

Nurses' Awareness, Perceived Knowledge, Attitude Towards and Barriers in Evidence-Based Practice (EBP)

<https://doi.org/10.37719/jhcs.2021.v3i1.0a001>

LOUIE ROY E. CATU, RN, EMT, MSN, PhD

<https://orcid.org/0000-0001-6175-9270>

School of Nursing and Allied Medical Sciences, Holy Angel University, Angeles City, Pampanga, Philippines

Corresponding author's email: lrcatu@yahoo.com

Abstract

Background: Evidence-based practice (EBP) is one strategy that enables clinicians to succeed in handling emerging literature, and integrating it to achieve high-quality patient outcomes. Although beneficial and innovative it is not considered a priority by many. Most nurses have little, if any, exposure to the clinical research process.

Purpose: This study aimed to conduct a baseline assessment of perceived knowledge, attitude toward EBP, and barriers to adopting EBP in nursing.

Methods: The study used a descriptive cross-sectional quantitative design. A convenient sample of 406 nurses participated and completed the EBP questionnaire. For ethical clearance, granted approval from Hospitals' Research Ethics Committee and to HAU-IRB.

Results: Nurses ($n = 156$, 38.4%) believes that EBP holistically is composed of patient data and preference, healthcare professionals' skills, and research findings. They ($n = 256$, 63%) have a positive attitude towards EBP and are willing to accept new healthcare strategies based on research. But expresses less confidence ($M = 3.90$, $SD = 0.64$) in identifying clinical issues/problems and translate these into a well-crafted clinical question. They perceived themselves to possess moderate levels of skills to undertake different EBP activities ($M = 3.76$, $SD = 0.61$). Knowledge ($\chi(4) = 12.174$, $p = 0.02$), attitudes toward EBP ($U = 13947.5$, $p = 0.04$) were significantly better among nurses who had previous EBP training. Similarly, respondents with EBP-related training are more confident in integrating EBP into their practice ($U = 13408$, $p = 0.01$).

Conclusion: Nurses' highest level of education and years of clinical experience affects their implementation skills in adopting EBP. The study reflected the benefits of training, continuing education, and length of experience in the acquisition of skills. Findings can serve as a basis for developing programs to improve nurses' knowledge and attitudes towards EBP. Nurse administrators can create policies that address barriers identified in the study.

Keywords: *Knowledge, Attitude, Barriers, Evidence-Based Practice (EBP)*

Introduction

In the past decade, there has been an exponential growth of information, a wealth of knowledge, and experience particularly in the improvement of healthcare (Cabrita et al., 2014). Providing the highest quality treatment is at the core of the healthcare delivery system that is dependent upon nurses (Mitchell et al., 2012). In the clinical setting, nurses need to fortify the profession and one of the strategies for doing so is the utilization of derived findings through the conduct of research (Castro-Palaganas, 2017). Nurses, who mostly spend a lot of time with their clients at the bedside, are the major contributors to the delivery of care. The quality care nurses provide makes a vital difference in the patient's overall health. As a profession, nursing is responsible for the quality and improvement of its practice (Slatyer et al., 2016). To enhance the standards of care, nursing professionals have to work at shifting to a different view to encompass an improved patient's preferences, clinical state, and circumstances.

In the present time, clinicians, both the novice and expert, are expected to utilize the best available research evidence for the most effective interventions to ensure improvement in healthcare. Evidence-based nursing is one strategy that may enable future clinicians to succeed in handling the emerging new literature and advancement of technology, which may ultimately result in high-quality patient outcomes (Melnyk et al., 2017). Evidence-based practice (EBP) is the meticulous, categorical, and prudent use of up-to-date finest research evidence in making a sound clinical judgment for the wellness of the patient, integrating the nurses' clinical expertise with the data obtained from systematic research (Sackett, 1997). EBP to the literature improves patient safety, optimizes care, and minimizes healthcare expenditures (Lavin et al., 2015; Melnyk et al., 2016).

Health care is one of the most vibrant human disciplines. As technology progresses, innovative and improved medicines, medical equipment, devices, and procedures are invented. These advancements in technology and processes are to support doctors, clinicians, and other healthcare practitioners to produce the best healthcare and treatment. EBP is one method that can potentially contribute to improved handling of clinical issues and provide enhanced patient outcomes through research. It advances from the incorporation of the finest research with clinical expertise (Sackett et al., 2000). EBP shifts the practice among providers of healthcare from a traditional prominence of seniority and authoritative opinions to an accent on data extracted from prior research

evidence studies. According to Melnyk et al. (2016), nurses' clinical practices based on research improve the quality of patient care, as equated to old-style clinical practices.

Traditionally, clinicians have been credited with nursing expertise in providing care, this is according to their practice including effective clinical decision making (Hamric et al., 2013). Expertise influences nurses' judgment, when nurses refine both theoretical and practical knowledge in actual situations, it increases the improvement in the delivery of care (Benner, 1984). However, experience is necessary but not a sufficient condition for proficiency, and not all experienced nurses are expert hospital practitioners (Svavarsdóttir et al., 2015). Benner (1984), also noted that several years in practice might create competence; but the passage of time and occurrence of events and interactions does not automatically confer adeptness. It may provide fluidity and flexibility but not the complex reflexive thinking that has been hypothesized to be an important component of good clinical decision-making (Croskerry, 2015). Hassankhani et al. (2018), found that nurses with more experience reported performing more intricate functions than those with less experience.

On the other hand, education also influences expertise, it is when theoretical concepts are combined with practical knowledge and apply it in the actual setting (Chinn, & Kramer, 2013). Although didactic learning alone cannot generate mastery in the nursing practice, evidence from prior smaller-scale studies showed that an individual nurse's level of education and years of experience are directly related to performance (Downar et al., 2017). With their sound educational foundation, it expedites the acquisition of skills through experience (Benner, 1984). Theory and principles enable nurses to hone in the ability to ask the right questions on patient problems to provide safe care and make good clinical decisions. Critical thinking enables nurses to meet the needs of patients within their context, considering their preferences, resulting in a higher quality of care (Groves, 2014). Moreover, critical decision-making can also be affected by age, and the highest level of education (Wood, 2017; Shapiro, & Stefkovich, 2016).

Although EBP is beneficial and innovative it is not considered a priority. Most nurses have little if any, exposure to the nursing research process, despite the expected advantages (Swenson-Britt, & Berndt, 2013). Various factors have made it challenging for nurses to integrate EBP into practice and barriers to utilizing current research evidence are still rampant. Mostly, they do not recognize the concept of the term EBP or how to incorporate it into the clinical setting (Schaefer, & Welton, 2018). It is difficult for professionals to utilize new, decontextualized, explicit knowledge in their daily work practice (Kristensen et al. 2015; Melnyk et al., 2016). Nurses will often rely on established know-how of routines even when decisions to adopt methods are available (Kristensen et al., 2015).

In the history of Philippine nursing evolution, initiatives, and efforts to strengthen the nursing profession were started long ago. It is inextricably linked to the foundation of the Philippine Nurses Association, nonetheless, the journey with EBP has much yet to be done. Authors in the Philippines like Borromeo and Castro-Palaganas believe that nurses "can learn from the exemplary leadership

practices and behaviors that helped her succeed to bring Philippine nursing out of the dark." Fortifying nurses and the profession entails an understanding of our roots, and this historiography provides "the unique perspective and context that spurred Anastacia Giron-Tupas to become an agent of change" (Castro-Palaganas, 2017; Borromeo, 2017). Numerous descriptive, exploratory studies have been conducted on nurses' awareness and attitudes related to EBP (Ammouri et al., 2014; Rojjanasirat, & Rice, 2017; Schaefer, & Welton, 2018). The majority of these studies were done in North America, Europe, and other Western developed countries. There are only a few studies that could be found for Southeast Asia, which is why there is a need to put focus on a different perspective of the world with its own work culture and environment. Therefore, the purpose of this study is to conduct a baseline assessment of nurses' awareness, knowledge, attitude toward EBP, and factors that are likely to encourage or create barriers to EBP.

Methodology

Research Design, Participants, and Sampling Technique

This study used a descriptive cross-sectional quantitative research design while convenience sampling was used, as all nurses were invited. The inclusion criteria were as follows: registered nurses, assigned in different areas/units, working in a government or private hospitals in Pampanga, a province in the Central Luzon region of the Philippines were qualified to participate.

Sample Size Computation

Using G* Power version 3.1.9.2, the total sample size needed to compare differences between three groups (e.g. in terms of highest educational attainment) that would yield an effect size of 0.25 and power of 0.95 at a 0.05 level of significance is 252.

Research Instrument

The EBP questionnaire developed by Majid et al. (2011) was reviewed for content validity by a team of experts; comprising information studies lecturers, nursing managers, nurse researchers, and registered nurses (Beaton et al., 2000; Afrasiabifar et al., 2006; Acquadro et al., 2008). The questionnaire is divided into three sections. The first section collects demographic information about the participants, the second section seeks information about their attitudes toward and knowledge of EBP, which also includes motivators and barriers to adopting EBP. The third section of the questionnaire solicited responses related to information sources used by nurses for patient care and clinical decision-making. Information was also collected about search features they used for literature searching as well as their knowledge of Boolean and proximity operators. To assess the nurses' database searching skills, a hypothetical topic was given to them along with five possible search statements. They were expected to pick the most appropriate search statement for the given topic.

Data Collection Procedure

The study asked permission to use the EBP survey questionnaire developed by Majid et al. (2011) and from the participating institutions for the data collection. A cover letter about the study and a consent form was attached with the questionnaires. All registered nurses were asked to participate. Copies of the self-administered survey questionnaire were supplied to nursing managers of all units in the participating hospitals as well as in the nurse's station. The nursing managers were personally briefed about the purpose and procedure of the study and were asked to distribute copies of the questionnaire to all nurses working in their respective units who agreed to participate. Nurses were requested to drop their completed questionnaires into a sealed survey collection box, placed at the nurses' stations. To be convenient for nurses and to improve the response rate, 1 survey collection box was placed in each unit. After a week there was a follow-up to the nursing unit to check the response rate of the nurses. Then these boxes were collected at the end of the data collection period after two weeks.

Ethical Consideration

Before the data collection, the manuscript was subjected to ethical clearances; submitted to the Hospitals' Research Ethics Committee for ethical clearance and HAU-IRB. Attached with the survey questionnaires is an explanation and rationale for the study together with informed consent. Discussing the direction on how to complete the survey form and describing how it will protect their identifications and maintain utmost confidentiality if they decided to participate. To capture the demographic data age and sex were the only personal information needed.

Data Analysis

Quantitative data were analyzed using IBM statistical software version 23. The characteristics of the sample were presented using descriptive statistics and the following (Chi-Square, Kruskal Wallis H Test, Mann Whitney) were tested for the significant differences in the participants' responses.

Results

Four hundred six ($n = 406$) nurses participated in this study. The majority of the respondents ($n = 241$, 59.4%) are aged 26-30 years old, most of them are females ($n = 273$, 67.2%) and one hundred thirty-three of them (32.8%) were males. More than half of the nurses, ($n = 230$, 56.7%) are employed in a government hospital and one hundred seventy-six (43.3%) are working in private hospitals. In addition, two hundred twenty-eight (56.2%) of them are assigned in the ward and the

rest are from different specialty units. Almost all, ($n = 392, 96.6\%$), have a bachelor's degree and the rest (3.4%) have master's degrees. Two hundred fifty-four (62.6%) have 5 years of clinical experience, while 122 (30%) have more than 5 to 10 years of clinical experience. The majority ($n = 299, 73.6\%$) reported that they had not participated in any specific training on EBP inpatient care.

Table 1. EBP Characteristics of the Participants ($n = 406$)

Variable	<i>n</i> (%)	Mean (SD)
Attitude and Knowledge of EBP		
EBP is the combined composition of the following: Patient's subjective and objective data, Previous experiences of health care professionals, Research findings and Patient's value/ Preference	156 (38)	
Attitude towards EBP: I prefer using more traditional methods instead of changing to new approaches.	256 (63)	
Most research articles are not relevant to my daily practice.	222 (55)	
My workload is too high to keep up to date with all new pieces of evidence.	181 (45)	
Self-efficacy of EBP skills		
Identify clinical issues/problems.		3.90 (0.64)
Relate research findings to his/her clinical practice and point out similarities and differences.		3.87 (0.71)
Apply an intervention based on the most applicable evidence		3.86 (0.63)
Barriers to adopting EBP		
Insufficient resources (e.g., equipment, materials) to implement EBP	277 (68)	
Insufficient time at the workplace to implement changes in their current practice.	252 (62)	
Difficulty in finding time at the workplace to search for and read research articles and reports.	244 (60)	
Supporting factors in adopting EBP		
Nursing management who embraces EBP		4.11 (0.80)
Given adequate training in EBP		4.20 (0.81)
Given protected time to conduct EBP		4.13 (0.77)
Access to a system for comprehensive literature searching		4.11 (0.78)
Mentoring by respondents who have adequate EBP experience		4.19 (0.81)
Desired areas of EBP training		
Understanding what is EBP		4.25 (0.71)
Identifying clinical issues for implementing EBP		4.18 (0.68)
Implementing recommendations to practice		4.15 (0.76)
Understanding research and statistical terms and methods		4.17 (0.77)

Variable	<i>n</i> (%)	Mean (<i>SD</i>)
Use of information resources and literature searching skills		
Print information sources		3.32 (0.88)
Electronic information sources		3.33 (1.02)
Human information sources		3.57 (0.91)

EBP holistically is the composition of patients' subjective, objective data and preferences, previous experiences of health care professionals, and research findings, Table 1 shows that 156 (38.4%) of the nurses perceived that. Respondents (disagree, $n = 188$, 46%; strongly disagree, $n = 68$, 17%) when combined, a total of 256 nurses contradict the use of traditional approaches when compared to new patient care practices. In addition, one hundred seventy-six (43%) "disagree" and forty-six (11%) "strongly disagree", a total of two hundred twenty-two nurses (55%) do not believe that research articles they encounter did not apply to their daily clinical practices. Respondents ($n = 181$, 45%), "agree" ($n = 142$, 35%) and "strongly agree" ($n = 41$, 10%), believes that due to heavy workload, they could not maintain updated with all new research evidence.

Regarding their skills in recognizing possible clinical issues, respondents felt they possess a slightly above average capacity to recognize clinical problems, which yielded ($M = 3.90$, $SD = 0.64$). Then decreased when relating research findings to clinical practice ($M = 3.87$, $SD = 0.71$), followed by the application of intervention based on the most applicable evidence.

For the barriers, one hundred ninety-six (48.3%) "agreed" and eighty-one (20%) "strongly agreed", when combined (277, 68.3%) nurses believed that the major barrier to the adoption of EBP was insufficient resources. Followed by 252 (62.1%) nurses who believed that insufficient time at their workplace to apply changes in their existing practice, one hundred ninety-two "agreed" (47.3%) and sixty "strongly agreed" (14.8%). And a total of 244 (60.1%) ("agreed", $n = 189$, 46.6%; "strongly agreed", $n = 55$, 13.5%) nurses reported struggling in allotting time at work to search for and read research articles.

The provision of providing adequate training in EBP has the highest mean score of 4.20 ($SD = 0.81$) and is closely followed by mentoring by respondents who have adequate EBP experience ($M = 4.19$, $SD = 0.81$). Another supporting factor is the convenience of a protected time to understand and apply EBP ($M = 4.13$, $SD = 0.77$). This is then followed by the support from their nursing management ($M = 4.11$, $SD = 0.80$) and the availability of a system capable of searching comprehensive literature with the same mean scores of 4.11, ($SD = 0.78$).

The most important training respondents identified is "understanding what is EBP" with a mean score of 4.25, ($SD = 0.71$). This is succeeded by recognizing clinical issues or problems for integrating EBP with a mean score of 4.18, ($SD = 0.68$) and closely followed by "understanding research and statistical terms" ($M = 4.17$, $SD = 0.77$) and "implementing recommendations to

practice" ($M = 4.15$, $SD = 0.76$).

To determine the overall popularity of different types of information sources, the combined mean scores for printed, electronic, and human sources were calculated. The use of human sources for getting nursing care information was prominent with a mean score of 3.57, ($SD = 0.91$). Subsequent is the use of electronic information sources ($M = 3.33$, $SD = 1.02$), and closely followed by print information sources with a mean score of 3.32, ($SD = 0.88$).

Table 2. Correlation and Comparison of variables as perceived by the participants ($n=406$)

Variable	Highest educational attainment	Length of Clinical Experience	Previous Training related to EBP
Perceived knowledge of EBP			
Pearson Chi-Square	5.661	22.012	12.174
df	4	20	4
<i>p</i> value	0.23	0.34	0.02
Beliefs and attitudes toward EBP			
I prefer using more traditional methods instead of changing to new approaches.			
Kruskal Wallis H Test	0.033	3.877	
df	1	5	
<i>p</i> value	0.86	0.57	
Mann-Whitney U Test			13947.5
<i>p</i> value			0.04
Self-efficacy of EBP skills			
Identify clinical issues/problems.			
Kruskal Wallis H Test	0.260	11.016	
df	1	5	
<i>p</i> value	0.61	0.051	
Mann-Whitney U Test			13395
<i>p</i> value			0.003
Conduct online searches (using databases and web search engines).			
Kruskal Wallis H Test	6.289	4.384	
df	1	5	
<i>p</i> value	0.01	0.50	
Mann-Whitney U Test			13627
<i>p</i> value			0.02
Barriers to adopting EBP			
Insufficient time at the workplace to implement changes in their current practice.			
Kruskal Wallis H Test	3.919	3.943	
df	1	5	

Variable	Highest educational attainment	Length of Clinical Experience	Previous Training related to EBP
<i>p</i> value	0.048	0.56	
Mann-Whitney U Test			13542
<i>p</i> value			0.02
Inability to implement recommendations of research studies into clinical practice.			
Kruskal Wallis H Test	6.462	3.543	
df	1	5	
<i>p</i> value	0.01	0.62	
Mann-Whitney U Test			12850
<i>p</i> value			0.002
Supporting factors in adopting EBP			
Nursing management who embraces EBP			
Kruskal Wallis H Test	1.267	14.824	
df	1	5	
<i>p</i> value	0.26	0.01	
Mann-Whitney U Test			14018.5
<i>p</i> value			0.046

Respondents' perceived knowledge of EBP, when associated with their highest educational attainment $\chi(4) = 5.661$, $p = 0.23$, showed that there was no statistically significant finding. Similar to their length of clinical experience $\chi(20) = 22.012$, $p = 0.34$, it also yielded a none statistical significant finding when associated with their EBP knowledge. However, when their perceived knowledge of EBP was linked to previous training related to EBP $\chi(4) = 12.174$, p -value = 0.02, it resulted in a statistically significant finding.

There were also no significant differences were found between overall beliefs and attitudes toward EBP and respondents' highest educational attainment, length of clinical experience, and previous training, except in the respondents' preference to use "more traditional practices instead of adapting to new methods" which showed statistically significant difference when compared according to previous training related to EBP ($U = 13947.5$, $p = 0.04$).

Same with their self-efficacy in EBP skills which also generated a significant finding on the respondents' ability to identify clinical issues ($U = 13395$, $p = 0.003$) when linked to previous EBP training. There was also a significant finding when compared between the respondents' highest educational attainment $\chi^2(1) = 6.289$, $p = 0.01$ and previous training related to EBP ($U = 13627$, $p = 0.02$) when compared with their online searches (using databases and web search engines).

Furtherly, there was also a significant finding when compared between respondents' identified barriers to adopting EBP, particularly in terms of the respondents' insufficient time at the

workplace to implement change in current practice when compared to the respondents' highest educational attainment $\chi^2(1) = 3.919$, $p = 0.048$ and previous training related to EBP ($U = 13542$, $p = 0.02$). Same with the inability to implement recommendations of research studies into clinical practice when compared to their highest educational attainment $\chi^2(1) = 6.462$, $p = 0.01$ and previous training related to EBP ($U = 12850$, $p = 0.002$)

For the supporting factors, specifically nursing management who embraces EBP when compared with the length of clinical experience $\chi^2(5) = 14.824$, $p = 0.01$, generated a significant relationship. Respondents with (5 - <10 Years) of clinical experience had the highest score. The previous training related to EBP also yielded a statistically significant finding ($U = 14018.5$, $p = 0.046$), those with a master's degree had a higher score.

Discussion

The results showed that the majority of the nurses have a positive attitude toward EBP, similar to previous studies by Stokke et al. (2014); Majid et al. (2011). According to Stokke et al. (2014) attitudes towards and implementation of EBP are influenced by education and competence building, accessible resources, providing ample time, and availability of EBP mentors who support nurses in implementing evidence-based practice. Furtherly, the data revealed that respondents were willing to accept new healthcare strategies based on research and not overly dedicated to traditional techniques. Nurses who have knowledge and competence in EBP, access to resources, and experience support have more belief in evidence-based practice.

However, respondents showed less confidence in their skills to adequately express identified clinical issues/problems and translate these into a well-crafted clinical question (Mohsen et al., 2016). Stokke et al. (2014) suggested that every nurse should at least understand the purpose and process of EBP to be able to ask relevant clinical questions.

In addition, participating respondents perceived that they possess moderate levels of ability to perform different EBP activities. Nurses should know and follow the steps in EBP, and each nurse should be able to adjust his/her practice based on valid and relevant current research (Stokke et al., 2014). According to Melnyk et al. (2018), it is a challenge for nurses to utilize decontextualized, categorical knowledge in their actual work practice. Nonetheless, knowledge and attitudes toward EBP were significantly higher among nurses who had previous EBP training. Similarly, respondents with EBP-related training are more confident in integrating EBP into their nursing practice. The data also showed that nurses' highest level of education and years of clinical experience affect their implementation skills in adopting EBP. Interestingly, the nurses with master's degrees scored higher even though they are the minority of the population. Academic programs have a historical background and even at present, master's level students learn or undergo the rigorous process of how to "do" research. Therefore, master's degree holders enhance evidence-based knowledge and

skills that stimulate the utilization of research in the healthcare field. Parallel to pieces of evidence from prior studies by Warren et al. (2016), that showed individual nurses' level of education and years of clinical experience are directly related to performance.

Barriers to adopting EBP were also investigated and the top two barriers in this study are insufficient resources (Mohsen et al., 2016), followed by lack of time (Tacia et al., 2015). Supporting factors in adopting EBP were also explored in this study. Respondents identified the provision of providing adequate training in EBP as an important factor in adopting EBP. Analogous to the research findings of Hohman et al. (2015), that training was one major transference ineffective increase in the utilization of EBP. Respondents recognize the necessity to have a protected time to learn and adopt innovative methodology including EBP. They were also expecting support from the nursing management; the same as a previous study, which noted that support from the management, is known to be a significant factor in the successful application of innovations in an organization (Nawab et al., 2015).

Overall, nurses possess a positive attitude toward EBP and consider it fundamental to their practice, however, several institutional and personal barriers obstruct its smooth implementation. One of which is, a lack of knowledge about EBP (Upton et al., 2015). Others are, inadequate organizational involvement, leadership support, and lack of resources have been identified as barriers that prevent the implementation of EBP (Bianchi et al., 2018; Duncombe, 2018).

The nursing discipline is evolving, and nurses play a crucial role to keep up to date on the latest evidence in the delivery of health care. One methodology to keep abreast of the latest practice is utilizing EBP, which embraces innovative procedures in the delivery of the best possible health care treatment. In this study, nurses are positive toward EBP, which is consistent with prior research (Majid et al., 2011; Stokke et al., 2014). Nurses with a higher degree qualification and who had more experience and previously attended EBP training were likely to appreciate implementing EBP. Theory and principles enable nurses to hone the ability to ask the right questions on clinical issues or problems, and a sound educational foundation expedites the acquisition of skills through experience (Benner, 1984). The result showed higher nursing qualifications and nurses who had attended EBP training tended to face fewer barriers in adopting EBP. Therefore, EBP has an impact on the beliefs, attitudes, and knowledge of nurses in the improvement of patient care. It was significantly higher among nurses with higher educational attainment and previous training related to EBP. It reflected that EBP training increases the knowledge and confidence in integrating EBP into their clinical practice.

Nurses recognize the importance of EBP and realize that commitment to the principles of "best practice" should be embraced and cultivated. This study is one initiative in connecting research and practice, which encourages the integration of research findings into evidence-based practice. It served as an assessment effort, gauging the extent of what is known, and shedding light on challenges in adopting EBP. It could be of use for replication inquiry in a broader and more diverse

setting, perhaps as a basis for developing context-specific interventions.

Conclusion

Nurses play a crucial role to keep up to date on the latest evidence in the delivery of health care. The assessment of nurses' awareness, knowledge, attitude towards EBP, and factors that are likely to encourage or create barriers in EBP, is imperative in the advancement of the healthcare delivery system. It would serve as a beacon in aiming for evidence-based practice, pioneering the multistep process of adopting an EBP. For the ultimate goal of enhancing the health care delivery system. EBP has an impact on the beliefs, attitudes, and knowledge of nurses in the improvement of patient care. The study reflected the benefits of training, continuing education, and length of experience in the acquisition of skills. Findings can serve as the basis for developing programs to improve nurses' knowledge and attitudes towards EBP. This can be done by provision of pieces of training related to EBP. Nurse administrators can create policies that address barriers identified in the study. That could minimize, eventually, eradicate barriers to adopting EBP.

Conflict of Interest

The author declares no conflict of interest and did not receive any funding/grant in the conduct of the study.

Acknowledgment

The completion of this manuscript could not have been possible without the participation and kind support of so many people whose names may not all be enumerated. Their contributions are appreciated and gratefully acknowledged and I would like to extend my sincere thanks to all who participated in the completion of the study.

References

- Acquadro, C., Conway, K., Hareendran, A., & Aaronson, N. (2008). Literature Review of Methods to Translate Health-Related Quality of Life Questionnaires for Use in Multinational Clinical Trials. *Value in Health*, 11(3), 509–521. <https://doi.org/10.1111/j.1524-4733.2007.00292.x>
- Afrasiabifar, A., Yaghmaie, F., Abdoli, S., & Abed Saiedy, Z. (2006). Research tool translation and cross-cultural adaptation. *Advances in Nursing Midwifery (Faculty of Nursing of Midwifery Quarterly)*, 16(54), 58–67. <https://www.sid.ir/en/journal/ViewPaper.aspx?id=109687>
- Ammouri, A. A., Raddaha, A. A., Dsouza, P., Geethakrishnan, R., Noronha, J. A., Obeidat, A. A., & Shakman, L. (2014). Evidence-based practice: knowledge, attitudes, practice and perceived barriers among

- nurses in Oman. *Sultan Qaboos University Medical Journal*, 14(4), e537-e545. <https://www.ncbi.nlm.nih.gov/pubmed/25364558>
- Beaton, D.E., Bombardier, C., Guillemin, F., & Ferraz, M.B. (2000). Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine*, 25(24), 3186–3191.
- Benner, P. (1984). From novice to expert: Excellence and power in clinical nursing practice. *AJN The American Journal of Nursing*, 84(12), 1480.
- Bianchi, M., Bagnasco, A., Bressan, V., Barisone, M., Timmins, F., Rossi, S., ... & Sasso, L. (2018). A review of the role of nurse leadership in promoting and sustaining evidence-based practice. *Journal of Nursing Management*, 26(8), 918-932. <https://doi.org/10.1111/jonm.12638>
- Borromeo, A., (2017). On Her Initiative: A Study of the Life and Times of Anastacia Giron-Tupas. *Philippine Journal of Nursing*. 87(1), 4-13. <http://www.pna-pjn.com/feature/1536>
- Castro-Palaganas, E., (2017). Fortifying Nursing Practice through Research Utilization. *Philippine Journal of Nursing*. 87(1), 1-2. <http://www.pna-pjn.com/voice/fortifying-nursing-practice-through-research-and-utilization/>
- Chinn, P. L., & Kramer, M. K. (2013). *Integrated theory & knowledge development in nursing-E-Book*. Elsevier Health Sciences.
- Croskerry, P. (2015). Clinical Decision Making. *Pediatric and Congenital Cardiac Care*. Springer, London. 397-409. https://doi.org/10.1007/978-1-4471-6566-8_33
- Cabrita, M. D. R., Cabrita, A. M., & Cruz-Machado, V. A. (2014). Healthcare Knowledge Management: Integrating Knowledge with Evidence-based Practice. *Proceedings of the Eighth International Conference on Management Science and Engineering Management*. 1121-1131. https://doi.org/10.1007/978-3-642-55122-2_97
- Downar, J., McNaughton, N., Abdelhalim, T., Wong, N., Lapointe-Shaw, L., Seccareccia, D., ... & Knickle, K. (2017). Standardized patient simulation versus didactic teaching alone for improving residents' communication skills when discussing goals of care and resuscitation: A randomized controlled trial. *Palliative medicine*, 31(2), 130-139. <https://doi.org/10.1177/0269216316652278>
- Duncombe, D. C. (2018). A multi-institutional study of the perceived barriers and facilitators to implementing evidence-based practice. *Journal of Clinical Nursing*, 27(5-6), 1216-1226. <https://doi.org/10.1111/jocn.14168>
- Groves, W. (2014). Professional practice skills for nurses. *Nursing Standard*, 29(1), 51-59.
- Hamric, A. B., Hanson, C. M., Tracy, M. F., & O'Grady, E. T. (2013). *Advanced practice nursing-E-Book: An integrative approach*. Elsevier Health Sciences.
- Hassankhani, H., Hasanzadeh, F., Powers, K. A., Zadeh, A. D., & Rajaie, R. (2018). Clinical skills performed by Iranian emergency nurses: Perceived competency levels and attitudes toward expanding professional roles. *Journal of emergency nursing*, 44(2), 156-163. <https://doi.org/10.1016/j.jen.2017.06.007>
- Hohman, M., Pierce, P., & Barnett, E. (2015). Motivational interviewing: An evidence-based practice for improving student practice skills. *Journal of Social Work Education*, 51(2), 287-297. <https://doi.org/10.1080/10437797.2015.1012925>
- Kristensen, N., Nymann, C., & Konradsen, H. (2015). Implementing research results in clinical practice-the experiences of healthcare professionals. *BMC health services research*, 16(48), 1-10. <https://doi.org/10.1186/s12913-016-1292-y>
- Lavin, M. A., Harper, E., & Barr, N. (2015). Health information technology, patient safety, and professional nursing care documentation in acute care settings. *Online J Issues Nurs*, 20(2). <https://doi.org/10.3912/OJIN.Vol20No02PPT04>

- Majid, S., Foo, S., Luyt, B., Zhang, X., Theng, Y. L., Chang, Y. K., & Mokhtar, I. A. (2011). Adopting evidence-based practice in clinical decision making: nurses' perceptions, knowledge, and barriers. *Journal of the Medical Library Association: JMLA*, 99(3), 229. <https://doi.org/10.3163/1536-5050.99.3.010>
- Melnyk, B. M., Gallagher-Ford, L., & Fineout-Overholt, E. (2016). *Implementing the evidence-based practice (EBP) competencies in healthcare: a practical guide for improving quality, safety, and outcomes*. Sigma Theta Tau.
- Melnyk, B. M., Gallagher-Ford, L., Zellefrow, C., Tucker, S., Thomas, B., Sinnott, L. T., & Tan, A. (2018). The first US study on nurses' evidence-based practice competencies indicates major deficits that threaten healthcare quality, safety, and patient outcomes. *Worldviews on Evidence-Based Nursing*, 15(1), 16-25. <https://doi.org/10.1111/wvn.12269>
- Melnyk, B. M., Fineout-Overholt, E., Giggelman, M., & Choy, K. (2017). A test of the ARCC© model improves the implementation of evidence-based practice, healthcare culture, and patient outcomes. *Worldviews on Evidence-Based Nursing*, 14(1), 5-9. <https://doi.org/10.1111/wvn.12188>
- Mitchell, P., Wynia, M., Golden, R., McNellis, B., Okun, S., Webb, C. E., ... & Von Kohorn, I. (2012). Core principles & values of effective team-based health care. *NAM Perspectives*.
- Mohsen, M. M., Safaan, N. A., & Okby, O. M. (2016). Nurses' perceptions and barriers for adoption of evidence-based practice in primary care: Bridging the gap. *American Journal of Nursing Research*, 4(2), 25-33.
- Nawab, S., Nazir, T., Zahid, M. M., & Fawad, S. M. (2015). Knowledge management, innovation, and organizational performance. *International Journal of Knowledge Engineering*, 1(1), 43-48.
- Rojjanasrirat, W., & Rice, J. (2017). Evidence-based practice knowledge, attitudes, and practice of online graduate nursing students. *Nurse education today*, 53, 48-53. <https://doi.org/10.1016/j.nedt.2017.04.005>
- Sackett, D. L. (1997). Evidence-based medicine. In *Seminars in perinatology*, 21(1), 3-5. [https://doi.org/10.1016/S0146-0005\(97\)80013-4](https://doi.org/10.1016/S0146-0005(97)80013-4)
- Sackett, D. L., Strauss, D. E., Richardson, W. S., Rosenberg, W., & Haynes, R. B. (2000). *Evidence-based medicine: how to practice and teach EBM (2 edn)* Churchill Livingstone. New York.
- Schaefer, J. D., & Welton, J. M. (2018). Evidence based practice readiness: A concept analysis. *Journal of nursing management*, 26(6), 621-629. <https://doi.org/10.1111/jonm.12599>
- Shapiro, J. P., & Stefkovich, J. A. (2016). *Ethical leadership and decision making in education: Applying theoretical perspectives to complex dilemmas*. Routledge. <https://doi.org/10.4324/9781315773339>
- Slatyer, S., Coventry, L. L., Twigg, D., & Davis, S. (2016). Professional practice models for nursing: a review of the literature and synthesis of key components. *Journal of Nursing Management*, 24(2), 139-150. <https://doi.org/10.1111/jonm.12309>
- Stokke, K., Olsen, N. R., Espehaug, B., & Nortvedt, M. W. (2014). Evidence based practice beliefs and implementation among nurses: a cross-sectional study. *BMC nursing*, 13(1), 1-10. <https://doi.org/10.1186/1472-6955-13-8>
- Swenson-Britt, E., & Berndt, A. (2013). Development and psychometric testing of the nursing research self-efficacy scale (NURSES). *Journal of Nursing Measurement*, 21(1), 4-22. <https://doi.org/10.1891/1061-3749.21.1.4>
- Tacia, L., Biskupski, K., Pheley, A., & Lehto, R. H. (2015). Identifying barriers to evidence-based practice adoption: A focus group study. *Clinical Nursing Studies*, 3(2), 90-96.
- Upton, P., Scurlock-Evans, L., Williamson, K., Rouse, J., & Upton, D. (2015). The evidence-based practice profiles of academic and clinical staff involved in pre-registration nursing students' education: a cross sectional survey of US and UK staff. *Nurse education today*, 35(1), 80-85.

<https://doi.org/10.1016/j.nedt.2014.06.006>

Wood, D. K., Chouinard, P. A., Major, A. J., & Goodale, M. A. (2017). Sensitivity to biomechanical limitations during postural decision-making depends on the integrity of posterior superior parietal cortex. *Cortex*, 97, 202-220. <https://doi.org/10.1016/j.cortex.2016.07.005>

About the Author

Louie Roy E. Catu, RN, EMT, MSN, Ph.D., is a faculty (Assistant Professor) under the School of Nursing and Allied Medical Sciences at Holy Angel University. Earned his Doctoral degree (2019), Master's degree (2014), Bachelor's degree (2008) in the same university, and an Emergency Medical Technician with national certification (2010) under Technical Education and Skills Development Authority. A former clinician: started as an Operating Room Volunteer Nurse (October 2008 - October 2009) at Angeles University Foundation Medical Center. Then continued his clinical experience at Sacred Heart Medical Center, as an Operating Room–Delivery Room Complex Staff Nurse (May 2010 - November 2015). In the same hospital after years of excellence in practice, he was recognized and promoted from staff nurse to Head Nurse (November 2015 - July 2016), to Nurse Supervisor and Nurse Training Officer (July 2016 - October 2018).

His research work focuses on nursing academics and clinical practice. Looking into the theoretical foundation with consideration of the human aspect of nursing from student to professional nurses and how these academic experiences translate to the clinical practice.