

**NURSES' KNOWLEDGE, ATTITUDE, PRACTICE
AND BARRIERS TOWARDS THE USE OF
EVIDENCE BASED NURSING PRACTICE (EBNP)
AT GOVERNMENT HOSPITALS IN MALAYSIA**

by

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for the degree of
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LIST OF ABBREVIATIONS

EBP	- Evidence Based Practice
EBNP	- Evidence Based Nursing Practice
HPP	- Hospital Pulau Pinang
HSJ	- Hospital Seberang Jaya
HSAH	- Hospital Sultan Abdul Halim Sungai Petani
HUSM	- Hospital University Sains Malaysia
RN	- Registered Nurses
SPSS	- Statistical Package Social Science
ANOVA	- Analysis of Variance
SD	- Standard Deviation
n	- Number
p	- Significant Value
f	- Frequency

**PENGETAHUAN, TINGKAH LAKU, AMALAN DAN HALANGAN
KEPADA JURURAWAT TERHADAP
AMALAN KEJURURAWATAN BERASASKAN BUKTI (EBNP)
DI HOSPITAL KERAJAAN DI MALAYSIA**

ABSTRAK

Dalam profesion kejururawatan, Amalan Kejururawatan Berasaskan Bukti (EBNP) membuat sumbangan positif kepada hasil penjagaan kesihatan, penyampaian penjagaan, pengajaran klinikal dan penyelidikan. Objektif kajian ini adalah untuk menentukan pengetahuan, sikap, amalan jururawat ke arah EBNP dan halangan untuk menggunakan EBNP di empat Hospital di Malaysia, Hospital Universiti Sains Malaysia (Hospital USM), Hospital Pulau Pinang (HPP), Hospital Sultan Abdul Halim (HSAH) dan Hospital Seberang Jaya (HSJ). Satu kajian keratan rentas telah dijalankan dari Januari sehingga Disember 2012 di kalangan jururawat yang bekerja dalam semua bidang, mengikut kewajipan waktu dalam empat hospital terpilih. Borang soal selidik yang telah digunakan dalam kajian ini telah diadaptasi daripada kajian Singapura. Dengan SPSS versi 21.0, data telah dianalisis oleh Statistik deskriptif, *Independent T-Test*, *One-Way ANOVA* dan *Multi-Factorial ANOVA*. Keputusan menunjukkan bahawa di kalangan jururawat yang bekerja di empat buah hospital Malaysia yang berbeza, hampir 50% tahu apa tentang amalan kejururawatan berasaskan bukti. Penilaian sikap menunjukkan bahawa sebilangan besar jururawat menyatakan jawapan bahawa bersetuju dan tidak bersetuju. Majoriti jururawat cenderung untuk menunjukkan sikap yang agak positif kecuali apabila ditanya tentang bagaimana beban kerja mengganggu dengan amalan EBNP. Kebanyakan jururawat mengiktiraf bahawa terdapat banyak halangan untuk melaksanakan EBNP di tempat kerja. Perbezaan signifikansi telah diperolehi dengan min

amalan EBNP antara jururawat senior dan junior diperhatikan bagi penyata 1, 2 , dan 3 iaitu ($p < 0.001$), ($p = 0.005$) and ($p = 0.028$) masing-masing. Analisis ANOVA pelbagai faktor yang digunakan untuk menentukan kesan kelayakan akademik, tempat kerja , pengalaman dan latihan pengetahuan jururawat terhadap EBNP. Kesimpulannya, kajian ini mungkin telah membantu untuk meningkatkan pemahaman tentang pengetahuan, sikap, amalan, dan halangan kearah untuk menggunakan EBNP dalam penyelidikan oleh jururawat melalui penerokaan halangan yang diketahui dan fasilitator di bahagian jururawat.

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ABSTRACT

In the nursing profession, EBNP makes a positive contribution to healthcare outcomes, care delivery, clinical teaching and research. The research objective was to determine the nurses' knowledge, attitude, practice of EBNP and barriers to adopt EBNP in four hospitals in Malaysia, Hospital Universiti Sains Malaysia (Hospital USM), Hospital Pulau Pinang (HPP), Hospital Sultan Abdul Halim (HSAH) and Hospital Seberang Jaya (HSJ). A cross-sectional study was conducted from January until December 2012 among nurses working in all disciplines, on shift or day time duties in four selected hospitals. The questionnaire was adapted from a Singapore study. The data were analysed with SPSS version 21.0, using descriptive statistics, Independent T-Test, One-Way ANOVA and Multi-Factorial ANOVA. Results showed that among the nurses working in four different Malaysian hospitals, nearly 50% knew what the evidence based practice meant. The items assessing the attitude showed a large number nurses responding that they did neither agree nor disagree with statements provided. The majority of the remaining nurses tended to show a rather positive attitude except when asked about how the workload interfered with their EBP practice. Most nurses recognized there were many barriers to EBP in their working place. The significant mean differences of practice on EBNP between senior and junior nurses were observed

for the statements 1, 2, and 3 ($p < 0.001$), ($p = 0.005$) and ($p = 0.028$) respectively. Multi-factorial ANOVA analysis used to determine the effect of academic qualification, working place, working experience and training on nurses' knowledge towards EBNP. In conclusion, this study may have helped to increase understanding of knowledge, attitudes, practice and barriers to adopt EBNP to the utilization of research by nurses through an exploration of perceived barriers and facilitators on the part of nurses.

CHAPTER 1

INTRODUCTION

1.1 Background of Study

1.1.1 Evidence Based Practice (EBP)

During the last century there has been an exponential growth of research and knowledge. The growth of health care information has been particularly rapid in diagnostic and therapeutic technologies. The application of evidence from research into practice is called Evidence Based Practice (EBP) and it has gained importance over the past few decades. Other authors have also stated that EBP has dominated the literature since more than 20 years and that the use of its theory has become wider (Melnyk, Fineout-Overholt, Stillwell & Williamson, 2004).

Research by Jean and Rosalind (2007) supports that EBP manual for nurses was published and the authors stated that EBP has appeared to be accepted as a pointer for health care quality (Jean & Rosalind, 2007). EBP has not only been of importance to medical doctors but also in the nursing profession it has contributed to quality and improvement of patient care, as was stated by Jean and Rosalind: in the nursing profession, EBP makes a positive contribution to healthcare outcomes, care delivery, clinical teaching and research.

A descriptive correlational study surveyed on Baccalaureate Nursing Faculty members about teaching EBP and techniques to implement EBP in psychological manner in nursing care. It has also been credited with proving efficacy of many treatments and exposing the ineffectiveness of many others such as their use of empowering teaching behaviors and their psychological empowerment in their clinical decision making for patient care (Brancato, 2007). A clinical practicum was successfully implemented for registered nurses and students nurses to apply EBP to actual clinical problems affecting nursing practice. It provides also the chances to move towards goals of clinical governance and evidence based patient care while practicing within a more transparent framework (Brancato, 2006).

One consistent finding in health services research is the gap between best practice, as determined by scientific evidence, on the one hand, and actual clinical care, on the other. Even in developed nations this gap seems to be very significant up to at least very recent years. A study conducted by Lehman and Koehn (2008), examined the extent of current understanding of EBP, knowledge, skills, and attitudes among registered nurses in an Urban Midwestern Hospital in the USA. It showed that there might be an organizational misinterpretation of EBP and EBP is a problem solving approach to clinical practice.

1.1.2 Evidence Based Nursing Practice (EBNP)

Evidence Based Nursing Practice (EBNP) has gained impetus in nursing, and it is defined in the literature in many different ways. Evidence consist of different levels, including research findings, knowledge from basic science, clinical knowledge, and expert opinion. Practices based on research findings tend to be more likely to result in desired patient outcomes across various settings and expertise (Pape, 2003).

The impetus to practice EBNP in nursing care may come mainly from healthcare facilities, since they tend to demand for cost repression, greater accessibility of information, and greater consumer knowledge about treatment and care options. Besides that, the EBNP brought changes in education of students, resulted in more practice relevant research, and closer working relationships between clinicians and researchers (Youngblut & Brooten, 2001).

Besides maximizing effects of clinical judgment, EBNP furnished wide opportunities for nursing care to more individualized, more effective and dynamic. As a result of the availability of definition of the best nursing practices with the evidence, nursing care keeps developing with the newest technological advances and it can take benefit of new knowledge developments (Youngblut & Brooten, 2001).

1.2 Problem Statements

Nurses are the frontline decision makers in making clinical judgments and they play a major role in practicing EBNP in their clinical practices. There have been similar studies on Malaysian primary care doctors (Chan & Teng, 2005), private medical practitioners (Lian & Marnoch, 1999), and dental practitioners (Yusof, Han, San, & Ramli, 2008), but to our knowledge, this is the first study conducted on different settings, facilities and management of hospital nurses in Malaysia mainly focused on EBNP.

Evidence transfer and its utilization in nursing is based on an assumption of shared professional knowledge and nurses are expected to implement the typical evidence that is brought to the clinical arena (Pape, 2003). But up to now there were no data on what is the level of obligations to implement and shared professional knowledge of the nursing profession in Malaysia in regards to EBNP.

This study will be useful to assess the level of awareness of EBNP and identify steps to overcome any deficiencies in nurses' training and implement the best care for the patients. Many nurses consider research and evidence to be the same (Jean & Rosalind, 2007). In fact, clinical experience, patient inclination and other related factors can be highly valued as evidence for patient care. Even though, EBNP is deemed to be capable of helping nurses to apply the best care for patient betterment, factors like insufficient training of nurses' specialists, nurses' personal background, attitudes, knowledge towards EBNP, may interfere with its clinical application.

Further research in this area is very much important to explore level knowledge and to determine the best care in clinical decision makings with compulsory training would affect outcomes. A thorough literature search did not reveal any study done in Malaysia that determine the level of knowledge, attitude, practice of EBNP, neither on the potential barriers for its implementation among Registered Nurses (RN). The main reason researcher undertaken this study was to determine the nurses' knowledge, attitude, practice of EBNP and barriers towards use of EBNP in four hospitals in Malaysia.

The choice of hospitals included was intended to purposefully include a tertiary University Hospital, a large tertiary Ministry of Health Hospital and a large and smaller district hospital. This study is likely to be capable of identifying potential opportunities for training and courses to be provided in the participating hospitals regarding EBNP nurses' responsibilities towards clinical care and decision making on their daily practice.

1.3 Objectives Of Study

1.3.1 General Objective

The research objective was to determine the nurses' knowledge, attitude, practice of EBNP and barriers towards use of EBNP in four hospitals in Malaysia (Hospital USM, HPP, HSAH and HSJ).

1.3.2 Specific Objectives

- i. To determine the level of nurses' knowledge, attitude, practice of EBNP and barriers to adopt EBNP in four hospitals in Malaysia (Hospital USM, HPP, HSAH and HSJ).
- ii. To compare the nurses' knowledge, attitude, practice of EBNP and barriers to adopt EBNP in four hospitals in Malaysia (Hospital USM, HPP, HSAH and HSJ).
- iii. To compare the nurses' knowledge, attitude, practice of EBNP and barriers to adopt EBNP between junior and senior nurses.

1.4 Research Questions

- i. What are the level of nurses' knowledge, attitude, practice of EBNP and barriers to adopt EBNP in four hospitals in Malaysia (Hospital USM, HPP, HSAH and HSJ)?
- ii. Are there any significant differences in the nurses' knowledge, attitude, practice of EBNP and barriers to adopt EBNP in four hospitals in Malaysia (Hospital USM, HPP, HSAH and HSJ)?
- iii. Are there any significant differences in the nurses' knowledge, attitude, practice of EBNP and barriers to adopt EBNP between junior and senior nurses?

1.5 Hypothesis

1.5.1 Hypothesis 1

Null Hypothesis (Ho): There are no significant differences in the nurses' knowledge, attitude, practice of EBNP and barriers to adopt EBNP in four hospitals in Malaysia (Hospital USM, HPP, HSAH and HSJ).

Alternative Hypothesis (Ha): There are significant differences in the nurses' knowledge, attitude, practice of EBNP and barriers to adopt EBNP in four hospitals in Malaysia (Hospital USM, HPP, HSAH and HSJ).

1.5.2 Hypothesis 2

Null Hypothesis (Ho): There are no significant differences in nurses' knowledge, attitude, practice of EBNP and barriers to adopt EBNP between junior and senior nurses.

Alternative Hypothesis (Ha): There are significant differences in nurses' knowledge, attitude, practice of EBNP and barriers to adopt EBNP between junior and senior nurses.

1.6 Definition Of Terms (Conceptual / Operational)

There are four important terms which were extensively used in this study. Definition of each important term is stated below:

- i. Registered Nurses (RN)
- ii. Knowledge
- iii. Attitude
- iv. Practice
- v. Barriers

i. Registered Nurses

According to Arthur (2012) RN is defined as professional nurses who have completed a course of study at an approved and accredited school of nursing and who have passed the National Council of Licensure Examination. RN is licensed to practice by individual states.

According to Lathrop (2008) the meaning of RN is a nurse who has graduated from an accredited nursing program, has passed the state examination for licensure, and has been registered and licensed to practice by a state authority.

In this study, RNs are permanent nurses working in all disciplines such as medical and surgical, whether on shift or day time duties.

ii. Knowledge

According to the Oxford English Dictionary (2012), knowledge is defined as (i) expertise, and skills acquired by a person through experiences or education; the theoretical or practical understanding of a subject; (ii) what is known in a particular field or in total; facts and information; or (iii) awareness or familiarity gained by experience of a fact or situation. Overall knowledge involves cognitive process such as perception, learning, communication, association and reasoning. Besides that the term knowledge refers also to mean of understanding a subject with ability to use it for a specific purpose (Simpson, 2012).

In this study, knowledge of nurses was evaluated through techniques of nurses applying and practicing EBNP in their clinical setting. For successful results, nurses had to be able to utilize their knowledge to identifying the best EBNP in their clinical care and decision making.

iii. Attitude

Attitude usually refers to manner, feeling, disposition, position, and so on by regarding to a person or thing for tendency or orientation especially to the mind. An attitude plays an important role in decision making process (Pape, 2003), where nurses must be aware and alert towards applying and practicing EBNP in their clinical setting. In this study, nurses' attitude was evaluated in order to know the influences of nurses' attitude towards applying and practicing EBNP in their clinical care.

iv. Practice

According to the Oxford English Dictionary (2012), Practice is the act of rehearsing a behavior over and over, or engaging in an activity again and again, for the purpose of improving or mastering it (Simpson, 2012).

In this study, nurses' practice was evaluated in order to know the influences of nurses' practice towards applying and practicing EBNP in their clinical care and decision making.

v. Barriers

According to the Oxford English Dictionary (2012), barriers are a coordinated series of obstacles designed or employed to channel, direct, restrict, delay, or stop the movement of an opposing force and to impose additional losses in personnel, time, and equipment on the opposing force. Barriers can exist naturally, be manmade, or a combination of both (Simpson, 2012).

In this study, the researcher focused on three major barriers such as lack of authority to change nursing practice, time constraints and lack of knowledge of research methods. The main conditions that would facilitate nurses in the use of research findings are support from administration or colleagues, available time and research knowledge base.

1.7 Expected Significance of The Study

The expected significance of this study was to investigate further on factors such as personal attributes that could influence nurses' knowledge, attitude and practice of applying EBNP and barriers towards implementing EBNP in clinical decision makings. Nurses are the key-person and pillars in every departments, clinics and wards. For a successful transformation, nurses accept challenges which bestow significantly to international nursing knowledge including, original research, review articles, historical perspectives, clinical cases and policy initiatives.

The association between nurses' knowledge, attitude, and practice of EBNP were important factors influencing the effective utilization and application of research results in practice (Prior, Wilkinson & Neville, 2010). EBNP is the combination of clinical expertise, patient values, and the best research evidence in decision making process for patient care. Clinically relevant research would provide the best evidence in practicing and applying EBNP every day in their clinical care and decision making in their clinical settings (Sackett, 2002).

By identifying factors influencing, this study has the potential to demonstrate nurses' knowledge, attitude, and practice to the implementation of EBNP and the strength to implement their knowledge and attitude in practicing and applying EBNP in their patient care. Nurses will be more alert and aware on latest updates on patient care. This will hopefully encourage them to attend more courses and training regarding EBNP in order to improve their capabilities to give optimum care for the patient.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

EBNP is an integration of the best available evidence, merged with clinical expertise and patients' background. EBNP enables health practitioners to address healthcare questions with an evaluative and qualitative approach. In addition the practitioner would be able to evaluate the current and past research, clinical guidelines, and other information resources in order to identify relevant literature and distinguish high quality and low quality findings.

The practice of EBNP includes five fundamental steps (Sackett, 2002). The steps are as follows;

Step 1: Formulating a well-built question

Step 2: Identifying articles and other evidence-based resources that answer the question

Step 3: Critically appraising the evidence to assess its validity

Step 4: Applying the evidence

Step 5: Re-evaluating the application of evidence and areas for improvement

2.1.1 Definition of Evidence Based Practice

The most common definition of EBP was captured from Sackett, Rosenberg, Gray, Haynes & Richardson (1996), a pioneer in exploration of EBP. EBP is "the care of the individual patient and integrating individual clinical expertise with the best available external clinical evidence from systematic research."

The figure below showed that EBP is the combination of clinical expertise (cumulated experience, education and clinical skills), patient values, and the best research evidence in decision making process for patient care. Sound methodology in clinically relevant research would provide the best evidence (Sackett, 2002).



Figure 2.1.1: EBP is the integration of clinical expertise, patient values, and the best research evidence adopted from Sackett (2002)

Even though evidence could not make a decision for health practitioners and researchers, it helps in support the patient care process. The integration of three components into clinical decisions leads to optimal clinical outcomes and quality of life. Conventionally EBP is a source of patient encounters that raises questions about the

effectiveness of therapy, the utility of diagnostic tests, the prognosis of diseases, or the etiology of disorders.

2.2 Importance of Evidence Based Nursing Practice

EBNP potentially improves patient care and seems to be a way of the future. Nursing has a history of relying on anecdotal experiences, promoting practices that are ineffective and in certain cases producing less than optimal outcomes. EBNP has become an essential element of clinical care and a tool to improve practice.

2.3 Overview of Evidence Based Nursing Practice

Nursing practice is a noble profession. Nurses spend 24 hours with patient care and are giving the best treatment to their patients. Nursing practice has offered therapies based on research evidence showing to promote positive clinical decision making and patient outcomes. Personal characteristics such as positive attitudes and involvement have been positively correlated with research utilization.

Nurses spend all of their time to give treatment to their patients. Nursing practice based on EBNP promotes positive clinical decision makings and patient outcomes. Apparently, organizational culture is a determinant of research practice in nursing, healthcare organizations must enhance conducive environment to attract nurses to involve in the organization's research culture and maximize the care patients receive (Sherriff, Wallis & Chaboyer, 2007).

2.4 Conceptual Framework

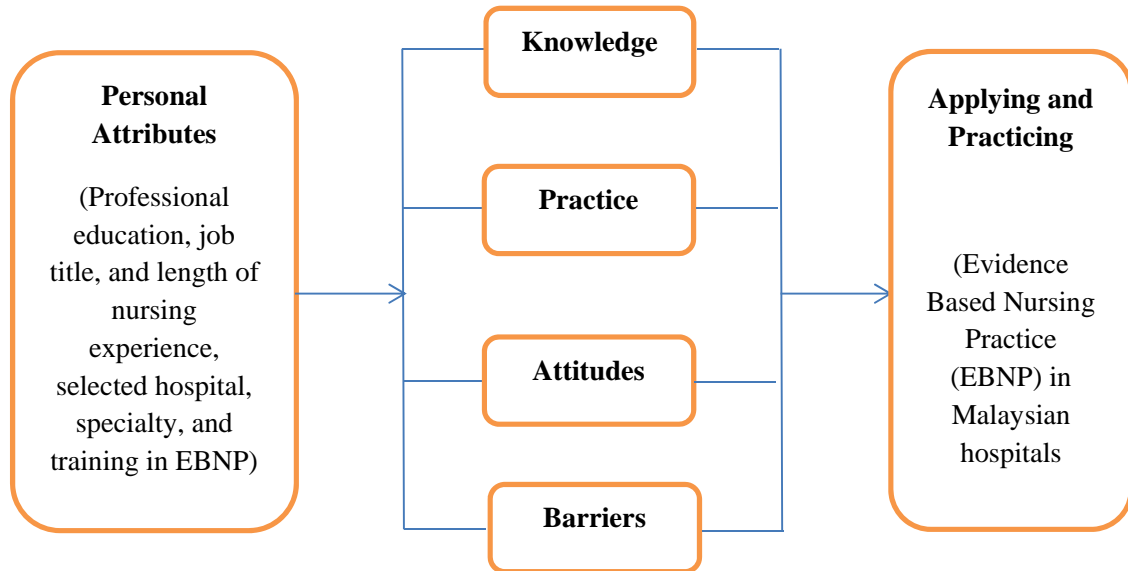


Figure 1.2.1: Conceptual framework: Nurses' knowledge, attitude, practice of EBNP and barriers towards to use of EBNP in Malaysia, adapted from Lee, Fraser and Chou (2007).

The above figure explains conceptual framework used in this study. Conceptual framework is usually use in research to outline possible courses of action or to present a preferred approach to an idea or thought. Personal attributes which consists of professional education, job title, and length of nursing experience, selected hospital, specialty, and training in EBNP. According to the list of demographic characteristics influences nurses' knowledge, attitude, practice of EBNP are the potentials influences of barriers towards to use of EBNP.

According to Bandura (1986) cited in Lee, Fraser, & Chou (2007), theory which was suitable to apply in this study was the self-efficacy theory. The core principle of this theory was that individual expectations performance (efficacy-expectation) and success (outcome-expectation) reflect whether they will perform a specific behavior. Since nurses are the most competent in their actions, self-efficacy theory can be useful to explore nurses' knowledge, attitude, and practice of EBNP. However, Bandura (1977) cited in Zan, Lee & Solmon (2009) has demonstrated that self-efficacy toward a unifying theory of behavioral change can have an impact on everything from psychological states to behavior to motivation.

According to Staples et al. (1998), self-efficacy theory suggests that there are four major sources of information used by individuals when forming self-efficacy judgments. In order of strength:

- I. Performance accomplishments: personal assessment information that is based on an individual's personal accomplishments. Previous successes raise mastery expectations, while repeated failures lower them.
- II. Vicarious experience: gained by observing others perform activities successfully. This is often referred to as modeling, and it can generate expectations in observers that they can improve their own performance by learning from what they have observed.
- III. Social persuasion: activities where people are led, through suggestion, into believing that they can cope successfully with specific tasks. Coaching and giving evaluative feedback on performance are common types of social persuasion.

IV. Physiological and emotional states. The individual's physiological or emotional states influence self-efficacy judgments with respect to specific tasks. Emotional reactions to such tasks (anxiety) can lead to negative judgments of one's ability to complete the tasks.

Virtually nurses can identify goals they want to accomplish, things they would like to change and things they would like to achieve in promoting and translating EBNP in their clinical decision makings. This theory will guide and play a major role in how goals, task and challenges were approached to integrated nurses' knowledge, attitude, practice of EBNP and barriers towards to use of EBNP among Malaysian nurses. Self-efficacy reflects confidence among all nurses in our country to exert control over one's own motivation, behavior, and social environment. Perceived self-efficacy is theorized to influence performance accomplishments both directly and indirectly through its influences on self-set goals (Bandura, 1986).

2.5 World views and the impact of EBNP in clinical settings and patients care

In USA (Kovner, Brewer, Yingrengreung & Fairchild, 2010) a study was conducted to recognize changes in nurse attitude toward research utilization and the organization's research environment. This research was mainly to promote the use of research in practice. It was a descriptive, cross-sectional, pre and post survey design used to identify nurses' personal and professional characteristics, perceptions of organizational culture, and the effectiveness of organizational strategies. The result indicated that there was an improvement in nurses' perception of barriers and organizational culture post implementation of the multifaceted intervention. Journal club participation was one of the key strategies that facilitated research utilization (Kovner et al., 2010).

Another study in USA (Brolinson, Price, Ditmyer & Reis, 2001) has reported that EBNP in nursing is not widely used even though it provides the highest quality of care to patients and their families. In addition, a pilot study was conducted to explore the practices of EBNP in determining the best practice for clinical issues that identified in professional nurses' practice settings. On top of that, the investigator sought to determine available evidence, identify barriers described by nurses, and gain an understanding of nurses' perceptions regarding the use of EBNP in clinical practice. The study found that the nurses claim that the formulation of PICO questions, recovery of evidence, analysis of statistics, and execution of EBNP are challenging and stimulating activities enhancing nursing practice dramatically (Brolinson, Price, Ditmyer & Reis, 2001).

In Colorado USA (Fink, Thompson & Bonnes, 2005) a study has been conducted objectively to illustrate and compare staff nurses' view of their real and ideal work environment in a tertiary pediatric facility. There were 385 nurses from five inpatient units were randomized and the team completed two types of forms real and ideal of the work environment scale. There were 10 subscales in the work environment scale which were divided into three dimensions: relationship, personal growth and system maintenance and change. The study showed that all units had high levels of involvement, peer unity, duty orientation and managerial control. Work pressure and autonomy scores were moderately high and the score for physical comfort, supervisor support, clarity and innovation were moderate (Fink, Thompson & Bonnes, 2005).

Overall, involvement scores were highest and lowest for physical comfort. Significant differences were found between real and ideal subscale scores. This is perhaps the staff were able to identify areas for improvement. Finally, they concluded that despite moderate work pressure, staff affirmed a highly positive work environment in their units respectively. In addition specific areas in their current workplace that incompatible with their favored work environment were identified and aimed to change (Fink, Thompson & Bonnes, 2005).

A study by Brancato (2007) on RN perceptions, knowledge, skills and attitudes associated with EBNP conducted in USA showed that practice and attitudes towards EBNP had recorded moderate scores. The mean scores of knowledge and skills were lower. Statistically significant differences were found for attitudes between those with baccalaureate and higher education compared to those with associate and diploma

education. The two main barriers to implement EBNP were time and knowledge (Brancato, 2007).

Also in the USA (Kotzer & Arellana, 2008) another study found significant differences ($p < .001$) in the perceived use of research, attitude toward research, availability of research resources, and perceived support for research activities based on educational level and organizational position. This study had been conducted among selected nurses based on their educational level, years of experience, and designation that might affect perceived availability of, attitude towards research, research resources, support, and research use in practice. They were surveyed using the Research Utilization Questionnaire (RUQ) and concluded that no significant differences were found in the perception of nurses based on years of experience.

The results of above study have implications for staff nurses, administrators, advanced practice nurses, and educators working in hospital systems. The different perceptions that were found based upon educational level and hospital position can be positively integrated and used by administrators and by nurses all levels of nursing practice to promote research utilization and evidence based practice initiatives within the organizational structure.

In Sweden (Kajermo et al., 2008), a study on prediction of nurses' perceptions of barriers to research finding utilization in clinical practice revealed several factors such as displeasure of immediate superiors' support in research, having no academic degree, unclear and unrealistic workplace goals. Thus, health care leaders, head nurses and nurse

managers should create a clear and realistic goal for the workplace as well as emphasize on EBNP. It was also important for head nurses and nurse managers to create strategies to supporting nurses' professional development and implementing research findings in clinical practice (Kajermo et al., 2008).

In Atlanta (Hart et al., 2008), researchers have surveyed nurses' perceptions of knowledge, skills, and attitude level related to EBNP and research utilization. They determined the level of organizational readiness for implementing EBNP and research; and examined the effectiveness of a computer-based educational program. Statistically significant differences were found in perceptions of knowledge, attitude, and skill as well as beliefs about organizational readiness in implementing EBNP. On top of that there was a gap in between knowledge and skills in retrieving research publications, evaluating the evidence, and incorporating the evidence into practice. Overall, in order to promote positive patient outcomes the nurses were thought to need to be able to use research findings and incorporate EBNP into their nursing practice. Appropriate organizational infrastructures may be able to promote EBNP and research utilization in clinical settings. Additionally, the authors suggested that nursing leaders in health care organizations should execute computer-based education to educate and engage nurses in EBNP initiatives and research utilization effectively (Hart et al., 2008).

In York, UK, a study (McCaughan et al., 2002), had been done to examine what prevents nurses from using research in decision making. Four main barriers to research use were identified: (1) Problems in interpreting and using research products, which is extremely complex and excessive statistical; (2) lack of organizational support; (3) lack

clinical credibility in research products and lesser clinical direction; (4) lack of skills and lower motivation to conduct research themselves. Denial of research knowledge was not a barrier to its application. Essential was the presentation and management of research knowledge in the workplace representing significant challenges for policymakers, clinicians and the research community (McCaughan et al., 2002).

In Canada (Cote, Gagnon, Houme, Abdeljelil & Gagnon, 2012) a study had been done to identify the factors that influenced nurses' intention to integrate research evidence into their clinical decision-making. There was 336 nurses participated who were working in a university hospital. Data were collected by using questionnaires, based on extension of Theory of Planned Behavior in February and March 2008. The study encouraged the use of an extended psychosocial theory in identifying the determinants of nurses' intention to integrate research evidence into their clinical decision-making. Increasing nurses' perceptions for integrating research findings in their clinical decision making would ensure good patient care utmost and provide a supportive environment that promotes EBNP (Cote et al., 2012).

In Turkey (Kocaman et al., 2010), researchers had carried out a descriptive cross sectional study to identify self-reported perceptions of the barriers to research utilization by Turkish staff nurses and also to ascertain if involvement in research related activities influenced their perception of the barriers. The frequent answers included: lack of time to implement new ideas and difficulty in reading English. In addition, unawareness of research findings and being isolated from knowledgeable colleagues were the greater barriers to research (Yava et al., 2009).

In Iran (Adib-Hajbaghery, 2009) a study was conducted to assess Iranian nurses' perceptions of EBNP. It was a qualitative study that included 21 participants from different groups of nurses at Kashan University of Medical Sciences. Semi structured interviews were executed to collect data. As per the participants' statements, implementation of EBNP care for clients was based on their professional knowledge and the patient's needs. In conclusion, nurses had a positive attitude concerning the use of scientific evidence to practice whereas this evidence had little application in their existing nursing practice (Adib-Hajbaghery, 2009).

In Taiwan (Chang, Russell & Jones, 2010) a study was done to investigate attitudes toward and perceived barriers and facilitators to research utilization among 89 Taiwanese RN. Majority had a positive attitude toward research and EBNP. The most significant barriers were insufficient authority to change practice, lack of understanding of statistical analyses, and a perceived isolation from knowledgeable (Chang, Russell & Jones, 2010).

In Korea, another study (Oh, Oh & Lee, 2004), a cross-sectional survey design, described nurses' research activities, perceptions and performances of EBNP and barriers to the use of research evidence in nursing practice in Korea. Data was collected from 437 registered nurses who were included in this study. If compared with earlier studies nurses' research related activities, perceptions and performances of evidence based nursing practice were relatively low. There were few barriers to research utilization such as a lack of implication for practice along with inadequate facilitation and difficulty in understanding written English. The findings were used to drive for