Registered Nurses' Attitudes and Confidence in Evidence-based Practice and Facilitators and Barriers for Implementation: A Literature Review

Justė Kivilienė¹, Aurelija Blaževičienė¹, Jamesetta A. Newland² ¹Nursing and Care Department, Lithuanian University of Health Sciences, Kaunas, Lithuania ²New York University Rory Meyers College of Nursing, New York, NY, United States

Keywords: confidence, attitudes, barriers in evidence-based practice, facilitators in evidence-based practice, registered nurses.

Summary. This study aimed to identify, appraise, and summarize the available evidence relating to nurses' attitudes, confidence in evidence-based practice (EBP), and facilitators and barriers for implementation of EBP in nursing.

Methods. PubMed, The Cochrane Library, EBSCO (Nursing Reference Center Plus), and Google Scholar were searched from January 2010 to January 2021. Studies in English that met the following criteria were considered for inclusion: quantitative and qualitative research that assessed the most common facilitators and barriers for implementation of EBP in nursing practice; and nurses' attitudes and confidence in using EBP in their daily routine.

Results. Seventeen studies were included in the review. In quantitative studies, questionnaires were specifically developed for use in six while the other 10 used validated instruments. One qualitative study was included. In 12 studies, researchers reported elements of nurses' attitudes and confidence about EBP. Facilitators to the implementation of EBP were explored in 11 studies, and barriers were identified in 12 studies. Results of this review indicate that nurses face challenges in implementing EBP.

Conclusion. To improve the use of EBP in nursing practice, nurses need to understand that nursing practice depends on some fundamental factors such as nurse education, computer literacy, work environment, experience, personal qualities, and colleagues around them. This literature review highlights the necessity of education in finding and accessing evidence, nurses' autonomy over nursing practice, mentorship for successful implementation, and organizational support.

Introduction

Evidence-based practice (EBP) is widely regarded as a critical component of providing safer health care (1-3). Beginning with Florence Nightingale in the 1800s and evolving again within the medical community, EBP continues to advance along with the nursing science. Evidence-based practice is foundational to undergraduate and graduate nursing education and is a way for the nursing discipline to minimize the theory to practice gap (4).

Sackett et al. (1996) characterized evidencebased medicine (EBM) as a clinical decisionmaking method that considers multiple sources of knowledge, including empirical evidence and analysis, patient preferences and choices, available resources, the context of treatment, and finally the skilled caregiver's clinical expertise (5). Other health professionals accepted this definition and adopted it for their own use. According to the International Council of Nurses, EBP in nursing is defined as "a problem-solving approach to clinical decision making that incorporates a search for the best and latest evidence, clinical expertise and assessment, and patient preference values within a context of caring" (4). Implementation of EBP in clinical practice allows for patients to receive the highest quality of care and achieve the best outcomes. Nurses acquire increased awareness and confidence in clinical decision-making (1, 3, 6).

Despite the significant benefits of EBP, many factors may act as barriers to the implementation of EBP, with some researchers arguing that the global application of EBP continues to advance slowly for these reasons (7). Summarizing the findings of researchers, the most common barriers to EBP implementation are inadequate supports of time and resources, a lack of knowledge and training, inadequate motivation, and limited assistance from organizations (8–10). Barriers must be overcome, not only in terms of education and training, but also in terms of objective barriers and their complete removal (10). For effective EBP implementation, further investment in resource supplementation, nursing workforce, nursing instruction, and EBP

Correspondence to Justė Kivilienė, Department of Nursing, Faculty of Nursing, Medical Academy, Lithuanian University of Health Sciences, Eivenių 4, Kaunas LT-50161. E-mail: juste.kiviliene@lsmu.lt

approaches are needed. As a result, nurses would have more research time, a stronger EBP operating environment, and additional support from colleagues and management (10). The use of evidence in nursing practice is not only a way to professionalize nursing, but it is also a necessary component in improving safety and quality and filling the gap between theory and practice (11).

Facilitation is becoming increasingly relevant in the advancement of evidence-based nursing practice. Since we are beginning to understand "what" facilitators or individuals who engage in facilitation do, there is still a need to better understand "how" they implement these activities, especially activities related to research utilization (12). Perceptions and attitudes about EBP, as well as occupational views and previous EBP education, all played a role in utilization intention (13). This knowledge can have an impact for improved patient care quality, growth in professionalism, professional satisfaction, and a more positive nursing image. The ability to make improvements in nursing practice based on research results can lay the foundation for the development and evaluation of practical methods for EBP (12).

The study aim was to identify, appraise, and summarize the available evidence relating to nurses' attitudes, confidence in EBP, and facilitators and barriers for implementation of EBP in nursing.

Methods

Search Strategy. The literature review was carried out in accordance with the PRISMA guidelines (14). Between January 2010 and January 2021, electronic databases were searched for studies published in English. To find quantitative and qualitative studies, researchers searched PubMed, The Cochrane Library, EBSCO (Nursing Reference Center Plus), and Google Scholar. The following search terms were used: confidence AND attitude, confidence AND evidence-based practice, confidence AND nurses, attitude AND evidence-based practice, attitude AND nurses, and evidence-based practice AND nurses. The Zotero program was used to collect, organize, cite, and share resources.

Study Eligibility. We included quantitative and qualitative research studies that assessed the needs of nurses using questionnaires, tools, focus groups, or semi-structured interviews. The studies that were included had to identify the most common facilitators and barriers for implementation of EBP in nursing practice and investigate nurses' attitudes and confidence in using EBP in their daily routine.

Study Selection. To assess which papers met eligibility criteria, two authors independently screened the titles and abstracts of the citations found by the literature search. The entire paper was

reviewed to assess final eligibility. When there were differences, the authors discussed the differences until they came to a consensus.

Data Extraction and Analysis. A data extraction form was used by one review author, and the data were checked by the second author. The following information was extracted: year of publication, author, country of study, aims and objectives, target population, type of research, and literature source. The authors also extracted significant research outcomes and major themes.

Results

Search Results. A total of 65 894 records were identified through PubMed, and additional records were identified through other sources: The Cochrane Library ($n = 102\ 201$), EBSCO (Nursing Reference Center Plus) (n = 14480), and Google Scholar (n = 38 300). The PRISMA flow diagram is shown in Figure 1. Duplicates were excluded, which left 1024 studies. After reading titles and abstracts, 160 articles were left. In the next step, full-text articles were assessed for continued eligibility. Of these, 143 articles were excluded for the following reasons: related to illness or treatment (n = 27), another purpose of the study (n = 77), nursing leadership (n = 8), nursing studies (n = 23), and other medical staff (n = 8). A total of 17 studies were included in the literature review. The majority used a crosssectional study design with survey instruments (Figure 1).

Description of Studies. The included studies recorded a total of 5455 nurses: n = 5415 in quantitative studies and n = 40 in qualitative studies. In these studies, nurses represented different specialties: cardiovascular, psychiatric, geriatric, clinical, community, intensive care; and different roles as nurse educators, clinical coaches, and nurse specialists. Participants also worked in various departments and hospitals: community centers; public, teaching, university, and specialist university hospitals for the treatment of cancer; and nursing homes. Of importance is the fact that researchers conducted studies in many countries around the globe, including the Bahamas, Singapore, China, Turkey, Canada, Iran, Norway (3 studies), Slovenia, Japan, Iceland, Israel, Taiwan, Ireland, Australia, and Jordan. Several studies used the same questionnaire. Study characteristics are summarized in Table 1 (quantitative and qualitative research).

Nurses' Attitudes and Confidence in EBP. Twelve studies indicated that researchers explored attitudes, knowledge, skills, and beliefs of registered nurses in relation to EBP. Analysis of these studies revealed that most nurses had a positive attitude toward EBP (15, 16). Nurses with more nursing experience were more likely to be confident in applying

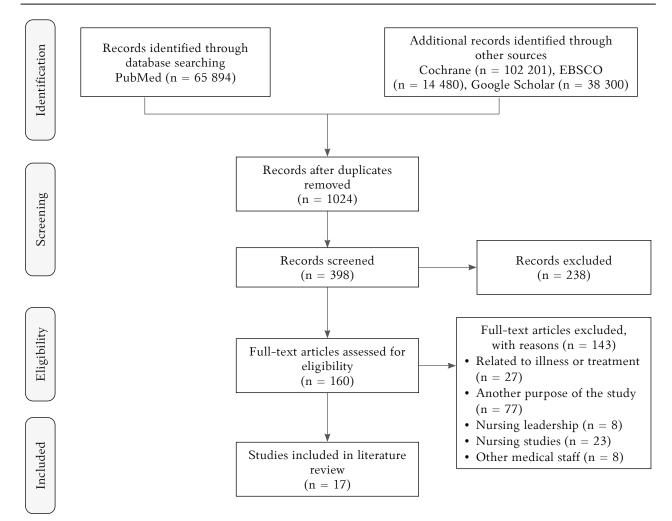


Fig. 1. PRISMA flow diagram of search strategy

EBP. Similarly, nurses who had completed EBP training felt more confident about incorporating EBP into their practice (16). However, research in Israel did not find any correlations between nurses' attitudes and EBP implementation (17). Moreover, researchers from Iran concluded that the majority of Iranian nurses were found to be underprepared for EBP because they had a negative attitude about the practice of using EBP (18). They stated that nurses' attitudes and self-efficacy to engage in EBP were insufficient, and there were numerous barriers that made integrating EBP into practice challenging. Based on the findings, nurses' ability and confidence in adopting EBP could be improved by training and ongoing support from experienced mentors or managers. One researcher recommended as a solution to include EBP knowledge and training in nurses' education; it would assist nurses in developing confidence in their capacity to appropriately use study findings in practice, as well as contribute to their professional obligation of providing highquality care in nursing practice (15).

After analyzing the studies performed using validated instruments, the results did not differ from those in which researchers developed their own surveys. In these studies, nurses showed positive attitudes towards EBP (7, 19-21). However, even when they had positive attitudes and beliefs about EBP, their implementation was low (20, 22-24). In a study conducted in Ireland, the majority of psychiatric nurses said they were more confident in finding information on the Internet than in using research findings (24). In another study, cardiovascular nurses stated that they relied more on experience and knowledge from study time in a nursing school rather than relying on study findings as formal sources of information in their daily job (19). Similar results were obtained by researchers from Norway, where nurses mostly relied on experience-based knowledge gleaned from their own observations, colleagues, and other collaborators; evidence was rarely used (22). However, nurses stated that they were sure of the importance of EBP in patient care and wanted to access evidence more

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| | Key Findings | | This study indicates that although nurses select and use evidence from a wide variety of sources and further training is needed to apply research knowledge in nursing practice. | | Nurses with higher education are more confident in evidence-based nursing. Evidence-based nursing practice was more likely where there was access to a rich library with nursing and medical journals, and opportunities for working with a computer and for searching the Internet in the workplace. | The majority of nurses expressed positive attitudes toward research and EBP. The barriers: insufficient authority to change practice, difficulty understanding statistical analyses, and a perceived isolation from knowledgeable colleagues with whom to discuss the research. The EBP facilitators: improved access to computers and Internet facilities in the workplace, more effective research training, and collaboration with academic nurses. |
| | nt / | | :se | he | rces 3P | |
| oro fimin i | Data Collection Instrument / Validated Instrument | | Questionnaire – 7 general categories: evidence sources, evidence use, facilitators, and barriers, CNS role challenges, general beliefs, and competence to access, use, and distribute evidence. | Questionnaire developed for the study. | Questionnaire about attitudes towards research in nursing, sources of knowledge and barriers to EBP implementation skills and work environment support. Questionnaire developed for the study. | There were 29 elements in the section "Barriers to Using Research in Practice." The other survey sections contained items adapted from several sources, with permission from each of the authors. Questionnaire developed for the study. |
| | ו Collectio Validated I | | Questionnaire – 7 g evidence sources, ev facilitators, and barr challenges, general competence to acce distribute evidence. | nnaire deve | Questionnaire about a towards research in nu of knowledge and bar implementation skills environment support. Questionnaire develoj study. | There were 29 elements in the section "Barriers to Us Research in Practice." The survey sections contained i adapted from several sourc permission from each of th Questionnaire developed fi study. |
| | Data | | Question evidence facilitatc challeng compete distribut | Question study. | Question towards of knowj impleme environr Question study. | There w the secti Research survey s adapted permissi permissi study. |
| | Design and Sample | | Administrated by telephone descriptive, cross-sectional study 94 clinical nurse specialists | | Self-administered cross-sectional survey with a convenience sample 243 nurses who worked in hospitals or in the community | Self-administered descriptive, quantitative study 89 registered nurses from 6 nursing homes |
| | Aim | żn | To investigate how nurses choose and use evidence in their everyday practice. | | To explore the relationship between nurses' personal and professional factors and evidence-based nursing practice. | To identify nurses' views of EBP barriers and facilitators that could help nurses improve and use EBP. |
| | Author Year Country | Quantitative design | Profetto- McGrath et al. 2010 Canada (29) | | Eizenberg 2011 Israel (17) | Chang et al. 2010 Taiwan (15) |

Table 1. Studies included for analysis

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| | Design and Sample Data Collection Instrument / Validated Instrument Key Findings | ness of titudeSelf-administered surveyThree-section questionnaire. The first section – demographic intrast surveyThis study discovered a positive attitude among nurses toward EBP.actors1486 registered nurses information.The first section – demographic nurses toward EBP.This study discovered a positive attitude among nurses toward EBP.actors1486 registered nurses information.The first section – demographic nurses toward and management.The barriers for implementation EBP: hospital management.adoption.about attitudes toward and monivators and barriers to adopting EBP; Third – nurses' knowledge sources for patient care and clinical decision-making.This study discovered a positive attitude among nurses toward EBP.QuestionnaireGuestionnaition; Second – information about attitudes toward and management.Paber information management.Paber information management.adoption.ApplicPaber information management.Patriers for implementation EBP: hospital management.adoption.ApplicPaber information management.Patriers for implementation EBP: hospital management.ApplicPaber information motivators and barriers to adopting decision-making.Patriers for information management.ApplicPaber information motivators and barriers to adopting decision-making.Patriers for inplementation EBP: hospital management.ApplicPatriers information decision-making.Patriers for information management.ApplicPatriers information decision-making.Patriers information management. <th>rsSelf-administeredDeveloping Evidence-Based PracticeNurses clinical practice mostly was based on own experience collected from their own observations, colleagues, and other collaborators for support in practice.6 EBP407 registered nursesQuestionnaire.6 EBP407 registered nursesValidated instrument.7 EBPFinitionEvidence from research was seldom used.6 EBP7 registered nursesFinition7 registered nurses7 registered nurses9 AD7 registered nurses8 nut and nurse9 AD7 registered nurses8 nut manage research was seldom used.9 AD7 registered nurse9 nut manage research evidence.</th> <th>arriers, Postal survey Development of Evidence-Based The barriers: insufficient time to find and read cills 145 psychiatric nurses Practice Questionnaire. p EBP Validated instrument. The facilitators: Practice development coordinators which supporting changes in the practice. The highest skills: Using the Internet to search for information The lowest skills: using research evidence to change practice to change practice.</th> <th>landicPostal descriptiveEBP Beliefs Scale - 16 statementsNurses have positive attitude regarding EBP:abilitysurveyof the scale; ILNP - 71 items in studyMost (82%) of the respondents reported less confident regarding their own knowledge and skillsabilitysurveyof the scale; ILNP - 71 items in Most (82%) of the respondents reported less confident regarding their own knowledge and skillsured by540 registered nurses with 44 items used in the current study.most (82%) of the respondents reported less confident regarding their own knowledge and skillssto540 registered nurses addition to background questions, with 44 items used in the current study.The barriers: lack of search skills and use of research in practice.ad withValidated instrument.in practice.</br></br></th> | rsSelf-administeredDeveloping Evidence-Based PracticeNurses clinical practice mostly was based on own experience collected from their own observations, colleagues, and other collaborators for support in practice.6 EBP407 registered nursesQuestionnaire.6 EBP407 registered nursesValidated instrument.7 EBPFinitionEvidence from research was seldom used.6 EBP7 registered nursesFinition7 registered nurses7 registered nurses9 AD7 registered nurses8 nut and nurse9 AD7 registered nurses8 nut manage research was seldom used.9 AD7 registered nurse9 nut manage research evidence. | arriers, Postal survey Development of Evidence-Based The barriers: insufficient time to find and read cills 145 psychiatric nurses Practice Questionnaire. p EBP Validated instrument. The facilitators: Practice development coordinators which supporting changes in the practice. The highest skills: Using the Internet to search for information The lowest skills: using research evidence to change practice to change practice. | landicPostal descriptiveEBP Beliefs Scale - 16 statementsNurses have positive attitude regarding EBP:abilitysurveyof the scale; ILNP - 71 items in studyMost (82%) of the respondents reported less confident regarding their own knowledge and skillsabilitysurveyof the scale; ILNP - 71 items in Most (82%) of the respondents reported less confident regarding their own knowledge and skillsured by540 registered nurses with 44 items used in the current study.most (82%) of the respondents reported less confident regarding their own knowledge and skillssto540 registered nurses addition to background questions, with 44 items used in the current |
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| ble 1 | Aim Desi | To explore awareness of Self-ack knowledge and attitude survey toward EBP and factors 1486 role 2 likely to encourage or from 2 create barriers to adoption. | To examine factors Self-ac influencing the cross-s implementation of EBP 407 rei among nurses. | Investigated the barriers, Postal facilitators, and skills 145 ps needed to develop EBP | To determine Icelandic Postal registered nurses' ability survey to provide care based on 540 rejevidence as measured by their beliefs, perception of skills, and access to resources associated with |
| Continuation of Table 1 | Author Year Country | Majid et al. 2011 Singapore (16) | Dalheim et al. 2012 Norway (22) | Yadav et al. 2012 Ireland (24) | Thorsteinsson 2013 Iceland (25) |

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| Continuation of Table 1 Author | able 1 | | Doto Collocition Instrument / | |
|--|---|---|--|--|
| Year Country | Aim | Design and Sample | Validated Instrument / Validated Instrument | Key Findings |
| Stokke et al. 2014 Norway (20) | To map self-reported beliefs towards EBP and EBP implementation among nurses. | Self-administered cross-sectional study 185 registered nurses | The EBP Beliefs Scale consists of 16 statements to measure beliefs about the value of EBP and ability to implement; The EBP Implementation Scale consists of 18 statements. Validated instrument. | Nurses were positive towards evidence-based practice, but only practiced it to a small extent. |
| Farokhzadian et al. 2015 Iran (18) | To examine nurses' attitudes toward EBP, self-efficacy, and preparation requirements, as well as supporting factors and barriers to EBP implementation. | Self-administered cross-sectional study 182 registered nurses | A questionnaire consisting of 2 sections: to collect socio- demographic information and a section collecting information on five topics (staff's attitude, self- efficacy skills of EBP, supporting factors, barriers, and training needs for implementing EBP). Questionnaire developed for the study. | The majority (87.4%) of the nurses had not attended any formal training on EBP and 60% of them were not familiar with the concept of EBP. Nurses' attitude towards EBP was unfavorable and their self-efficacy skills of EBP were poor. The barriers: difficulty judging the quality of research papers and reports. The facilitators: mentoring by nurses who have adequate EBP experience. |
| Malik et al. 2015 Australia (7) | To investigate the knowledge, skills, and attitudes of nurse educators, clinical coaches, and nurse specialists in relation to EBP. | Internal mail system survey 135 nurses | Questionnaire consisted of 67 Likert style items. Questionnaire developed for the study. | Nurses had positive attitudes towards EBP. Nurses demonstrated lack of knowledge and skills in appraising and utilizing evidence into practice. They indicated a desire to seek educational opportunities to upskill themselves in the process of EBP. |
| Skela-Savič et al. 2016 Slovenia (23) | To identify the extent of EBP implementation, to establish nurses' beliefs on EBP and to identify possible explanatory factors | Self-administered cross-sectional research 534 nurses | Standardized instruments Evidence- Based Practice Beliefs and Implementation Scale. Validated instrument. | Nurses have positive beliefs about evidence-based practice but exhibit a low level of implementation. |
| Zhou et al. 2016 China (21) | To describe RNs' attitude, knowledge, and practice on EBP. | Self-administered multiple institutional cross-sectional survey 818 nurses | EBPQ questionnaire – 24 items: knowledge/skills (14 items), attitude (4 items), and practice (6 items). Validated instrument. | Respondents have positive attitude towards EBP positively. Facilitators: longer working experience; administrative position; research experience, lighter working load. |

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| f Table 1 | Aim Design and Sample Data Collection Instrument / Validated Instrument Key Findings | To explore the perceivedSelf-administeredA questionnaire of 32 questions; 5-point Likert-like scales as well as 5-point Likert-like scales as well as open-ended questions.More of nurses never tried to implement evidence- | To investigate cardiovascularSelf-administeredThe EBNAQ-15 items divided intoNurses have positive attitudes, feelings, beliefs, andTo investigate cardiovascularSelf-administeredThe EBNAQ-15 items divided intoNurses have positive attitudes, feelings, beliefs, andnurses' attitudes towardscross-sectional surveythree subscales that assess beliefsintention of conduct towards EBN.EBP, sources of knowledge,62 nursesand expectations, conduct purpose,Half of the respondents (47%) were familiar withand the factors supportingeBN.EBN.The barriers: not enough time and resources.EBP.rursing (EBN).The barriers: not enough time and resources.Validated instrument.administration to implement EBN. | Il. To explore Self-administered Evidence-Based Practice The facilitators: experience conducting nursing | ITo identify the predictors of EBP among intensive care sectional designEvidence-Based Practice toustionnaire and Evidence-BasedThe barriers: clinical environmental The facilitators: knowledge of EBP; educational program for nurses.ITo identify the predictors of toustion and evidence-BasedThe barriers: clinical environmental The facilitators: knowledge of EBP; educational program for nurses.ITo identify the prediction of toustion and evidence-BasedThe facilitators: knowledge of EBP; educational program for nurses.ITo identify the prediction of toustion and evidence-BasedPractice Barrier Scale.ITo introve to identifyPractice Barrier Scale.ITo introve to identifyValidated instrument. | esign The aim of this study was Classical grounded theory methodology. to gain more knowledge theory methodology. about what nurses perceive about what nurses perceive theory methodology. as the most important collected data through evidences. Collected data through the groups. and to explain how they act |
|-------------------------|---|---|---|--|---|--|
| Continuation of Table 1 | Author Year Country | Duncombe To explor 2018 barriers ar The Bahamas EBP impl (28) | Kilicli et al. 2019 Turkey (19) EBP, sour EBP. EBP. | Tomotaki et al. To explore 2020 sociodemo Japan (30) related to | Abuejheisheh To identif- et al. EBP amoi 2020 nurses. Jordan (27) | Qualitative design Renolen et al. 2014 The aim of this study was 2014 to gain more knowledge about what nurses perceiv as the most important challenge in implementin evidence-based practice and to explain how they a |

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often, but they were less confident in their own knowledge and skills (7, 21, 25).

Only one qualitative study was selected for the analysis of this topic (Table 2). First, researchers approached approximately 40 nurses who had been active in the development of EBP. They selected 14 nurses from this group, with varying levels of experience and from various geographic locations, based on their willingness and availability to participate. Using a grounded theory methodology, the researchers conducted four focus group discussions. In addition, data from a single participant-initiated interview were used. The focus groups were moderated by the first author, and in the first three focus groups, an assistant with experience in EBP was present to take notes and observe the group discussions. The researchers concluded that nurses needed to be able to trust what they did, so they decided to depend on their own experience rather than research. This was typical, with the exception that when nurses had accidents and were afraid of putting patients in danger by not employing new knowledge, they adjusted their practice. It is important to improve nurse's confidence in using evidence based on scientific information, as well as experience and patient preferences, in order to apply the best knowledge to improve patient care (26).

Facilitators for Implementation of EBP in Nursing. Eleven of the included studies (Table 2) presented findings on facilitators for implementation of EBP in nursing. Collaboration and mentoring and supporting changes in practice were found to be the strongest facilitators for implementation of EBP (15, 17, 18, 24). Knowledge of EBP was found to be the strongest predictor of using EBP, showing that an educational program for nurses on this topic was critical to improving EBP practice in the clinical field, which could improve nursing care and ultimately raise the quality of health care offered (15, 27). Nurses needed more time to achieve this goal; EBP is a multistep process so nurses needed enough time to identify clinical issues where EBP could be used, translate these issues into wellformulated clinical questions, conduct a critical appraisal of the retrieved evidence, formulate and implement an intervention, and assess the effectiveness of the implemented intervention (7, 16). Organizational policies and support from the hospital administration were very important in implementation and development of EBP (18, 19, 28). Analysis of the literature showed that longer job experience, administrative positions, research experience, continuing education, certification for advanced practice, communication skills, a lighter workload, and a more professional attitude were all found to be useful in facilitating EBP (21, 27, 29, 30).

Barriers for Implementation of EBP in Nursing. However, nurses faced many barriers in their work. The most common problems were a lack of time, limited skills in finding and managing research evidence, and insufficient knowledge of statistical terms and technical jargon used in scientific articles (7, 16, 18, 19, 22, 24, 25). The usage of sources of knowledge and self-reported barriers were influenced by the nurse's age, years of nursing practice, and number of years after obtaining the last health professional degree (22). It was also mentioned that use and dissemination of evidence in practice were complicated by various duties and large workloads, time restrictions, and the knowledge required for critically appraising the volume of information (29). Other problems were related to lack of training, inadequate authority to change practice, lack of organizational and administrative support, and a sense of isolation from experienced colleagues with whom to debate the findings (15, 27, 28). See Table 3.

| Facilitators | Number of Studies Identifying Facilitators, $n = 10$ |
|--|--|
| Collaboration; mentoring and supporting changes in practice | 15, 17, 18, 24 |
| Training is needed to apply research knowledge in nursing practice | 15, 28, 29 |
| Organizational policies and support from the hospital administration | 19, 28 |
| Educational program for nurses | 27, 30 |
| Access to Internet for searching in workplace | 15, 17 |
| Work experience | 21, 30 |
| Experience conducting nursing research | 21, 30 |
| Rich library with nursing and medical journals | 17 |

Table 2. Facilitators to EBP implementation

| Barriers | Number of Studies Identifying Barriers, $n = 11$ |
|--|--|
| Lack of time | 19, 22, 24, 25 |
| Lack recourse to change practice | 19, 24 |
| Hospital management/ insufficient authority to change practice | 15, 16, 27 |
| Lack of skills to find and manage research evidence | 7, 15, 22, 25 |
| Inadequate training in research methods. | 28 |
| Technical jargon used in scientific articles | 18 |

Table 3. Barriers to EBP implementation

Discussion

Nurses are the largest group of health care providers and have a key role in ensuring the promotion of health care (9) and delivering better services (6). EBP is important to the professional development, responsibility, and capabilities of nurses (28), and it has become an important subject in nursing and has been integrated into daily practice. There are many studies that show nurses' positive attitudes, feelings, and beliefs about EBP and intentions to conduct EBP (7, 16, 19). Therefore, why is EBP not used more often in nursing practice? As shown, this literature review of the implementation to EBP in nursing depends on several factors: nurse education, computer literacy, professional status of the nurse in the hospital and country, clinical experience, personal features, and work environment (15, 19, 28, 29).

For this reason, nurses must learn throughout life, constantly update not only subject knowledge but also general knowledge, strive for the development of one's personality and profession. Lack of knowledge and understanding about the benefits of applying EBP findings to practice may be affected by insufficient motivation of nurses – lack of understanding of the need to use EBP, low interest, lack of personal interests, or lack of ideas. Every nurse should know the purpose and method of EBP, be able to ask appropriate clinical questions, and be aware of who in their workplace can help to search and answer questions.

Nurses do not implement EBP because they have never had formal training on EBP and are not familiar with the concept of EBP (18, 22). Education plays a key role in modifying nurses' less acceptable attitudes and behaviors. Nurses need support and encouragement to ensure that the reading of scientific literature is supported during work and that the use of EBP should become a daily routine. Even more, EBP mentors are critical in building clinicians' belief in the practice and their capacity to put it into practice. EBP mentors through mentorship programs, trainings, lectures, and the like, could be an essential method for decreasing the effects of theory-practice gaps (12, 31). Mentoring will also help in developing nurses' confidence in their choice to use relevant study findings in practice, allowing them to fulfil their professional responsibility of providing high-quality nursing care.

Another very important factor for implementation of EBP is work environmental and organizational policy. Nonetheless, successful implementation of EBP in any practice setting will necessitate a strong commitment and joint efforts from organizational leaders. Solutions might include workload review/ regulation, promotion, encouraging management and feedback, all of which could be common strategies to improve professional practice both on their own and as part of a higher quality improvement program.

As a key barrier for EBP implementation nurses reported that they had difficulty assessing the quality of research papers and reports and applying the information to clinical practice (16, 19, 22, 24, 32). Also, other barriers identified were inadequate resources for implementing research findings, inadequate training in research methods, poor perceived knowledge of science, and lack of experience in conducting nursing research (18, 22, 23, 25, 28, 30). The use of sources of information and self-reported barriers were affected by the nurse's age, years of nursing practice, and number of years after receiving the last health professional degree (22).

Limitations. There are some limitations to the current analysis. The main limitation involved the search process, which was restricted to only a few databases. Other limitations are related to the different research methodologies used in the selected studies. Most of the study instruments were validated but used different measurement scales. Some instruments were specifically developed for the study based on the knowledge available to the researchers and had no verified psychometric properties. It should also be mentioned that different sample sizes and data collection processes using self-administered questionnaires via internal

mail systems, postal service, and by telephone posed challenges in synthesizing findings across studies. We also lack information on how EBP is developing in each country, including information on how and when nurses learn about EBP. Another crucial factor is that we are unaware of the quality improvement programs and EBP usage at each institution where nurses work. This may be related to the attitudes of nurses and the use of EBP in routine clinical settings. In self-report instruments, nurses' responses, their openness, and their honesty, and thus, the summary of results might have been influenced by personal and situational conditions at the time of administration. In the literature review, only studies published in scientific journals were included and the facilitators and barriers for implementation of EBP in nursing published in "grey literature" were not investigated.

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Conclusion

To improve the use of EBP in nursing practice we need to understand that nursing practice depends on some fundamental factors such as nurse education, computer literacy, work environment, experience, personal qualities, and colleagues around them. This literature review highlights the necessity of education in finding and accessing evidence, autonomy over nursing practice, mentorship for successful implementation, and organizational support. Most importantly, this knowledge supports the review's conclusion that EBP in nursing is determined by factors that are interpersonal, intrapersonal, extra personal, and strongly dependent on the environment. The use of evidence in nursing means not only helping nurses in their daily routine, but also raising competence, improving the prestige of nursing, but also providing improved quality care to patients.

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