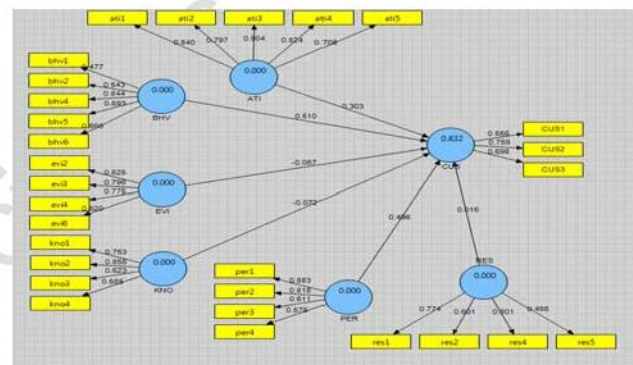


Fig. 2 The research model in the standard estimate

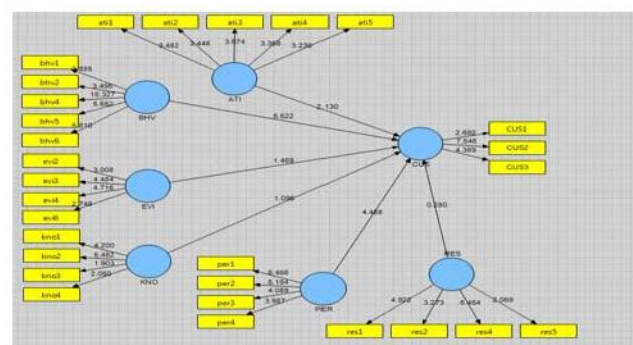


Fig. 3 The research model in significant mode parameters

Assessment of the indices model fitting

To check the quality or reliability of the model, which included a credit check share index and index credit check, redundancy was used. In Table 8, the values of each of the indicators of the independent

variables were affiliated mediators. As it can be seen, the indicators were positive and higher than zero.

Table 7. Share indices (CV Com) and redundant index (CV Red)

CV Red	CV Com	Variable
0.504	0.504	Attitude toward evidence-based practice
0.174	0.174	Behavioral intention and behavior
0.185	0.185	No obstacles to the investigation and evidence
0.247	0.247	Introduction to Evidence Based Practice
0.265	0.265	No barriers related to change based on the best evidence
0.135	0.135	Evidence sources commonly used for data recovery
0.376	0.035	Customer orientation

Discussion and Conclusion

According to the results of the study, a hypothesis of a causal relationship between the attitudes of the physicians on evidence-based practice was accepted by the customer orientation. The study results showed that physicians have a positive attitude towards evidence-based practice and believe in the physicians' submission of evidence-based practice in high-quality services to provide better and faster health services, giving the best response to the needs of the recipients of health care services and satisfaction customer orientation impact that made up the health care system. The results of the previous research also indirectly suggested that this approach was based on evidence-based practice to have an impact on the customer orientation [11,18].

According to the second hypothesis regarding the impact of behavioral intention, the behavior based on evidence-based practice to customer orientation was evident, the physicians were studied, and the behaviors were associated with evidence-based practice in order to give the best answer to the clients. These behaviors included problem-solving skills, filling gaps in professional performance by using the best evidence, using guidelines and instructions in response to the client needs and skills of the professional practice due to new evidence. As a result, the number of previous researches also indirectly referred to the issue of the treatment based on evidence-based practice which affected the customer orientation [11,15].

Amini and colleagues research results were different from the findings of the current study, and, the researchers concluded that the residents in the study had a positive attitude towards evidence-based medicine and the access to the Internet for clinical decision making, practically of evidence-based medicine, and, they did not use it because they did not consider a systematic training in this field [18].

The results of the study of Salehi and colleagues regarding the implementation of evidence-based performance on the nurses, were different from the

findings of this study. In terms of performance, the majority of staff in the field of evidence-based nursing was weak, the research staff was motivated, and the organization supported this weakness [14].

Unlike the model that predicted a causal relationship, there was no research that examined the related barriers and found no evidence of measures rejected by the customer orientation. With regard to the measures used in this section, such as having enough time to find the evidence needed to have the confidence, having the necessary skills in the field of evidence-based practice, facilities, proficiency in English, it could be concluded that the existence of these barriers would be the best evidence that doctors can access. A large number of respondents and lack of time was the most important factor in the decision of not using evidence-based medicine. In 2004, Hanson and colleagues noted that only 1.9 percent of the physicians and other doctors use specific methods to find the evidence they need to learn to evaluate the evidence [36].

The previous researches noted other similar obstacles such as lack of time, lack of skills to search, the age of employees, level of experience, lack of a systematic training, their motivation and lack of an organizational support personnel [11,13,17,19].

Unlike the model, a causal relationship between practitioners in the field of evidence-based practice and customer orientation was observed and the fourth hypothesis was rejected. The study results also showed that the awareness of target groups used the low knowledge of employees in different job categories in this area [2,8-16].

It can be concluded that physicians studied the need for spending programs and training courses based on approach evidences, the importance of the work and being familiar with the advantages of using evidence-based approach. Therefore, it was recommended through workshops and educational meetings and the creation of an interaction with the care centers based on evidence and past experience with regard to the facilities given to this important issue. According to the findings of the fifth research hypothesis, the absence of barriers in the performance of the best evidence was accepted by the customer. According to the results and outcome of Heiwe et al. study, it can be stated that despite some obstacles, such as the lack of time, the approach based on evidence in the clinical practice, the conclusion that the best evidence will be able to take better decisions and provide a better quality of care was reached [11].

The sixth hypothesis, regarding the existence of a positive relationship between the sources of evidence commonly used to retrieve the information on the customer, was accepted. The provision of the evidence resources needed such as manuals and instructions for access to the Internet, studying the data, training courses and intelligence information from colleagues shared a very important role in the use of evidence-based

approach in the study group. The organization will provide the conditions and resources so that employees are directed towards the use of this approach.

The results of this study showed that there is a significant causal relationship between the dimensions such as "attitude", "intent to conduct and behavior", "lack of barriers to change based on the best evidence", "the current evidence sources used for information retrieval", and the evidence-based approach to "customer" in the group. However, there was no significant causal relationship between the 2 dimensions, "lack of barriers and finding the evidence" and "Introduction to Evidence Based Practice", the evidence-based approach to "customer orientation" in the group of physicians studied. By providing the necessary training so that the staff could provide the facilities to encourage and motivate the staff, the use of evidence-based approach could be used and it

would facilitate a greater efficiency and ultimately improve the organization and attract customers and clients. As physicians base their actions on the scientific evidence in the health area, they will be able to make better decisions and provide a higher quality of care, so as to reduce the cost of treatment, patients gaining the satisfaction and the effectiveness of the organization. The results of this research showed that physicians make an evidence-based, customer-focused approach of the organization.

Recommendations

In the end, it was suggested that similar studies in different working groups in the health care system, were appropriate and compatible with the circumstances in our country, the development of care being based on the achieved evidence-based practice.

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