RESEARCH ARTICLE

EVIDENCE-BASED PRACTICE BELIEFS AND IMPLEMENTATION OF STAFF NURSES IN THE ILOCOS REGION

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Abstract

Purpose of the Study: The study assessed the EBP beliefs and implementation of staff nurses in the Ilocos Region.

Methods: A sample size of 384 nurses was surveyed in this cross-sectional, descriptive-correlational study approved by the Saint Louis University – Research Ethics Committee. They were selected through simple random sampling in seven (7) different government and private training hospitals in the Ilocos Region. The EBP Beliefs Scale (EBP-B) and EBP Implementation Scale (EBP-I) were used to collect the data on the respondents' EBP Beliefs and Implementation respectively. Data collected were analyzed using descriptive statistics such as frequency, percentage, mean and standard deviation; and inferential statistics such as Spearman rank correlation.

Findings: The mean total score of 58.57 indicated that the respondents have no full commitment or belief to EBP but the possibility exists. The overall mean rating of 3.63 signified that they "Agree" on the statements in the EBPB scale in general. On the EBP implementation, a mean summative score of 28.06 specified that the respondents implemented EBP between 1 to 3 times but less than 4 times in the past eight weeks. The overall mean rating was calculated at 1.56 suggestive that EBP is "Rarely implemented". Moreover, this study established a weak positive correlation between the respondents' EBP Beliefs and EBP Implementation [r_s (384) = 0.252, $p < 0.001$].

Conclusion: This study has shown that nurses in the Ilocos region are positive about their knowledge of, confidence in and belief about EBP but are not fully committal to it. However, in spite of having positive EBP belief, their implementation of EBP was rare or low. The study was able to elicit that EBP implementation is significantly associated by the held beliefs on EBP by the respondents.

Keywords: EBP Beliefs, EBP Implementation, Staff Nurses, Ilocos Region

Introduction

The Evidence-Based Practice (EBP) approach is consistently pushed in the development, improvement, and establishment of professions. Nursing, as a profession, has not been spared from joining this bandwagon because of the impact of EBP in the improvement of the quality of care. As it becomes the gold-standard of nursing care in the 21st century, a growing number of nurses have become enthusiasts of EBP, and great efforts have been exerted to implement it. There is a general consensus that when EBP is used as a framework for practice, patient outcomes are improved as EBP practitioners are kept up-to-date of ways to provide effective and efficient care and veer away with the ritualistic, traditional, and non-systematic clinical experience. Moreover, many scholars have alluded to EBP as a vital element to filling the gaps that arise between research, theory and practice in various work settings (Billings & Kowalski, 2006; Goodfellow, 2004; Mackey & Bassendowski, 2016; McEwen & Wills, 2014; Upton, 1999).

French (1999) defined EBP as "the systematic interconnecting of scientifically generated evidence with the tacit knowledge of the expert practitioner to achieve a change in particular practice for the benefit of a well-defined client/patient group." With the application of EBP in various health care disciplines, Evidence-Based Nursing (EBN) has evolved. However, Ingersoll (as cited in Scott & McSherry, 2009) noted that there are some of nursing scholars who worry about EBP being applied to nursing. He emphasized that there are some components essential to nursing care which are found to be lacking in EBP. These missing components of EBP

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were included in the definition of EBN by Ingersoll (2000) stating that "evidence-based nursing is the conscientious, explicit and judicious use of theory-derived, research-based information in making decisions about care delivery systems and in consideration of internal and external consumer needs and preferences."

Although reasons for introducing EBP together with strategies for doing so and resource implications have been addressed (Ciliska, Pinelli, DiCenso & Cullum; Benefield; DiCenso, Prevost, Benefield, Bingle, Ciliska, Driever, Lock & Titler mentioned in Adib-Hajbaghery, 2007) in developed and developing countries, the evidence suggests that a paradigm shift to EBP is happening very slowly. To explain this scenario, researchers have focused on individual nurses' knowledge, beliefs and skills in appraising and using research as the cornerstone of EBP and consequently have developed models to encourage nurses' use of research in practice.

Several studies have been conducted in developed countries to identify the uptake of EBP among nurses and other healthcare professionals. In 2004, a descriptive study on nurses' knowledge, beliefs and the extent to which their practice is evidence-based was conducted by Melnyk, Fineout-Overholt, Fischbeck, Li, Small, Wilcox, and Kraus in the United States. Results revealed that even if the beliefs about the benefit of EBP were high, knowledge of EBP was comparatively low. Significant relationships were also established between the extent to which nurses' practice is evidence-based and 1) nurses' knowledge of EBP, 2) nurses' beliefs about the benefits of EBP, 3) having an EBP mentor, and 4) using the Cochrane Database of Systematic Reviews and the National Guideline Clearinghouse (Melnyk et al., 2004).

In 2009, Waters, Crisp, Rychetnik, and Barratt studied Australian Nurses experience of nurses' preparedness for evidence-based practice. The study determined the current knowledge and attitudes towards EBP among pre- and post-registration nurses in New South Wales (NSW), Australia. The results of this study illustrated that with regard to EBP, the issues for nurses in NSW are similar to those experienced by health professionals worldwide. NSW nurses responding to the survey had a welcoming and supportive attitude towards EBP but poor competence and confidence in many EBP skills.

Similarly, Icelandic nurses' beliefs, skills, and resources associated with EBP and related factors were explored by Thorsteinsson in 2012. This descriptive survey determined RNs' ability to provide care based on evidence by measuring their beliefs, perception of skills, and access to resources associated with EBP. Findings showed that respondents had strong beliefs about the value of EBP for patient care, but showed less confidence on the knowledge and skills needed for EBP. Peers were consulted by most (82%) of the respondents (i.e., RNs) when in need of information, rather than peer-reviewed resources. Only a third of over half of the RNs (54%) who received instructions in the usage of electronic databases reported success in using them. They considered "lack of search skills" as the primary barrier to use of research in practice. Positive EBP beliefs, familiarity with EBP and other EBP-related activities were found to be associated with the use of research findings in practice. A disadvantage on the part of the clinical RNs was found when it came to accessing of EBP-related resources along with less frequent participation in EBP-related activities other than using research in practice.

Heydari, Mazlom, Ranjbar, and Scurlock-Evans (2014) conducted a study among clinical nurses and midwives in Mashhad public hospitals in Iran that aimed to determine their EBP knowledge, attitudes, and practice. This descriptive cross-sectional study revealed a low knowledge or skills and practice of EBP, but moderate attitudes toward EBP among most of the participants. Results further showed that significant differences exist between the mean scores on knowledge or skills, attitudes, and practice by field of study. A higher knowledge or skills and practice of EBP was reported by nurses than midwives ($p < .001$). A greater knowledge or skills and practice of EBP, and more positive attitudes was displayed by nurses and midwives with master's degrees than nurses with bachelor's degrees ($p < .001$).

In 2015, Underhill, Roper, Siefert, Boucher, and Berry compared and described oncology nurse beliefs and perceived implementation of EBP and explored beliefs and implementation before and after implementing an institutional EBP initiative. Results of this descriptive-correlational study revealed that a history of formal EBP education and nurse role were associated with higher EBP-B and EBP-I scores ($p < .05$). Highest level of education was significantly correlated with both EBP-B ($r = .25$; $p = .03$) and EBP-I ($r = .32$; $p = .01$).

Weng, Chen, Kuo, Yang, Lo, Chen, and Chiu (2015) also surveyed nurses in Taiwan as to the implementation of evidence-based practice in relation to a clinical nursing ladder system. The survey showed that advanced nurses were more aware of EBP than beginning nurses ($p<0.001$; 91 % vs. 78 %). Additionally, advanced nurses held more positive beliefs about and attitudes toward EBP ($p < 0.001$) and had more sufficient knowledge of and skills in EBP ($p < 0.001$). Furthermore, they more often implemented EBP principles ($p < 0.001$) and accessed online evidence-based retrieval databases ($p < 0.001$). The most common motivation for using online databases for advanced nurses was self-learning and for beginning nurses was positional promotion. Multivariate logistic regression analyses showed advanced nurses were more aware of EBP, had higher knowledge and skills of EBP, and more often implemented EBP than beginning nurses.

While EBP activities have taken place in developed countries such as Australia, Canada, the UK, and the US, the principle of

incorporating research evidence into practice is still in its infancy in developing countries (Dizon, Dizon, Regino, & Gabriel, 2014). The growth of EBP is slow in developing countries like the Philippines

In the Philippines, the theory-practice gap remains as a key issue which can be mitigated by the implementation of EBP. Commission on Higher Education (CHED) Memorandum Order No. 14, series of 2009 paved the way for the introduction of the EBP in the nursing curriculum. On Core Competency 5 under research, it specified that graduates of the BSN Program must be competent in making use of EBP to enhance nursing practice. Thus, EBP skills is an expected competency of BSN graduates who are trained under this curriculum.

Despite EBP skills being expected from BSN graduates, their commitment to EBP is still sluggish. Issues such as lack of knowledge regarding EBP principles and lack of skills in applying and teaching EBP principles, delay the uptake of EBP. In addition to these, local barriers, tradition, and practices also influence its uptake (University of South Australia Website [UNISA], 2016).

Like in other parts of the country, the Ilocos Region is no exemption with regard to the difficulty of diffusing EBP in the practice setting. With this unique situation in the Ilocos region in the enculturation of EBP by health care institutions, one might wonder if the same scenario is experienced by most, if not all regions of the country.

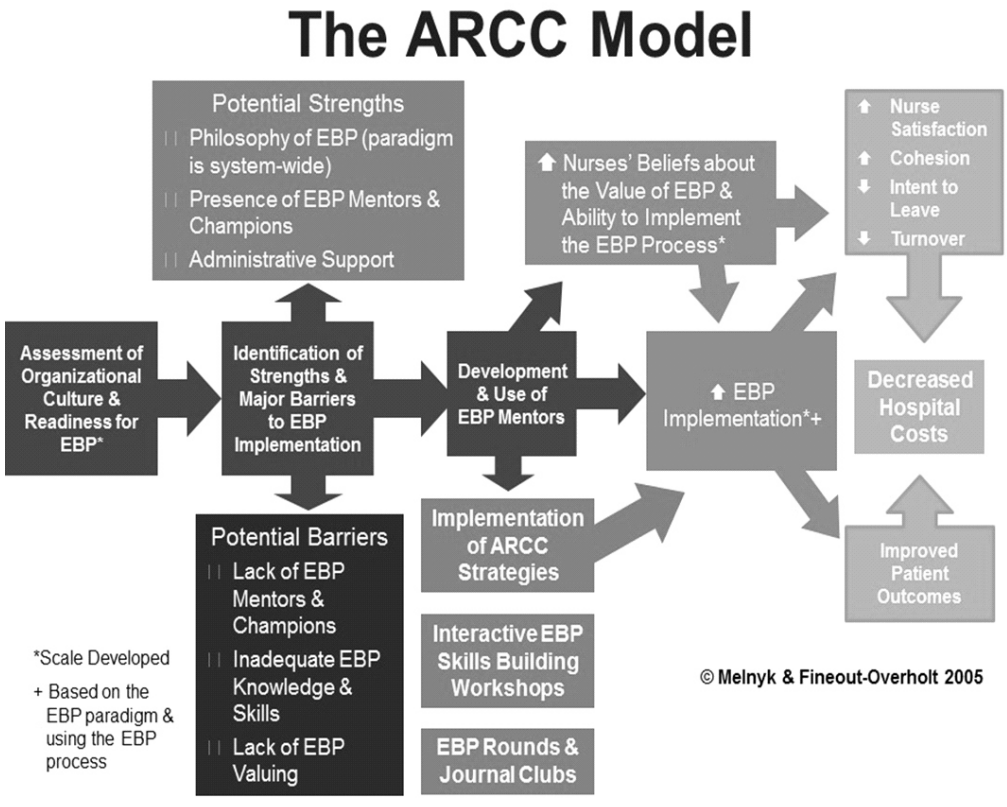
Although efforts have been made to disseminate the value of EBP in seminars, conferences and publications, the unavailability of data on EBP beliefs and implementation among nurses in the region underscore the need for an investigation. It is within this context that the need to investigate the belief about and implementation of EBP among nurses practicing in the Ilocos region was born.

If Filipino nurses are to be at par with global standards, specific studies should be conducted on a regional basis to determine the unique situations of these regions as to their EBP beliefs and implementation. Assessment of beliefs on and implementation of EBP among nurses in various regions of the country would fill the gap on the limited information of EBP utilization of nurses in the country. Hence, this study attempted to fill in the missing information of EBP implementation among Filipino nurses, particularly those who are practicing in Region I.

FRAMEWORK OF THE STUDY

This study was anchored on the Advancing Research and Clinical practice through Close Collaboration (ARCC) Model (Melnyk & Fineout-Overholt, 2002; Melnyk, Fineout-Overholt, & Mays, 2008). ARCC is a model for EBP implementation. Valid and reliable instruments measuring the constructs of the model, barriers and facilitators to EBP and also the clinicians' beliefs about and the actual implementation of EBP were developed by the proponents of the ARCC model.

Figure 1. The ARCC Model



As this model frames the conduct of this study, this current investigation is guided by the contention of the ARCC model that beliefs about the value of EBP and a clinician's ability to implement it, foster implementation using the EBP paradigm and subsequently improved outcomes. The model holds that higher beliefs about EBP are expected to increase EBP implementation and thereby, improve health outcomes. Moreover, it believes that EBP implementation will improve healthcare outcomes through greater participation in evidence-based care. EBP implementation is expected to be highly associated with higher nurse satisfaction, which will eventually lead to fewer turnover rates and healthcare expenditures (Melnyk & Fineout-Overholt, 2010).

Therefore, this study tried to test if there is a positive relationship between clinicians' belief about EBP and their implementation of EBP as the model has hypothesized. Congruent with the ARCC theoretical model, beliefs in EBP were defined as support for the premise that EBP improves clinical outcomes and confidence in one's EBP knowledge and skills (Melnyk et al., 2008). Moreover, implementation of EBP was defined as engaging in relevant behaviors that included seeking and appraising scientific evidence, sharing evidence or data with colleagues or patients, collecting and evaluating outcome data, and using evidence to change practice (Melnyk et al., 2008). Along with this hypothesis, the current study was also set to investigate if clinicians who practice in an organization with stronger EBP cultures, versus those who practice in organizations with weaker EBP cultures, will have stronger beliefs and greater implementation of EBP.

METHODS

Research Design. This study used a cross-sectional, descriptive- correlational design.

Locale of the Study. The study took place in seven different government and private training hospitals in the Ilocos Region (Region I), Philippines which serve as base hospitals of various schools/Higher Education Institutions offering the Nursing Program. These hospitals were accredited Level III and Level IV based on the list of Licensed Government and Private Hospitals of the DOH as of 2011.

Population and Sample. The study involved staff nurses of the aforementioned hospitals as respondents. They took part in this study regardless of their area/ward of assignment, years of service, and status of appointment. From a population of 1,069 staff nurses, the sample size consisting of 384 nurses was determined using OpenEpi Version 3.01 (2013) website. The calculated sample size was distributed using the stratified sampling technique using the geographical locations of these hospitals as strata. Respondents were selected using the simple random technique.

Of the 384 respondents, mean age was 30.04 (SD = 8.35). Length of service in years of the respondents has been reported at the average of 5.54 (SD = 6.37) and have attended an average of 1.84 (SD = 2.97) EBP seminar/training in the last 12 months. Majority of them are female (63.5%), permanent (54.2%) as to their status of appointment and are bachelor's (69.3%) degree holders.

Table 1. Characteristics of Respondents (N=384)

Respondents' Characteristics		**Mean**	**SD**
Age		30.04	8.35
Length of Service in Years		5.54	6.37
Number of EBP Seminar/Trainings attended in the last 12 months		1.84	2.97
		f	**%**
Gender	Male	140	36.5
	Female	244	63.5
Status of Appointment	Full-time/permanent	208	54.2
	Casual/Contractual	176	45.8
Highest Educational Attainment	BSN	266	69.3
	With Master's Units	96	25.0
	Master's Degree	22	5.7

Data Gathering Tool. This study used a three-part questionnaire to elicit the needed data. It was structured so that demographic data were solicited first. Demographic data included the respondent's institution, age, sex, status of appointment, highest educational attainment, length of service in years, and number of EBP seminar/training attended for the last 12 months

The EBP Belief (EBP-B) Scale (2003 by Melnyk & Fineout-Overholt) the second part of the tool, is 16-item scale measuring nurses' beliefs about and confidence in their ability to implement EBP. The EPB-B utilizes a 5-point Likert scale and responses range from 1 (strongly disagree) to 5 (strongly agree) and include two reverse scored items (items 11 and 13). A summative score was calculated for this measure and can range from 16 to 80; higher scores indicate more positive beliefs. For its reliability, the developers reported a Cronbach's alpha of 0.90 and Spearman-Brown r reliability coefficient of 0.87 indicating the internal consistency for the scale was excellent (Melnyk et al., 2008).

The third part is the EBP Implementation (EBP-I) scale (2003 by Melnyk & Fineout-Overholt), which is an 18-item scale, measuring the actual implementation of EBP. Responses are given using a 5-point Likert scale of how often in the previous eight weeks the respondents performed the item in question (0=0 times to 4= $\geqslant$ 8 times). A summative score was calculated and can range from 0 to 72; higher scores indicate more frequent implementation. For its reliability, the developers reported a Cronbach's alpha of 0.96 Spearman-Brown r reliability coefficient of 0.95 indicating the internal consistency for the scale was excellent (Melnyk et al., 2008).

Data Gathering Procedure. Before the data collection, the researcher submitted the study proposal for ethical review by the Saint Louis University - Research Ethics Committee. The researcher also obtained permission from the Heads of Hospitals to conduct the study in their respective institutions through a letter of request. Possible respondents were determined upon the recommendation of the respective Chief Nursing Officer of the institution and were selected through simple random sampling. Upon identification of possible respondents, the researcher and/or research assistant explained clearly the objectives of the study and obtained written consent from the former.

Once consent was granted, the researcher or his research assistant/s distributed the questionnaire to the respondents during their duty hours at the institution. Respondents answered the questionnaire during their break while some brought the questionnaire home so as not to disrupt their work routine. The respondents were given one week to accomplish the questionnaire which was retrieved after that. Data were collected from March to June 2017. Questionnaire-checklists were assessed as to the completeness of responses. Those questionnaires with incomplete responses were discarded. Responses were tallied and subjected to statistical computation for analysis and interpretation.

Ethical Considerations. This study was submitted for ethical review by the SLU Research Ethics Committee. Permission for the use of the Data Instruments was sought prior to its use. Ethical considerations in the conduct of this research study are concerned with obtaining informed consent and maintaining confidentiality. Hence, an informed consent form containing pertinent information of the study was formulated, given to and signed by the respondents to signify their agreement to participate in the study.

Anonymity of the respondents and confidentiality of the data were addressed and maintained throughout the duration of the study and included, but were not limited to the following (a) assigned number codes for each participant on all research notes and documents, and (b) survey forms and any other identifying participant information were kept in a locked file cabinet in the personal possession of the researcher. The researcher removed any identifying information after analyzing the data, and all study results were reported without identifying information so that no one viewing the results was able to match anyone with the responses. Soft copy of the data from this study was saved on a password-protected computer for one year. Only the principal investigator and study staff had access to this information.

For the principle of justice and fairness, the respondents were treated fairly regardless of their institution, area/ward of assignment, years of service, and status of appointment. Each of them was given equal treatment without judgment or prejudice.

Data Analysis and Statistical Treatment of Data. Data collected were analyzed using the Statistical Package for Social Sciences version 18. Summative scores, mean, standard deviation, and Spearman's rank Correlation Coefficient were used to summarize and interpret the findings of this study.

RESULTS

Beliefs of the Staff Nurses towards EBP

Tables 2a and 2b illustrate the EBP beliefs of staff nurses in the Ilocos region. Specifically, Table 2a shows the summative scores of the respondents on EBP-B scale while Table 2b depicts the mean scores and percentage of endorsements of the respondents on each item of the same scale.

Table 2a. Frequency of Summative Scores on the Evidence-based Practice Beliefs N=384

	Evidence-Based Practice Belief (Mean= 58.57 SD= 6.86)					Total
	16-31	32-47	48	49-63	64-80	
Hospital A	0	0	0	12	4	16
Hospital B	0	0	2	19	2	23
Hospital C	0	1	1	27	17	46
Hospital D	1	2	3	71	22	99
Hospital E	0	0	0	19	5	24
Hospital F	0	8	3	56	21	88
Hospital G	0	8	2	67	11	88
Total	**1**	**19**	**11**	**271**	**82**	**384**
%	**0.260%**	**4.948%**	**2.865%**	**70.573%**	**21.354%**	**100%**

Legend 16-31 - No commitment
32-47 - Little Commitment
48 - Neutral
49-63 - No full commitment
64-80 - Firm Belief

The beliefs of staff nurses towards EBP was measured using the EBP-B scale. The mean total score computed was 58.57 (SD=6.86) with scores ranging from 28 to 76 (with possible scores 16-80) (See Table 2a). This result indicates that the respondents have no full commitment or belief to EBP at the time of data collection but the possibility for them to have a firm belief or full commitment to EBP exists

Meanwhile, the respondents have expressed that they generally "agree" with the items of the EBP-B scale as evidenced by the overall mean rating of 3.63 (SD =0.42) across the 16 items of the scale (See Table 2b). This result implies that the respondents come to agreement that they have positive belief about EBP implementation. Specifically, they believe that they have the adequate knowledge of, confidence in and belief in their ability to implement EBP.

Table 2b. Mean Ratings and Percentage of Endorsement on the items of Evidence-based Practice Beliefs (N=384)

Evidence-Based Beliefs	Mean ($\bar{x}$=3.63)	SD (0.42)	% who strongly agreed/agreed in each statement
Item 1	4.08	0.71	86.20%
Item 2	3.63	0.66	63.80%
Item 3	3.77	0.69	71.88%
Item 4	3.95	0.73	80.73%
Item 5	4.10	0.81	82.81%
Item 6	3.83	0.70	74.48%
Item 7	3.74	0.66	69.53%
Item 8	3.76	0.72	70.31%
Item 9	4.02	0.78	81.51%
Item 10	3.72	0.70	67.19%
Item 11*	3.47	0.80	46.88%
Item 12	3.60	0.67	58.85%
Item 13*	3.32	0.95	44.53%
Item 14	3.61	0.64	60.68%
Item 15	3.74	0.69	71.09%
Item 16	3.81	0.73	72.14%

** Reversed scored*

Legend 16-31 - No commitment; 32-47 - Little Commitment; 48 - Neutral; 49-63 - No full commitment; 64-80 - Firm Belief

Implementation of EBP by the Staff Nurses

Tables 3a and 3b indicate the EBP implementation of staff nurses in the region. Explicitly, Table 3a displays the summative scores of the respondents on the EBP-I scale whereas Table 3b shows the mean ratings of each item of the same scale.

The implementation of EBP by the respondents was measured using the EBP-I scale. A mean summative score of 28.06 (SD = 15.47) was computed based on the raw scores which ranged from 1 to 70 (possible scores of 0-72) (See Table 3a). Based on these results of self-report engagement to EBP of the respondents, it signifies that they are hardly actualizing EBP in their respective work environment. The computed summative score indicates that the respondents have implemented EBP between 1 to 3 times but less than four (4) times in the past eight (8) weeks. Using this as a reference, actual result of the present study is indicative of low EBP implementation.

Scrutinizing Table 3b, the overall mean rating was calculated at 1.56 (SD = 0.21). The overall mean rating signifies that the EBP is "rarely implemented" by the respondents in their respective work environment. In other words, the respondents are implementing EBP in a low extent.

Table 3a. Frequency of Scores on the Extent of Evidence-Based Practice Implementation (N=384)

Evidence-Based Practice Implementation (Mean= 28.06 SD=15.47)						
	0-17	18-35	36-53	54-71	72	Total
Hospital A	3	6	7	0	0	16
Hospital B	12	6	4	1	0	23
Hospital C	9	21	16	0	0	46
Hospital D	16	30	47	6	0	99
Hospital E	10	6	8	0	0	24
Hospital F	32	37	16	3	0	88
Hospital G	15	38	27	7	1	88
Total	**97**	**144**	**125**	**17**	**1**	**384**
%	**25.26%**	**37.50%**	**32.55%**	**4.43%**	**0.26%**	**100%**

Legend
0-17 implemented EBP less than 1 time
18-35 implemented EBP between 1-3 times but less than 4 times
36-53 implemented EBP between 4-5 times but less than 6 times
54-71 implemented EBP between 6-7 times but less than 8 times
72 implemented EBP between 8 times or more

Table 3b. Mean Ratings of Evidence-based Practice Implementation (N=384)

Evidence-Based Nursing Practice Implementation	Mean ($\bar{x}$=1.56)	SD (0.21)
Item 1	1.93	1.09
Item 2	1.59	1.00
Item 3	1.30	1.01
Item 4	1.52	1.01
Item 5	2.00	1.17
Item 6	1.48	1.01
Item 7	1.70	1.05
Item 8	1.51	1.05
Item 9	1.53	1.09
Item 10	1.48	1.08
Item 11	1.56	1.04
Item 12	1.19	1.03
Item 13	1.20	1.06
Item 14	1.53	1.08
Item 15	1.67	1.10
Item 16	1.61	1.08
Item 17	1.63	1.08
Item 18	1.63	1.05

Norm
3.21 – 4.00 Very frequently implemented (VFI)
2.41 – 3.20 Frequently implemented (FI)
1.61 – 2.40 Occasionally Implemented (OI)
0.81 – 1.60 Rarely implemented (RI)
0.00 – 0.80 Very rarely implemented (VRI)

Significant Relationship between EBP beliefs and EBP implementation

Spearman's correlation between EBP beliefs and EBP implementation of the respondents showed that there is a weak positive correlation, which was statistically significant [r_s (384) = 0.252, p < 0.001] (See Table 4). This result suggests that EBP beliefs are precursors of EBP implementation where it contends that as EBP beliefs increase, EBP implementation of the respondents may also increase.

Table 4. Spearman's Correlation Coefficient of Significant Relationship

Variables		EBP Implementation
EBP Beliefs	$r_s(384)$	.252**
	T^b	5.090
	p-value	0.000

*Legend: **Correlation is significant at the 0.01 level (2-tailed).*

DISCUSSION

The study investigated the EBP beliefs and implementation of staff nurses in the Ilocos Region. Also, it tested if there is a positive relationship between clinicians' belief about EBP and their implementation of EBP as posited by the ARCC model.

The results showed that the respondents are positive yet has no firm belief on EBP as indicated by their scores in the EBP-B Scale. The result corroborates the claim that the incorporation of EBP principles to direct users or implementers in developing nations, like the Philippines, is slow-moving. As compared to developed countries, these results are lagging behind. Previous studies reported in the current investigation laud that nurses and/or other health care professionals who were investigated responded and obtained higher scores suggestive of a firmer belief than the respondents of the present study.

The respondents' positive belief but no full commitment to EBP implies the need to strengthen the EBP beliefs of the nurses. This goal can be achieved if hospital administration and nursing staff are made aware of the current practice guidelines. The awareness of the need for EBP demands a process/action to change practice habits, and academician are in the best position to provide education and increase awareness of point-of-care clinician. Having the necessary reference materials and facilities, the academe can develop strategies for teaching experienced staff about and how to utilize EBP base in their teaching experience to students. These can be done through formal and informal communication and conversations. The academe may opt to spearhead orientation programs, EBP seminars/training. At the very least, they may decide to become resource speakers or lecturers in In-service training of hospitals. Topics may include EBP what it is and what it is not, steps in EBP, skills needed to implement EBP and how to implement EBP. The educational strategy, in turn, transforms the nurses' thinking and eventually leads to change in practice that is based on evidence. With education, nurses will find interpretation and implementation of EBP, reduction of barriers, and the ability to speed up the translation of research into the use at the bedside as necessary to provide quality, effective and efficient care to their patients.

Nonetheless, it is interesting to note that the respondents generally agree with the items of the EBP-B scale. This result can be attributed to the continual reiteration of EBP and its effects in seminars, training and even in the professional journal for nurses – the Philippine Journal of Nursing (PJN). The said journal, as it is distributed nationwide, might have shaped the views of the respondents who probably have read the journal. PJN has consistently echoed the clarion call to shift to EBP from the traditional way of providing intervention. In its 2009 second issue "Leading Change Through Evidence-Based Practice in Nursing," Palaganas (2009) wrote in her editorial to capitalize on the enthusiasm for evidence-based practice that is growing in the nursing community and the need to develop, implement and evaluate a plan to make it happen. Furthermore, the 2012 first issue of the same journal "Closing the gap: from Evidence to Action" further retold the urgent call to constantly strive to use EBP to nursing services. It was stated in the editorial section that the evidence-based approach to health care attempts to bridge the gap between research and nursing practice in various work settings and that this approach should be seen as a tool to continually push to more lasting solutions to deeply rooted gaps in the health care (Palaganas, 2012).

On the other hand, the study results have shown that the respondents were implementing EBP one (1) to three (3) times in the last eight (8) weeks. This result is way below the standard of an EBP clinician. Melnyk and colleagues (2008) argued that EBP should be implemented by clinicians at a minimum of at least 6-7 times in the last eight (8) weeks. Using this as a reference, actual result of the present study is indicative of low EBP implementation. The result of the current study strengthens the assertion that EBP implementation is slow, particularly in developing countries.

The findings of this study are similar to those of previous studies on EBP implementation, therefore, the result is not surprising. Just like in the case of Stokke and colleagues (2014) where the results of their study have shown that nurses were practicing EBP to a small extent. The same finding is also seen by Lynch (2015) revealing that there was a low use of EBP among nurses.

The low extent of EBP implementation of the present study can be attributed to several factors both at the individual and organizational level. This standpoint is further strengthened by the assumption of the ARCC model that there are barriers (as well as facilitators of) to EBP implementation for individuals and within the healthcare systems. The model further reiterated that barriers to EBP must be removed or mitigated to implement EBP as a standard of care.

At the individual level, possible reasons for low implementation of EBP include (a) lack of rigorous educational preparation and technical skills about EBP, (b) limited or lack of involvement in research activities of the organization and outside organizations, and (c) hesitance and decreased intent to spearhead practice change. In contrast, at the organizational level, potential explanations could be (a) EBP is not a priority of the organization, (b) lack of EBP trained staff, (c) staff nurses do not have the authority and autonomy to change practice, (d) lack of administrative support, (e) lack of funds to support an EBP project, (f) lack of logistical support, (g) high workload of nurses, and (h) a high ratio of patient to one nurse. These factors, individual or combined, play as major barriers to the acculturation of EBP in the organization.

Moreover, the absence of a model adopted by health care institutions is another aspect that perhaps can explain the low implementation of EBP in their work setting. EBP models have been developed to help nurses in integrating evidence into their daily practice. These models assist nurses in directing efforts derived either from clinical problems or from "good ideas" toward actual implementation in a specific practice setting. Use of EBP models leads to systematic approaches to EBP, prevents incomplete implementation, promotes timely evaluation, and maximizes use of time and resources (Gawlinski & Rutledge, 2008).

This study also investigated the relationship between EBP beliefs and EBP Implementation. The finding of the present study seems to be consistent with the basic hypothesis of the ARCC model that there is a positive relationship between clinicians' beliefs about EBP and their implementation of EBP. In the ARCC model, higher beliefs about EBP are expected to increase EBP implementation. Similarly, the finding of the current investigation conforms with the findings of earlier studies in EBP beliefs and implementation that EBP implementation was explained by EBP beliefs (Estrada, 2009; Kaplan et al., 2014; Kim et al., 2016; Melnyk et al., 2004; Squires, Estabrooks, Gustavsson, & Wallin, 2011; Wallen et al., 2010; Weng et al., 2015). When knowledge about EBP is developed, and conviction is strengthened, the individual will be motivated to get involved and work in an evidence-based way (Stokke et al., 2014). The ARCC model shares the same ideas as it assumes that for clinicians to change their practice to be evidence-based, cognitive beliefs about the value of EBP and their confidence in their ability to implement it must be strengthened. Some studies demonstrate that nurses with positive EBP beliefs and attitude are more likely to utilize research and implement EBP (Eizenberg; Koehn & Lehman; Melnyk et al.; Milner, Estabrooks, & Myrick; Ploeg, Davies, Edwards, Gifford, & Miller, as cited in Kang & Yang, 2016). EBP beliefs indicate nurses' cognitive perceptions about the value of EBP and their ability to implement this in clinical settings.

Meanwhile, although the intention to implement EBP is ushered when EBP beliefs are high, actualizing EBP in the work environment is more than just believing in its value to produce the desired outcome or having the confidence to implement it. Technical preparation and mastery of desired skills are needed for EBP to materialize in a non-EBP culture. Therefore, contextual and personal elements are relevant considerations when implementing EBP. Nero (2016) in his study investigating how nurses in Region I view the concept of nursing in the Philippines mentioned that nurses in the region believe that nursing is a science grounded on theories; and since nursing is a science, it is considered as evidence-based care. He further noted that today, Ilocano nurses had adopted the trait of incorporating science into their practice. However, as they embrace the knowledge imparted to them by other cultures, Ilocano nurses still preserve their culture and tradition by continuously practicing and passing them to the next generation. The hesitance to forego traditional practices plus the barriers that occur in the organizational context explains the weak relationship between beliefs on and implementation of EBP in the Ilocos region.

CONCLUSION

This study has shown that nurses in the Ilocos region, in general, are positive about their knowledge of, confidence in and belief about EBP but are non-fully committal to it. Their non-full committal probably explains why their implementation of EBP was rare or low. Moreover, the study was able to elicit that EBP implementation can be affected by EBP beliefs for a positive correlation exists between EBP beliefs and EBP implementation. These data could serve as essential bases for developing strategies that would solidify the nurses' beliefs as well as improve their actualization of EBP.

RECOMMENDATIONS

Findings of the current study demand for educational interventions and competence building methods to intensify the present status of EBP implementation among staff nurses in the region. Professional organizations and/or higher education institutions may opt to offer crash courses on EBP. Various professional nursing organization should establish a unified EBP training course/program with different levels to address the varied needs of nurses. First level training courses which highlight the importance/value, process and competencies needed for EBP implementation can be attended by point-of-care nurses while higher level training courses which provide intensive didactics and practicum can be attended by clinicians who would want become EBP champions of the organization.

Hospital and Nursing administrators should be committed to providing necessary resources such as computers and EBP education to create an environment conducive to EBP. EBP

competencies and initiatives/ projects can also be integrated as criteria for clinical promotions.

Memorandum of Agreement (MOA) between Higher Education Institutions (HEIs) offering health-related programs and base hospitals should include the need for partnership in research undertaking. Research outputs and the utilization of the findings of the partnership can become the basis of renewal of ties/contracts.

It is also recommended that Professional Nursing Organization of the region should come up with an action plan that outlines specific strategies and actions to be taken to solidify the beliefs, knowledge and attitudes and facilitate EBP implementation of Nurses on EBP.

Since the information at hand provides the unique circumstance of Region I staff nurses on EBP, it is recommended that similar studies be conducted in the other regions of the country. This suggestion is deemed necessary in order to capture the nation-wide status of EBP in Philippines. Additionally, EBP beliefs and implementations studies with nurses in the academe as respondents should also be taken in consideration.

References

Adib-Hajbaghery, M. (2007). Factors facilitating and inhibiting evidence-based nursing in Iran. J Adv Nurs Journal of Advanced Nursing, 58(6), 566-575. doi:10.1111/j.1365-2648.2007.04253.x

Billings, D. M. & Kowalski, K. (2006). Bridging the theory-practice gap with evidencebased practice. The Journal of Continuing Education in Nursing, 37, 248-249.

Commission on Higher Education. (2009). CMO-No.14-s2009 [PDF]. Commission on Higher Education.

Dizon, J. M., Dizon, R. J., Regino, J., & Gabriel, A. (2014). Evidence-based practice training for health professionals in the Philippines. Retrieved April 21, 2016, from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3998855/

Estabrooks, C. A., Scott, S., Squires, J. E., Stevens, B., Obrien-Pallas, L., Watt-Watson, J., . . . Williams, J. (2008). Patterns of research utilization on patient care units. Implementation Science, 3(1). doi:10.1186/1748-5908-3-31

Estrada, N. (2009). Exploring Perceptions of a Learning Organization by RNs and Relationship to EBP Beliefs and Implementation in the Acute Care Setting. Worldviews on Evidence-Based Nursing, 6(4), 200-209. doi:10.1111/j.1741-6787.2009.00161.x

French, P. (1999). The development of evidence-based nursing. Journal of Advanced Nursing, 29(1), 72-78.

Gawlinski, A., & Rutledge, D. (2008). Selecting a Model for Evidence-Based Practice Changes. AACN Advanced Critical Care, 19(3), 291-300. doi:10.1097/01.aacn.0000330380.41766.63

Goodfellow, L. M. (2004). Can a journal club bridge the gap between research and practice? Nurse- Educator. 29(3): 107-10.

Heydari, A., Mazlom, S. R., Ranjbar, H., & Scurlock-Evans, L. (2014). A Study of Iranian Nurses' and Midwives' Knowledge, Attitudes, and Implementation of Evidence-Based Practice: The Time for Change Has Arrived. Worldviews on Evidence-Based Nursing, 11(5), 325-331. doi:10.1111/wvn.12052

Ingersoll, G. L. (2000). Evidence-Based Nursing: What It Is and What It Isn't. Nursing Outlook, 48(4), 151-152. doi:10.1067/mno.2000.107690

Kaplan, L., Zeller, E., Damitio, D., Culbert, S., & Bayley, K. (2014). Improving the Culture of Evidence-Based Practice at a Magnet® Hospital. Journal for Nurses in Professional Development, 30(6), 274-280. http://dx.doi.org/10.1097/NND.0000000000000089

Kang, Y., & Yang, I. (2016). Evidence-based nursing practice and its correlates among Korean nurses. Applied Nursing Research, 31, 46-51. doi:10.1016/j.apnr.2015.11.016

Kim, S. C., Stichler, J. F., Ecoff, L., Brown, C. E., Gallo, A., & Davidson, J. E. (2016). Predictors of Evidence-Based Practice Implementation, Job Satisfaction, and Group Cohesion Among Regional Fellowship Program Participants [Abstract]. Worldviews on Evidence-Based Nursing, 13(5), 340-348. doi:10.1111/wvn.12171

Lynch, S. H. (2015). Nurses' Beliefs About and Use of Evidence-Based Practice. Retrieved July 4, 2017, from http://web.b.ebscohost.com/ehost/detail/detail?vid=0&sid=1f2a6d7b-2668-46e7-b624-aa8b48536ed3%40sessionmgr120&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#AN=109860306&db=c8h

Mackey, A., & Bassendowski, S. (2016). The History of Evidence-Based Practice in Nursing Education and Practice. Retrieved December 15, 2016, from http://www.professionalnursing.org/article/S8755-7223(16)30028-X/abstract

McEwen, M. & Wills, E. (2014). Theoretical basis for nursing (4th ed.). New York: Lippincott, Williams & Wilkins.

Melnyk B. M., & Fineout-Overholt, E. (2010) ARCC (Advancing Research and Clinical practice through close Collaboration): a model for system-wide implementation and sustainability of evidence-based practice. In: RycroftMalone J, Bucknall T, editors. Models and frameworks for implementing evidence-based practice: linking evidence to action. Oxford; Ames, IA: Wiley-Blackwell; Sigma Theta Tau. p. 169-84.

Melnyk, B. M., Fineout-Overholt, E., Fischbeck, N. F., Li, H., Small, L., Wilcox, L., & Kraus, R. (2004). Original article: Nurses' perceived knowledge, beliefs, skills, and needs regarding evidence-based practice: Implications for accelerating the paradigm shift. Worldviews on Evidence-Based Nursing, 1(3), 185-193.

Melnyk, B. M., Fineout-Overholt, E., & Mays, M. Z. (2008). The evidence-based practice beliefs and implementation scales: Psychometric properties of two new instruments. Worldviews on Evidence-Based Nursing, 5(4), 208–216

Nero, F.D.L. (2016). The Concept of Nursing in the Philippines from the Perspective of Nurses in Region I (Unpublished Doctoral Dissertation).

Palaganas, E. C. (2009). Leading change and Evidence-Based Nursing. Philippine Journal of Nursing, 79(2), 2009th ser., 1-2.

Palaganas, E. C. (2012). Closing the gap: Moving from Evidence to Action. Philippine Journal of Nursing, 82(1), 2012th ser., 1-2.

Scott, K., & McSherry, R. (2009). Evidence-based Nursing: Clarifying The Concepts For Nurses In Practice. Journal of Clinical Nursing, 18(8), 1085-1095.

Squires, J. E., Estabrooks, C. A., Gustavsson, P., & Wallin, L. (2011). Individual determinants of research utilization by nurses: A systematic review update. Implementation Science, 6(1). doi:10.1186/1748-5908-6-1

Stokke, K., Olsen, N. R., Espehaug, B., & Nortvedt, M. W. (2014). Evidence based practice beliefs and implementation among nurses:

A cross-sectional study. Retrieved June 18, 2017, from https://www.ncbi.nlm.nih.gov/pubmed/24661602

Thorsteinsson, H. S. (2012). Icelandic Nurses' Beliefs, Skills, and Resources Associated with Evidence-Based Practice and Related Factors: A National Survey. Worldviews on Evidence-Based Nursing, 10(2), 116-126. doi:10.1111/j.1741-6787.2012.00260.x

Underhill, M., Roper, K., Siefert, M. L., Boucher, J., & Berry, D. (2015). Evidence-Based Practice Beliefs and Implementation Before and After an Initiative to Promote Evidence-Based Nursing in an Ambulatory Oncology Setting. Worldviews on Evidence-Based Nursing, 12(2), 70-78. doi:10.1111/wvn.12080

University of South Australia. (n.d.). EBP in the Philippines. Retrieved June 12, 2016, from http://www.unisa.edu.au/Research/Sansom-Institute-for-Health-Research/Research/Allied-Health-Evidence/Quality-Care/EBPPhil/

Upton, D. J. (1999). How can we achieve evidence-based practice if we have a theory-practice gap in nursing today? Journal of Advanced Nursing, 29(3), 549-555. doi:10.1046/j.1365-2648.1999.00922.x

Wallen, G.R., Mitchell, S.A., Melnyk, B., Fineout-Overholt, E., Miller-Davis, C., Yates, J. & Hastings, C. (2010) Implementing evidence-based practice: effectiveness of a structured multifaceted mentorship programme. Journal of Advanced Nursing 66(12), 2761–2771

Waters, D., Crisp, J., Rychetnik, L., & Barratt, A. (2009). The Australian experience of nurses' preparedness for evidence-based practice. Journal of Nursing Management, 17(4), 510-518. doi:10.1111/j.1365-2834.2009.00997.x

Weng, Y., Chen, C., Kuo, K. N., Yang, C., Lo, H., Chen, K., & Chiu, Y. (2015). Implementation of Evidence-Based Practice in Relation to a Clinical Nursing Ladder System: A National Survey in Taiwan. Worldviews on Evidence-Based Nursing, 12(1), 22-30. doi:10.1111/wvn.1207

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