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RESEARCH ARTICLE

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Nursing managers' perspectives on facilitators of and barriers to evidence-based practice: A cross-sectional study

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Abstract

Aim: This study aimed to determine the facilitators and barriers to evidence-based practice (EBP) from the perspective of Iranian nursing managers.

Design: Cross-sectional study.

Methods: Data were collected from 335 top nursing managers of Iran. The research instruments included three electronic questionnaires for demographics, facilitators and barriers of evidence-based practice. Descriptive statistics and appropriate analysis tests were used to clarify the strength of relationships between the factors.

Results: A total of 277 nursing managers participated in the study (response rate of 82%). Iranian nursing managers believed that organizational factors were the most important domain for both facilitators (34.7 ± 9.2) and barriers (28.37 ± 6.2) to EBP. Regarding the Perspectives of nursing managers on Necessity and Extent of EBP implementation, 79.8% ($n = 221$) considered EBP to be essential, while 45.8% ($n = 127$) regarded its implementation as moderate.

KEYWORDS
cross-sectional study, evidence-based practice, nursing managers

1 | INTRODUCTION

Evidence-based practice (EBP) is a decision-making method that has become an important component of health care in recent decades (Adib-Hajbaghery, 2006) and is recognized as a way to improve healthcare standards and excellence in nursing care (Azami et al., 2020). As a problem-solving method, EBP integrates the best available scientific evidence with clinical expertise, situational conditions, available resources and patient preferences (Renolen et al., 2018). Since nurses are the largest group of specialized staff in healthcare systems, their performance statistically significantly impacts the quality of health care, and this leads to reduced costs, family satisfaction, nurses' personal and professional development and improvement of organizational performance (Heydari et al., 2014).

Facilitators and barriers to EBP in clinical settings have been the focus of research for many years. Factors that have a great impact on the implementation of EBP in several studies are related to organizational support, especially leadership and support by managers (Cheng et al., 2018; Li et al., 2019). Healthcare system leaders need to create an organizational culture to support their staff to implement EBP (Gallagher-Ford et al., 2020). The perspectives and performance of nursing managers play an effective role in the process of accepting the use of EBP by nurse (Tuppal et al., 2019).

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2 | BACKGROUND

Health care has changed a lot in the past decade due to the evolutions in technology, provision of services, increased elderly population, need for the management of the increasing population with chronic diseases and an increase in the public knowledge about high quality and affordable healthcare services (Pittman, 2019). These changes have made healthcare systems improve and update their service provision, especially in the field of nursing (Pittman, 2019). Based on the available statistics all the graduated nurses are employed in hospitals and treatment centres in Iran (de Las Heras-Rosas et al., 2021; Raeissi et al., 2019). It was previously stated that EBP has been neglected in the healthcare system and nursing education in Iran (Mohammadi et al., 2018). Adoption of EBP by nurses was found to be related to the innovation, knowledge and attitude of the nurses and their perception of EBP attributes. It was also shown that attitudes had the most statistically significant effect on the adoption of EBP (Mohammadi et al., 2018). It was also shown that nursing managers have an important role in the adoption of EBP in the nurses (Hasanpoor et al., 2019).

Nursing managers, especially top nursing managers, are a statistically significant force in the success of EBP because they understand the importance of evidence-based interventions and policies, have the potential to change healthcare system, and allocate human and material resources to nurses' work environment (Azami et al., 2020; Farokhzadian et al., 2016). Hence, it is necessary to investigate nursing managers' perspectives on EBP and how to implement it. In Iran, Hassanpour et al. conducted a study to examine the perspectives of nursing managers at one of the universities of medical sciences in relation to facilitators and barriers to evidence-based management (EBMgt) (Hasanpoor et al., 2019). The currently available data indicated that training and research systems and discordance between universities and stakeholders were considered as the barriers to, while personal interest in the adoption of scientific management and interpersonal and social factors were reported as the facilitators for EBP in Iranian nursing managers. To the best of our knowledge the perspectives of Iranian nursing managers on EBP has not been fully evaluated and due to the number and diversities in nursing managers, the current study findings may not be generalizable to the whole population of nursing managers in Iran. As much is not known on this topic, the facilitators and barriers to EBP among nursing managers have not been determined. The first step in implementing successful interventions in improving EBP among nursing managers is to identify its facilitators and barriers. Therefore, the present study was designed and implemented with the aim to learn about facilitators and barriers to EBP from the perspective of Iranian Nursing Managers. The present study also aimed at examining the relationship between managers' demographic characteristics and facilitators and barriers to EBP. Another aim of this study was to determine the necessity and extent of EBP implementation by nurses from the perspective of nursing managers.

3 | METHODS

3.1 | Study design

The present cross-sectional study was conducted at Iranian universities of medical sciences. The research population included top nursing managers, comprising two categories in Iran, chief nursing officers (matrons) of hospitals and nursing managers of medical universities.

3.2 | Sampling method

Considering the aim of this study, two groups of nursing managers were identified; (1) university nursing managers and (2) hospital matrons. As the number of university nursing managers were small ($n=55$), all of them were included in the study based on census sampling. However, as the population of matrons was 750, sample size was calculated using the Morgan table. Therefore, the sample size was 254 participants that was increased to 280 participants considering 10% dropout. Matrons were recruited using stratified random sampling by classifying Iranian universities of medical sciences into three levels according to the ranking system of the Ministry of Health. Then the number of affiliated hospitals to each university was identified. Sampling in each university was performed proportionate to the number of that university affiliated hospitals. Therefore, the total estimated sample size for this study was 335 participants (Figure 1).

3.3 | Measures

Three electronic questionnaires were used to collect information in this study.

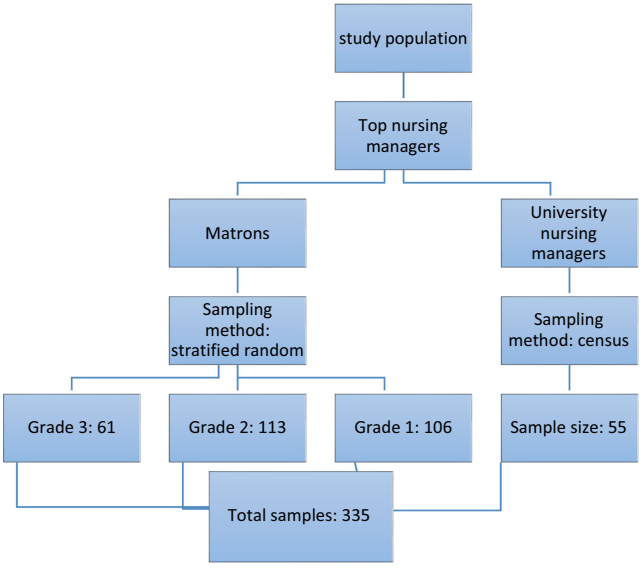

FIGURE 1 Study population and sampling.

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1. *Demographic Characteristics Questionnaire*: This questionnaire included 11 items related to personal and educational information, work experience, familiarity with EBP and the level of research activity. In addition, two items asked about the necessity and extent of EBP implementation, scored from zero to ten and were classified into three levels of low (score 0–3), medium (score 4–6) and high (score 7–10).
2. *Facilitators of Evidence-based practice Questionnaire*: This Persian questionnaire, designed by Chehrzad et al. in 2015, includes 16 items for reviewing facilitators if EBP (Chehrzad et al., 2015). The criteria for assessing the score in this questionnaire are based on a five-point Likert scale (nothing, little, no opinion, moderate and high), which are assigned scores of one to five, respectively. Thus, the total score of this questionnaire ranges from 16 to 80. The reliability of the instrument was determined with Cronbach's alpha coefficient of 0.89 (Chehrzad et al., 2015). In the present study, items were classified into three domains based on their similarities: nursing factors (3 items), organizational factors (9 items) and quality and research presentation factors (4 items) in order to facilitate its assessment (Table 1). The overall Cronbach's alpha of the facilitators of EBP questionnaire in this study was 0.96.
3. *Barriers to Evidence-based practice Scale (BARRIER Scale)*: The Persian version of BARRIER Scale was used, which was translated into Persian by Salemi et al. and its reliability was determined with Cronbach's alpha coefficient of 0.71 (Salemi et al., 2010). The *BARRIER Scale* includes 29 items that investigate the barriers to implementation of EBP in four domains: barriers to nurses' values, skills and awareness (8 items), organizational barriers and limitations (8 items), barriers to research quality (6 items) and barriers to presentation and accessibility of research results (7 items) (Table 1). The scoring criteria are based on a five-point Likert scale (nothing, little, no opinion, moderate and high), which are given scores one to five, respectively, with the total score ranging from 29 to 145. The overall Cronbach's alpha for the barriers to EBP scale in this study was 0.90.

3.4 | Data collection

First, necessary permissions were obtained. Phone numbers of the nursing managers were given to the researcher by the nursing offices of the universities of medical sciences. Then, consent to participate in the study was obtained by phone and the questionnaires were sent to them by e-mail or social networks.

3.5 | Data analysis

As all the questionnaire items were set as compulsory, participants could not end the sessions with leaving unanswered items. Therefore, there was no missing data in this study. Data were stratified and analysed with SPSS, version 22. Descriptive statistics were reported using mean and standard deviation (SD) for continuous variables and frequency and percentage for categorical variables. Comparison of the mean scores for facilitator and barrier questionnaire domains between gender and work place groups was performed using the student t-test, while comparison of mean scores for the domains between education level and university rank was performed using the one-way analysis of variance (ANOVA). Correlation between domain scores and continuous study variables was evaluated using the Pearson's correlation coefficient. Linear regression analysis with backward correction was performed to identify the predictors of domain scores. The level of statistical significance was considered as $p < 0.05$.

3.6 | Ethics

The study protocol was approved by the ethics committee of Gonabad University of Medical Sciences (code of ethics: IR.GMU.REC.1397.041).

4 | RESULTS

4.1 | Demographic characteristics of the participants

Of the 335 questionnaires sent, 277 were returned, indicating an 82% response rate. The participants included 31 university nursing manager and 246 matrons, 51.6% of the managers ($n = 143$) were female. The mean working experience and nursing management experience of the participants were 20.05 ± 7.38 years and 42.05 ± 47.38 months, respectively. Table 2 shows participants' demographic and professional characteristics.

4.2 | Facilitators of EBP

Among the three domains of facilitators, nursing managers believed organizational factors were the most important (34.7 ± 9.2) followed by factors related to quality and presentation of research results and factors related to nursing. The most important facilitating factors were 'increased support and encouragement by managers' and 'establishing an evidence-based nursing committee' to apply research findings in clinical settings, each receiving medium to high scores of by 78.7% of managers (Table 3).

In this study, among the facilitators of EBP, the mean score for nursing factors domain was only statistically significantly different between categories of university ranking ($p = 0.006$) with highest scores in first rank universities followed by third ranked and second ranked universities. The mean score for organizational factors was statistically significantly different between categories of education level ($p = 0.001$) and university ranking ($p < 0.0001$). This finding indicated that the mean score for organizational factors domain decreased from bachelor's degree to PhD degree, while the highest score was recorded for first third rank universities followed by first

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TABLE 1 Domain constructs of the study questionnaires.

Questionnaire	Domain	Items
Facilitators of EBP questionnaire	Nursing factors (3 items)	Practical research with the cooperation of nurses
		Continuing medical education based on recent research findings
		Provision of education on research methods
	Organizational factors (9 items)	Using enough time for review and implementing the guidelines
		Encouraging nurses to use EBP
		Support from managers in performing EBP
		Cooperation of universities with hospitals
		Presence of EBP committee
		Identifying problems in using research findings
		Rewarding nurses for the use of recent research findings
		Availability of recent journals in hospital libraries
		Employing nurses with research skills
	Research presentation factors (4 items)	Conveying the research results in the form of guideline from a reliable source
		Comprehensiveness of the research reports
		Accessibility of research results
		Free access journals
Barriers to EBP scale	Nurses' values, skills and awareness (8 items)	Not being informed about study findings
		Few benefits from updating clinical methods
		Lack of communication between nurses and researchers
		EBP has few benefits for nurses
		Not valuing research in practice
		No documented evidence for updating methods
		Lack of willingness to change or implement new methods
		Lack of skills to evaluate research findings
	Organizational barriers and limitations (8 items)	Inadequate facilities
		Inadequate time to study
		Insufficient permissions to use EBP
		Discordance between research findings and practice
		Physicians' noncompliance
		Lack of permission to perform EBP by the managers
		Lack of support by peers
		Inadequate time to test new ideas
	Research quality (6 items)	Unreliable research findings
		Unrepeatable research findings
		Inaccurate conclusions from the findings
		Slow publishing of the research findings
		Studies are methodologically week
		Controversies in the findings of studies
	Presentation and accessibility of research results (7 items)	Difficulty in accessing research findings
		Difficulty in the interpretation of statistical results
		Unclear implication of research findings in clinical practice
		Unclear writing of reports
		Unrelated research topics to nurses' problems in practice
		Scattered publications in various sources
		High volume of research findings

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TABLE 2 Demographic and professional characteristics of participants' demographic and professional details.

Variable		Numbers	Percentage
Gender	Female	143	51.6
	Male	134	48.4
Education level	Bachelor's degree	105	37.9
	Master's degree	157	56.7
	PhD	15	5.4
Work place	University	31	11.2
	Medical centres	246	88.8
University rank	Grade 1	94	33.9
	Grade 2	117	42.2
	Grade 3	66	23.8
Take a research course	Yes	206	74.4
	No	71	25.6
EBP awareness method	Academic subjects	161	58.1
	Academic and training course	116	41.9
Articles published	None	92	33.2
	Less than five	140	50.5
	5–10	31	11.2
	More than 10	14	5.1

ranked universities and second ranked universities. The mean score for research presentation factors domain was statistically significantly different between education level ($p=0.042$) and university ranking ($p<0.002$). This finding indicated that the mean score for research presentation factors domain decreased from bachelor's degree to PhD degree, while the first ranked and third ranked universities had similar mean scores; they were higher than that for the second ranked universities (Table 4).

The correlation between domains of facilitators of EBP and age, work experience and nursing management experience are shown in Table 5. Nursing factors and organizational factors domain scores had a statistically significant and positive correlation with nursing management experience ($r=0.161$, $p=0.007$ and $r=0.119$, $p=0.04$, respectively), while the scores for research presentation factors domain had a statistically significant and positive correlation with age ($r=0.128$, $p=0.03$) and work experience ($r=0.132$, $p=0.02$).

Based on regression analysis among the facilitators of EBP, nursing domain had a negative relationship with education level (0.012) and positively related to published articles ($p=0.044$) and nursing management experience ($p=0.009$); while organization factors domain score was only negatively related to female gender ($p=0.001$), and research presentation factors domain score was negatively related to education level (0.015).

4.3 | Barriers to EBP

Among the four domains of barriers to EBP, the most important barriers to EBP based on the perception of nursing managers were organizational barriers (28.4 ± 6.2), followed by factors related to nurse's values, skills and awareness (27.1 ± 5.3), presentation and accessibility of research results (21.7 ± 5.1) and research quality (17.1 ± 4.9). 'Physicians' not cooperating with nurses', 'Inability of nurse to evaluation the quality of the research' and 'Lack of sufficient authority of nurses to change patients' care procedures ' were the most important factors among all 29 barriers. The first 10 barriers reported by nursing managers are presented in Table 3.

In this study, among the domains of barriers to EBP, the mean scores for research quality and presentation and accessibility of research results domains were statistically significantly different between education level categories ($p=0.048$ and $p<0.0001$, respectively). This finding indicated that the mean score for research quality domain was the highest among PhD graduates followed by participants with bachelor's and master's level of education, while the scores for presentation and accessibility of research results domain was the highest among participants with bachelor's degrees followed by participants with master's and PhD degree, respectively. Furthermore, there was a statistically significant difference in the scores for values, skills and awareness domain between genders ($p=0.012$). This finding indicated that the mean score for this domain was statistically significantly higher among female participants (Table 4).

The correlation between scores of barriers to EBP domains and age, work experience and nursing management experience are shown in Table 5. The scores of the organizational barriers and limitations had a statistically significant and negative correlation with work experience ($r=-0.125$, $p=0.038$), while the scores for presentation and accessibility of research results domain had a statistically significant and positive correlation with nursing management experience ($r=0.153$, $p=0.011$).

Among the barriers to EBP, nurse's values, skills and awareness domain score were negatively related to age ($p=0.002$), female gender ($p=0.018$) and was positively related to nursing management experience ($p=0.006$); while organizational barriers and limitations domain score was negatively related to age ($p<0.001$), education level ($p=0.004$) and university rank ($p=0.045$), presentation and accessibility of research results domain score was negatively related to age ($p=0.040$), education level ($p<0.001$) and positively related to nursing management experience ($p=0.021$). The research quality domain score was not related to any of the study variables ($p>0.05$) (Table 6).

4.4 | Necessity and extent of EBP implementation

EBP necessity was considered high by 221 (79.8%) participants, while 47 (16.9%) and 9 (3.2%) participants considered EBP necessity as moderate and not at all/a little, respectively. The mean score for EBP necessity was 8.02 ± 1.9. EBP implementation was considered high by 51 (18.5%) participants, while 127 (45.8%) and 99 (35.7%) participants considered it as moderate and not at all/ a little, respectively.

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TABLE 3 Mean score for the first 5 facilitators of EBP and first 10 barriers to EBP from the perspective of nursing managers.

Questionnaire	Domain	Facilitators	% moderate and high effect	Mean ± SD
Facilitators of EBP	Organization	1- Managers' increased support and encouragement	78.7	4.2 ± 1.2
		2- establishing an evidence-based nursing committee	78.7	4.0 ± 1.4
		3- allotting appropriate time for reviewing and implementing research findings	76.6	3.9 ± 1.2
	Nurse	Training nurses on research methods	76.6	3.9 ± 1.2
	Research	Comprehensibility of research reports	75.5	4.2 ± 1.0
Barriers to EBP	Organization	1- physicians' not cooperating with implementation	70.8	3.8 ± 1.3
		2- There is insufficient time on the job to implement new ideas	63.5	3.7 ± 1.1
		3- Nurses do not have enough authority to change patients' care procedures	61	3.6 ± 1.3
		4- The nurse does not have time to reed research	58.8	3.6 ± 1.2
		5- Administration will not allow implementation	58.8	3.7 ± 1.1
	Nurse	1- The nurse is unaware of the research	65	3.5 ± 1.2
		2- The nurse does not feel capable of evaluation the quality of the research	62.1	3.5 ± 1.1
		3- The facilities are inadequate for implementation	59.9	3.5 ± 1.2
		4- The nurse is unwilling to change/try new ideas	59.6	3.6 ± 1.1
		5- The nurse feels the benefits of changing practice will be minimal	58.8	3.3 ± 1.2

5 | DISCUSSION

This study explored facilitators and barriers to EBP from the perspective of Iranian nursing managers. Analysis of the findings showed that nursing managers consider the factors related to the organization more important than other domains in terms of both facilitators and barriers to EBP, as reported by several studies conducted in different organizational contexts (Alatawi et al., 2020; Atakro et al., 2020; Janati et al., 2018; Mthiyane & Habedi, 2018).

Regarding the facilitators, 74.4% of nursing managers mentioned the domain of organizational factors with a mean score of 34.7 ± 9.2 as a factor with a great impact. These results are similar to those of the Panagiari's study in Germany, in which more than 80% of the facilitators were related to organizational factors (Panagiari, 2008). However, Hasanpoor et al. considered social/interpersonal factors as the most important facilitator (Hasanpoor et al., 2019). In the present study, the two factors of 'increased support and encouragement by managers' and 'establishing an evidence-based nursing committee' were the most effective facilitating factors reported by nursing managers; both of these factors fall under the category of organizational factors. Increased support by managers is a factor that has been considered in many studies (Almaskari, 2017; Bianchi et al., 2018). Increased support from managers ranked second in the study by Mohammadpour

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TABLE 4 Comparison of the mean scores of the domains for facilitators and barriers to EBP questionnaires between genders, place of work, education level and university ranking categories.

		Facilitators of EBP			Barriers to EBP			
Variable		Nursing factors	Organizational factors	Research presentation factors	Nurses' values, skills and awareness	Organizational barriers and limitations	Research quality	Presentation and accessibility of research results
Gender	Male	10.8 ± 3.7	33.9 ± 9.8	15.0 ± 3.9	26.3 ± 5.5	28.1 ± 6.7	16.8 ± 5.1	1.5 ± 0.5
	Female	11.6 ± 3.1	35.7 ± 7.8	15.9 ± 3.8	27.9 ± 5.2	28.6 ± 5.8	17.4 ± 4.6	1.6 ± 0.5
p[a]		0.055	0.317	0.459	0.012[c]	0.516	0.318	0.115
Work place	University	11.1 ± 2.8	33.6 ± 9.6	15.0 ± 3.7	27.8 ± 4.7	29.5 ± 5.1	17.2 ± 4.5	20.7 ± 4.9
	Medical centres	11.2 ± 0.5	34.9 ± 9.2	15.6 ± 3.9	27.0 ± 5.5	28.2 ± 6.4	17.1 ± 4.9	21.8 ± 5.1
p[a]		0.875	0.446	0.452	0.454	0.282	0.977	0.235
Education level	Bachelors	11.6 ± 3.0	37.2 ± 7.0	16.2 ± 3.5	27.9 ± 5.2	28.2 ± 6.3	17.9 ± 4.2	24.0 ± 5.0
	Masters	11.0 ± 3.1	33.6 ± 10.2	15.1 ± 4.1	26.8 ± 5.6	28.8 ± 6.3	16.5 ± 5.3	20.4 ± 4.6
	PhD	10.1 ± 2.8	30.1 ± 9.6	14.3 ± 3.3	25.1 ± 3.9	24.9 ± 3.6	18.3 ± 4.2	18.5 ± 4.2
p[b]		0.165	0.001[c]	0.042[c]	0.087	0.064	0.048[c]	<0.0001[c]
University ranking	1	11.9 ± 3.5	36.7 ± 8.3	16.2 ± 3.4	27.0 ± 5.1	29.4 ± 5.8	17.4 ± 5.2	22.0 ± 4.7
	2	10.5 ± 3.6	31.8 ± 10.3	14.5 ± 4.2	27.2 ± 6.0	27.9 ± 6.7	17.0 ± 5.0	21.0 ± 5.5
	3	11.6 ± 2.5	37.3 ± 7.1	16.2 ± 3.4	27.2 ± 4.7	27.7 ± 6.0	17.0 ± 3.9	22.5 ± 4.8
p[b]		0.006[c]	<0.0001[c]	0.002[c]	0.964	0.168	0.834	0.132

[a]The independent *t*-test was used for the comparison.

[b]The analysis of variance was used for the comparison.

[c]Statistically significant difference.

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TABLE 5 Correlation between facilitators and barriers to EBP and age, work experience and nursing management experience.

Questionnaire	Domain		Age	Work experience	Nursing management experience	
Facilitators of EBP	Nursing factors	*r*	0.076	0.056	0.161	
		p	0.20	0.35	0.007*	
	Organizational factors	*r*	0.078	0.081	0.119	
		p			0.19	0.17	0.04*
	Research presentation factors	*r*			0.128	0.132	0.105
		p			0.03*	0.02*	0.08
Barriers to EBP	Nurses' values, skills and awareness	*r*			−0.103	−0.098	0.091
		p			0.08	0.103	0.130
	Organizational barriers and limitations	*r*			−0.118	−0.125	0.040
		p			0.05	0.038*	0.504
	Research quality	*r*			−0.012	−0.024	0.153
		p			0.830	0.647	0.091
	Presentation and accessibility of research results	*r*			−0.015	−0.024	0.153
		p			0.798	0.689	0.011*

*Statistically significant correlation.

et al. in Iran, who concluded that nursing managers can lay the ground for evidence-based care through various methods such as increasing the motivation and material and spiritual encouragement of nurses, establishing an evidence-based committee and providing adequate facilities and resources (Mohammadpour et al., 2013).

Establishing an evidence-based nursing committee for clinical research findings has been considered in other studies; in Mehrdad's study, nurses agreed on the establishment of a centre that could help them perform EBP, and 65.4% of the nurses believed such a team or committee can facilitate the use of research results in clinical work (Mehrdad et al., 2007). The role of evidence-based nursing committees as a training resource is important because nurses' education is considered as one of the most important facilitators in various studies (Almaskari, 2017; Hasanpoor et al., 2019). In the present study, this item held the second place among facilitating factors. The results of a study by Gallagher et al. also affirmed this finding in that many EBP features, including knowledge, skills and attitudes towards EBP statistically significantly improved and sustained after an intensive 5-day training program (Gallagher-Ford et al., 2020).

Moreover, this study explored the barriers to EBP among nursing managers. 'Lack of cooperation between physicians and nurses in applying the research results' had the highest mean scores among all 29 barriers. This finding was perceived by 70.8% of nursing managers as a large or medium barrier. Expressing the impact of organizational barriers on EBP and the need for support from the organization, Jordan et al. considered nursing managers as the most important advocates of EBP implementation, followed by nursing colleagues and ultimately physicians. They stated lack of support by physicians may harm implementing EBP because they are one of the main stakeholders in patient care (Jordan et al., 2016). However, some studies have reported this factor to rank fourth among barriers (Amini et al., 2011; Salemi et al., 2010). Since this factor is highly dependent on organizational culture, differences in study results can be justified. Physicians and nurses have different understandings of patient needs, thus, correcting the physician-nurse relationship strengthens the planning based on common goals and increases the sense of participation and cooperation in the treatment team (Futami et al., 2020). The second barrier from the perspective of nursing managers is nurses' unawareness of research findings. To remove this barrier, there are suggestions such as continuing training, holding a journal club and hiring research-oriented nurses who can serve as role models. In this regard, the results of Malik's study strongly support education as a tool to enhance nurses' inquiry and appraisal skills, create positive attitudes and to overcome EBP barriers (Malik et al., 2016).

Another important barrier is 'insufficient time on the job to implement new ideas'. In sum, 60% to 75% of nurses in different countries considered not having enough time to try new ideas as a barrier with a moderate or high impact (Alatawi et al., 2020; Hasanpoor et al., 2019; Youssef et al., 2018). Lack of time can be caused by a shortage nurse in addition to too much workload in each shift. The previous research suggests that nurses are reluctant to EBP because they are too tired and overworked (Ahlers et al., 2021; Hamilton, 2019; Treviño-Siller et al., 2020). Although some believe that not having time is an acceptable excuse in the society, which can reflect the lack of interest, need and knowledge for applying research results (Hasanpoor et al., 2019; Mthiyane & Habedi, 2018).

Another part of this study addressed the perspective of nursing managers on the necessity and extent of EBP implementation. In sum, about 80% of managers considered EBP essential. The positive attitude of nursing managers towards EBP in this study has been observed among nurses in other studies conducted in Iran and other countries (Azmoude et al., 2018; Hosseini-Moghaddam et al., 2021;

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TABLE 6 Relationship between facilitators and barriers to EBP and age, work experience and nursing management experience.

		Facilitators of EBP				Barriers to EBP			
Variable		Nursing factors	Organizational factors		Research presentation factors	Nurses' values, skills and awareness		Organizational barriers and limitations	Research quality	Presentation and accessibility of research results
Age	Beta	–	–		–	−0.160		−0.205	–	−0.093
	p	–	–		–	0.002*		<0.001*	–	0.040*
Gender (female)	Beta	−0.800	−1.698		−0.855	−1.732		–	−0.645	−0.851
	p	0.054	0.001*		0.063	0.008*		–	0.282	0.147
Education level	Beta	−1.099	–		−1.017	−1.593		−2.281	−0.832	−3.283
	p	0.012*	–		0.015*	0.018*		0.004*	0.127	<0.001*
Work place	Beta	–	–		–	–		−1.905	–	–
	p	–	–		–	–		0.109	–	–
University rank	Beta	–	–		–	–		−1.048	–	−0.374
	p	–	–		–	–		0.045*	–	0.360
Take a research course	Beta	–	1.806		–	–		–	−0.798	–
	p	–	0.185		–	–		–	0.176	–
EBP awareness method	Beta	0.729	1.737	0.787	–	1.820	0.760	0.587		
	p	0.089	0.152	0.100	–	0.023*	0.244	0.341		
Articles published	Beta	0.634	–	–	0.811	1.169	–	–		
	p	0.044*	–	–	0.095	0.041*	–	–		
Work experience	Beta	−0.032	–	0.057	–	–	−0.069	–		
	p	0.310	–	0.071	–	–	0.115	–		
Nursing management experience	Beta	0.012	0.020	–	0.020	–	0.013	0.016		
	p	0.009*	0.095	–	0.006*	–	0.062	0.021*		

*$p < 0.05$ considered significantly.

Mudderman et al., 2020; Youssef et al., 2018). However, when it comes to EBP implementation, nursing managers believe EBP was moderately implemented for care giving at medical centers, which is consistent with other studies (Mohsen et al., 2016; Saunders & Vehviläinen-Julkunen, 2014). The findings of this part show that despite the strong positive attitude towards EBP, its implementation in clinical performance is moderate or low.

5.1 | Study strengths and limitations

This study was conducted on a large sample of nursing managers using an online questionnaire. Utilizing social media and internet has facilitated conducting studies in a wide geographical region especially during the coronavirus disease 2019 (COVUD-19) pandemic. To the best of our knowledge, no study has yet combined the perception of nursing managers in terms of EBP between various regional universities in Iran. These findings could also be used in countries and societies that share similar values, culture and education systems, especially countries that have matrons, a nurse with minimum undergraduate degree in nursing whose duty is to supervise the performance of nurses in the hospital and clinic and oversee the standard of care.

However, due to the difficulty in accessing the contact number of all nurses and also due to their busy working hours, the minimum sample size was calculated and used for this study. The findings of this study provide evidence for conducting further studies in this field. Another limitation of this study was performing the study based on self-report and relying solely on the replies of the participants. Although the questionnaires were validated in previous studies and the internal validity of the tools were accepted in this study, there is still a chance that the responses of some of the participants were not accurate. To address this issue an open-ended question was provided for each questionnaire asking the participants to include other aspects that they thought were not included in the questionnaire. These statements were reviewed by the researchers to better interpret the responses. This study was based on voluntary participation and self-report. Although all the questionnaire items were compulsory as the participants were free to quit answering the online questionnaire, we anticipated that the questionnaires were answered fairly and willingly by all the participants. However, there is still chance for some questionnaire

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items to be answered dishonestly as the participants might not be willing to give a faire response to some questionnaire items. Although statistically significant correlations were found in this study, the correlation coefficients were small and indicated small effect size. Similar issue was present for the regression findings (adjusted R squared ranged from 0.04 to 0.07). Therefore, these findings should be interpreted with caution. It is suggested that studies with larger sample sizes be conducted to evaluate the relevance of these findings.

5.2 | Study implications and recommendations for further research

The findings of this study can have managerial, clinical and education applications. In terms of managerial application, this study findings emphasized the key role of organizational conditions and nursing managers for evidence-based practice. Supportive performance of managers and nursing organization is necessary to provide evidence-based performance. The support of the organization requires a positive attitude towards EBP among nursing managers. This study showed that this attitude was present among the high-level the nursing managers. In terms of clinical application, the findings of this study can be used by nurse managers to improve the quality of nursing services by facilitating EBP and improve treatment outcomes in the hospitals. In terms of education application, the findings of this study indicated that nursing managers had insufficient the level of knowledge and skills in adopting EBP. Therefore, there is a need for education interventions to fill the existing educational gap. Currently, research method has been included in the nursing bachelor's education program and higher levels, but it seems that this education alone was not enough. Therefore, nursing managers and nurses may require practical education of the searching, comprehension and interpretation of academic documents.

As mentioned in the limitations, the findings of this study documented the need for extreme evaluating the facilitators and barriers and to identify the triggers and related factors to these barriers and facilitators prior to designing interventions. Therefore, there is a need for large multicentre studies with the aim of identifying the mechanism of action of each barrier and facilitator. The findings of these studies can be further used in updating the education curricula and continuing nursing education programs.

6 | CONCLUSION

This study analysed the facilitators and barriers to EBP from the perspective of Iranian nursing managers. Nursing managers valued organizational factors and nursing factors as the prominent barriers to EBP. The findings of this study may help nursing educators, healthcare decision-makers and nursing managers design interventions to empower nurses in adapting EBP. However, these findings should be evaluated in larger and multicentre studies and in other fields of healthcare system.

AUTHOR CONTRIBUTIONS

All authors read and approved the final manuscript. Hosseini-Moghaddam F and Mohamadpour A contributed in designing the study, Hosseini-Moghaddam F collected the data and data analysed by Hosseini-Moghaddam F, Bahri N and Mojalli M. All authors participated in the writing and review of the manuscript.

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CONFLICT OF INTEREST STATEMENT

No conflicts of interest have been declared by the authors.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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