Vol. 2, 2021
Journal of Medical Library and Information Science

doi.org/10.22037/jmlis.v2i.34065

Citation: Dehghan Salmasi N, Kazerani M, Shekofteh M, Jambarsang S. Analysis and identification of barriers to using evidence-based databases in nurses. J Med Libr Inf Sci. 2021; 2:e20.

CrossMark

Original article

Analysis and identification of barriers to using evidence-based databases in nurses

Najme Dehghan Salmasi[1], Maryam Kazerani[1*], Maryam Shekofteh[1], Sara Jambarsang[2]

[1] Department of Medical Library and Information Sciences , School of Paramedical Sciences, shahid Beheshti University of Medical Sciences, Tehran, Iran

[2] Statistics and Epidemiologies Department, Faculty of Health, Shahid Sadoughi University of Medical Sciences, Yazd, Iran

Recieved: 9 Feb 2021
Accepted: 13 Jul 2021

Keywords:
Databases
Evidence-Based Nursing
Barriers
Nurses
Shahid Beheshti University of Medical Sciences
Iran

* **Corresponding author**
Maryam Kazerani
kazerani@sbmu.ac.ir

Abstract

Introduction: Evidence-based nursing uses the best scientific evidence in clinical decision-making for the best care. The essential step in this process is to find evidence from databases. However, there are many barriers to its implementation that need to be identified. The purpose of this study was to determine the barriers to using evidence-based databases and their relationship to contextual characteristics.

Methods: This is a descriptive cross-sectional study in which 214 nurses working in educational hospitals of Shahid Beheshti University of Medical Sciences participated in 2020. Data were collected using a researcher-made questionnaire. Data were analysed by SPPS software version 23. Descriptive statistics, independent t-test, and ANOVA were used for data analysis.

Results: Nurses' knowledge of evidence-based databases is average and low. The biggest is the weakness in formal and informal evidence-based nursing education. The results also showed that nurses with higher education (P-value = 0.002) and educational supervisors (P-value = 0.015) and supervisors (P-value = 0.017) reported more barriers.

Conclusion: It is recommended that the head of departments and policymakers in nursing education make general revisions to the content of the nursing curriculum for the evidence-based practice concepts point of view and provide necessary facilities for relevant training courses by workshops, congresses, etc.

Introduction

In today's world, we are bearing witness to the innovations and evolutions in healthcare. Since treatment teams are faced in their profession with unpredictable situations of the patients, they should always synchronize their information and knowledge with the latest changes in clinical care so that the best evidence can be applied for making decisions about the patients. In the clinical team, nurses account for the largest group offering healthcare services and play essential and essential roles in continuing healthcare and enhancing and preserving the patients' health (1). Due to the same reason, offering healthcare and services with acceptable quality has been posited as a priority in the treatment services system, especially regarding the nursing services. To keep their knowledge and skills up-to-date, the nurses are required to follow the latest study and research findings and apply the produced knowledge to bring about an enhancement in the healthcare standards (2). Therefore, a new perspective on efficient and effective patient care is that nursing care must be research-based, and this issue is focused on evidence-based care

(3).

Evidence-based healthcare was first begun in 1992 from medicine (4). Still, it has currently found its way to all healthcare arenas, and the nursing occupation is also undergoing changes towards documented performance. During this process, nurses can make proper clinical decisions by using the best existent evidence and their clinical skills and paying attention to the patient's conditions. The best research evidence has been obtained in the replicable clinical research on patients with a minor error. Implementation of evidence-based nursing includes five key stages: the raising of a clinical question, search in the resources for finding the best and the most relevant evidence in line with finding an answer to the question, critical evaluation of the evidence, blending of the evidence with the clinical performance, and eventually evaluation of the changes made (5).

Krugman realizes the use of research findings as one of the most critical ways of empowering nursing occupation and believes that the healthcare mistakes can be reduced and the nursing service quality can be enhanced in case of using the research results (6). Moreover, this approach positively affects the outcome of the patients' healthcare via omitting non-effective healthcare and using efficient nursing processes (7). However, provisioning of a sort of healthcare based on best evidence and features high effectiveness has become an international strategy for healthcare associations (8).

It is necessary to expand the nursing knowledge in line with the patients' healthcare's continuous advancement (9). The most substantial fraction of the nursing knowledge is based on research and study. Nursing research is deemed a scientific process that causes validation and definition of the existing knowledge and production of new knowledge (10). Its objective is to develop the nursing activities by producing a type of knowledge applied in daily clinical services (11). One of the methods of accessing the studies' results is a reference to the evidence-based databases that are searchable and patient-centric and provide the full text of evidence found in previous studies and experiences that have been critically evaluated by researchers in each field (12). On the other hand, the most crucial step in implementing evidence-based nursing is collecting the best and the most relevant evidence for answering a clinical question. Thus, the nurses must become familiarized with the corresponding databases and effective and efficient search for finding the answer to a clinical question.

There are numerous barriers to implementing evidence-based nursing that lead to slowness and/or non-implementation thereof. In line with this, the obstacles of running evidence-based nursing have been investigated in numerous studies. The results of the survey by Shayan et al. show that scarcity of resources, limited access to the information, inadequate number of staff, lack of organizational support, inconsistency between instruction and performance in the nursing study field, absence of a relationship between the scientific and operational clinical environments, and shortage of time have been reported amongst the hindrances to the evidence-based practice amongst the nurses (13). In a study by Yue et al., as well, the impediments of evidence-based nursing amongst the nurses specialized in burn cares are non-instruction of evidence-based nursing, unfamiliarity with the statistical analyses, unfamiliarity with scientific researches' methodologies, limited access to the studies, difficulty in reading and comprehending the articles in foreign languages, low ability in searching the systematic reviews and shortage of time for searching and reviewing the related works have been reported (14). The study results by Ammouri et al. demonstrate that the most significant barriers existing on the way of implementing evidence-based practice amongst the nurses are shortage of time for performing research and insufficiency of the resources for changing the methods (15). Moreover, in a study by Majid et al., the barriers that were found existing on the way of accepting the evidence-based practice were a shortage of time, inability in perceiving the evidence, heavy work duty of the nurses, and non-instruction (16). In the study by Heiwe et al., the most important factor giving rise to the non-implementation of evidence-based practice has been a shortage of time (17).

Generally, according to the various studies, it can be stated that nurses have problems in the area of familiarity with the databases and application of study findings in healthcare issues. Considering the importance of evidence in enhancing nursing performance and the wide gap between the production of evidence and application in the clinical area, it is necessary to investigate the nurses' perspectives for identifying the main barriers. Thus, the current research paper intends to determine the nurses' attitudes working in educational and treatment hospitals of Shahid Beheshti Medical Sciences University regarding the limitations of using databases, thereby elaborating the relationships between the demographic indicators with the mentioned barriers. Meanwhile, specifying the status of using databases and the existing barriers, the study findings will provide the readers with suggestions regarding removing the obstacles and improving the current situation.

Methods

The present study is descriptive and cross-sectional research. The study population included all of the matrons, clinical supervisors and educational supervisors, and head nurses working in educational and treatment hospitals affiliated with Shahid Beheshti University of Medical Sciences with a work history of at least five years during 2019 reached in number to 238 persons. Considering the limitedness of the study population, all of the nurses were entered into the study based on the full-count sampling method, and 214 questionnaires were subsequently completed and collected. Since Rogers' model analyses an innovation item, the evidence-based databases were considered an 'innovation' due to reliable clinical resources. They included the Cochrane Library, Embase, PubMed, and Clinical Key for Nurses, and BMJ (British Medical Journal) Clinical Evidence databases, which were accessible at the time of data-gathering. However, there was a limitation in this study in that we did not have access to some crucial databases in this field, such as the Cumulative Index of Nursing and Allied Health Literature (CINAHL).

The study's data gathering instrument was a researcher-made questionnaire that was codified through an in-depth review of the related texts and articles about the obstacles to implementing evidence-based nursing (11,15,18,19) in three sections. Data were collected by visiting hospitals in person. The first section incorporated the demographic information questions about age, gender, education, work history, job position, and the level of familiarity with the English language. The second section encompassed queries about the amount of familiarity with the concept of evidence-based nursing and databases related to it. These questions have been designed based on a six-point scale (6 = very high; 5 = high; 4 = intermediate; 3 = low; 2 = very low; and 1= not at all) with higher scores indicating higher familiarity rates. The last part embraces the nurses' perspectives regarding

the barriers to using evidence-based databases in the form of a 5-point Likert scale (5 = very high; 4 = high; 3 = ; 2 = low and 1= very low) with higher scores indicating more barriers. The status of each of the obstacles and the amount of familiarity with each of the databases has been reported in the form of mean scores. After the final codification of the questionnaire, its content validity and reliability were examined. To do so, the ideas and suggestions of 11 experts were collected regarding each of the questions in the questionnaire, and the required revisions were accordingly made. As a result, the relative content validity ratio (CVR) was calculated using the corresponding formula and a value equal to CVI = 0.77 was confirmed. To assess the reliability, the questionnaires were seminally distributed between 30 individuals from the study sample volume. The Cronbach's alpha coefficient was computed equal to 0.932, reflecting the questionnaire's appropriate reliability.

In order to analyze the data in SPSS Software, version 23, such statistical indices as frequency distribution and mean value were utilized, and the results were presented in tables and diagrams. One-way ANOVA was also used to compare the scores of barriers at the levels of education and employment. In addition, Ben-Ferroni supplementary test was used to compare pairs.

Results

The study findings indicated that out of the 214 studied nurses, 170 (79.4%) are female, and 44 (20.6%) are male; 108 individuals (50.5%) had BA degrees, and 126 persons (58.9%) were head nurses. In addition, the majority of the respondents had work histories ranging from 20 to 25 years (table 1).

Furthermore, the study findings indicated that out of the entire studied nurses, 69 (32.2%) had previously participated in evidence-based nursing instruction classrooms and workshops, and 145 (67.8%) had taken no advantage of such classes and workshops. To satisfy their information needs and respond to the clinical questions, nurses make use of various methods. The study findings indicated that 135 individuals (63.1%) from amongst the study participants had found consultation with professors and colleagues; 122 individuals (57%) use reference and guidebooks; 84 individuals (39.3%) use specialized websites as the most frequently applied method of meeting the information needs; 18 individuals (8.4%) reported the use of databases as the least applied method of satisfying information needs.

Table 1. Demographic information of the study subjects

Variable	Variable levels	Frequency (Percentage)
Gender	female	170 (79.4)
	male	44 (20.6)
Age	20-30	1 (0.5)
	31-40	42 (19.6)
	41-50	125 (58.4)
	51-60	46 (21.5)
Level of Education	BA degrees	108 (50.5)
	Masters	97 (45.3)
	PhD	9 (4.2)
Work experience	5-10	9 (4.2)
	10-15	15 (7.0)
	15-20	63 (29.4)
	20-25	91 (42.5)
	More than 25	36 (16.8)
Job position	instructional supervisor	16 (7.5)
	clinical supervisor	67 (31.3)
	matron	5 (2.3)
	head nurses	126 (58.9)
level of familiarity with the English language	very high	7 (3.3)
	high	45 (21.0)
	intermediate	141 (65.9)
	low	18 (8.4)
	very low	3 (1.4)

The familiarity rate of most of the nurses (81 individuals, 37.9%) with the evidence-based nursing concept was at an intermediate level. They acquired a score equal to 2.84 out of the total mean score (in a range between 1 and 6) for their familiarity with evidence-based databases. This reflects the idea that their familiarity with such databases is low; the highest rates of familiarities were found to belong to PubMed, Clinical Key for nursing, and Embase (diagram 1).

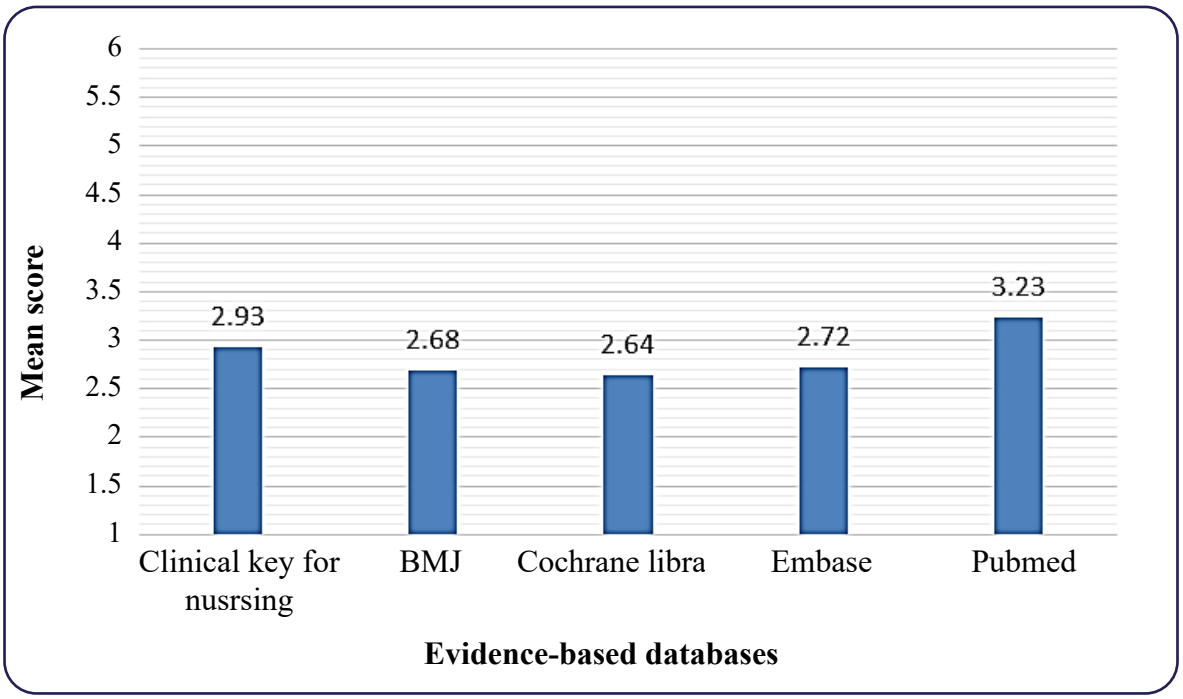

Diagram 1. Mean score of nurses' familiarity with each database

Diagram 2 illustrates the mean score of each of the barriers to using evidence-based databases (a score between 1 and 5) from the viewpoint of the nurses. The highest scores were respectively found for weakness in the formal instruction of evidence-based nursing, shortage of instructional classes and workshops, not being familiar with the databases, and shortage of time. Conversely, the lowest scores were found acquired by distrust in the study results, lack of skill in the English language, and difficulty in analyzing the study results.

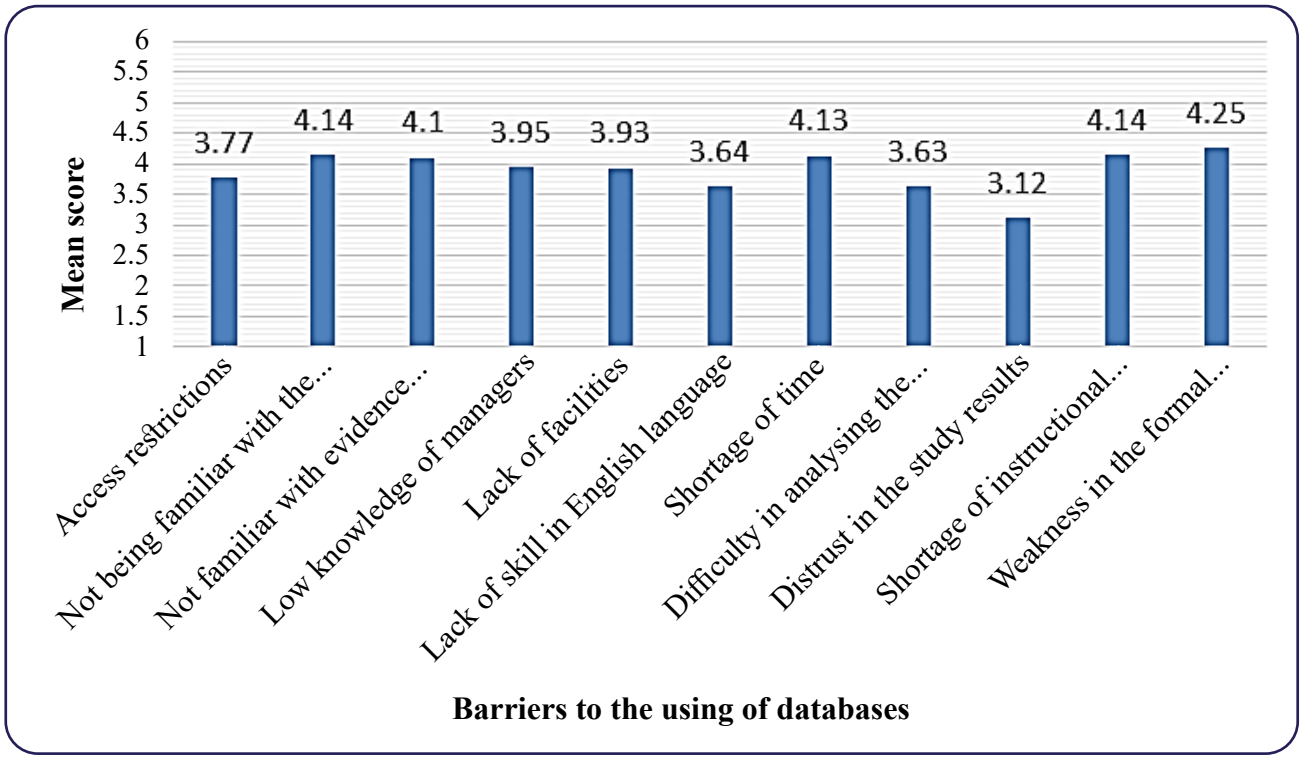

Diagram 2. Mean score of each of the barriers to the using of databases from the viewpoint of the nurses

The results of testing the relationships between the demographic variables and barriers to the using of bases showed that there is a significant difference between the education level and barriers (P-value<0.05) in such a way that the individuals with MA and Ph.D. degrees were found reporting more barriers. In addition, the mean scores of the barriers were found significantly different between the instructional and clinical supervisors (P-value = 0.015) and clinical supervisors and head nurses (P-value = 0.017) and instructional supervisors and head nurses reporting the highest number of barriers. No significant differences were observed between the other demographic variables and barriers.

Discussion

In order to acquire more up-to-date knowledge for offering high-quality healthcare to the patients, nurses need to have access to the study and research findings. In other words, the use of information technology can enhance the quality and efficiency of the staff members. Despite the importance of the databases in nursing performance, the results of the present research paper show that the majority of the nurses are familiar with the evidence-based nursing concept and its corresponding databases to an intermediate and low extent. They believed that there is yet no formal instruction in this regard, and they realized this factor as the biggest hindrance to the application of the databases. In the study by Stavor et al., a lack of instruction regarding the process of using research in practice was expressed as the most significant obstacle to implementing evidence-based nursing (20). Al-Jamei et al. reported that the pharmacists are familiar with the PubMed database to a meager amount, and their study participants were also found unfamiliar with the other databases (21).

Additionally, it is reported in the study by Malik et al. that lack of knowledge and required skill in finding the researches and utilization of them in practice are the barriers to the evidence-based practice (22). In line with this, Shifaza and Hamiduzzaman concluded that although the nurses have information needs in their clinical decision-making, they have had little instruction regarding information retrieval (23), which is consistent with the present study results. Furthermore, most of the studied nurses were found to have participated in no evidence-based nursing instruction classes and workshops, following the results obtained in the study by Al-Jamei (21).

The study findings indicated that most nurses prefer to consult with their professors and colleagues to respond to a clinical question, and they go to databases only rarely. In addition, Kahouei et al. reported in a study that a high percentage of the nurses tend to use their experiential knowledge in their clinical activities more than the findings obtained from the studies; in his view, the nurses' clinical knowledge is more based on experience than research (24). Sitzia, as well, states that only 15% to 20% of the nurse's clinical performance is based on the study results (25) and is consistent with the present study results.

The studied nurses stated that the shortage of time is the third barrier to the application of databases. Moreover, numerous other studies have found a shortage of time and temporal limitations as one of the hindrances to the implementation of evidence-based nursing (21,22,26–28).

The present study results demonstrated that there is no significant difference between such demographic variables as age, work history, and level of English familiarity with barriers to the application of databases. Still, there is a significant difference between education level and job position with barriers in such a way that the individuals with MA and Ph.D. degrees and instructional supervisors and matrons were found having felt more barriers to the application of the databases. The reason for such a finding can be the lack of adequate authority in changing the healthcare methods and making the required planning for holding instructional workshops for this group of nurses. Furthermore, in a study that was carried out by Oh et al., the existence of a significant relationship between position and clinical experience with barriers to the application of research results was proved in such a way that the clinical nurses with work histories below ten years were found having felt more barriers on the way to the application of research findings (29), which is not consistent with what has been found herein. In the meantime, in a study conducted by Yava et al. on Turkish nurses, the statistical tests were not indicative of a significant difference between the barriers to the application of research with any of the demographic variables pertinent to the studied nurses, including age, education level and clinical experience (30).

Conclusion

The present research findings indicated that the most significant obstacles to the application of evidence-based databases are the weakness in the formal instruction of evidence-based nursing, shortage of instructional classes and workshops, not being familiar with the databases, and shortage of time. In other words, the current policy in Iran's nursing instruction does not allow the actualization of such an issue. On the other hand, the nurses are unfamiliar with various kinds of databases and methods of retrieving the researches. Therefore, to actualize this issue, the nursing instruction managers and policymakers are required to generally revise the contents of nursing lessons and insert lesson units regarding the concepts related to the evidence-based practice and at the same time provide the necessary facilities for holding the related instructional courses. Furthermore, creation of the departments and wards in hospitals that can facilitate the entry of the study results to the clinical sectors, as well as the formation of nursing teams along with the medical librarians for instructing effective search in the databases and methods of using them, considerably contributes to the implementation of evidence-based practice.

Based on the findings of this study, more work needs to be done to use evidence-based database. Nurses in hospitals need to have comprehensive support for using databases. Therefore, in order to create a more desirable attitude among nurses and provide sufficient motivation to use these resources, the benefits of evidence-based care should be widely discussed.

Declarations

Acknowledgement

All of the nurses are thanked for their participation in the study. Gratitude is also expressed to the education vice-chancellors and nursing managers in the instructional and treatment hospitals affiliated with Shahid Beheshti Medical Sciences University for their cooperation in gathering information.

Conflicts of Interests

The authors have no conflict of interest in this article.

Ethical statement

The data extracted from the questionnaire were used in full and without any interference and bias with full observance of ethical principles. This article is part of a Master's thesis in Medical Librarianship and Information Science at Shahid Beheshti University of Medical Sciences, with a code of ethics IR.SBMU.RETECH.REC.1398.085.

Funding and support

There is no funding or support in this article.

Authors' contributions

All author contributed in designing, running, and writing all parts of this study.

References

1. Adibhajbaghery M. Evidence-based practice : Iranian nurses' perceptions. Worldviews Evidence-Based Nurs. 2009;2(6):93–101. doi:10.1111/j.1741-6787.2009.00149.x.

2. Abbot P, Mc Sherry R, Simons M, editors. Evidence informed nursing: A guide for clinical nurses. London: Routledge; 2002. Available from: https://books.google.com/books?hl=en&lr=&id=Ta4PpT5uLL8C&oi=fnd&pg=PR3&ots=J3IWZJ3K-p&sig=xaP92b-pho1KaN1zt9KQt7CAJ8g#v=onepage&q&f=false

3. Rodgers SE. The extent of nursing research utilization in general medical and surgical wards. J Adv Nurs. 2000;32(1):182–193. doi:10.1046/j.1365-2648.2000.01416.x.

4. Masic I, Miokovic M, Muhamedagic B. Evidence based medicine new approaches and challenges. Acta Inf Med. 2008;16(4):219–225. doi:10.5455/aim.2008.16.219-225.

5. Levin RF, Feldman HR, editors. Teaching evidence-based practice in nursing: A guide for academic and clinical settings. Springer; 2006. https://genialebooks.com/ebooks/teaching-evidence-based-practice-in-nursing-a-guide-for-academic-and-clinical-settings-springer-series-on-the-teaching-of-nursing/

6. Krugman M. Evidence based practice: The role of staff development. J Nurses Staff Dev. 2003;19(6):279–285. doi:10.1097/00124645-200311000-00003.

7. Rycroft-Malone J, Kitson A, Harvey G, Mccormack B, Seers K, Titchen A, et al. Ingredients for change: Revisiting a conceptual framework. Qual Saf Heal Care. 2002;11(2):174–80. doi:10.1136/qhc.11.2.174.

8. Hewitt-taylor J. Clinical guidelines and care protocols. Intensive Care Nurs. 2004;20(1):45–52. doi:10.1016/j.iccn.2003.08.002.

9. Baigis J, Hugjes A. Evidence based practice. J Assoc Nurses AIDS Care. 2001;12(1):9–18. doi: 10.1177/105532901773742248.

10. Retsas A. Barriers to using research evidence in nursing practice. J Adv Nurs. 2000;31(3):599–606. doi: 10.1046/j.1365-2648.2000.01315.x.

11. Oranta O, Routasalo P, Hupli M. Barriers to and facilitators of research utilization among Finnish rgistered nurses. J Clin Nurs. 2002;11(2):205–13. doi: 10.1046/j.1365-2702.2002.00587.x.

12. Farrell A. An evaluation of the five most used evidence based bedside information tools in Canadian health libraries. Evid Based Libr Inf Pract. 2008;3(2):3–17. doi: 10.18438/B8R89R.

13. Shayan SJ, Kiwanuka F, Nakaye Z. Barriers associated with evidence based practice among nurses in low and middle income countries : A aystematic review. Worldviews Evidence-Based Nurs. 2019;16(1):12-20. doi: 10.1111/wvn.12337

14. Yue L, Fan X, Peng H. Abilities and barriers to practicing evidence-based nursing for burn specialist nurses. Burns 2018;44(2):397-404. doi: 10.1016/j.burns.2017.05.026.

15. Ammouri AA, Raddaha AA, Dsouza P, Geethakrishnan R, Noronha JA, Obeidat AA, et al. Evidence-based practice: Knowledge attitudes, practice and perceived barriers among nurses in Oman. Clin Basic Res. 2014;14(4):537–45. https://pubmed.ncbi.nlm.nih.gov/25364558/

16. Majid S, Foo S, Luyt B, Zhang X, Theng Y, Chang Y, et al. Adoption evidence based practice in clinical decision making :nurses ' perceptions , knowledge , and barriers. J Med Libr Assoc. 2011;99(3):229–36. doi: 10.3163/1536-5050.99.3.010.

17. Heiwe S, Kajermo KN, Samuelsson M, Andersson I, Wengstro Y. Evidence-based practice : attitudes , knowledge and behaviour among allied health care professionals. Int J Qual Heal Care. 2011;23(2):198–209. doi: 10.1093/intqhc/mzq083.

18. Naderkhah Z, Kalhor R, Azmal M, Badpa M, Adel A, Marnani AB. The evaluation of Level of Knowledge , Attitude and practice of evidence-based practice and its barriers among nurses working in selected Iranian hospitals. J Biol Today's World. 2016;5(9):163–8. doi: 10.15412/J.JBTW.01050902.

19. Chehrzad M, Ghanbari A, Rahmatpour P, Salehzade A, Pasban M. Nurses' perceptions about facilitators and

barriers of implementation of evidence-based practice. Res Med Educ. 2015;7(2):29–36. doi: 10.18869/acadpub.rme.7.2.29.

20. Stavor DC, Zedreck-Gonzalez J, Hoffmann RL. Improving the use of evidence-based practice and research utilization through the identification of barriers to implementation in a critical access hospital. J Nurs Adm. 2017;47(1):56–61. doi: 10.1097/nna.0000000000000437.

21. Al-Jamei S, Abu Farha R, Zawiah M, Kadi T, Al-Sonidar A. Perceptions, knowledge, and perceived barriers of Yemeni pharmacists and pharmacy technicians towards evidence-based practice. J Eval Clin Pract. 2019;25(4):585–90. doi: 10.1111/jep.12988 .

22. Malik G, McKenna L, Plummer V. Facilitators and barriers to evidence-based practice: perceptions of nurse educators, clinical coaches and nurse specialists from a descriptive study. Contemp Nurse. 2016;52(5):544–54. doi: 10.1080/10376178.2016.1188017.

23. Shifaza F, Hamiduzzaman M. System factors influencing the Australian nurses' evidence-based clinical decision making: A systematic review of recent studies . Evid Based Care J. 2019; 9 (2): 17-30 . doi: 10.22038/ebcj.2019.40598.2068.

24. Kahouei M, Babamohamadi H, Ghazavi shariat panahi S, Mahdi Zadeh J. The impact of IT infrastructures on Iranian nurses' and students'health information-seeking strategies. Program. 2013;47(4):369–383. doi: 10.1108/PROG-05-2012-0021.

25. Sitzia J. Barriers to research utilisation: The clinical setting and nurses themselves. Intensive Crit Care Nurs. 2002;18(4):230–43. doi: 10.1054/ejon.2000.0115 .

26. Sullivan KJ, Wayne C, Patey AM, Nasr A. Barriers and facilitators to the implementation of evidence-based practice by pediatric surgeons. J Pediatr Surg. 2017;52(10):1666–73. https://pubmed.ncbi.nlm.nih.gov/28209414/.

27. Barends E, Villanueva J, Rousseau DM, Briner RB, Jepsen M, Houghton E, et al. Managerial attitudes and perceived barriers regarding evidence-based practice : An international survey. PLoS One. 2017;7–9. doi: 10.1371/journal.pone.0184594.

28. Labrague LJ, Souza MSD, Helen RN, John S, Fronda DC, Edet RNOB, et al. A multicountry study on nursing students' perceived competence and barriers to evidence based practice. Worldviews Evidence-Based Nurs. 2019;1–11. doi: 10.1111/wvn.12364.

29. Oh EG. Research activities and perceptions of barriers to research utilization among critical care. Intensive Crit Care Nurs. 2008;24:314–22. doi: 10.1016/j.iccn.2007.12.001.

30. Yava A, Tosun N, Çiçek H, Yavan T, Terakye G, Hatipoğlu S. Nurses' perceptions of the barriers to and the facilitators of research utilization in Turkey. Appl Nurs Res. 2009;22(3):166–75. doi: 10.1016/j.apnr.2007.11.003 .