

## **Knowledge, Attitude and Practice of Evidence-Based Nursing Practice and Barriers**

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### **Abstract**

Professional nurses, one of the human resources in the health sector, are obliged to carry out the nursing process, especially nursing, based on scientific evidence. This study aimed to describe the knowledge, attitudes, and practice of evidence-based practice and its barriers to the hospital. Quantitative research with a descriptive approach was conducted at Dr. M. Djamil Hospital, Padang. A consecutive sampling technique was utilized, with 139 selected nurse practitioners, and only 90 nurses filled in the questionnaires. The instruments used were Evidence-Based Practice Profiles (EBP2) and the BARRIERS Scale. Characteristics of respondents were 70.0% diploma education; mean age was 36.7 (SD=7.95) years and 13.35 (SD=8.37) years of working time. The mean attitude towards EBP was higher than the mean of EBP knowledge/understanding, confidence, understanding of research terms, and practice towards EBP (3.32; 2.93; 2.72; 2.53; 1.95). Therefore, there is a definite need for improving knowledge, comprehending EBP, and research terminology to overcome the obstacles of EBP implementation in the nursing service practice.

**Keywords:** Attitudes, barriers, evidence-based practice, knowledge, implementation.

## Introduction

Human resources are one of the input subsystems to achieve the goals of the health system. An important focus in human resources is the development and enabling of human resources as well as improving the quality of human resources in the health sector. Human resources in the health sector have the right to fulfill their basic needs (human rights) as social beings, competence, and the authority to dedicate themselves in the fields of health, ethics, moral noble, and specialized in duty.

Professional nurses are one of the human resources in the health sector. Nurses must carry out the nursing process, especially nursing interventions based on scientific evidence. It is line with the opinion of Mahanes, Quatrara, and Dale (2013) that nurses are expected to stay up to date on a large number of institutional initiatives, best practice guidelines, and policies and procedures.

In nursing, evidence-based practice is essential to provide high-quality care. The Institute of Medicine (IoM) claims that Evidence-Based Practice (EBP) is very important in improving and ensuring the quality of health services (Rn, Knops, Ubbink, & Rn, 2013). The IOM study in 2001 reported that patients received recommended evidence-based treatment measures only as much as 55% (Anne & Woods, 2013). In contrast, according to Bach (2005), evidence-based practice in the care of the general population is provided for only 50% (Wood & Payne, 2012). In the nursing profession, research findings as new information will be incorporated continuously in nursing practice (Pipe, Wellick, Buchda, Hansen, & Martyn, 2005). Unfortunately, nurses faced real challenges when translating the best evidence in clinical practice (Pipe et al., 2005; Boström, Rudman, Ehrenberg, Gustavsson, & Wallin, 2013). Several studies have been conducted to find out about knowledge, attitudes, and awareness about EBP in various countries (Rn et al., 2013; White-Williams et al., 2013; McKenna, Ashton, & Keeney, 2004). Furthermore, a literature review of 37 articles found five obstacles, namely clinical characteristics,

nursing education, research habits and reading literature, facilitation of research use, and its relevance to nursing staff and clinical practice (Athanasakis, 2013). A study showed that among surgeons, 90% was familiar with the term EBS, whereas nurses were only 40%. Common barriers for surgeons were contradictory results (79%) and inadequate reporting methodology (73%), and for nurses was EBS unconsciousness (67%) and unclear research reports (59%) (Legemate & Ubbink, 2009).

Since the establishment of the Nursing Science Program, Universitas Andalas has introduced research on nursing students. Students have been instructed to disseminate the results of their study in the field of nursing. It was based on the Nursing Academic Curriculum 2009, 2012, and has been supported by qualified nursing tutors who are at the master and doctoral level. Based on the 2009-2013 Nurse Curriculum, there are literature review lecture sessions, which expose nurses to research articles and the importance of practice based on scientific evidence. However, there is no accurate data on the extent to which nurses' knowledge and attitudes are related to evidence-based practice and how evidence-based nursing practice is applied.

Little information is known about the use, knowledge, and attitudes towards EBP, including its barriers among nurses in hospitals in Padang. Therefore, it is necessary to study the knowledge, attitudes, and factors affecting evidence-based nursing practice (EBNP) among nurses in hospitals.

Further, based on observations, it found that the majority of hospital-nurses rarely used evidence-based practice (EBP). When asked by the researcher, some of them did not comprehend the importance of EBP. Thus, research is needed so that relevant policies and strategies can be recommended based on research findings. This study aimed to determine the knowledge, attitudes, implementation, and constraints towards evidence-based practice in nurse practitioners.

## Method

The research design was quantitative with a

descriptive approach. Consecutive sampling of nurse practitioners at Dr. M. Djamil Hospital, Padang, was conducted from August 1 to August 30, 2017. Eligibility criteria required individuals to have work experience equal to or more than one year in the hospital. The number of questionnaires distributed was 139 and returned as many as 119.

Moreover, the research response rate was high at around 85.61%. Furthermore, of the 119 questionnaires returned, some personal data were found to be incomplete, and only 90 questionnaires were completed in full on evidence-based practice and barrier scale. Thus, the data analyzed were only 90.

The instrument used the Evidence-Based Practice Profile (EBP2) questionnaire (McEvoy, Williams, & Olds, 2010) and BARRIERS Scale (Wang, Jiang, Wang, Wang, & Bai, 2013). EBP2 has 58 items arranged in five domains, namely understanding EBP (4 items), attitudes towards EBP (17 items), comprehending research terminology (17 items), practice (9 items), and self-confidence

(11 items). The BARRIERS scale, which includes 29 questions about obstacles of applying research to practice in a healthcare setting, uses five scales (Legemate & Ubbink, 2009). The questionnaire is in English, translated into the Indonesian language by the process of forward-backward translation. The validity and reliability of the instrument were not undertaken since previous studies revealed that both instruments were useful, valid, and reliable to use (McEvoy et al., 2010; Wang et al., 2013).

All data management and analysis were managed using SPSS Statistics 23.0. Data were imported into SPSS and checked for missing values. Numerical variables (EBP understanding/knowledge, attitude, practice, and barriers) were displayed in mean, standard deviation, median, minimum, and maximum, while the respondents' characteristics were summarized by number and percentage.

## Results

**Table 1 Description of Respondents Seen From Age, Gender, Recent Education, Work Experience, and Inpatient Room (n = 90)**

Characteristics	f	Mean	SD	Min	Max
Age (years)	84	36.75	7.95	26	58
Missing data	6				
Work experience (years)	78	13.35	8.37	1	37
Missing data	12				
Gender	<b>f</b>	<b>%</b>			
Male	14	15.6			
Female	65	72.2			
Missing data	11	12.2			
Education					
Senior High School in Nursing	3	3.3			
Diploma	63	70.0			
Bachelor of Nursing & Registered Nurse	13	14.4			
Missing data	11	12.2			
Room					
Pediatric-Maternity	13	14.4			
Surgery	38	42.2			
Non-surgery	15	16.7			

Operation Room	17	18.9
Cardiovascular Care Unit	7	7.8

**Table 2 EBP Understanding/Knowledge Responses, Attitude Towards EBP, Understanding of Research Terms, Practice towards EBP and Confidence to EBP**

Aspects	Mean (SD)	Minimum	Maximum
EBP understanding	2.93 (0.96)	1.00	5.00
Attitude towards EBP	3.32 (0.51)	1.18	4.35
Understanding of research terms	2.53 (0.79)	1.00	4.00
Practice towards EBP	1.95 (0.91)	1.00	5.00
Confidence to EBP	2.72 (0.44)	1.00	4.18

**Table 3 Frequency distribution and percentage of the Barrier scale**

No	Subscale and item	Very disagree	Disagree	Neutral	Agree	Very Agree
<b>Nurse subscale: The nurse's research values, skills, and awareness (Adopter)</b>						
	<b>Item</b>	<b>f (%)</b>	<b>f (%)</b>	<b>f (%)</b>	<b>f (%)</b>	<b>f (%)</b>
1.	The nurse is unaware of the research	10 (11.1)	55 (61.1)	22 (24.4)	3 (3.3)	0
2.	The nurse does not feel capable of evaluating the quality of the research	7 (7.8)	43 (47.8)	36 (40.0)	4 (4.4)	0
3.	The nurse is isolated from knowledgeable colleagues with whom to discuss the research	11 (12.2)	45 (50.0)	31 (34.4)	3 (3.3)	0
4.	The nurse is unwilling to change/try new ideas	15 (16.7)	32 (35.6)	41 (45.6)	2 (2.2)	0
5.	The nurse sees little benefit for self	12 (13.3)	37 (41.1)	29 (32.2)	12 (13.3)	0
6.	There is not a documented need to change practice	11 (12.2)	39 (43.3)	30 (33.3)	4 (4.4)	6 (6.7)
7.	The nurse feels the benefits of changing practice will be minimal	10 (38)	38 (42.2)	37 (41.1)	5 (5.6)	0
8.	The nurse does not see the value of research for practice	16 (17.8)	34 (37.8)	34 (37.8)	6 (6.7)	0
<b>Setting subscale: Setting barriers and limitations (Organization)</b>						
9.	There is insufficient time on the job to implement new ideas	5 (5.6)	18 (20.0)	57 (63.3)	10 (11.1)	0
10.	The nurse does not have time to read the research	4 (4.4)	21 (23.3)	43 (47.8)	22 (24.4)	0
11.	The nurse does not feel she/he has enough authority to change patient care procedures	6 (6.7)	23 (25.6)	41 (45.6)	20 (22.2)	0
12.	The facilities are inadequate for implementation	6 (6.7)	13 (14.4)	46 (51.1)	23 (25.6)	2 (2.2)

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13.	Other staff are not supportive of implementation	3 (3.3)	20 (22.2)	54 (60.0)	13 (14.4)	0
14.	Physicians will not cooperate with implementation	3 (3.3)	35 (38.9)	44 (48.9)	7 (7.8)	1 (1.1)
15.	The nurse feels results are not generalizable to own setting	2 (2.2)	31 (34.4)	50 (55.6)	7 (7.8)	0
16.	Administration will not allow implementation	4 (4.4)	27 (30.0)	52 (57.8)	7 (7.8)	0
Research subscale: Qualities of the research (Innovation)						
17.	The research has not been replicated	0	18 (20.0)	52 (57.8)	20 (22.2)	0
18.	The literature reports conflicting results	0	19 (21.1)	64 (71.1)	7 (7.8)	0
19.	The research has methodological inadequacies	1 (1.1)	31 (34.4)	49 (54.4)	9 (10.0)	0
20.	Research reports/articles are not published fast enough	0	18 (20.0)	52 (57.8)	20 (22.2)	0
21.	The nurse is uncertain whether to believe the results of the research	1 (1.1)	31 (34.4)	52 (57.8)	6 (6.7)	0
22.	The conclusions drawn from the research are not justified	2 (2.2)	21 (23.3)	62 (68.9)	5 (5.6)	0
Presentation subscale: Presentation and accessibility of the research (Communication)						
23.	The statistical analyses are not understandable	1 (1.1)	21 (23.3)	51 (56.7)	17 (18.9)	0
24.	The relevant literature is not compiled in one place	1 (1.1)	18 (20.0)	42 (46.7)	28 (31.1)	1 (1.1)
25.	Research reports/articles are not readily available	1 (1.1)	17 (18.9)	47 (52.2)	25 (27.8)	0
26.	Implications for practice are not made clear	1 (1.1)	19 (21.1)	53 (58.9)	17 (18.9)	0
27.	The research is not reported clearly and readably	1 (1.1)	25 (27.8)	52 (57.8)	12 (13.3)	0
28.	The research is not relevant to nurse's practice	1 (1.1)	26 (28.9)	47 (52.2)	16 (17.8)	0
Items not included in any of the subscales (Others)						
29.	The amount of research information is overwhelming	1 (1.1)	21 (23.3)	44 (48.9)	22 (24.4)	2 (2.2)
30.	Research reports/articles are written in English	6 (6.7)	25 (27.8)	49 (54.4)	9 (10.0)	1 (1.1)

**Table 4 Barrier Scale Score**

Subscale	Mean (SD)	Minimum	Maximum
Adopter	2.37 (0.60)	1.00	3.75
Organization	2.80 (0.54)	1.25	4.13
Innovation	2.85 (0.47)	2.00	4.00
Communication	2.96 (0.63)	1.00	4.00
Others	2.87 (0.64)	1.00	4.50
Total	2.73 (0.44)	1.70	3.83

Table 1 shows that the average age was 36.75 years. The average nurse has been working in this hospital for 13.35 years, with the lowest and highest working period were one year and 37 years. Almost  $\frac{3}{4}$  respondents were female. More than half of the 70% of respondents' final education was vocational, followed by nursing graduates and registered nurses amounted to 14.4%, and the remaining around 3.3% were senior high school level in the nursing field. Nearly half of the respondents as many as 42% worked in the Operation Room (OR).

Table 2 illustrates the mean, minimum, and maximum of EBP understanding/knowledge responses, EBP attitude responses, understanding of research terms, actions against scientific evidence-based practices, and confidence in EBP on nurses at Dr. M. Djamil Hospital 2017. The average attitude score on evidence-based practice (EBP) was the highest among the other scores on average. Meanwhile, action against EBP has the lowest average score.

Table 3 describes the frequency and percentage of respondents' answers to the Barrier scale questionnaire. There were 5 (five) subscales of nurse subscale, constraint and limitation subscale, research quality subscale, presentation subscale and accessibility of research results, and item subscale not available on each subscale. Most of the respondents answered disagree and neutral, while some respondents who answered agreed, even strongly agreed with the nurse subscale. Unlike the case with other subscales, the spread of answers was unpleasant, neutral, and amenable.

Table 4 illustrates the average subscale score and the total score of the barrier scale. The subscale of presentation and accessibility of research results as barriers of almost  $\frac{3}{4}$  was low, followed by other item subscales, constraint and constraint subscale, research quality subscale, and consecutive nurse subscales of 70%, 62.2%, 58.9%, and 53.3%. In total, more than half of the barriers were considered low, with an average score of 2.73. Thus, most respondents rated the barrier of the five aspects low, and others felt the barrier was quite high.

## Discussion

This study provided knowledge, attitude, understanding of research terms, and confidence to EBP, as well as EBP action on nurses in Padang City. The results showed that more than a few nurses had the same EBP understanding/knowledge response or more than the average score. However, the average score of respondents' understanding of EBP and research terms was in the mid-range of 2.93 and 2.53. In line with research, Rn et al. (2013) reported that nurses had a poor understanding of the term EBP. A possible explanation for this might be that nurses who had learning experience related to research in the educational program were more capable of conducting research (Olade, 2003). The findings seemed to be consistent with other studies which found that nurses' educational level had a statistically significant relationship with their research attitudes (Olade, 2003). Furthermore, previous research revealed that EBP educational interventions have effectively improved the knowledge and skills associated with EBP (Patelarou et al., 2017; Saunders, Vehviläinen-Julkunen, & Stevens, 2016). Besides, education is one of the essential characteristics of nurses because it can affect one's perception, where the higher the level of education, the greater the desire to utilize knowledge and skills in carrying out tasks in a professional manner (Oyoh, Somantri, & Sekarwana, 2017).

Attitudes towards EBP had a higher mean than the mean of knowledge and practice towards EBP, namely, 3.32. Some studies reported that nurses have a positive attitude toward EBP and use of research in practice (Stokke, Olsen, Espehaug, & Nortvedt, 2014; Ammouri et al., 2014; Hussein & Hussein, 2013; Foo, Majid, & Mokhtar, 2011; Rn et al., 2013; White-Williams et al., 2013; Chang, Russell, & Jones, 2010; Wilkinson, Hinchliffe, Hough, & Mphysio, n.d.; Chang et al., 2013; Butler, 2011). A study reported that nurses view the EBP application as an improvement in patient care outcome criteria, research findings are useful in compliance with nursing practice, and EBP encourages patient-centered care (Hussein & Hussein, 2013). The average practice towards EBP was the lowest among others, which was 1.95. In

contrast to the case (White-Williams et al., 2013) in Alabama, the average EBP action score was about two times higher than the current study results, which were 3.41. This was possible due to a higher education level and position as a manager in the workplace so that it had better actions towards EBP. Previous research explained that the need to improve nurses' professional skills through education and training is a fundamental aspect (Oyoh et al., 2017; Rohayani & Banuwati, 2015). Furthermore, Gagan & Hewitt-Taylor (2004) emphasized that the taking and transfer of scientific evidence into practice is difficult and challenging.

Scott and Mcsherry (2008) stated that nurses need to have a good understanding of how to run evidence-based nursing (EBN) and what the concept means and how it differs from other approaches for use in evidence-based actions/practices. Moreover, nurses need to be made aware and involved with the processes associated with obtaining evidence in practice and then identifying what is deemed incompatible with the right to inform their decisions and actions in practice. In this study, note that the average total score for each subscale was in the mid-range of 2.73; 2.96; 2.87; 2.85; 2.80; and 2.37, respectively. It showed, some respondents stated that the barrier felt quite strong, while others felt the barrier was quite low. The nurses' subscale as adopters of grades, skills, and awareness has the lowest average score among other subscales. Nurses considered conducting research worthless and even felt a little benefit of EBP for themselves were the top two things as a barrier on this subscale. However, the nurse item did not want to change/try new ideas, and nurses did not care about the research being the lowest item.

Further to the organizational subscale, it found that inadequate facility items to implement EBP ranked first as a barrier, followed by the limited time for reading study results and the absence of nurse autonomy to change patient care procedures. This finding is consistent with Brown, Wickline, Ecoff and Glaser (2009), who reported that organizational barriers, such as lack of time and nurse autonomy, are the main perceived barriers. Lack of facilities such as unprepared information technology (IT) and library

facilities can hamper the implementation of EBP. Also, Eizenberg (2010) pointed out that one of the variables that emerge as EBNP predictors is organizational support, whereas EBNP is more prevalent in workplaces providing computer and internet facilities. Previous research reported that nurses feel satisfied with the support of the team and organization in the form of ease of obtaining and using facilities and advice and assistance in providing nursing services to improve the quality of nurses' work (Somantri & Yudianto, 2018).

The current study found that the second-highest mean score was the limitation of time to implement new ideas and read articles research. Unlike the previous findings Mehrdad, Salsali, and Kazemnejad (2008), the lack of time was felt to be the fifth most frequently cited barrier in research use. This study found that the second-largest average score was the limited time to implement new ideas and reading research articles. In contrast to previous findings, Mehrdad, Salsali, & Kazemnejad (2008) argued, lack of time was felt to be the fifth barrier most frequently cited in the use of research. Pettengill, Gillies, and Clark (1994) suggested that there is a need to investigate the concept of time in terms of personal factors such as motivation and aspiration. The next barrier was low nurse autonomy in patient care procedures. This is consistent with other findings and may be related to the low status and autonomy of nurses in all countries investigated (Chang et al., 2010; Fink, Thompson, and Bonnes, 2005). Besides, Olade (2003) argued the lack of nurses and authority could generally stem from a tradition where nurses do not question nursing practice but focus on tasks assigned to them by co-workers in management positions or by medical staff.

## **Conclusion**

This article points out that more than half of the respondents have a nursing certificate, the mean of attitude exceeds the average score of knowledge/understanding related to EBP, research terms, and practice towards EBP. The evidence from this study shows that there should be an increase in the

nurse's knowledge and skills in evidence-based practice. Also, analyzing research results and anticipating constraints such as better time management between practice and reading research literature, improving nurse autonomy in patient care practices, and providing referral access facilities. These efforts will undoubtedly enhance the implementation of evidence-based practice.

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