Factors Affecting the Adoption of Evidence-based Management among U.S. Healthcare Administrators

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The purpose of this study was to identify factors which may either hinder or facilitate the adoption of EBMgt among U.S. healthcare administrators. A cross-sectional, descriptive, non-experimental study was conducted, using a two-stage cluster sampling. The study results showed a statistically significant relationship between the availability of access to EBMgt information resources and intention to the adoption of EBMgt $r_s = .490$, $n = 152$, $p < .001$ *and creating an EBMgt culture and intention* $r_s = .544$, $n = 152$, $p < .001$. *The top four barriers to the adoption of EBMgt were lack of time, lack of training, unfamiliarity with EBMgt, and lack of skills in appraising quality of evidence. It is suggested that creating an EBMgt culture, providing organizational support, access to EBMgt information resources, and training facilitate the adoption of EBMgt practice among the U.S. healthcare leaders.*

INTRODUCTION

The concept of evidence-based management (EBMgt) is originally derived from Evidence-based Medicine (EBM). Physicians and health care providers are generally positive toward the practice of EBM (Amin et al., 2007; Bartelt et al., 2011; Heiwe et al., 2011; Jette et al., 2003; Shuval et al., 2007). Over the last two decades, more healthcare professionals have taken an evidence-based approach to make clinical decisions in order to improve quality of patient care. Healthcare administrators usually support EBM, but it has been slow to adopt EBMgt in their own professional practice (Walshe & Rundall, 2001; Arndt & Bigelow, 2009).

Healthcare leaders' decisions in healthcare management have a significant impact on the effectiveness of quality patient care delivery and the success of healthcare organizations. Scholars in healthcare management stated that an evidence-based practice would improve the competence of the decision-makers and their motivation to use more scientific methods in healthcare management decision-

making (Kovner & Rundall, 2006; Pfeffer & Sutton, 2006). Shortell et al. (2007) stated that consistent, sustainable improvement in the quality of care received in the U.S. is unlikely to be achieved if EBM and EBMgt are not linked together within effective organizational contexts. A literature review indicated that EBMgt has not been widely used by healthcare administrators in the U.S. (Kovner & Rundall, 2006; Arndt & Bigelow 2009; Walshe & Rundall, 2001) and that healthcare administrators do not often consult research evidence in management decision-making (Dopson et al., 2013). Population health, patient safety, quality of care and access, widespread demands for reducing the cost of care, and value-based purchasing all require healthcare administrators to make decisions based on the best available scientific evidence in conjunction with their professional wisdom, organizational data and stakeholders' values (Shortell, Rundall, & Hsu, 2007; Shortell 2006; Center for Evidence-based Management, 2014).

Not much is known about why there is a slow movement in EBMgt and what makes it difficult for healthcare administrators to adopt an evidence-based approach in decision-making. To our knowledge, few studies have been conducted examining factors that either inhibit or facilitate the adoption of EBMgt among healthcare leaders (D'Aunno, 2017). The purposes of the present study were to identify perceived factors that may inhibit or facilitate healthcare leaders' use of EBMgt and to examine any relationships between perceived factors and intention to use of EBMgt among healthcare leaders in the U.S.

METHOD

Study Design

A cross-sectional, descriptive, and non-experimental study, using a two-stage cluster sampling, was conducted to identify factors that inhibit or facilitate healthcare administrators' adoption of EBMgt and whether there is an association between the factors and intention to use of EBMgt among healthcare administrators.

Study Population and Setting

The population for the present study was senior health leaders in U.S. healthcare organizations. The inclusion criteria for the study were: 1) participants were either chief executive officers (CEOs) or acting leaders of a healthcare organization who were leading a hospital or multi-health system; and 2) participants had experience in healthcare administration or healthcare management.

Sampling

The 2014 American Hospital Association (AHA) Guide was used as a primary source for collecting contact information on chief executive officers (CEOs) and chief administrative officers (CAOs) of healthcare organizations. Based on the AHA Guide, a master list of 6,400 U.S. CEOs and acting health leaders of hospitals/health systems was generated to meet pre-established inclusion criteria. 1,210 CEOs were randomly selected, using a two-stage cluster sampling. At the first stage of cluster sampling, the investigators randomly selected 14 states out of nine regions (50 states) in the U.S. At the second stage of cluster sampling, 1,210 health care organizations were randomly selected out of the 14 states. The 14 states included Alaska, Arkansas, Colorado, Georgia, Indiana, Massachusetts, Michigan, Minnesota, New York, South Dakota, Texas, Utah, Virginia, and Washington.

Data Collection

A survey instrument was designed using a seven-point Likert scale. The content validity of the instrument was established based on literature reviews and assessed by subject matter experts in healthcare administration. A pilot test of the instrument was conducted among 20 healthcare administrators across the nation. The instrument was further modified as a result of the pilot test.

Qualtrics, web-based software, was used for developing an online survey and collecting responses from participants who chose to take online survey. Hard copies of the survey, with a cover letter and a return envelope, were mailed to 1,210 randomly selected participants. In addition, out of 1,210 participants, 500 email addresses were obtained through contacting hospitals or online searches.

Therefore, an online survey link was distributed to 500 participants via email. All of the participants were provided with a cover letter that stated the purpose of the study. They were informed that their participation in the survey was completely voluntary. The participants were allowed to freely withdraw at any time during the survey and to abstain from answering any questions with which they felt uncomfortable. Following the initial mail and online surveys, five online reminders and two mailed postcard reminders were sent to the potential participants who had not completed the survey. Survey data were kept confidential. Prior to the administration of the survey, an institutional review board approval was obtained.

Data Analysis

The survey data received online were exported directly to IBM® SPSS® 23.0. The mail survey data were entered in Excel and then exported into IBM® SPSS® 23.0. All survey data were screened for missing values, outliers, normality, skewness and kurtosis prior to data analysis. The data screening indicated that the Likert-scale responses exhibited variance. There were two participants who did not respond to some of the survey items; therefore, in the present study, only responses were analyzed and the missing values were not included for the statistical analysis. With regard to reliability, the Cronbach's alpha analysis was conducted for attitude toward the use of EBMgt, intention to use EBMgt, perceived barriers and facilitators. The results ranged from 0.84 to 0.93, which met internal consistency reliability. Usually 0.7 and above is acceptable (Nunnally, 1978). See Table 1 for more information. For data analysis, a Spearman's correlation was used as a statistical test because the variables were measured on a 7-point Likert scale. The purpose of using Spearman's correlation coefficient was to test any relationship between factors, either barriers or facilitators, and healthcare leaders' intention to use EBMgt. The parameters used for statistical analysis in this study were set at a significance level of (a) 0.05.

TABLE 1
CRONBACH'S ALPHA ANALYSIS RESULTS (INTERNAL CONSISTENCY RELIABILITY)

Factors	Number of Indicators	Coefficient alpha
Attitude Toward the Use of EBMgt	4	0.89
Intention to Use EBMgt	2	0.93
Perceived Barriers	7	0.88
Facilitators	5	0.84

RESULTS

General Information on Participants

One hundred and fifty-four participants completed the survey, for a 12.7% response rate. Of the 154, 86% (133/154) were chief executive officers; 12% (18/154) were chief administrative officers; and 2% (3/154) were other senior administrators as acting leaders for their organizations. Table 2 shows demographic information about the participants, such as gender, age, level of education, years of management experience in healthcare settings, and membership of professional associations. Regarding years of management experience, 45% (68/152) of the participants reported having more than 30 years of management experience in healthcare settings; 34% (51/152) had 20-29 years of management experience; 21% (33/152) had less than 20 years of management experience. Two participants did not report their years of experience. A statistically significant relationship was demonstrated between age and years of management experience in healthcare settings (r_s = .684, n = 152, p < .001). Another finding of this study indicated a significant change in the CEO positions in healthcare organizations. The AHA Guide (2014) served as a primary source for contacting CEOs and CAOs. It was found that within a year, 24.9% (301/1,210) of these health administrators listed in the AHA Guide either changed their job or left the position at their hospital or healthcare system.

In addition, Table 2 shows that 80% (123/154) of participants were members of the American College of Healthcare Executives (ACHE); 58% (90/154) were members of the American Hospital Association (AHA); 6% (9/154) were members of the Medical Group Management Association (MGMA); and 3% (4/154) were members of the American Medical Association (AMA). It was found that some participants belonged to more than one professional association, such as both ACHE and AHA.

TABLE 2
DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS

Characteristics	# of Participants	%
Gender	N=154	
Male	119	77%
Female	35	23%
Age Group	N=154	
30-39	5	3%
40-49	23	15%
50-59	69	45%
Over 60	57	37%
Years of Management Experiences	n=152	
>40 Years	14	9%
30-39 Years	54	35%
20-29 Years	51	34%
< 20 years	33	22%
Member of Professional Association	N=154	
ACHE	123	80%
AHA	90	58%
MGMA	9	6%
AMA	4	3%

Note: Some participants joined more than one professional association.

Participating Healthcare Organizations

Table 3 shows participants' employment characteristics of hospital bed size, number of employee, healthcare organization ownership (for-profit, not-for-profit, and government), and type of health services (general, specialty, rehabilitation/chronic diseases, and psychiatric service) provided by participating healthcare organizations. The results showed that there was a significant relationship between hospital bed size and intention to use EBMgt (r_s = .335, n = 152, p < .001) and the number of employee and intention (r_s = .310, n = 152, p < .001). The ownership of healthcare organizations and the type of health services had no significant association with healthcare leaders' intention to use EBMgt.

Attitude Toward the Use of EBMgt

Four items in the survey measured participants' attitudes toward the use of EBMgt using a seven-point Likert scale. For the first item, 135 of 152 (89%) participants either strongly agreed or agreed that "It is important to integrate the best available evidence into the healthcare management decision-making". For the second item, 123 of 152 (81%) either strongly agreed or agreed that "Using EBMgt increases the quality of management decisions". 80 % (121/152) of the participants either strongly agreed or agreed that "I support the adoption of EBMgt in healthcare management". For the fourth item, 69% (105/152) of

the participants either strongly agreed or agreed that "Adopting EBMgt in my decision-making will likely improve organizational performance". Overall, the present study results showed that participating senior healthcare administrators had a positive attitude toward the use of EBMgt. Two participants did not respond to their attitude toward the use of EBMgt.

TABLE 3
CHARACTERISTICS OF PARTICIPATING HEALTHCARE ORGANIZATIONS

Characteristics	# of Healthcare Organizations	%
Bed Size	n=152	
<25	48	32%
26-99	33	22%
100-199	21	14%
200-299	13	8%
300-499	13	8%
>500	24	16%
Employee Size	N=154	
100 or fewer	8	5%
101-300	45	29%
301-600	30	20%
601-900	9	6%
901-1,200	10	6%
1,201 or more	52	34%
Ownership	n=150	
Not-for-Profit	99	66%
For-Profit	19	13%
Government (Federal or Non-Federal)	32	21%
Health Service	N=154	
General	128	83%
Specialty	58	38%
Rehabilitation/Chronic Diseases	54	35%
Psychiatric	45	29%

Note: 1) Some hospitals provide more than one health service; and 2) Some participants did not complete the report on some of the survey items, for instance, bed size and ownership.

Barriers

Seven barriers to using EBMgt were listed in the survey instrument. They were lack of interest, lack of skills in appraising quality of evidence, lack of skills in searching the literature, lack of strong research evidence to support the use of EBMgt, lack of time, lack of training opportunities, unfamiliarity with EBMgt, and other barrier. The results indicated that the top four barriers to the use of EBMgt were lack of time (69%, 105/152), lack of training opportunities (59%, 89/152), unfamiliarity with EBMgt (52%, 78/151), and lack of skills in appraising the quality of evidence (50%, 75/151). 69% (104/151) of the participants reported that they did not lack of interest in EBMgt.

Facilitators

Five perceived facilitators that would help with the adoption of EBMgt were included in this study. They were availability of access to EBMgt information resources, such as journals and databases in health services and management, availability of EBMgt training programs, availability of organization support, creating a culture that embraces EBMgt, and EBMgt practice promoted by professional associations. Participants were also provided with an opportunity to respond to open-ended question where they could suggest potentially other facilitators of EBMgt. The results showed that 83% (126/152) of the participants either strongly agreed or agreed that providing availability of access to journals and databases in healthcare management would help the adoption of EBMgt. The second top facilitator perceived by 80% (121/152) of the participants was creating a culture that embraces EBMgt. 72% (110/152) of the participants reported that availability of organizational support would facilitate the adoption of EBMgt. 69% (105/152) of the participants considered that availability of EBMgt training programs (69%) would help increase the familiarity with EBMgt and the skills in appraising the quality of evidence and information searching. In addition, participants considered the promotion of EBMgt by the professional association (65%, 98/152) would help with the adoption of EBMgt.

Participants were asked to respond to one survey item about their intention to use EBMgt in management decisions within the next six months. The results shown in Table 4 indicated a statistically significant relationship between healthcare leaders' intention to use EBMgt and creating a culture that embraces EBMgt (r_s = .544, n = 152, p < .001), availability of access to EBMgt information resources (r_s = .490, n = 152, p < .001), availability of organizational support (r_s = .456, n = 152, p < .001), and EBMgt practice promoted by professional associations (r_s = .345, n = 152, p < .001).. See Table 4 for more results on the relationship between factors and intention to use EBMgt. Two participants did not report their perceived factors.

TABLE 4
RELATIONSHIP BETWEEN FACTORS AND INTENTION TO USE EBMGT (N=152)

Number of Factors	Factors (Facilitators and Barriers)	r_s - Spearman's Rho Correlation Coefficient	*P*-Value
1	Lack of interest	-0.291***	<0.001
2	Lack of skills in appraising quality of evidence	-0.77	0.345
3	Lack of skills in searching for information	-0.118	0.147
4	Lack of strong research evidence	-0.218**	0.007
5	Lack of time	-0.104	0.204
6	Lack of training	-0.093	0.254
7	Unfamiliarity with EBMgt	-0.282***	<0.001
8	Availability of access to EBMgt information resources	0.490***	<0.001
9	Availability of EBMgt training programs	0.332***	<0.001
10	Availability of organizational support	0.456***	<0.001
11	Creating a culture that embraces EBMgt	0.544***	<0.001
12	EBMgt practice promoted by professional associations	0.345***	<0.001

Note: *** p-value < 0.001; ** p-value < 0.01; * p-value < 0.05 (2-tailed)

DISCUSSION

Demographic Characteristics

The existing literature showed that few studies have been published examining factors that influence the use of EBMgt among senior healthcare administrators in today's U.S. healthcare environment. Kovner and Rundall (2006) performed an interview among 68 health managers and Guo, Farnsworth, and Hermanson (2015) conducted a survey among 48 Idaho Hospital Association members. The present study was conducted among 154 health leaders from 154 healthcare organizations across the nation. The findings showed an overall positive attitude toward the use of EBMgt among the study population. The present study results on the attitude toward the EBMgt were consistent with the ones by Guo et al. (2015), but differed from the ones obtained by Kovner and Rundall (2006). Drs. Kovner and Rundall's study showed health managers had negative attitude toward the use of EBMgt.

In regards to demographic characteristics such as education, the common degree held by a hospital/health system CEO was master's degree. As for years of management experience, a statistically significant relationship was demonstrated between age and years of management experience in healthcare settings. The study results indicated that it takes many years for younger healthcare administrators to accumulate knowledge and experience in healthcare management in order to obtain a senior leadership position of healthcare organizations.

Another finding of this study indicated a significant change in the CEO positions in healthcare organizations. It was found that 24.9% of health administrators listed in the AHA Guide either changed their job or left their healthcare organizations within a year during the year period of the present study. This finding shows that CEO positions of healthcare organizations are unstable. According to the latest report of the American College of Healthcare Executives (2014), hospital CEO turnover increased 20% in 2013. Dr. Thomas Dolan, former President and CEO of the ACHE, mentioned that the median tenure of a hospital CEO was four years, with 58% of current CEOs at their posts for fewer than five years (Selvam, 2012). Dr. Dolan believed it took CEOs at least five years on the job to make a significant impact on their organizations. To obtain the latest contact information on potential participants, the principal researcher conducted searches on the websites for participating hospitals and health organizations and phone calls were made as well. Not surprisingly, it was found that 24.9% of hospital CEOs and CAOs left their healthcare organization within a year or so. This finding indicated that health leaders are facing many challenges and that changes consistently happen in healthcare systems and organizations, especially for health care reforms across the nation.

Barriers to the Adoption of EBMgt

EBMgt has not been implemented quickly by healthcare administrators in the U.S. In the present study, healthcare administrators showed positive attitudes toward the use of EBMgt. However, barriers that hinder the EBMgt movement exist. A literature review suggests some of the barriers to the practice of EBMgt among healthcare leaders. These barriers were lack of time, difficulty in accessing the evidence-based management resources, and lack of evidence (Shortell et al., 2007; Walshe & Rundall, 2001; Chan, Morton, & Shekelle, 2004; Pfeffer & Sutton, 2006; Guo et al., 2015). The present study's results showed that lack of time, lack of training opportunities, unfamiliarity with EBMgt, and lack of skills in appraising the quality of evidence were the top four perceived barriers to the use of EBMgt among the study population. A detailed discussion on the major barriers perceived by participants is presented next.

Lack of Time

Healthcare administrators are busy leading health care organizations. Many senior healthcare administrators do not have time to acquire and review information concerning best demonstrated management practice. Pfeffer and Sutton (2006) stated that hundreds of journals and newspapers were devoted to business and management issues, roughly 30,000 business books in print and thousands more being published each year, and online databases for business knowledge are continuing to expand. Bigelow and Arndt (2003) mentioned that research articles were time consuming to read. The CEOs

commented that time was a precious resource, that they had limited time, and that information needs to be succinct and to the point (Bigelow & Arndt, 2003). The present study findings were consistent with these scholars who considered lack of time as one of the major barriers for healthcare administrators to the use of EBMgt.

Lack of EBMgt Training and Unfamiliarity with EBMgt

Providing EBMgt training programs is considered helpful in reducing the top barriers to the adoption of EBMgt, such as unfamiliarity with EBMgt and increasing knowledge and skills in appraising the quality of evidence and information searching. In medical and health sciences schools, evidence-based medicine/practice is considered important in their curriculum. Students have been taught how to search for evidence in online databases, how to evaluate the quality of evidence, and how to apply research evidence to their clinical decisions. After graduation, these medical and health sciences students have learned basic principles and process of evidence-based medicine. The knowledge and skills gained at school help them efficiently locate evidence and apply the evidence to their clinical decision-making. In the field of management and business, some universities, such as Stanford University and Carnegie Mellon University, offer EBMgt in their curriculum to their business students. However, many current practicing healthcare administrators who graduated two decades ago were not familiar with EBMgt because they did not have a chance to learn EBMgt. In the present study, 78% of participating healthcare leaders reported they had not previously received any EBMgt training. This indicates that lack of EBMgt training among healthcare administrators is another barrier to the adoption of EBMgt. Scholars suggested that EBMgt training increases healthcare administrators' competencies in making better healthcare management decisions using research evidence (Shortell, 2006; Walshe & Rundall, 2001; Kovner, 2003). The AHA and the ACHE have not developed any official educational program on EBMgt for their members. Lack of training on EBMgt principles, information searching, and appraising the validity of evidence, and unfamiliarity with EBMgt could affect the movement of EBMgt toward best practice in decision-making. Therefore, lack of training and unfamiliarity with the implementation process of EBMgt have been identified by the present study population, healthcare leaders, as the top barriers to the adoption of EBMgt.

Lack of EBMgt Strong Evidence

Pfeffer and Sutton (2006) mentioned insufficient evidence for managers and executives to use and that the evidence did not quite apply to managers of health care. A gap between research and practice in healthcare management exists (Bigelow & Arndt, 2003; Damore, 2006). In medicine and health sciences, a movement of translational research began a decade ago. Translational research in medicine involves moving knowledge gained from the basic health sciences to its application in clinical practice. Databases, such as PubMed, can be freely accessed on the Internet. PubMed is a premier resource in medicine developed by the National Library of Medicine, which comprises more than 27 million records. Clinical practitioners can freely access this database and other online resources, and apply basic research evidence to their clinical decision-making to improve the quality of patient care. However, in healthcare management and administration, translational research has not been widely conducted. Damore (2006) stated that the challenge of adoption of EBMgt was to bridge the gap between management theory and practice. This type of barrier certainly makes it difficult for healthcare administrators to adopt EBMgt practice. To close the gap, collaborations between managers, academicians, and benchmarking entities are needed to assist healthcare administrators and managers in the practice of EBMgt. Damore (2006) suggested providing evidence-based management information to practitioners in a convenient, efficient, and accessible manner without a significant numbers of barriers via web-based access. More work remains to be done to make it easier for practicing healthcare administrators and managers to use the best available management research evidence for their decision-making.

Facilitators on EBMgt Practice

The present study included five perceived facilitators that may help healthcare leaders take an evidence-based approach in management decision-making. 83% of participants considered providing the availability of access to journals and databases in healthcare management would help the adoption of EBMgt. In reality, it is hard for healthcare administrators to implement EBMgt without an access to information resources in healthcare management. With the advanced health information technology, so much information is provided online and makes it easy to search. On the other hand, purchasing access to the information resources could be costly for healthcare leaders and healthcare organizations. The present study results indicate a significant relationship between access to information resources and intention to use of EBMgt among participating healthcare leaders. It is likely that healthcare leaders would intend to practice of EBMgt if they have information resources available and easier for them to access.

Other top facilitators identified in this study were creating a culture that embraces EBMgt and an availability of organizational support. Walshe and Rundall (2001) recommended building a management culture that values research, and training managers in the competencies required to apply research evidence to health services management decisions. Stewart (1998) stated that managers should develop a research culture that required at least one senior manager to act as a role model. D'Aunno (2017) stated that organizational culture and structure play a strong role in limiting evidence-based management. The present study findings showed that senior healthcare administrators considered creating a culture and receiving organizational support important factors to help with the movement of EBMgt in healthcare management. The present study's results agree with these scholars' statements that the adoption of EBMgt is likely to be organization-specific, where leaders take the initiative to create an evidence-based practice culture within an organization (Stewart, 1998; Pfeffer & Sutton, 2006; Kovner & Rundall, 2006; D'Aunno, 2017).

In the present study, participants reported that promotion of EBMgt by professional associations would help with their evidence-based practice in healthcare management. Professional associations play an important role in increasing their members' leadership knowledge and skills in leading healthcare organizations to deliver a quality of patient care and to further advance healthcare management excellence through education and research. 80% (123/154) of the participants in the present study were ACHE members and 58% (90/154) were AHA members. These participants were leaders in hospitals and healthcare organizations. The decisions made by these hospital and health system CEOs and CAOs may highly impact the success of their organizations and quality of patient care in their communities. Professional associations need to develop some practical tools and provide adequate access to synthesized EBMgt information resources for healthcare administrators so that they can use these resources and apply an evidence-based approach to decision-making.

Health care organization leaders and decision-makers must be held for accountable for both patients and healthcare organizations. Professional organizations need to promote an evidence-based practice approach for their members' professional practice. The purpose of promoting an EBMgt practice and creating an EBMgt culture is to increase its members' awareness of using the best available scientific research evidence for management decision-making. The decisions made based on scientific evidence can have positive impacts on the improvement of healthcare organizations' performance and quality of health services to patients.

Implications for Health Leaders and Professional Practice

The findings of the present study have significant implications for healthcare administrators and managers and professional practice in healthcare management. First, evidence-based management is an important professional practice in healthcare management and decision-making. Not much research has been conducted to examine what factors either inhibit or facilitate the adoption of EBMgt among senior health leaders in the U.S. The authors contribute to the scholarly literature by identifying perceived facilitators and barriers to the use of EBMgt among participants throughout this study. The findings could help professional associations and policy-makers better understand current senior health leaders' perceptions of what factors could affect their adoption of EBMgt in today's U.S. healthcare environment.

Second, the research findings could be useful for researchers, healthcare administrators, and professional organizations to develop interventions that may reduce the perceived barriers and facilitate the use of an evidence-based approach for better decision-making among healthcare administrators.

Third, the outcomes of the study may help healthcare administrators, health policy makers, and professional organizations establish some policies for future professional practice in healthcare management. Overall, through this study, the authors identified senior health leaders' perceived factors that could explain part of the reason why there was a slow EBMgt movement and what made it hard for them to adopt EBMgt in their professional practice.

LIMITATIONS

This study has some limitations. The first limitation is that the results could not be generalized to the whole population of healthcare administrators in the U.S. because the response rate was relatively low. The second limitation is that self-reporting could be caused by recall bias. There was no way to test the truth of responses due to self-reporting by participants during the survey.

RECOMMENDATIONS

The study's results suggested that participants' intention to use EBMgt had a significant association with access to EBMgt information resources, creating an EBMgt culture, receiving organizational support, promotion of EBMgt by professional organizations, and providing healthcare leaders with EBMgt training.

To reduce perceived barriers, it is recommended that federal government agencies, in partnership with universities, private sectors, and professional associations (e.g. HHS, AHRQ, ACHE, AHA), need to bring researchers, practitioners, educators, and clinicians together to establish a research center for evidence-based management in healthcare that conduct EBMgt research and synthesize information on healthcare management from different resources. Hopefully, the research center could develop an EBMgt knowledge-based database and provide consultations and guidance that assist healthcare administrators and managers in the practice of EBMgt and healthcare management decision-making. Providing healthcare leaders and managers with an adequate access to synthesized evidence-based management information resources might reduce barriers to the adoption of EBMgt, especially for small hospitals and healthcare organizations that cannot afford to purchase the access to expensive online journals and knowledge-based databases in healthcare management.

Effective EBMgt training programs need to be developed to facilitate the adoption of EBMgt and increase senior healthcare administrators' EBMgt knowledge and skills in appraising the quality of evidence and information searching. Another important aspect is to create an evidence-based practice culture within healthcare organizations and to provide support to healthcare administrators in the practice of evidence-based management and decision-making. With the efforts put into practice, senior healthcare administrators may feel more comfortable in implementing EBMgt practice in decision-making and making the EBMgt movement forward. Evidence-based practice is considered a best health care model in clinical practice. The adoption of an evidence-based management practice by healthcare administrators and health mangers would hopefully improve decision-making that ultimately help improve quality of patient care in hospitals and healthcare organizations.

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