

## Original Article

## Readiness, Barriers and Potential Strength of Nursing in Implementing Evidence-Based Practice

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### Abstract

**Background:** Evidence-based practice (EBP) is an ideal problem-solving approach based on the application of the best research in making health care decisions and proven to be able to improve the quality of health services. The ability of nurses to carry out EBP is strongly influenced by several factors. The aim of the study was to identify the readiness, barriers and potential strength of nurses in implementing EBP.

**Methods:** A cross-sectional study method using evidence-based practice readiness survey instruments (EBPR Survey), Barrier of EBP and facilitating factors to EBP adoption recruiting 186 nurses in the inpatient room of Dr. Wahidin Sudirohusodo Makassar.

**Results:** The nurse scored high (median = 63) on the EBP readiness scale which reflected a significant positive readiness for EBP and reported high knowledge and skills about EBP (median = 21), positive attitudes and beliefs towards EBP (median = 20.5), and workplace culture that supports EBP (median = 21). However, almost half (44.1%) of them were unsure about their ability to engage in EBP despite the fact that they believed in the importance of EBP.

**Conclusion:** Identified of nurses' readiness in implementing EBP can facilitate changes to EBP practice development and design strategies and interventions needed before adopting EBP.

**Keyword:** evidence-based practice, nursing, readiness, barriers, potential strength

### Introduction

Evidence-based practice (EBP) plays an integral role in high-quality health services and has been recognized internationally as an ideal problem-solving approach and emphasizes the application of the best research, helps health professionals stay up to date and make better health care decisions (Stokke, Olsen, Espehaug, & Nortvedt, 2014; Chang & Crowe, 2011). EBP is the cornerstone of nursing practice as a means to improve the quality of patient care (American Academy of Nursing, 2016). Internationally, WHO and the European Commission emphasize that health and social services must be based on

the best research evidence (WHO, 2018). The practice of implementing EBP has been carried out by most hospitals in European countries, Australia and America and Asia, especially Taiwan (Pereira, Salvi, & Verloo, 2017; Stokke et al., 2014; Cruz et al., 2016; Weng et al., 2013), because there is a curriculum about EBP applied since the lecture bench (Finotto, Carpanoni, Turrone, Camellini, & Mecugni, 2013; Cruz et al., 2016; ).

In Indonesia, overall the practice of implementing EBP has not been implemented in all hospitals. From a previous study conducted by Elysabeth, Librantly, & Natalia, (2014) about

the relationship between nurse education level and EBP application competency in Siloam Kebun Jeruk Hospital, it was stated that only a small proportion of nurses had competency in applying EBP. Meanwhile, research conducted by Oktiyuliandri, (2015) suggests that the application of EBP has been implemented in Dr. RSUP M. Djamil Padang since 2012 but has not been maximal, this is indicated by the results of research on nurses' knowledge and attitudes in implementing EBP in the inpatient room of Dr. M. Djamil found that some nurses have less knowledge about EBP but have a positive attitude towards EBP. Sandofa, Rudini, & Fitri, (2016) suggested that some ICU nurses at Raden Mattheher Hospital in Jambi had knowledge and beliefs about EBP and argued that EBP was important in clinical care practices but some of them could not critically assess a scientific work.

The utilization of research results in EBP has been stated in the Law of the Republic of Indonesia Number 38 of 2014 concerning Nursing Article 2 point b states that nursing practice must be based on scientific values, meaning that nursing practice must be based on science and technology obtained through research, education or service or practical experience (Kemenkopmk, 2014). However, many health care decisions are still based on traditional practices, assumptions, personal experiences and opinions and individual skills (Azmodde, Farkhondeh, Ahour, & Kabirian, 2017). In addition, the study conducted by Eizenberg, (2011) states that although nurses are aware of the importance of EBP, they prefer to discuss with colleagues rather than reading the results of the study. This is because EBP is not the norm of everyday practice and the majority of nurses are not involved in EBP for several reasons (Patelarou et al., 2017).

Saunders & Vehviläinen-Julkunen, (2015) suggested that nurses' ability to conduct EBP was strongly influenced by nurses' readiness to implement EBP. The identification of nurses' readiness before implementing EBP is very important because this will reveal the inhibiting variables and variables that facilitate the implementation of EBP (Thiel & Ghosh, 2008). This phenomenon makes the writer want to know how the picture of readiness, barriers, and potential strength of nurses in implementing EBP.

## Research Methodology

**Study Design, Setting, Participants:** The research method used was a cross-sectional study. Data was collected using a self-report questionnaire consisting of three parts: demographic information, EBPR Survey, Barrier of EBP and factors to facilitate to EBP adoption. Demographic data obtained include age, level of education, length of work, participants in training/training/seminars on EBP. The sampling technique in this study was convenience sampling. Respondents in this study were inpatient nurses at RSUP DR. Wahidin Sudirohusodo Makassar who has worked for more than 6 months is 186 people.

### Research Instruments-Questionnaire:

Respondents filled out the EBPR Survey questionnaire adopted from Patelarou, Dafermos, Brokalaki, Melas, & Koukia, (2015) to determine nurses' readiness for adopted EBP from. The total of the questionnaires consisted of 18 item statements using a Likert scale about knowledge and skills about EBP (6 items), attitudes and beliefs of nurses towards EBP (6 items), the workplace culture of nurses towards EBP (6 items). Consists of 5 points Likert scale starting from 1 (strongly disagree), 2 (disagree), 3 (between disagreeing and agreeing), 4 (agree) to 5 (strongly agree). Total scores can range from 18 to 90. To find out the barriers and potential strengths in implementing EBP adopted from the Barrier of EBP, it consists of 9 item statements and factors to facilitate to adoption EBP consists of 6 statement items by Foo et al., (2011). Consists of 5 points Likert scale starting from 1 (strongly disagree), 2 (disagree), 3 (between disagree and agree), 4 (agree) to 5 (strongly agree) for obstacle questionnaires with scores ranging from 9 to 45 and 5 points Likert scale starts from 1 (very unimportant), 2 (not important), 3 (between not important and important), 4 (important) to 5 (very important) for potential questionnaire strengths with scores ranging from 6 up to 30. These instruments were adopted into Indonesian and through the translation and back-translation process (Fransen, Van Schaik, Twickler, & Essink-Bot, 2011) and have been tested on 30 implementing nurses in the inpatient class II and III RSP Unhas Makassar, with the results of Corrected Item-Total Correlation 0.330-0.911 and Cronbach's Alpha > 0.7.

<b>Variabel</b>	<b>Crombach's Alpha</b>
<b>Knowledge and Skill</b>	<b>0.875</b>
<b>Beliefs and Attitude</b>	<b>0.870</b>
<b>Workplace Culture</b>	<b>0.826</b>
<b>Barrier</b>	<b>0.848</b>
<b>Potential Strength</b>	<b>0.919</b>

**Statistical analysis:** The data obtained is analyzed in a simple manner with software that helps this data analysis process, namely SPSS 21 to obtain a description of the variable using the frequency distribution table. Simple statistical calculations are carried out by identifying the frequency, percentage, the mean and standard deviation of the demographic data, readiness, barriers, and potential strength of EBP implementation.

**Ethical Consideration:** This research has been approved by the Medical and Health Research Ethics Committee of Faculty of Medicine, Hasanuddin University with the reference number of 408/H4.8.4.5.31/PP36-KOMETIK/2018. Informed consent has been done in each respondent to tell about the objective and procedure of the study.

### Results

Demographic data of respondents are presented in table 1. Most of the respondents were on average 30 years old ( $SD \pm 7.32$ ), educated nurses (51.76%), had worked in nursing on average 6 years ( $SD \pm 6.80$ ) and the majority had never attended training/workshop/seminar on EBP (79.6%). Table 2 presents the variable readiness of nurses in implementing EBP. The results showed that overall the readiness of nurses in implementing EBP was in the high category with an average of 61.23 ( $SD \pm 10,308$ ). When viewed from the subscale, the workplace culture of EBP is the highest score with an average of 20.22 ( $SD \pm 4,645$ ) and attitudes and beliefs are the lowest scores with an average of 20.37 ( $SD \pm 3,968$ ).

Table 3 presents the barriers to nurses' adoption of EBP. The biggest obstacle results obtained by nurses for EBP adoption are indicated by the majority (> 50%) of respondents stating that they are unable to apply research study recommendations into clinical practice and difficulty finding time at work to search and read research articles and reports (73.7%), no enough time at work to implement changes in their practice (58.1%), insufficient resources (for example, equipment, materials) to implement EBP (52.2%), in addition to the above barriers there are other barriers including the inability to understand the statistical terms used in research articles (47.3%), difficulties in assessing the quality of papers and research reports (43%), were unable to apply research study recommendations into clinical practice and inability to interpret well the results of research studies (39.2%), and inadequate understanding about the term research used in the research article (38.2%).

Table 4 presents the potential variables of nurse power in adopting EBP. The results of the majority (> 50%) of respondents stated that adequate training was provided (77.4%), nursing colleagues who received / supported EBP (62.9%), nursing management who received / supported EBP, mentored by nurses who had adequate EBP experience and access to the system for a comprehensive literature search (61.8%), having a specific time to conduct EBP (51.6%) is a potential nurse power for EBP adoption.

**Table 1 Distribution of Respondent Characteristics (n=186)**

Characteristics	Mean ( $\pm$ SD)	
	Min-Maks	
Age (year)	30.27 ( $\pm$ 7.32)	
	20 - 53	
Length of Work (year)	6.06 ( $\pm$ 6.80)	
	1 - 38	
	Frekuensi	(%)
Level of Education		
D3	88	47.3
S.Kep.,Ners	96	51.76
S2	2	1.1
Participants in training/workshop/seminars on EBP::		
Never	131	70.4
Ever	55	29.6

Table 2 Readiness of nurse about EBP

Variabel	Sub Variabel	Min-Maks	Median
Readiness	Knowledge and Skill	10-30	21
	Beliefs and Attitude	11-28	20.5
	Workplace Culture	10-30	21
	<b>Total score</b>	<b>39-82</b>	<b>63</b>

Table 3 Barrier of nurse to adopt EBP

No	Item	Not Agree n (%)	Neutral n (%)	Agree n (%)
1	Inability to implement recommendation of research studies into clinical practice	35 (18.8)	<b>80 (43)</b>	71 (38.2)
2	Difficulty in judging the quality of research papers and reports	36 (19.4)	70 (37.6)	<b>80 (43)</b>
3	Inadequate understanding of research term used in research articles	8 (4.3)	41 (22)	<b>137 (73.7)</b>
4	Difficulty in determining the applicability of research findings	29 (15.6)	72 (38.7)	<b>85 (39.2)</b>
5	Inability to properly interpret the result of research of studies	33 (17.7)	<b>80 (43)</b>	73 (39.2)

6	Inability to understanding statistical term used in research articles	30 (16.1)	68 (36.6)	<b>88 (47.3)</b>
7	Insufficient resources (e.g. equipment, materials) to implement EBP	27 (14.5)	62 (33.3)	<b>97 (52.2)</b>
8	Difficulty in finding time at work place to search for and read research articles and reports	12 (6.5)	37 (19.9)	<b>137 (73.7)</b>
9	Insufficient time at work place to implement changes in their current practice	16 (8.6)	62 (33.3)	<b>108 (58.1)</b>

**Table 4 Potential Strenght to adopt EBP**

No	Item	Not Important n (%)	Neutral n (%)	Important n (%)
1	Given protected time to conduct EBP	32 (17.2)	58 (31.2)	<b>96 (51.6)</b>
2	Nursing management who embrace EBP	30 (16.1)	41 (22)	<b>115 (61.8)</b>
3	Mentoring by nurse who have adequate EBP experience	35 (18.8)	36 (19.4)	<b>115 (61.8)</b>
4	Given adequate training in EBP	7 (3.8)	35 (19.4)	<b>144 (77.4)</b>
5	Nursing colleagues who embrace EBP	23 (12.4)	46 (24.7)	<b>117 (62.9)</b>
6	Access to a system for comprehensive literature searching	27 (14.5)	44 (23.7)	<b>115 (61.8)</b>

## Discussion

The characteristics of nurses in these respondents strongly represent the nurse clinician. More than half of the respondents were nurses educated nurses. Where the higher the level of education of a person, the better the competence in conducting EBP. This is in accordance with the research conducted by Eizenberg, (2011) that obtained characteristics of nurse education, the highest category in EBP application is dominated by nurses who have undergraduate education background (Elysabeth et al., 2014). Judging from the length of work of nurses is very varied, respondents in this study worked on average 6

years with a standard deviation ( $\pm 6.80$ ). This reflects that the more nurses work experience related to nursing care, the more expert they are in carrying out nursing actions. Supported by research conducted by Griffiths et al., (2001) shows that the use of EBP is widely reported by nurses with years of experience. However, the majority of respondents had never attended training/workshops/seminars on EBP, this led to a lack of respondents' knowledge about EBP. The results of this study support the importance of training to improve knowledge and skills about EBP in order to successfully implement EBP (Moreno-Casbas, Fuentelsaz-Gallego, de Miguel, González-María, & Clarke, 2011).

Knowledge is very important in the implementation of EBP because the knowledge possessed is not only within the scope of the concept but rather is needed in relation to how practices in implementing EBP (Ligita, 2012). Knowledge of the EBP concept and clinical experience are important things nurses must have. This is because professional experience and knowledge are factors that can affect the quality of nursing services to patients. Therefore, adequate knowledge of EBP is needed if it is to implement EBP into clinical practice appropriately. In addition, nurses also need to be aware of what EBP means and how to process it so that they can apply the concept correctly (Patelarou et al., 2017; Melnyk BM, Fineout-overholt E, Stillwell SB, 2009).

The implementation of EBP will be carried out well if the nurse has a positive attitude towards EBP. More than half of the respondents believe in EBP but rarely engage in EBP during daily practice. Recent research examining EBP attitudes, beliefs and knowledge by health care professionals found that although many saw the benefits, they did not believe that they had the skills, knowledge, and abilities needed to incorporate them into clinical practice (Majid et al., 2011; Azmoude et al., 2017). Phenomenon, nurses' positive attitudes and beliefs about the importance and value of EBP continue to increase, as evidenced by studies conducted in countries including the United States, Iceland, Spain, Iran and India (Ammouri et al., 2014; Heydari, Mazlom, Ranjbar, & Scurlock-Evans, 2014; Perez-Campos, Sanchez-Garcia, & Pancorbo-Hidalgo, 2014; Saunders & Vehviläinen-Julkunen, 2015; Khammarnia et al., 2015). They think EBP can improve the quality of care they can provide to patients (Cruz et al., 2016; Sandofa, Rudini, & Fitri, (2016).

Nurses can adopt EBP knowledge through adequate skills development in the workplace that supports EBP. These results are in accordance with the results of Patelarou et al., (2017) concluding that EBP knowledge correlates strongly with the level of skills and culture of local organizations. The results of this study indicate that the culture of the workplace in dr. Wahidin Sudirohusodo, especially in the inpatient room, supports the implementation of EBP as a basis for the clinical taking. This is supported by research conducted by Hagbaghery et al., (2004) stating that nurses consider EBP as a prerequisite in clinical decision making and also as an important factor in providing timely

and quality care. However, in practice, there is no policy that regulates the implementation of EBP in RSUP. dr. Wahidin Sudirohusodo. Creating an EBP culture requires commitment from management and administration to jointly support EBP's vision and regulate policies related to EBP (Shifaza, Evans, & Bradley, 2014).

There are several barriers to adopting EBP into clinical practice, including being unable to apply research study recommendations to clinical practice. This is the biggest challenge in the world of health today, where health workers, especially nurses are required to be guided by EBP as a basis for clinical decision making. In accordance with the report by The Quality Chasm by IOM, (2003) states that nurses must have competence in integrating the best research with clinical expertise and patient values for optimal care. For this reason, nurses need to be used to synthesize research results into clinical practice (Khammarnia et al., 2015).

Time constraints and lack of knowledge and skills about EBP are one of the main barriers for nurses to adopt EBP (Foo et al., 2011). This is because most nurses carry out nursing practices based on habits or traditions rather than evidence that might result in an increase in workload or it could be due to poor nurse time management. Time limitations are a serious barrier to the use of research. In addition, insufficient time to read, evaluate, analyze, disseminate and apply evidence has been reported by many nurses as barriers to EBP (Shifaza, Evans, & Bradley, 2014; Foo et al., 2011; Cruz et al., 2016; Yoder et al., 2014; Ammouri et al., 2014). In addition, resources are reported to be one of the barriers to the implementation of EBP. This is consistent with the results of research by Khammarnia et al., (2015) and Varaei, Salsali, & Cheraghi, (2013) report that human resources, lack of availability of access, heavy workloads, and lack of access to libraries that are rich in nursing journals and heavy workloads are the most common barriers to implementing EBP.

Other barriers such as the inability to understand statistical terms used in research articles and difficulties in assessing the quality of papers and research reports (Griffiths et al., 2001), are unable to apply research study recommendations into clinical practice and inability to interpret the results of research studies properly (Majid et al., 2011) and inadequate understanding of the terms of the research used in the research article (Connor & Pettigrew, 2009) are some of the barriers that must be overcome so that the

concept of EBP in everyday practice can be implemented properly.

As for the potential strength found in research, it is adequate training about EBP. Training on EBP is an effective strategy to increase nurses' knowledge regarding EBP. The more often nurses participate in training/workshops/seminars about EBP, the more nurses understand EBP and can assess evidence and formulate solutions based on the best available evidence, for which nurses need to be introduced to the process and utilization of EBP so that nurses can develop competencies in preparing them to have a greater understanding of EBP. This is confirmed by research conducted by Sandofa, Rudini, & Fitri, (2016) showing that low knowledge about EBP can make nurses unable to critically assess a scientific work. Thus, training and guidance on EBP can increase nurse knowledge about EBP (Foo et al., 2011; Elysaabeth et al., 2014).

In addition, management support is the key to the successful implementation of EBP. In order for the implementation of EBP to be successful, it requires the support of nursing managers who have the authority and nursing service policies to commit to the implementation of EBP. This is consistent with the research of Conner et al., (2013) and Shifaza et al., (2014) suggesting that the main factors that facilitate the implementation of EBP include support, encouragement, and recognition by management and administration. Active support from nurse leaders is very important for the implementation of EBP in everyday practice because it can create an organizational culture that supports EBP more (Saunders, Stevens, & Vehvil, 2016).

The importance of access to the system for a comprehensive literature search. The results of this study, supported by previous research that 56% of barriers to EBP implementation are related to individual aspects, namely lack of internet access in the workplace and lack access to libraries with nursing journals (Pagoto et al., 2007; Young & Ward, (2001). For this reason, it is necessary to have a habit in using computer facilities, especially when looking for articles in journals online, so as to train nurses to use the website Khammarnia et al., (2015). This study also explores other factors that may encourage nurses to adopt EBP. seems to be one of the important factors for nurses to learn and apply EBP. This result is consistent with the results of the study (Shifaza et al., 2014; Solomonsms & Spross, 2011; Griffiths et al., 2001) stating that

the most frequently cited facilitators of EBP is to increase the availability of time, so that hospital management needs to make the necessary adjustments in the nurse's work schedule to ensure sufficient time for them to study and implement EBP (Majid et al., 2011).

**Conclusion:** Knowledge of nurses in the medium category about EBP has made nurses at this time not yet ready enough to implement EBP. However, their attitude is quite positive towards EBP and the workplace culture that supports the implementation of EBP. The thing that strongly supports nurses' readiness in implementing EBP is adequate training, management support, the importance of access to the system for a comprehensive literature search. While the inhibiting factor can be in the form of not being able to apply the research study recommendations into clinical practice, time constraints and lack of knowledge and skills about EBP, insufficient resources. Further research that can be done relates to interventions that can be done to develop the implementation of EBP in nursing practice and evaluate the progress of implementing EBP and compare pre-initiative baseline data with future post-initiative data.

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