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Current practice, perceived barriers, and perceived facilitators of Thai nurses on using evidence-based practice on pain assessment and pain management in older adults

Marisa Suwanraj
University of Iowa

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CURRENT PRACTICE, PERCEIVED BARRIERS, AND PERCEIVED
FACILITATORS OF THAI NURSES ON USING THE EVIDENCE-BASED
PRACTICE ON PAIN ASSESSMENT AND PAIN MANAGEMENT IN OLDER
ADULTS

by
Marisa Suwanraj

An Abstract

Of a thesis submitted in partial fulfillment
of the requirements for the Doctor of
Philosophy degree in Nursing
in the Graduate College of
The University of Iowa

July 2010

Thesis Supervisor: Professor Keela Herr

ABSTRACT

Background: As the number of older adults in Thailand continues to increase, along with increased incidence of surgical intervention that causes pain, the quality of pain care in older adults is needed. Nurses are primarily responsible for assessing and managing pain in older adults (Jose Closs, 2008; Prowse, 2007). The use of evidence-based practices (EBPs) improves quality of care and saves healthcare cost. However, in Thailand where empirical study of using EBP related to pain in older adults is limited, research to understand how Thai nurses use EBP acute pain in older adults is needed.

Purpose: The purpose of this study is to describe current practices, perceived barriers and perceived facilitators of Thai nurses on using EBP for assessing and managing acute pain in postoperative older adults.

Method: A descriptive exploratory survey was conducted in 8 mid and large-size hospitals in Thailand. The Acute Pain EBP Questionnaire (APEBPQ) (Suwanraj, 2009) was distributed to 240 Thai nurses. 236 questionnaires were returned with the response rate of 98.3 percent. Open-ended questions related to barriers and facilitators of using EBPs were coded to identify major themes. MANOVA was performed to explore the differences between years of nursing experience on perceived barriers and facilitators.

Results: The majority of participants are female (96.8%) with mean age 35.5 years (range=23-54). Thai nurses reported using 51/53 recommendations from EBPQ Acute Pain most of the time/always (95%). Using an equianalgesic table (1.80 ± 1.16) and assessing MMSE in older adults with postoperative pain (1.74 ± 1.15) were occasionally used. Research reports published in English was the greatest barriers. Nurses perceived greatest support from a Head ward than other colleagues. Nurses with 11-20 years of nursing experience had higher reported barriers than those with 1-10 years of nursing experience.

Practice Implications: This study provides important information on barriers and facilitators of using EBPs related to pain assessment and pain management in Thailand. The results of the study will be used to develop strategies to promote the use of EBPs acute pain among Thai nurses who provide nursing care for postoperative older adults.

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PH.D. THESIS

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To Sthan and Hongthong Suwanraj, my dad and my mom, for their unconditional love,
and support. Without you, nothing seems possible.

All our dreams can come true, if we have the courage to pursue them.

Walt Disney

ACKNOWLEDGMENTS

There are many people who are being part of my success. I am so thankful for their support and encouragement for all the years at the University of Iowa College of Nursing.

First, I would like to express my heartfelt appreciation to Dr. Keela Herr, my advisor, for her mentorship, support and encouragement through my journey to Ph.D. Her mentoring provides an opportunity for me to reach a full potential to develop my area of interest in older adults pain and evidence-based practice. Greatly thanks to my co-advisor, Dr. Toni Tripp-Reimer for her caring, support and kindness. Her thoughtful insights and wisdom in qualitative research contribute enormously to my qualitative work. Special thanks to my dissertation committee members: Dr. Charmaine Kleiber, Dr. Paula Mobily, and Dr. Tim Ansley for their valuable feedback and guidance.

Second, I would like to give my gratitude to my parents, Sthan and Hongthong Suwanraj, who give me an unconditional love and support. My two younger sisters, Arisara and Savitree Suwanraj for take good care of our parents back home. Without your dedication, my dream might not be fulfilled. My late Aunt, Sangwan Suwanraj, although you could not be here to see my success, I believe you are watching me in heaven. My uncle and aunt, Dr. Suwich and Clara Joyce Sanwong for providing me home-sweet-home in the US and a great experience to explore the world outside my academia.

Third, my grateful thank goes to Joyce Long, my best friend and my spiritual guidance. Thank you so much for all the pray and spiritual support. My Thai Student Association friends for their warm friendship, generosity, helping hand and kindness, you all make a snow day in Iowa City seems like a warm summer day in Thailand. A Friday Night Dinner group, it was so much fun cooking and do many activities with all of you. My Doctoral Student friends especially Shelly Eisbach, Susan Adams, Ju Young Shin, and Chiung-Man Wu, for their encouragement, support, and friendship. My colleagues

who helping with instrument developing and translation process : Aroon Chatdon, Brenda Morisaki, Somporn Chinoros, Patama Patpong, Nusara Prasertsri, Srisuda Ngamkham, Phongrat Rattanathai, Sadee Saithong, Yupaporn Pongsing, and Penwan Khemkan.

Last, I am thankful for: the Royal Thai Government and Praboromarajchanok Institue for providing me a full scholarship to study in the US; T. Anne Teary International Dissertation Research Fellowship for supporting me to conducting dissertation research in Thailand; and Thai nurses who participated in my study.

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CHAPTER I INTRODUCTION

Background

The older adult population is continuously growing worldwide. From 2005 to 2050 the world's older adult population is expected to increase by 12 percent (United Nations, 2005). During that time, the Thai older adult population is anticipated to expand by 21.3 percent, almost twice the world's rate (World Health Organization, 2007). This increase in the older adult population escalates the need for health care services such as hospital care and surgical interventions. In the United States, approximately 31 percent (nearly nine million) of older adults are hospitalized for surgery each year (AHRQ, 2005; DeFrances & Hall, 2007), and the admission rate for surgical intervention in older adults is three times that of younger adults (Prowse, 2007). In Thailand, approximately 26.8 percent of the surgical population is older adults (Department of Medical Services, 2007).

In response to the growing need for hospitalization and surgical care in older adults, there is an accordant need for appropriate postoperative pain assessment and pain management (Keita, Tubach, Maalouli, Desmots, & Mantz, 2008). Among surgical older adults, acute pain is a significant problem (Prowse, 2007). Acute pain is associated with organic or traumatic causes, including postoperative pain and trauma (Hollenack, Cranmer, Zarowitz, & O'Shea, 2007). Postoperative pain encompasses complex phenomena that involve physical, psychological, cultural, and environmental factors; these interconnect and affect how pain is perceived, managed, and evaluated (International Association for the Study of Pain (IASP), 2007). Unacceptable levels of postoperative pain in older adults are commonly found in hospitals (MacDonald & Hilton, 2001; Titler et al., 2003). In the U.S., approximately 80 percent of surgical patients experience acute pain, with 86 percent of those patients reporting pain that is moderate, severe, or extreme (Apfelbaum, Chen, Mehta, & Gan, 2003; Aubrun, Salvi, Coriat, & Riou, 2005; Morrison et al., 2003). Similarly, in Thailand, 60.4 percent of

hospitalized patients report having had acute pain (Sanansilp et al., 2002), and 99 percent of patients who report suffering from pain are older adults (Khlonyant, 2001). While a large number of studies address postoperative pain, few relate specifically to older adults.

Pain assessment and its management are the standard of care that should be achieved for all older adults. In developing countries, where healthcare resources are scarce, the use of evidence-based practices (EBPs) is important. In Thailand, the use of EBPs is embraced in an academic setting. Thai nursing faculties incorporate EBP teaching as part of their masters programs, along with encouraging students to use systemic reviews in their literature review; further, they promote students' development and implementation of evidence-based practice guidelines (EBPGs), a systematically developed statement of best practices that provides a framework to guide healthcare professionals' clinical decision making about appropriate care (Nantachipan, 2007; Turner, Misso, Harris, & Green, 2008). For instance, at Mahidol University, fifty clinical nursing practice guidelines have been developed as part of graduate nursing students' theses (Faculty of Graduate Studies, 2008), and five of these specifically address pain (Hirunpuchchong, 2006; Mayurapak, 2005; Nawarak, 2005; Sringam, 2005; Vistuttisiri, 2006). Conversely, no Thai EBP guidelines currently examine pain in older adults. Considering the anticipated increase in the Thai older adult population, along with the current quality of pain care for this population, the use of existing acute pain guidelines which are culturally appropriate to use in Thai older adults is necessary.

The use of EBPs is known to improve clinical care and patient outcomes (Melnik et al., 2004). Practitioners who utilize EBPs have better judgment and are more accurate in their diagnoses (Smith, 2003). The employment of evidence-based practice by Thai nurses is expected to increase as more Thai graduate nursing students enter the workforce. In Thailand, few studies focus on Thai nurses' use of EBPs in general, and even less is known about the use of EBPs as they relate to specific topics such as acute pain in older adults.

Research Problem

As the number of older adults increases, the use of EBPs related to pain assessment and pain management will become more important in the provision of quality care for this population. According to Ottawa Model of Research Use (Graham & Logan, 2004), to promote the use of acute pain EBPs in practice settings, there is a need to initially explore three factors as follows: (1) potential adopters (nurses): EBP related factors (i.e., nurses' current use of pain assessment and pain management in older adults), perceived barriers, and perceived facilitators to using EBPs, (2) evidence-based innovation: evaluation of the cultural appropriateness of EBPG acute pain, and (3) practice environment: hospital size. The conceptual framework of the Ottawa Model of Research Use is located in Chapter II page 38.

Potential Adopters (Nurses)

Nurses' EBP Related Factors

For the successful implementation of innovation (the use of EBPs related to pain assessment and pain management), the adopter (nurse) must play an important role. Five factors (i.e., awareness, needs, implementation skills, context, and source of practice knowledge) were described by previous studies as the nurses EBP related factors (Adams, 2008; Adams & McCarthy, 2005; Jose Closs & Bryar, 2001) that influence the adoption of EBPs. It appears that these EBP related factors have not yet been investigated among Thai nurses who take care of postoperative pain in older adults.

Nurses' awareness may motivate them to seek knowledge regarding information necessary to use EBPs (innovation) and how to make EBPs work (Rogers, 2003). Nurses' who are unaware of EBPs may be the major barrier of using EBPs in practice settings (Knops, Vermeulen, Legemate, & Ubbink, 2009).

Needs is the state of dissatisfaction or frustration that occurs when individual desires are not fulfilled (Rogers, 2003). Nurses' needs can occur when nurses know that EBPs (innovations) exist. The existence of EBPs creates a motivation for nurses to learn

more about EBPs, and may lead to their decision to adopt or reject EBPs. If nurses decide to adopt EBPs and put them to use, nurses need to have implementation skills.

Implementation skills involve active information seeking, such as: finding and obtaining EBPs, knowing how to use EBPs, recognizing problems from using EBPs, and knowing how to solve those problems. Also, the success of EBP implementation may differ in different adopter contexts. Rogers (2003) found that implementation is usually more difficult when the adopter is an organization rather than an individual.

Knowledge gained from reliable sources is another attribute that may promote the adoption of EBPs. Nurses used variety of knowledge sources (i.e., social interaction, experience, and previous learning) in practice (Estabrooks, Floyd, Scott-Findlay, O'Leary, & Gushta, 2003), and the most frequent source of knowledge was a peer or colleague (Pravikoff, Tanner, & Pierce, 2005). Although knowledge regarding EBPs does not always change practice, regularly using various sources of knowledge may encourage nurses to adopt EBPs (Leasure, Stirlen, & Thompson, 2008).

Nurses' Current Use of EBPs - Pain Assessment and Pain Management in Older Adults

The identification of current practice of nurses is the vital first step before initiating change in acute pain management. The two most significant current practices that need to be identified are the use of pain assessment and pain management in older adults.

Pain Assessment

Pain assessment is the key to accurate treatment (Hollenack et al., 2007) and it is the first step to effective pain management (Manias, 2003). Poor assessment of pain in older adults is commonly found in healthcare professionals who have misconceptions related to pain, and who lack knowledge, skill, and/or appropriate attitude regarding pain management (AGS Panel on Persistent Pain in Older Persons, 2002; Taylor & Herr, 2003). Of all the healthcare professionals involved in pain management, nurses are

primarily responsible for assessing pain in postoperative patients (Rejeh, Ahmadi, Mohammadi, Anoosheh, & Kazemnejad, 2008) and in older adults (Jose Closs, 2008; Prowse, 2007). Inadequate knowledge and unenlightened attitudes regarding pain assessment and pain management among nurses contributes to the undermanagement of pain in older adults (AGS Panel on Persistent Pain in Older Persons, 2002).

Unrelieved pain and unmet optimized pain relief are the consequence of inadequate pain assessment providing by nurses. The problem of inadequate pain assessment by nurses creates a crucial barrier to optimized pain relief and a reduction in unrelieved pain (Richards, 2008). In Thailand, the chart audit study at a university hospital showed that Thai nurses use at least one assessment tool, such as a Pain Descriptor Scale (96 percent) or Numeric Rating Scale (45.2 percent), to assess pain in adult and older adult patients (Chanvej et al., 2004). The quality rating of pain assessments documented was considered poor overall, and none of them was considered good. Ninety-nine percent of pain documented in the following items was considered very poor: pain assessment after analgesic administration, pain assessment every 2 hours within 0-24 hour postoperative, and pain assessment every 4 hours within 24-72 hours postoperative. The poor documentation of pain assessment makes clear that urgent attention needs to be focused on the quality of care in the postoperative setting.

Although the previous study showed that pain assessment tools were used for assessing pain in adults and older adults in one Thai hospital, the choice of selecting an appropriate pain assessment tool specifically for older adults by Thai nurses was not reported. There is a need to identify the current practice on how Thai nurses select and use appropriate pain assessment tools in surgical older adults. By contrast, in the U.S., there is growing evidence related to using an appropriate pain assessment tool in older adults. Said selection of pain assessment tools is based on the older adult's cognitive status and preference (Rakel & Herr, 2004). Self report tools are considered the gold standard for assessing pain in older adults (Pautex & Gold, 2006; Wheeler, 2006). These

tools (i.e., 0-10 Numeric Rating Scale, Verbal Descriptor Scale or Faces Pain Scale) can be used effectively in alert and oriented older adults, or even those with mild to moderate cognitive impairment when accompanied by careful patient education and procedures to promote understanding of tool use (Herr, Bjoro, Steffensmeier, & Rakel, 2006).

However, for older adult patients with severe cognitive impairment, there is no standard tool recommended for broad adoption since most of the tools are still in the process of development and testing (Herr, Bjoro, & Decker, 2006). In summary, while the knowledge regarding current practice related to pain assessment in the U.S. is well-established and disseminated, there is a need to identify current use of pain assessment EBPs in other nations.

Pain Management

Pain management, particularly in post-operative situations, is still ineffective and undermanaged in older adults (Aubrun & Marmion, 2007; Sauaia et al., 2005). Insufficient knowledge about pain management, inadequate pain assessment and evaluation, and various attitudes about pain contribute to inadequacy in postoperative pain management in older adults (Manias, Botti, & Bucknall, 2002). In the acute care setting in the US, postoperative pain in orthopedic older adult patients was poorly treated (Karani & Meier, 2004). The problem of undertreated pain is even worse in cognitively impaired older adults. Morrison and Siu (2000) found that only 24 percent of geriatric hip fracture patients who were cognitively impaired received standing orders for an analgesic agent. Ineffective postoperative pain management consequently resulted in negative clinical outcomes, including deep vein thrombosis, pulmonary embolism, coronary ischemia, myocardial infarction, pneumonia, poor wound healing, insomnia, and demoralization which may have increased length of stay, readmission rate, and patient dissatisfaction (Apfelbaum et al., 2003).

Ineffective pain assessment and management are also common in Thai hospital settings (Chanvej et al., 2004; Khlongyant, 2001). A study of the pain experience of Thai hospitalized older adults indicated that 54 percent of older patients on a medical ward had severe pain in the first two days of hospitalization. After traditional pain management, the percentage of older patients who continued to experience severe pain was slightly decreased to 48 percent (Khlongyant, 2001). The large numbers of unrelieved pain was consistent with other research which found that the most common reason for inappropriate pain management is the failure of staff (APS, 1999; Brown, 2004; Hall-Lord, Larsson, Baath, & Johansson, 2004; Herr et al., 2004; Idvall & Ehrenberg, 2002; Manias et al., 2002). Reasons for poor pain management include: nurses' interruptions of activities related to pain; nurses' lack of attentiveness to patient cues of pain; nurses' varying interpretations of pain; and nurses' attempts to address competing demands of nurses, doctors, and patients (Manias et al., 2002). Factors relating to barriers to effective pain management by Thai nurses have never been explored, and a research agenda in this area is essential. However, said agenda is beyond the scope of this study.

A few studies explore current use of acute pain EBPs in older adults. Herr and colleagues (2004) studied current nurse practices related to evidence-based assessment of acute pain in older adults hospitalized with hip fracture in twelve acute care settings. They found that pain was not routinely assessed, and pain reassessment was low within 60 minutes after administered analgesic. This study showed that these nurses did not use acute pain EBPs in older adults in their practice.

Perceived Barriers on Using EBPs

Identification of both barriers and facilitators to EBPs is an important step to determine factors that might discourage or support the adoption of EBPs (Graham & Logan, 2004). Among the various barriers to EBPs cited by nurses in the U.S., the top three listed were: lack of time, limited access to resources to seek evidence, and poorly

developed search and critical appraisal skills (Hutchinson & Johnston, 2006). Concerning pain treatment in older adults, nurses reported that the greatest barrier to acute pain management was the difficulty of communication with physicians and peers (Titler et al., 2003). Nurses' work-related environment with respect to the organization is one of the important obstacles to implementing pain management EBPs. Workload and lack of staff or institutional constraints also hinder optimal pain management (Schafheutle, Cantrill, & Noyce, 2001). To promote the adoption of innovative influences, organizational support is needed. Failure by organizations to provide and support staffs to create unit-specific solutions and evaluate change in practice, create an impediment to implementation (Bucknall, Manias, & Botti, 2001). Regarding pain assessment and management, the decision-making ability of nurses varied, reflecting their skills and attitudes (Vallerand, 1997). Consequently, a combination of lack of skills along with attitudes related to pain may prevent nurses from making optimal care decision.

Another barrier is lack of leadership support. To improve pain management care, there is a need to develop clinical pain champions, those who recognize institutional problems related to pain, and who can apply institutional resources (Idell, Grant, & Kirk, 2007). The inability of nurses to apply research findings to improve practice (e.g., problems of interpreting and using scientific research, lack of clinical application for nursing research, and lack of skill in reviewing research) is also a hurdle that must be overcome (McCaughan, Thompson, Cullum, Sheldon, & Thompson, 2002).

In Thailand, difficulties of implementing EBPs are compounded by the language barriers. The implementation of EBPs at a Thai regional hospital found that obstacles to implementing EBPs included English, time constraints, limited experience in some interventions, and inadequate support from policy makers (Swadpanich, Siriwachirachai, Lumbiganon, & Laopaiboon, 2008). Language barriers may prevent Thai nurses from using high quality of evidence that is relevant to practice decisions.

Perceived Facilitators on Using EBPs

Various facilitators have been found to increase the adoption of EBPs, such as: support and encouragement from administration, time to critically appraise studies and implement their findings, and clearly written research reports (Omery & Williams, 1999); mentorship (Melnik & Fineout-Overholt, 2002); and change agent at local level and at the level of organization (Baltic, Whedon, Ahles, & Fanciullo, 2002; Cleeland et al., 2003; Weissman, Griffie, Muchka, & Matson, 2000). Facilitators of pain EBPs adoption include integrating pain EBPs into organization and unit policies, procedure, standards, pathways, and documentation systems (Dufault, 2001, 2004; Dufault & Sullivan, 2000; Titler & Everett, 2001; Titler et al., 2003). Grand pain rounds and posters placed on the unit have been found to increase knowledge regarding pain management, and improve the nurses' knowledge related to pain change practice patterns (i.e., improved pain reassessment) (Idell et al., 2007). However, no study has explored facilitators of pain EBPs for nurses in Thailand.

Evidence-based Innovation

Evaluation of the Cultural Appropriateness of Acute Pain EBPGs

Problems related to postoperative pain assessment and management in older adults can be addressed by promoting use of EBPs into nursing practice. EBPs typically refers to research, but also includes case studies, expert opinions, and scientific principles (Adams & McCarthy, 2007). Mostly, healthcare professionals use EBPs in the form of EBPGs. The results of various studies established that the use of EBPs reduces cost of care and improves patient outcomes (Cullen, Greiner, Greiner, Bombei, & Comried, 2005; Feuerstein, Hartzell, Rogers, & Marcus, 2006; Thamlikitkul & Apisitwittaya, 2004); further, adherence to clinical practice guidelines (CPGs), an outline plan for practice recommendations, improves economic efficiency of organizations by reducing treatment and operation costs (Schneider, Peterson, Vaughn, Mooss, & Doebbeling, 2006). An empirical study on acute pain management found that the use of EBPs for

acute pain management in older adults with hip fractures helped to decrease the total cost of inpatient stay (\$1,500 reduction), total cost per day, and length of stay (Brooks, Titler, Ardery, & Herr, 2009).

Using EBPs also allows nurses and healthcare professionals to provide the highest quality of care in meeting the needs of patients and families (Melnyk & Fineout-Overholt, 2005), and assists bedside nurses in decision making and accountability for their own practice (Newhouse, Dearholt, Poe, Pugh, & White, 2005). Implementation of an evidence-based program for post operative management in surgical patients contributed to lower pain scores and less impact of pain on sleep, walking, and general activities than that of patients who had not received the program (Bedard, Purden, Sauve-Larose, Certosini, & Schein, 2006).

Despite the supporting evidence regarding the benefits of using EBPs, only 27 percent of hospital chief executives in the U.S. reported using evidence-based pain management (EBPM) in their hospitals (Jiang, Lagasse, Ciccone, Jakubowski, & Kitain, 2001). The shortfall of EBPM adoption needs further exploration as to why more hospitals do not implement EBPM. The parallel question is whether the same pattern would hold in Thailand, where EBPs resources are scarce compared to the U.S.

In Thailand, the concept of EBPs was first mentioned a decade ago (Nantachipan, 2007). Two well-known organizations, the Thai Cochrane Network (TCN) and the Thai Center for Evidence Based Nursing and Midwifery (TCEBNM), have led efforts in implementing EBPs into practice. The TCM, the first South East Asia Cochrane Collaboration was established in 2001 at Khon Khen University, Khon Khen, Thailand (Henderson-Smart et al., 2007). It focuses its efforts on promoting the use and synthesis of relevant research related to reproductive and child health in developing countries (Cochrane Collaboration, 2008). The TCEBNM promotes the use of EBPs by Thai nurses via several educational and training programs, and by developing guidelines specific to nursing practice in various fields (Nantachipan, 2007). In the past five years, the use of

EBPs among Thai healthcare professionals has generally grown. Currently, the use of EBPs for pain management in Thailand is based on the policy of each hospital. For example, one hospital adopted the pain guideline developed by WHO (Subongkot, Khounnikhom, Pratheepawanit, & Sookprasert, 2007), while other hospitals developed their own guidelines related to postoperative pain (Department of Nursing, 2005; Surgical Department: BMA Medical College and Vajira Hospital, 2010). The adoption of the WHO pain guideline in Thailand was found to be effective in decreasing pain intensity in cancer patients (Subongkot et al., 2007).

The successful implementation of EBPGs in healthcare settings depends on the perception of potential adopters (nurses) about the EBPGs. The acute pain in older adults guideline, developed by scholars who address issues specifically germane to nursing practice (Herr, Bjoro, Steffensmeier et al., 2006), may promote the adoption of EBPGs among Thai nurses. However, this guideline was developed based on research and evidence from Western culture. The culturally appropriate aspect of the recommendations from the acute pain EBPGs may be the main issue of concern for implementing this guideline in Thai hospitals. Because of the influence of culture on nurses' behavior in a healthcare setting (Mattson, 2009), Thai nurses may perceive the recommendations from the acute pain EBPGs differently than the western nurses. Therefore, there is a need to explore the perception of Thai nurses toward the cultural propriety of the recommendations of acute pain EBPGs.

Practice Environment

Nurses' Practice Environment of Using EBPs (Hospital Characteristics)

Practice environment is the hospital organizational characteristics that associate with the use of EBPs. The influence of practice environment on using EBPs has been studied extensively in the literature. Practice environment was found to influence the use of EBPs and/or research utilization (RU) at both individual and organizational levels

(Cummings, Estabrooks, Midodzi, Wallin, & Hayduk, 2007; Marchionni & Ritchie, 2008; Vaughn et al., 2002). At the individual level (nurses), hospital characteristics (i.e., staff development, opportunity for nurse-to-nurse collaboration, and staffing and support services) were found to positively influence the utilization of nurses working in acute care hospitals (Cummings et al., 2007). On the contrary, Marchionni and Ritchies (2008) found that hospital environment (i.e., culture learning and transformational leadership) might not influence the implementation of the EBPGs. With the small sample size (N=20) of this study, its validity may be questioned. Only a few studies explored the influence of practice environment factors on the use of EBPs at the organizational level. Vaughn and colleagues (2002) found that practice environment factors associated with the adherence of EBPGs included clinical emphasis, organizational capacity, professionalism, patient population, and urbanicity. Although the study settings were in acute care hospitals, the focus of the study was on the adoption of primary care EBPGs (i.e., alcohol-use screening, depression screening, and tobacco-use screening). The application of primary care EBPGs may be less complex than that of acute pain EBPGs. In Thailand, and where resources are scarce, the practice environment related to organizational capacity (such as hospital bed size) might be an interesting factor to explore *vis-a-vis* its influence on the use of EBPs in Thai nurses.

Purpose and Specific Aims

The purposes of this study are to (1) describe the following, and their effect upon Thai nurses, in the use of evidence-based practices for acute pain assessment and management in older adults: nurses' EBP related factors, current use of EBPs; perceived barriers, perceived facilitators, evaluation of the cultural appropriateness, and, the practice environment, and, (2) describe the differences of nurses' characteristics (year of nursing experience) on perceived barriers and perceived facilitators of using EBPs acute pain.

The specific aims of this study are to:

1. Describe Thai nurses' EBPs related factors, such as awareness, needs, implementation skills, context, and source of practice knowledge, as they relate to using evidence-based practices for acute pain assessment and management in older adults.
2. Describe Thai nurses' current use of evidence-based practices for acute pain assessment and management in older adults.
3. Describe Thai nurses' perceived barriers to using evidence-based practices for acute pain assessment and management in older adults.
4. Describe Thai nurses' perceived facilitators for using evidence-based practices for acute pain assessment and pain management in older adults.
5. Describe Thai nurses' evaluation of the cultural appropriateness of "Evidence-based Practice Guideline: Acute Pain Management in Older Adults" (Herr, Bjoro, Steffensmeier et al., 2006).
6. Describe Thai nurses' practice environment (hospital size) in using evidence-based practices for acute pain assessment and pain management in older adults.
7. Describe the differences of nurses' characteristics (years of nursing experience) with perceived barriers and perceived facilitators, for acute pain management in older adults.

This study will provide preliminary information regarding Thai nurses' EBPs related factors, current use of EBPs, perceived barriers, perceived facilitators, evaluation of the cultural appropriateness, and practice environment, for developing strategies to promote the use of evidence-based practice in Thai nurses working at acute care hospital. Evaluation of the cultural appropriateness of the acute pain EBPG will benefit future development and implementation of those standards for Thai older adults.

Study Significance

Quality of pain assessment and pain management is a global problem. Various organizations, such as the World Health Organization, the International Association for the Study of Pain, and others have tried to implement various strategies, such as educational programs for healthcare providers, to improve quality of pain care. Unfortunately, unrelieved pain still exists, and the quality of pain assessment and pain management is ineffective (AHRQ, 2005). Several factors constitute obstructions to the quality of pain assessment and pain management, such as the lack of knowledge about pain among healthcare providers (Greiner, Buhr, Phelps, & Ward, 2003), and the gaps between research and practice may contribute to the unresolved pain problem. Implementing EBPs into healthcare settings may fill the gap between research and practice, and also improve quality of care while saving precious healthcare dollars.

According to the Ottawa Model of Research Use (Graham & Logan, 2004), the process of implementing EBPs cannot be completed without exploring the barriers and facilitators. Barriers and facilitators to EBPs must each be addressed before the process of EBPs implementation (Gale & Schaffer, 2009). Reviews of literature related to barriers to research use (RU) and EBPs from 1999-2009 found 34 studies from different countries using the BARRIERS scale to explore barriers to RU. However, only one study (Sae-Sia, Songwattana, Kahawong, & Suwan, 2008) identified barriers to RU in a developing country, and only three studies (Chau, Lopez, & Thompson, 2008; Oh, 2008; Sae-Sia et al., 2008) identified barriers to RU in Asian countries (i.e., Hong Kong, Republic of Korea, and Thailand). Thus, the state of science related to barriers to RU is predominated by research conducted in western and/or developed countries. Considering healthcare context differences, it cannot be assumed that the barriers reported by developed countries' nurses are the same as developing countries' nurses (and Thai nurses). All 34 studies identified barriers in the context of RU, and used quantitative approaches. With the large amount of studies identifying barriers to RU, Carlson and Plonczynski (2008)

suggested there is no further benefit from the publication of descriptive studies, as there is no evidence that identifying barriers to RU influences nursing practice. Additionally, Bostrom and others (2008) recommend that identifying barriers which are general and wide-ranging makes it difficult to design specific interventions. However, in Thailand, where empirical study related to barriers to EBPs is limited, research to identify barriers to EBPs is necessary. Other approaches, such as qualitative or mixed method approaches, should also be encouraged. In addition, facilitators related to pain EBPs in Thailand have not been well examined. Consequently, this research will be the first study related to this topic in Thailand.

Although most of the recommendations of EBPGs based their systematic reviews upon evidence in Western countries, some healthcare settings in Thailand have adopted the EBPGs developed in and for Western countries (Pitimana-Aree, Uerpairojkit, Punjasawadwong, Virankabutra, & Charuluxananan, 2007; Thamlikitkul & Apisitwittaya, 2004). Applying guidelines internationally must be approached carefully, since they often originated from a specific healthcare context (Kent, Fineout-Overholt, & Wimpenny, 2007). Before implementing guidelines outside of their originating context, many issues such as economic context, socio-political context, and cultural context should be examined. For example, Thailand is a lower-middle-income economics country (World Bank, 2008) where resources are limited and scarce (Santesso & Tugwell, 2006). Therefore, implementation of high cost but effective recommendations made in high-income Western countries' guidelines (i.e., using patient-controlled analgesic (PCA) in postoperative pain control) may not be successfully implemented in Thailand because of the expense (e.g. intravenous computerized pump required for each postoperative patient). On the other hand, the recommendations that have been shown to be both cheap and effective, such as using around-the-clock (ATC) administration of analgesics for ongoing pain, may be easy to implement. Thus, examination of the process and

innovation attributes for the potential implementation of EBPGs for pain management is needed in order to identify strategies for adoption of EBPGs in the future.

Summary

Postoperative pain management in older adults is undermanaged due to healthcare professionals' lack of knowledge regarding pain assessment and pain management. Nurses are the healthcare professionals who play a leading role in assessing and managing pain in older adults. To improve the quality of care in pain assessment and management for this population, it is important to support and educate nurses about using EBPs for acute pain management in older adults. It is well-known that using EBPs improves quality of care and decreases cost of care. Various barriers are described, but time is the most cited barrier to EBPs. There are various facilitators to promote the use of EBPs. Most facilitators may work in one setting, but not in another, because each setting has its own characteristics that affect the process of implementation and the adoption of EBPs. The innovation (EBPGs) itself has influence on the decision to adopt the EBPs. Therefore the culturally propriety of EBPGs should be explored.

In Thailand, where the older adult population is increasing, quality of care in this population is in high demand. The inadequate pain assessment and pain management in Thai older adults reflect the low quality of care provided by Thai healthcare professionals, especially nurses, who take the lead role in assessment and management of pain in older adults. Since EBP is a new concept in Thailand, research related to the use of EBPs is very limited. There is a need to conduct research to describe Thai nurses' current practice, perceived barriers, and perceived facilitators related to pain assessment and pain management in older adults suffering from postoperative pain, as well as to describe nurses' practice environment, and to describe the Thai nurses' evaluation of acute pain EBPGs.

CHAPTER II LITERATURE REVIEW

The use of EBPs related to acute pain continues to grow worldwide. However, little is known about how an innovation (acute pain EBPs) diffuses among many adopters, and how Thai nurses' use acute pain EBPs in older adults. The purposes of this dissertation are to describe current practice, perceived barriers, and perceived facilitators of Thai nurses on using acute pain EBPs in older adults. To better understand these factors, the following topics are reviewed: EBPs definition and concept; the movement of EBPs in Thailand; EBP models; conceptual framework [the Ottawa Model of Research Use (OMRU)]; and constructs from the OMRU model (i.e., potential adopter, evidence-based practice innovation, and practice environment).

Method of Literature Review

Traditional narrative and systematic reviews are each frequently used in reviewing literature. Both methods are retrospective, and, accordingly, they convey errors and biases (Cook, Mulrow, & Haynes, 1997). Systematic reviews, a rigorous and well-defined approach of literature reviews, are well-known for their limiting biases as well as providing reliable information for drawing conclusions to make decisions (Cronin, Ryan, & Coughlan, 2008). Systematic reviews consist of seven steps: (1) clearly formulated question, (2) comprehensive data search, (3) unbiased selection and extraction process, (4) critical appraisal of data, (5) synthesis of data, (6) performance of sensitivity and subgroup analyses if possible and appropriate, and (7) preparation of a structured report (Higgins & Green, 2006). Systematic reviews are focused on specific topics that are intended to answer clinical problems for decision-making. On the other hand, the traditional narrative reviews are intended to obtain a broad perspective of the topic. This method is appropriate for describing a history of the development of a problem and its management. It is also useful for understanding the context of a problem (Cook et al., 1997). Considering the nature of this literature review topic, along with the research

questions that focus on describing the phenomena of interest, a traditional narrative review may be an appropriate method. However, to decrease the bias of the traditional narrative review, integrating steps 1-5 of a systematic review may help to improve the quality of the analysis. Therefore, the method of literature review used for this study was a combination of the traditional narrative reviews in conjunction with steps 1-5 of the systematic reviews. For this study, this method has been termed *the systematic narrative review*.

The purpose of the systematic narrative review was to describe both international and Thai nursing studies that discussed current use of EBPs, perceived barriers, and perceived facilitators, between January 2000 and January 2010. Both published studies and unpublished studies (gray literature) were searched per the recommendation of Holopainen and colleagues (2008) in order to limit biases. Published studies were searched using a computerized literature search in electronic databases (i.e., PubMed, CINAHL), supplemented with a manual search for journals that specify the electronic search. The terms “*evidence-based practice*”, “*evidence-based practice models*”, “*acute pain*”, “*postoperative pain*”, “*aged*”, “*older adults*”, “*elderly*”, “*nurses*”, “*barriers*”, and “*facilitators*” were meshed and merged. Unpublished studies, or gray literature (i.e., dissertation, conference proceedings, websites, guidelines), were searched by hand. Subsequently, 312 articles that were published in either English or Thai were identified as relevant to the dissertation focuses. The abstracts were read, and the following studies were selected if their contents included the key words described above. Two hundred and thirty-eight papers were selected for review.

EBP Overview

EBP Definitions and Concepts

The concept of EBPs was developed from the model of evidence-based medicine (EBM) which was first established at McMaster Medical School in Canada in the 1980s

(Jennings & Loan, 2001). Ultimately the concept of EBM extended beyond medicine to other disciplines, including nursing (Ciliska, Pinelli, DiCenso, & Cullum, 2001). Using EBPs includes the conscientious use of current best evidence in making patient care decisions towards meeting the needs of patients and families (Ciliska et al., 2001; Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000). EBP is a problem solving approach to clinical practice that enables clinicians to provide the highest quality of care in meeting the multifaceted needs of their patients and families' (Melnik & Fineout-Overholt, 2005). EBP consists of three components: (1) critical appraisal of a systematic search for the most relevant evidence, (2) one's own clinical expertise, and (3) patient preferences and values.

The term EBP has become widely adopted in recent years by the nursing profession. It is sometimes used interchangeably with research utilization (RU) (Mast, 2000; Titler, Mentis, Rakel, Abbott, & Baumler, 1999), as well as evidence-based nursing (EBN) (K. Scott & McSherry, 2009). Although the terms EBP and RU are related, many researchers have argued that they are not the same (Stetler, 2001; Titler et al., 1999). RU is the application of findings from studies that use qualitative or quantitative methods, and also randomized trials (Titler et al., 2001). It is a process of transforming research knowledge into practice (Stetler, 2001). EBP is a broader concept that includes RU, along with evidence from case reports and expert opinions, in making decision about health care practices. If one considers the definition of EBP as *the conscientious and judicious use of the best evidence to guide practice*, RU is a subset of EBP, and is both a process and product within EBP.

Another term that is often interchangeably used with EBP is EBN. EBN 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' (Ingersoll, 2000). It is a new concept that contains the same elements as EBP (Lindberg, 2004). Scott and McSherry (2009)

compared definitions and synthesized elements of EBP and EBN from 13 articles. They found that all definitions of EBP and EBN contained some forms of RU. Eleven key elements (i.e., identification of research, evaluated research, application of research, use of best evidence, evaluation of care, problem solving, decision making, clinical/professional expertise, theory driven, patient involvement, and process) drawn from 13 definitions of EBP and EBN established that the heavily highlighted element of EBN definitions was the “theory driven practice” component. Based upon the elements’ synthesis, EBN is determined to be an ongoing process by which evidence, nursing theory, and expertise are used for decision making to provide optimum care for individual patients. Because EBP definitions had covered almost all listed elements except for the “evaluate care” factor, it could be claimed that EBN is a subset of EBP.

In sum, EBP has broader concepts and elements than EBN and RU. EBP is a problem-solving approach to practice that incorporates all of these facets (i.e., evidence from the best, well-designed quantitative and qualitative studies, and patient preferences and values) in order to make the best decision for patient care.

EBP can be used to narrow the gap between research and practice (Brady & Lewin, 2007), and when EBP knowledge is incorporated into practice, patients experience better outcomes (Carlson & Plonczynski, 2008). According to Melnyk and Fineout-Overholt (2005), the process of EBP consists of five steps: (1) asking the clinical question using the PICO format (i.e., patient population, interventions of interest, comparison of interventions, and outcomes) to obtain the best evidence; (2) collecting the most relevant and best evidence to answer the clinical question; (3) critically appraising the evidence; (4) integrating the evidence; and, (5) implementing a decision. The application of EBP to clinical practice is integrated with three other elements of clinical practice that influence care management: clinical expertise, patient preferences for alternative forms of care, and available resources (DiCenso, Cullum, & Ciliska, 1998).

The use of three elements of EBP in patient decision-making vary within the context and the specific detail of each case (Ciliska et al., 2001).

Acute Pain EBP Development Process

EBP characteristics consist of six crucial components: relative advantage, complexity, compatibility, trialability, clarity, and user-friendliness (Graham & Logan, 2004). To make the decision about evidence, many panels of experts or organizations provide systems to rate the evidence. For example, Melnyk and Fineout-Overholt (2005) developed a system which rates systematic reviews, meta-analysis, and EBP guidelines (EBPGs) as the highest evidence hierarchy, and rates expert opinions or case reports as the lowest evidence. In addition, many reputable organizations such as AHRQ, NICE, and WHO, have adopted a universal system of evaluation called GRADE (Grades of Recommendations, Assessment, Development, and Evaluation) (Guyatt et al., 2006) . The GRADE system ranges the strength of evidence into four categories: (1) strong, (2) moderate, (3) low, and (4) very low. GRADE was developed by widely diverse representatives and premised upon international guidelines. It provides pragmatic interpretation of strong versus weak recommendations, as well as explicated comprehensive criteria for evidence grading; hence, it is the most commonly used rating system among healthcare professionals (Guyatt et al., 2008). By contrast, Melnyk and Fineout-Overholt's methodology provides a rating system based on a nursing perspective, so this method is commonly found in nursing literature.

EBPGs are the practice recommendations, based upon the quality of evidence derived from creditable rating systems such as GRADE, Melnyk and Fineout-Overholt, and the Agency for Healthcare Research and Agency (AHRQ). The development of EBPGs consists of a rigorous review by multidisciplinary expert teams and peer reviews, along with the use of measurable outcomes (Kirchhoff, 2004). EBPGs are the most commonly selected guidelines to implement in practice setting. The focus of this

dissertation was the use of acute pain EBPs in older adults; thus, the literature review was concentrated only on the development of EBPGs related to pain assessment and pain management. The EBPGs or Clinical Practice Guidelines (CPGs) development process was different in various countries. At a national level, CPGs related to pain assessment and pain management have been developed by various organizations in the U.S. (American Society of Anesthesiologists Task Force, 2004; Gordon et al., 2005; Guevara-Lopez et al., 2005; Herr, Bjoro, Steffensmeier et al., 2006). The National Guideline Clearinghouse (NGC) provides a standard format and support for dissemination guidelines. In the United Kingdom, pain guidelines were produced by the collaboration between representatives of a multidisciplinary team, the British Pain Society, and British Geriatrics Society, in response to the need to improve pain management in older adults (Schofield, O'Mahony, Collett, & Potter, 2008a). Producing guidelines about pain in older adults was a time-consuming process which took approximately two years to complete (Schofield, O'Mahony, Collett, & Potter, 2008b). The development process included setting up a working group of pain experts from around the U.K., searching papers related to pain assessment or measurement, reading and reporting upon each selected paper by two expert members, establishing the statement of best evidence upon expert consensus, and finally producing a best practice document (Schofield et al., 2008b). The U.K. acute pain guidelines were disseminated via websites of the British Pain Society and the British Geriatrics Society.

In Thailand, acute pain EBPGs is a new concept in nursing practice. Several EBPGs have been developed, disseminated, and implemented in Thai healthcare settings (Pitimana-Aree et al., 2007; Swadpanich et al., 2008; Thamlikitkul & Apisitwittaya, 2004; Thongchai, Bumroongkit, Jittawatanarat, Puengbanhan, & Chuajedton, 2007; Vistuttisiri, 2006); however, few EBPGs related to pain management (Mayurapak, 2005; Sringam, 2005), and only one study developed EBPGs acute pain specifically for Thai older adults (Siriburanonta, 2008). Most of the EBPGs in Thailand were developed at the

organizational level as a quality improvement tool. Only a few guidelines were developed for use at the national level (Pitimana-Aree et al., 2007; Turner, 2009). The dissemination of acute pain EBPGs in Thailand is very limited. Most of the EBPGs in Thailand are kept in the library, and only the abstract was circulated via university website. No national organization acts as a clearinghouse to disseminate the guideline. With the insufficient number of acute pain EBPGs in older adults in Thailand, along with the limited manner of guideline dissemination, there is a need to both promote the development of acute pain EBPGs and to identify the practical method of guideline dissemination to healthcare providers who serve older adult patients suffering from acute pain.

At the international level, the World Health Organization (WHO) is an organization committed to facilitate the adequate treatment of pain by legitimate use of opioid analgesics. WHO is also responsible for developing guidelines that can be used in both developed and developing countries. The first WHO pain guideline was produced in 1986. To date, there are 11 existing WHO guidelines addressing pain management; however, only two guidelines (i.e., “cancer related pain relief (second edition) WHO 1996” and “cancer related pain relief and palliative care in children WHO 1998”) are pain guidelines, and both are outdated (Kumar, 2007). With the commitment to promote possible relief to every patient suffering from pain, WHO conducted the Delphi study to identify the numbers of needed pain guidelines, as well as the types of pain that should be incorporated into each guideline (Kumar, 2007). Forty-six experts from 20 countries, both developed and developing, participated in the study. The Delphi study committees concluded that there is an urgent need for WHO to develop new pain management guidelines due to theirs having become out-of-date. They further recommended that the new WHO pain management guidelines should be targeted to specific population groups, such as children, older adults, and HIV patients. The new pain guidelines should be adjusted for conditions and available resources, as well as the limited knowledge and skills of healthcare providers. Currently the new WHO pain management guidelines are

in the process of development. There is presently no WHO pain guideline related to older adults.

EBPs Movement in Developed Countries and Thailand

The use of EBPs is widespread and has been accepted among healthcare professionals in Canada, the United Kingdom, Australia, and the United States (Melnik & Fineout-Overholt, 2005; Sackett et al., 2000). Various organizations have been established globally in order to provide high quality and reliable evidence (i.e., systematic reviews, best practice guidelines), which inform healthcare decision-making. Healthcare professionals have access to available evidence such as The Cochrane library, The National Institute for Health (NIH), Clinical Excellence in the United Kingdom, and The Joanna Briggs Institute (JBI) in Australia (Cochrane Library, 2008; Joanna Briggs Institute, 2008a; National Institute for Health and Clinical Excellence, 2008). Although professional nursing associations in North America, Europe, and Australia serve as leaders in the promotion of EBPs among nurses, this is not the case in Asia nor Africa. At this time professional nursing organizations on these continents have yet to take an active role in promoting EBPs (Holleman, Eliens, van Vliet, & van Achterberg, 2006).

In Thailand, the concept of EBPs was first mentioned a decade ago. There are two organizations (i.e., the Thai Cochrane Network (TCN) and the Thai Center for Evidence Based Nursing and Midwifery (TCEBNM)) that have introduced the use of evidence-based practice into Thailand. The TCN, a branch of the Australasian Cochrane Center, was first established in 2001 at Khon Kaen University, Khon Kaen, Thailand, and it became the first South East Asia Cochrane Collaboration (Henderson-Smart et al., 2007). The TCN focuses on promoting the generation and use of research syntheses relevant to health problems in Thailand and on developing a capacity to train and support Thai review authors. It received support from the Southeast Asia Optimizing Reproductive and Child Health in Developing Countries (SEA-ORCHID) (Cochrane Collaboration, 2008);

as a result, most of the guidelines produced by this organization focus on reproductive and child health. Another EBPs organization is the TCEBNM, the first and the only EBPs center in Thailand, established in collaboration with the JBI in November 2002 (Thailand Center for Evidence-Based Nursing and Midwifery (TCEBNM), 2006). The TCEBNM has provided many educational and training programs related to using EBPs for nurses, students, and faculties in Thailand. This center has developed more than ten evidence-based nursing practice guidelines (EBNPG), and has translated various best practice information into the Thai language (Joanna Briggs Institute, 2008b; Thailand Centre for Evidence Based Nursing and Midwifery (TCEBNM), 2008). Although various guidelines have been developed, no national guideline is available on effective pain assessment and pain management in older adults.

To date, several hospitals in Thailand have implemented EBPG in their hospitals. For example, a large hospital (university affiliate) in the Northeastern region of Thailand disseminated EBPs related to pregnancy and childbirth care to physicians and nurses using workshops, journal clubs, and audit and feedback as methods of implementation (Laopaiboon et al., 2008; Swadpanich et al., 2008). Another study at a large hospital (university affiliate) in Bangkok implemented a CPG on prescribing antibiotics for adults with upper respiratory infection, using interactive educational meetings as a method of implementation (Thamlikitkul & Apisitwittaya, 2004). All three studies found that the implementation of the EBP or CPG was an effective method to change the practices of physicians and nurses. However, the studies were done in large hospitals with university affiliates, where resources were relatively abundant. The status of using and implementing EBPs in other types of hospitals in Thailand is still unknown.

Diffusion of Innovations and RU Models

To apply EBPs or research into practice, theory is needed in order to develop testable and useful intervention. Currently there is no gold standard recommendation to

use models or theory to implement research into practice (Estabrooks, Thompson, Lovely, & Hofmeyer, 2006); therefore, researchers in these fields have attempted to apply a variety of theories or models to implement EBP or research into practice. In this review, only EBP or RU models or theories that have frequently appeared in nursing publications, are used by institutions, and are intended for use by nurses to change practice are discussed.

Roger's diffusion of innovation model (Rogers, 2003) is the most frequently used model in EBP literature, due to its generality. Greenhalgh and colleague (2004) performed systematic reviews of the use of diffusion of innovations in service organizations, and found almost 495 studies mentioned diffusion of innovations. The model was used in various academic disciplines (i.e., sociology, psychology, clinical epidemiology, organizational and management, and interdisciplinary). It was also used in four different types of traditional research: (1) early diffusion research (i.e., rural sociology, medical sociology, communication studies, and marketing); (2) development (i.e., development studies, health promotion, and evidence-based medicine); (3) organizational and management (i.e., structural determinations of organizational innovativeness, studies of organizational process, context, and culture, inter-organization studies, knowledge utilization, narrative studies, and complexity studies); and, (4) organizational psychology. This model studies how innovation (EBP) communicates via certain channels over time throughout social systems; therefore, it could be specifically used for diffusion, dissemination, and implementation of innovation. Apart from a diffusion of innovation model, nurses use a variety of models to help move research or EBPs into practice. The models that are often used in nursing include the RU models (i.e., *the Ottawa Model of Research Use (OMRU)* (Graham & Logan, 2004), *Funk's Model of Research Dissemination* (Funk, Tornquist, & Champagne, 1989)), and the EBP Implementation models (i.e., *The Stetler Model* (Stetler & Maram, 1976), *The Iowa Model* (Titler, Cullen, & Ardery, 2002), *Translation Research Model* (Titler & Everett,

2001), *The Johns Hopkins Nursing Evidence-Based Practice Model* (Newhouse et al., 2005), and *The Evidence-Based Practice Model for Staff Nurses* (Reavy & Tavernier, 2008)). The detail of each model is described. The strengths and the weakness of each model are discussed.

According to the diffusion of innovation model (Rogers, 1995), the adoption of innovation is influenced by the innovation (i.e., EBPG), the users (i.e., characteristics of users), and the social systems (i.e., healthcare organizational characteristics) via communications channels. Rogers defines diffusion as the process in which an innovation is communicated over time among the members of a social system. The types of communication used in this model will always contain a new idea. Rogers' innovation consists of five characteristics (i.e., *relative advantage, compatibility, complexity, trailability, and observability*) that influence different rates of adoption (Rogers, 2003). Users are more likely to adopt the innovation if: (1) they perceive value that the innovation is better than the existing idea (*relative advantages*); (2) they perceive the idea to be consistent with their values, past experience, and needs (*compatibility*); (3) they perceive less difficulty of understanding or learning to use the new idea (*complexity*); (4) they have an opportunity to experience an innovation on a limited basis (*trailability*); (5) they can see the results of an innovation (*observability*).

Individuals and other decision makers will go through the innovation-decision process as they move through the following process: (1) gaining initial knowledge about the innovation, (2) building their attitude about the innovation, (3) making a decision to adopt or reject the innovation, (4) implementing the new idea, and (5) confirming the decision. Rogers indicates that this process deals with the uncertainty that is involved in deciding whether a new idea should be accepted and incorporated into practice. This process occurs over time throughout five stages of decision making: knowledge (users exposed to the innovation); persuasion (users made the decision on favorable or unfavorable attitude); decision (users engaged in activities that lead to their choice to

adopt or reject the innovation); implementation (users incorporated the new idea and used it); and confirmation (users seek reinforcement regarding their decision making) (Rogers, 2003).

The main concepts from the diffusion of innovation models (i.e., users, innovation, social system, and communication channel) provide a useful framework for nursing scholars to develop EBP or RU models specifically used in nursing context. The model element synthesis found that EBP or RU models that based their concepts on the diffusion of innovation models include *the OMRU* (Graham & Logan, 2004), *The Translation Research Model* (Titler & Everett, 2001), and *Funk's Model of Research Dissemination* (Funk et al., 1989). All elements of each of these models are in the three elements of diffusion of innovation model: users, innovation, and social system. Although the *OMRU* model and *Funk's Model of Research Dissemination* explore barriers and facilitators to the utilization of research, they have different focus. *Funk's Model of Research Dissemination* focuses on exploring barriers and facilitators of three components: (1) qualities of research (i.e. the topic, relevance, applicability, and availability of research; the level of control over the practice; and the gap between research and practice), (2) characteristics of the communication (i.e., use of nontechnical language, emphasis on implication, clarification of limits on generalizability, strategies for implementation, demonstration of new techniques, broad dissemination, and discussion between researchers and clinicians), and (3) facilitation of utilization (i.e., reinforcement of new knowledge, ongoing dialogue between researchers and clinicians, updates on research in the area, sharing of experiences, and giving of support during implementation experiences). However, the model does not provide the guideline to implement these results from exploring barriers and facilitators into a practice setting. On the other hand, the *OMRU* model recommended researchers explore barriers and facilitators of the first three elements (evidence-based innovation, potential adopter, and practice environment) in order to get the preliminary information to improve the process

of implementation, adoption, and outcome implementation of the RU. Therefore, the OMRU model provides more direction of how to apply the model into a practice setting than *Funk's Model of Research Dissemination*.

EBPs Implementation Models

The process of actually implementing research finding into clinical practice takes almost 20 years (Burns & Foley, 2005). This gap can be narrowed if EBPs are adopted and implemented in practice settings. There are several evidence-based practice models that are used to implement research into practice settings such as *The Stetler Model* (Stetler & Marram, 1976), *Translation Research Model* (Titler & Everett, 2001), *The Iowa Model* (Titler et al., 2002), *The Johns Hopkins Nursing Evidence-Based Practice Model* (Newhouse et al., 2005), and *The Evidence-Based Practice Model for Staff Nurses* (Reavy & Tavernier, 2008).

The Stetler Model (Stetler & Marram, 1976) was first introduced in 1976, and it has been refined over the years. This model outlines a prescriptive series of steps to assess and use research findings, thus facilitating safe and effective EBPs. Known as a “practitioner-oriented” model, this focuses on critical thinking, and it uses findings by the individual and the knowledgeable practitioner - therefore it provides greater guidance for using and applying critical utilization concepts and research to daily practice (Ciliska, DiCenso, Melnyk, & Stetler, 2005). With the emerging of the EBPs concept, the Stetler Model has been updated within the concept of EBPs (Stetler, 2001). The 2001 version of the Stetler Model has fully integrated the concept of EBPs, and it shifts its focus from individuals to groups of people who are responsible for RU/EBPs.

The *Translation Research Model* (Titler & Everett, 2001) was developed based on the diffusion of innovation model. It was developed to test the effectiveness of interventions on the rate and the extent of adoption of EBP by healthcare providers. To adopt the innovation, characteristics of the innovation (EBPG) are communicated via

varieties of communication methods (i.e., opinion leaders, change champions, core group, and outreach) to social systems and users. After the process of adoption of innovation, users or social systems provided feedback on the use of the EBP in order to improve the quality of the innovation. The components in the model are quite abstract; consequently, the model is more likely to generalize and apply as a conceptual framework for implementation of research into practice. Currently, there are two studies related to acute pain in older adults that used and tested this model (Titler et al., 2009; Titler et al., 2003)

The Iowa Model (Titler et al., 2002) is an organizational model that incorporates the conduct and use of research and other forms of evidence (Titler & Everett, 2001). This model is a revision of the Iowa Model of Research-Based Practice to Promote Quality Care (Titler et al., 1994). The Iowa model describes how the infrastructure to support research use must involve every level of the organization, from high-level management to front-line clinicians. The utilization of the Iowa model gives a strong message to the organization about its role in the support of EBPs. The desirable attribute of this model is in the format of practice prompts; as a result, it is easy to understand and implement. The model has several strengths, such as using a variety of evidence, focusing on implementation and evaluation of EBP improvement, and integrating the EBP with quality and performance improvement initiatives (Titler, 2007). For those reasons, using this model for implementing EBPs into practice is recommended.

The Johns Hopkins Nursing Evidence-Based Practice Model was developed as a result of collaboration between the JHH Department of Nursing and the Johns Hopkins University School of Nursing (JHUSON) (Newhouse et al., 2005). The model incorporates the use of “best available evidence” as a core component, and the EBPGs provide nurses with structure and tools to acquire EBPs. According to the JHNEBP model, “EBP is a problem solving approach to making clinical, educational, and administrative decisions that combines the best available scientific evidence with the best available practice evidence. The process takes internal and external influences on practice

into consideration and requires the nurse to use critical thinking when applying the evidence.” This model includes three processes: practice question, evidence, and translation (Newhouse, Dearholt, Poe, Pugh, & White, 2007).

The model and guideline were pilot tested in Spring 2003 at 15 JHH Post Anesthesia Care Unit (PACU) for a period of five 1-2 hour sessions over an eight-week period. Nurse participants received a guidebook on how to use the EBP model and guidelines, and also attended a two day educational session about unit-based nursing leaders: change agents and EBP champion. After the EBP implementation, the results showed that staff nurses were able to effectively use the model and guidelines. Barriers to implementation were also found as follows: meaning of EBP to nurses, knowledge deficit, information overload, and time allocation. Although Newhouse and colleague reported barriers to implementation in their study, no evidence was found on how the barrier concept fit in the JHSEBP model or guidelines. The researchers reported that the success of the EBPs implementation programs depended on three important strategies: (1) the design and implementation; (2) the dedication of time and resources by nursing leadership; and (3) the collaboration between hospital and academia (Newhouse et al., 2005). The JHSEBP conceptual model refined the graphic and added appraisal (i.e., research and non-research), as well as variables for internal factors and external factors (i.e., internal factors: culture, environment, equipment/supplies, staffing, standards; external factors: accreditation, legislation, quality measures, regulation, standards) (Newhouse et al., 2007). As a result, implementation of this model in practice is recommended.

The Evidence-Based Practice Model for Staff Nurses (Reavy & Tavernier, 2008), a model emphasizing the importance and centrality of staff nurses, was created to guide evidence-based practice implementation. With the influence from three models of evidence-based practice implementation (*The Iowa Model of Evidence-based Practice to Promote Quality Care* (Titler et al., 2001), *The Stetler Model* (Stetler, 2001), and

Rosswurm and Larrbee (1999)), the relationship among clinical practice, dissemination of information, and use of research was represented. This model consists of four components (i.e., staff nurses, nurse researcher, patient, and communication) and six processes (i.e., assessment, identification and evaluation of problem, analyses and syntheses of best available evidence, planning, implementation and evaluation, and integrating and maintaining) (Reavy & Tavernier, 2008). In this model, the staff nurse has an ownership of evidence-based practice and a centrality for implementing evidence-based practice. The nurse researcher teaches, role models, and discusses evidence-based practice with staff nurses. He or she also assist staff nurses with literature searches, analysis and critique of evidence, providing assistance with pilot studies, and receiving communication related to ideas for research. Communication is integral to the patient, staff nurse, and nurse researcher. Patients give verbal and nonverbal communication to the staff nurse, and they receive nursing care based on best evidence. The model is not complicated, and is easy to use in clinical setting; it provides a table that describes the roles of patient, staff nurse, and researcher for each incidence of using evidence-based practice. The model also describes, step by step, how to incorporate three important components of EBPs (i.e., patient preferences, clinical experts, and the best evidence) into each incidence of EBP implementation. Accordingly, the users of this model can have confidence that the core components are incorporated into each EBP process.

Almost all of the foci of the implementation models can be applied at both individual and organizational levels. Only the EBP Model for Staff Nurses focuses on the model implementation at the individual level. However, the model provides more in-depth understanding of how to implement EBPs by incorporating patient preferences, clinical experts, and the best evidence into each implementation process. The summary of model focus and model process are shown in Table 1.

Table 1 The Summary of Foci and Processes of the Selected Implementation Model

Model	Stetler Model	Translation Research Model	Iowa Model	The John Hopkins Nursing EBP Model	The EBP Model for Staff nurses
Focus	Using of research finding and EBPs at individual nurse and organization level	Testing the effect of innovations at organizational level	Use of research and other forms of evidence at the organizational level	Use of best evidence and EBP tools to acquire EBP at organizational level	Three players to incorporate EBPs into practice consist of patient values and preferences, staff nurses/clinical experts, and nurses researcher/best available evidence
Processes/ Stages/ Components	1.Preparation 2.Validation 3.Comparative evaluation/ decision making 4.translation /application 5.Evaluation	The diffusion of innovations is influenced by the nature of the innovation (EBPG) and its communication via social system. Five components are included in this model: characteristics of innovation, communication process, user, social system, and adoption of innovation.	1.Triggers (i.e., knowledge or problems) to improve practice through research 2.Assemble relevant research literature 3.Critique and evaluate for use in practice 4.Decision about the sufficient of research base 5.Decision to adopt the evidence in practice 6.Change practice 7.Monitor outcomes	1.Practice question 2.Evidence 3.Translation	1.Assessment 2.Identification and evaluation of problem 3.Analyses and syntheses of best available evidence 4.Planning, 5.Implementation and evaluation 6.Integrating and maintaining

Using EBP implementation models to change practices helps nurses to organize the implementation process, prevent the incomplete implementation, and decrease time spent, effort, and resources (Gawlinski & Rutledge, 2008). There is no single EBP implementation model that meets all the needs of every nursing environment. Thus, nurses should select the EBP implementation model based on their practice context. Gawlinski and Rutledge (2008) proposed six criteria for evaluating EBP models as follows: clarified concept, provided diagram, comprehensive model, easy to use, generalization, and easily to apply. They also recommended that institutions should select

at least two models that had highest evaluation score for group discussion. If two models had similar scores, a group discussion concerning the strengths and weaknesses of each model would facilitate selecting the model that was fitted with the needs of the institution. The Gawlinski and Rutledge article provided a practical perspective for selecting an EBP model to change practice, so it might be used as a template for initiating EBP model selection at the institution level.

Various selection criteria were applied in choosing an RU/EBPs nursing model to use as this dissertation's conceptual framework. The OMRU was selected due to its clear concepts and appropriate contexts. The detail of OMRU was described below.

The Ottawa Model of Research Use (OMRU)

The Ottawa Model of Research Use (OMRU) (Graham & Logan, 2004; Logan & Graham, 1998) was derived from the literature relating to research utilization, diffusion of innovations, physician behavior change, and development and implementation of practice guidelines (Logan & Graham, 1998); it was probably linked to Donabedian's work (1988), which described the production of health care in terms of structure, process, and outcomes (Graham & Logan, 2004). The OMRU consists of six elements which are central to knowledge transfer: (1) evidence-based innovation (e.g., a continuity-of-care innovation); (2) potential adopter (e.g., nurses, physician, or those whose practice or behavior are targeted to change); (3) the practice environment (i.e., the settings or culture); (4) implementation intervention strategies to promote the transfer of innovation to practice (e.g., barrier management, transfer, follow-up); (5) adoption of the innovation (e.g., intention and use of innovation); and (6) outcomes of implementing innovation (e.g., patient, practitioner, or system). The model is based on three assumptions: 1) the model is dynamic, and all elements influence and are influenced by the others; 2) patients and clients play a crucial role in all aspects of the process; 3) society and the health care external environment will affect all aspects of the process. To promote the innovation,

each element of the OMRU is assessed, monitored, and evaluated before, during, and after decisions are made. In order to identify factors that might discourage or support the adoption of innovation, the model directs change agents to conduct a barrier assessment of innovation, the potential adopters, and the practice environment. In developing countries, including Thailand, where many barriers to application knowledge exist and few studies have been conducted, this model may provide a framework for systematically assessing the use of evidence-based practice related to pain.

The OMRU can be used as a guide for innovation implementation (Graham & Logan, 2004). It includes six steps of implementation as follows: 1) getting started, 2) clarifying the innovation, 3) assessing the innovation, potential adopters and the practice environment for barriers and supports, 4) selecting and monitoring the implementation interventions, 5) monitoring the adoption, and 6) evaluating the outcomes. In this study, the intent is to describe current practice, perceived barriers, and perceived facilitators of Thai nurses regarding evidence-based practice related to pain in older adults. Therefore, the third steps of the OMRU (i.e., assessing the innovation, potential adopters and the practice environment for barriers and supports) and the first three elements of OMRU (i.e., potential adopters, evidence-based innovation, and practice environment) will be incorporated into the conceptual framework of the study. A diagram of the model is presented in Figure I.

Evidence-based innovation is the first element that change agents should evaluate as regards the perception of potential adopters vis-a-vis their views on how the innovation was developed (e.g., credibility of the developers, rigor of the innovation process, and transparent and free from conflict of interest), in conjunction with the attributes (characteristics) of innovation, such as its relative advantages, complexity, compatibility, trialability, clarity, and user-friendliness (Graham & Logan, 2004). The evidence developed by credible sources is more likely to be applied. In contrast, the evidence that is not compatible with usual practice, or is not well-suited with cultural

values, is unlikely to be adopted (Haines, Kuruvilla, & Borchert, 2004). By understanding the view of potential adopters of evidence-based innovation, the change agent can clarify misconception, address negative perceptions, and promote attributes viewed as positive.

Potential adopters are those whose behavior or practices are targeted for change. Patients, clinicians, and other policymakers in the system can be potential adopters of evidence-based practice. The OMRU directs policymakers to identify the potential adopters, and to then explore their attitudes, knowledge, and motivation for adopting the evidence, skills, and new practice protocol (Logan & Graham, 1998). In this study, potential adopters include Thai nurses who are working on a surgical ward and have experience taking care of older adults. Nurses' awareness, needs, implementation skills, context, knowledge, attitude, and their perceived barriers and facilitators will be assessed. To indicate a gap between present practice and the requirement for innovation adoption, current practice related to pain assessment and management will be determined by "Pain in Older Adults Nursing Evidence-based Practice Questionnaire".

Practice Environment exerts its influence on the process of research transfer and utilization in practitioners, researchers, and policymakers (Graham & Logan, 2004). It influences the success of research use (Estabrooks, 2003). The practice environment can be categorized into four factors: structural, social, patient, and other situation-specific factors (Logan & Graham, 1998). The structural factors include the setting's decision making structure, rules, regulations, official policies, physical structure, workload, available resources and supplies. Social factors involve politics, personalities, local champions or advocates of EBPs, culture, and belief systems within the setting. Patient factors trigger the demand for evidence-based practice. They may also stimulate practitioners to adopt innovation or to comply with evidence-based recommendations. Other situation-specific factors are the setting that may impact the adoption of innovation, such as the medico-legal climate.

To date, no instrument suitably captures the concepts from OMRU. Therefore a new instrument using concepts from OMRU must be developed.

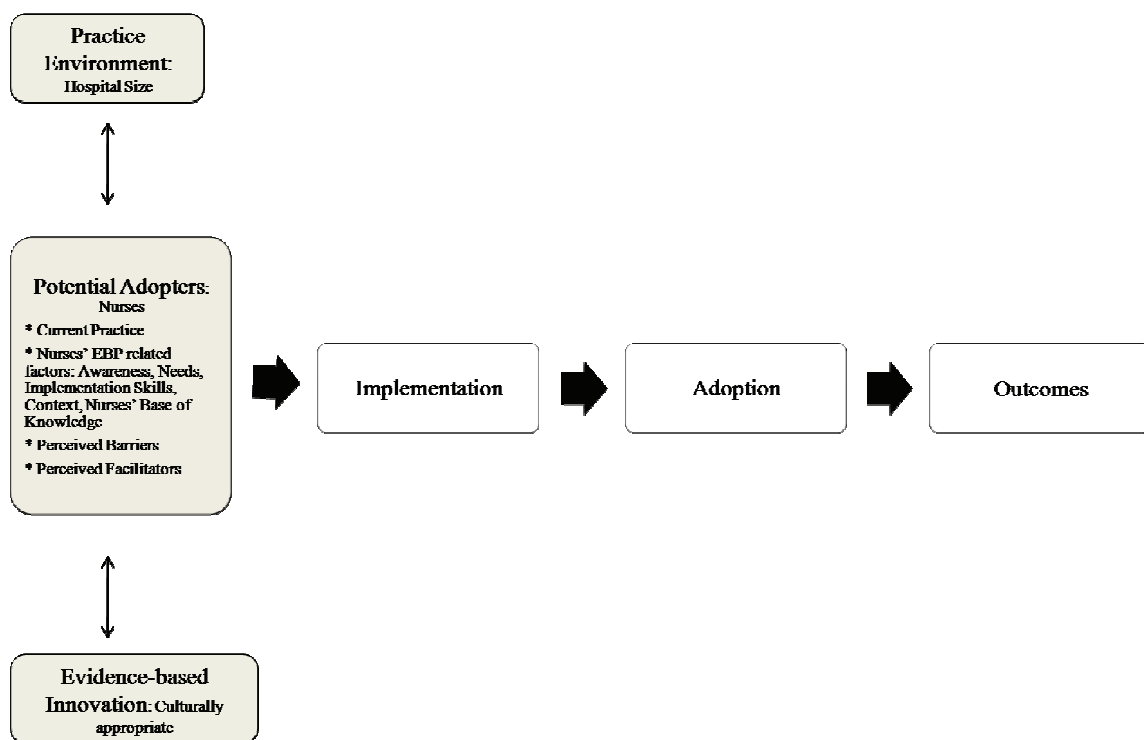


Figure 1 Conceptual Framework of Current Practice, Perceived Barriers, and Perceived Facilitators of Thai Nurses on Using the Acute pain EBP in Older adults. Adapted from the Revised Ottawa Model of Research Use (Graham & Logan, 2004)

The review of literature related to current practice, perceived barriers and perceived facilitators of Thai nurses concerning the use of evidence-based practice on pain assessment and pain management in older adults was completed based on concepts of the Ottawa Model of Research Use (OMRU). Three reviewed topics are as follows: (1) potential adopters (nurses), including: nurses' EBP related factors (i.e., awareness, needs, implementation skills, context, and knowledge), nurses' current use of acute pain EBPs, perceived barriers to using EBPs, and perceived facilitators for using EBPs; (2) evidence-

based innovation (acute pain EBPG in older adults): evaluation of the cultural appropriateness of acute pain EBPG; and (3) practice environment (hospital): hospital size.

Potential Adopters

Potential adopters refers to the practitioners involved in using the innovation (Hogan & Logan, 2004). It can be defined as persons who influence the use of evidence-based practice in healthcare settings, such as nurses, physicians, and other healthcare providers. Potential adopters in this study are nurses who work on surgical or orthopedic wards and have experience giving care to older adults suffering from postoperative pain. Potential adopters can also be described in terms of the nurses' current practice, as well as characteristics such as knowledge, awareness, needs, implementation skills, context, perceived barriers, and perceived facilitators.

Characteristics of the EBPs Nurses: Awareness, Needs, Implementation Skills, Context, and Sources of Knowledge

Nurses' Awareness, Needs, Implementation Skills, Context, and Sources of Knowledge

Nurses' *awareness, needs, implementation skills, and context* are the characteristics of adopters (nurses) using EBPs. *Awareness* is the act of "taking account" of an object or state of affairs. It is not a passive activity, because the individual has to gain his/her awareness from behavior that he or she initiates (Rogers, 2003). Nurses' awareness is defined as an ability of the nurse to know and understand that pain assessment and pain management in older adults EBPs do exist. Awareness can serve as change stimulus for initiating EBP changes (Leasure et al., 2008). Awareness is also the first thing that nurses should have before deciding to adopt the EBPs (Kulier, Gee, & Khan, 2008).

Needs influence nurses to believe that the innovations, such as pain EBPs, are required to solve a problem in their practice setting (Carlson, 2008). If nurses do not feel

the need of using EBPs in clinical practice, they may not feel their practice needs to be changed. *Implementation skills* are the abilities of nurses to apply or carry knowledge into practice. *Context* is a setting or environment in which nurses practice. Little is known about how these characteristics impede or facilitate the implementation of EBPs in Thailand. Therefore this is an important area for study.

Knowledge is defined as “ a familiarity, awareness, or understanding gained through experience and study” (Pickett, 2000). Knowledge base is “collections of facts, assumptions, beliefs, and heuristics that are used in combination with database to achieve desired results” (McGraw-Hill staffs, 2003). Although knowledge does not itself lead to changing practice, health care providers engaging in regular reading of journals may encourage an adoption of EBPs (Leasure et al., 2008). Easy access to sources of knowledge, such as literature search programs (PubMed, CINALH, or Ovid), libraries, and journals, is found to increase the adoption of EBPs. The literature offers few studies on the kinds of knowledge that nurses use in practice (Estabrooks, 1998; Gerrish et al., 2007). Little is known about type of knowledge nurses use in Thailand. Thus, there is a need to describe Thai nurses’ knowledge related to pain assessment and management in older adults and its relationship to adoption of EBPs.

Nurses’ Current Use of Acute Pain EBPs

Currently there are a large numbers of acute pain studies by healthcare professionals, but few address postoperative pain in older adults. The review of literature of postoperative pain in older adults from 1992 to April 2004 by Prowse (2007) found only 37 such studies. The systematic reviews of current nursing practice related to postoperative pain in older adults, from 1999-January 2009, revealed that out of 45,113 postoperative studies, only 68 mention current nursing practice related to postoperative pain in older adults. The paucity of older adults’ postoperative pain studies may be related to the lack of awareness of postoperative pain among healthcare providers, along

with the lack of knowledge of age-related changes in older adults that contribute to pain alteration.

The studies of postoperative pain in older adults were frequently found on surgical or orthopedic wards where high pain intensity occurred (Coll & Ameen, 2006; Glindvad & Jorgensen, 2007; Herr et al., 2004; Titler et al., 2009; Titler et al., 2003). Few studies focus on minor surgery in older adults, such as cataract surgery (Henry, Navarro, Jun, & Annaberdyev, 2006). In both inpatient and outpatient settings, nurses are the most likely group to improve pain outcomes in older adults (Prowse, 2007). However, the evidence from medical abstractions established that nurses who work in acute pain settings are not routinely assessing the location of pain, and that patients lack pain assessment in first 24 hours, and lack pain assessment after administered of analgesics (Herr et al., 2004). Deficiencies in pain documentation were also found in the outpatient setting. Henry and colleagues (2006) reviewed the pain level of 135 cataract surgery patients; they found that 21 percent reported pain, and nine percent reported medium to severe pain. Sixty two percent of documentation notes found no pain assessment record. The lack of pain documentation demonstrated that a quality improvement program was needed. Hence, pain as ‘the fifth vital sign’ was implemented in this outpatient setting. After that, pain assessment documentation increased to 95 percent.

Nurses need to know the varieties of pain assessment tools to properly select the evidence-based tools for use in older adult patients (Schofield et al., 2008b). Nurses also need to be aware that self-assessment of pain is the gold standard for assessing pain in older adults (Pautex & Gold, 2006). Self report of pain can be used effectively in mild to moderate cognitively impaired older adults, and if older adults cannot communicate their pain using self report, an observational tool can be used (Herr, Bjoro, Steffensmeier et al., 2006).

Pain management practices by nurses are commonly found to be ineffective. An ethnographic study of pain management practices in older adults found that nurses were

less likely to ask about older adults' analgesic needs, and frequently did not offer adequate information regarding pain management intervention and analgesic administration (Brown & McCormack, 2006). In Thailand, nurses refused to give pain medication to surgical patients as requested due to the many demands of nursing activities (Poomnikom, 2000). Supporting programs that improve healthcare professional skills related to pain assessment and management are needed to improve pain management in older adults (Brown, 2004).

Various nursing practices were found to improve quality of pain care, such as the nurse case manager model and multidisciplinary teams. Palese and colleagues (2005) found that when patient care was based on the nurse case manager model, patients perceived lower level of pain. Using multidisciplinary teams is another approach to improve quality of pain. In the U.K., multidisciplinary acute pain teams (APTs), including perhaps physicians, nurses, pharmacists, and psychologists, take main responsibility for the management of pain in an acute care hospital (McDonnell, Nicholl, & Read, 2003a). Although the APTs were advocated in many U.K. reports as a way to improve quality of postoperative pain care in acute care hospitals (Royal College of Anaesthetists, 2000), the result of systemic review and meta-analysis indicated that there is inadequate evidence to support the effectiveness of APTs on postoperative outcomes (McDonnell et al., 2003a).

In Thailand, various researchers investigated pain in acute care settings (Chanvej et al., 2004; Khlongyant, 2001; Poomnikom, 2000; Sanansilp et al., 2002), but few studies investigated pain in the older adult population. A study of nurses' current practices related to pain in older adults is needed in order to understand phenomena of care in older adults in Thailand.

Nurses' Perceived Barriers to Using EBP

Barriers are something that obstructs or impedes (Houghton Mifflin Company., 2002). According to Funk and colleague (1991), barriers to RU consist of four components: (1) characteristics of the potential adopter, (2) characteristics of the organization, (3) characteristics of the innovation, and (4) characteristics of the communication. The Funk's barriers to RU concept has been widely adopted by researchers since 1991, despite criticism for focusing on research findings more than the broader definition EBPs (Gerrish et al., 2007).

Perceived barriers are defined as the perception of the nurse regarding obstacles that prevent him or her from using EBPs. Various barriers to EBPs cited by nurses, physicians, and other health professionals include: lack of knowledge regarding EBP strategies; misperceptions or negative views about research and evidence-based care; lack of belief that EBPs will result in more positive outcomes than traditional care; voluminous amounts of information in professional journals; lack of time and resources to search for and appraise evidence; overwhelming patient loads; organizational constraints, such as lack of administrative support or incentives, or demands from patients for a certain type of treatment; peer pressure to continue with practices that are steeped in tradition; and inadequate content and behavioral skills regarding EBPs in educational programs (Melnyk, 2002; Melnyk, Fineout-Overholt, Stone, & Ackerman, 2000). The most frequently cited barriers to nurses' use of research include lack of time, limited access to resources to seek evidence, and poorly developed search and critical appraisal skill (Hutchinson & Johnston, 2006). In order to formulate a framework of barriers that affect practitioner adherence to guidelines, a review of 5,658 articles and a selection of 76 studies related to EBPGs was conducted, and it found that there are three main categories of EBPs barriers, including: 1) knowledge and lack of awareness (e.g., lack of familiarity with guidelines, guideline accessibility); 2) attitudes (e.g., lack of confidence in the guideline developer, lack of outcome expectancy that guidelines will be

effective with their patient population, and lack of self-efficacy or motivation to perform the guideline recommendations); and 3) behaviors (e.g., the inability to incorporate patient preferences into the clinical decision-making process) (Cabana et al., 1999).

Major barriers associated with the implementation of evidence based practice in pain management in acute care facilities have been examined. A study of acute pain treatment for older adults hospitalized with hip fracture found that the top five potential barriers to acute pain treatment in older adults were: (1) difficulty communicating with physicians when the type or dose of prescribed analgesics needs to be evaluated or changed, (2) difficulty contacting physician, (3) lack of consultation with peers, (4) lack of knowledge regarding medication use and safety, and (5) the need to convert drugs to equivalent dosages (Titler et al., 2003). In the postoperative setting, perceived barriers to pain assessment and reassessment that are often cited by staff are (1) working environment is not flexible, (2) decision-making ability of nurses, (3) lack of leadership support, and (4) nurses are not comfortable using research (Bucknall et al., 2001; McCaughan et al., 2002). In implementing the Quality Improvement (QI) projects related to pain in various settings, found barriers included lack of administrative support and staff resources to work on QI and collect data, reliance on guidelines distribution in lieu of direct staff contact, staff turnover, and resistance to change (Dahl et al., 2003; Deyo, Schall, Berwick, Nolan, & Carver, 2000; Weissman et al., 2000).

Although many researchers (Cadmus et al., 2008; Carlson & Plonczynski, 2008) suggest moving beyond barriers to identify the successful implementation, identification of barriers related to EBPs for specific topics and in developing countries are still needed.

Nurses' Perceived Facilitators for Using EBPs

To overcome barriers in implementing EBPs, facilitating conditions (i.e., support and encouragement from administration, time to critically appraise studies and implement their findings, and clearly written research reports) need to be supported in order to

enhance EBP (Omery & Williams, 1999). In addition, a recent study with advanced practice nurses revealed that mentorship in EBPs was a key factor for implementing evidence-based care (Melnyk & Fineout-Overholt, 2002). The use of change agents at the local and organizational levels is found to surmount barriers (Baltic et al., 2002; Cleeland et al., 2003; Weissman et al., 2000). Facilitating conditions believed to specifically affect the use of EBPs guidelines include: organizational capacity for change that includes strong support and interest at all levels of leadership; implementation infrastructure such as adequate resources and time; characteristics of the health care team, such as shared vision and mission; guideline characteristics, such as the importance of the guideline to the clinician; and its credibility (Solberg et al., 2000). A systemic process for organization change, such as one outlined with a research utilization approach, is advisable for conquering barriers (Idell et al., 2007).

Several facilitators associated with the implementation of evidence-based practice related to pain management in acute care settings were described. Integrating evidence-based pain management into organization and unit policies, procedure, standards, pathways, and documentation systems is strongly recommended by various researchers (Dufault, 2001, 2004; Dufault & Sullivan, 2000; Titler & Everett, 2001; Titler et al., 2003). Grand pain rounds as well as posters placed on the unit are found to increase knowledge regarding pain management, along with the improvement of nurses' knowledge related to pain change practice patterns (i.e., improved pain reassessment) (Idell et al., 2007). Vaughn and colleagues (2002) studied organizational predictors of adherence to ambulatory care screening guidelines, and they used five organizational factors (i.e., clinical emphasis, organizational capacity, professionalism, patient population, and urbanicity) as factors to predict the adherence to the ambulatory care screening guidelines. They found that said organizational factors influence the CPG adherence in a large multi-setting sample.

The studies of perceived facilitators of EBPs are dominated by knowledge from developed countries. In Thailand, where resources are scarce, nurses may perceive different other facilitators. Therefore the study related to Thai nurses' perceived facilitator to EBPs is needed.

Practice Environment

The practice environment influences the successful use of EBPs (Estabrooks, 2003). The practice environment consists of various factors such as decision-making structure, beliefs and values within the organization, norms, practices, rules and policies, and resources (Logan, Harrison, Graham, Dunn, & Bissonnette, 1999). It may include other resources that constitute either barriers to or supports for adoption of pain EBPs, such as Acute Pain Services, or the presence of pain experts in the practice environment. A qualitative study to explore barriers or facilitators toward implementing EBPs was conducted in the Veterans Health Administration (VHA) Northwest Network. It revealed that, the participants in the six medical centers in the United States often described similar barriers and facilitators, despite wide variations among size, type (primary or tertiary), intervention(s) selected, and the number and types of clinical and support staffs. At some facilities the barriers to successful implementation related to the intervention process, and culture played a key role (Sharp, Pineros, Hsu, Starks, & Sales, 2004). In Thailand, a practice environment related to pain assessment and pain management in older adults has never been explored. Identification of the Thai practice environment, using a qualitative approach, may provide an in-depth understanding of barriers and facilitators on using pain EBPs.

Empirical Studies of the OMRU Model

The OMRU model has been used as a conceptual framework for implementing EBP guideline into practice in various settings, such as community care, tertiary care, and long-term care (Graham & Logan, 2004; Hogan & Logan, 2004; Logan et al., 1999).

Definition of Terms

Evidence-based practice (EBP) is the conscientious use of current best evidence in making decisions about patient care (Ciliska et al., 2001; Sackett et al., 2000). It is a problem solving approach to clinical practice that enables clinicians to provide the highest quality of care in meeting the multifaceted needs of patients and their families (Melnyk & Fineout-Overholt, 2005). It is defined as the process of combining the best evidence available with nursing expertise, along with the preferences of older adults and family members.

Current Practice is nurses' reported practice related to pain assessment and management in older adults, which include pain assessment, pain documentation, and pharmacological and nonpharmacological pain management. Current practice may negatively influence the quality of care for patients suffering from pain (Carlson, 2008). For example, some nurses may not accept patient self report as the most reliable indicator of pain (Horbury, Henderson, & Bromley, 2005), may underrate postoperative pain (Puntillo, Neighbor, O'Neil, & Nixon, 2003), or may refuse to give pain medication as a patient requested (Poomnikom, 2000).

Cultural Appropriateness of the acute pain EBP is the perception of nurses toward the acute pain EBP regarding the appropriateness of using the acute pain EBP recommendations in their practice setting.

Perceived Barriers is defined as the perception of nurses related to obstacles to adoption of EBPs (Carlson, 2008). It can be defined as Thai nurses' perceptions related to persons, things, or environments that hinder the use of EBPs related to pain assessment and management in older adults.

Perceived Facilitators is defined as the perception of nurses regarding activities, people, things, or environments that support the use of EBPs.

Operational definition

Evidence-based practice is measured by the APEBPQ part I (Nurses' EBP related factors). In this study five components of EBP (i.e., awareness, needs, implementation skills, context, and sources of knowledge) were measured.

Current Practice is measured by the APEBPQ part II.A. In this study, current practice related to pain includes six components: initial, rapid pain assessment, pain assessment of cognitively impaired older adults, pain management plan, pharmacological and nonpharmacological management, evaluation of effectiveness, and pain management discharge plan.

Cultural Appropriateness of Using acute pain EBPs is measured by the APEBPQ part II.B. The APEBPQ part II. B consists of six components: initial, rapid pain assessment, pain assessment of cognitively impaired older adults, pain management plan, pharmacological and nonpharmacological management, evaluation of effectiveness, and pain management discharge plan.

Perceived Barriers are measure by the APEBPQ part III. Two measured components included barriers to research finding and barriers to changing practice.

Perceived Facilitators is measured by the APEBPQ part IV.

Summary

Three topics, potential adopters, practice environment, and evidence-based innovation, were reviewed using a systematic review approach. The gaps of each topic are as follows. Few studies in Thailand investigate pain and the use of EBPs related to pain. No study explores characteristics of nurses in Thailand related to using EBPs. Some studies in Thailand explore barriers and facilitators to RU, but there are only a few studies on EBPs. No study explores nurses' perceptions on use of EBP in specific topics such as pain in older adults. Therefore, study of Thai nurses' current practices, perceived barriers, and perceived facilitators to using pain assessment and management EBPs is

needed to provide a basis for development of future interventions to facilitate use of EBPs for pain management in older adults.

There are many EBPs models, but the most appropriate model for this study is the OMRU model. This model was used to explore current practice, perceived barriers, and perceived facilitators of adopters in using EBPs before the process of implementation. The model is used in various settings, and in both developing and developed countries. Therefore, it can be used as a conceptual model to explore the use of EBPs related to pain assessment and pain management in Thailand. However, no instrument has been developed to capture the concepts from the OMRU. Therefore instruments were identified based on OMRU concepts for this study.

CHAPTER III METHODS

Design

A mixed method, a descriptive exploratory survey and a qualitative content analysis, were used to describe Thai nurses' perceptions of current practice, perceived barriers, and perceived facilitators related to evidence-based practice in postoperative pain in older adults.

Setting

This study was conducted in Thailand. There are 1,339 Thai hospitals which can be categorized into two types: public (N=990) and private (N=349) (Bureau of Policy and Strategy, 2007). Public hospitals funded by the Thai government include hospitals under the Ministry of Public Health (MoPH) (N=876), along with hospitals under other auspices (N=114), such as Ministry of Education (MoEd) (university affiliated), Ministry of Defense, Ministry of Interior, Bangkok Metropolitan, and state enterprises. In addition, public hospitals located throughout five regions of Thailand (Bangkok, North, Northeastern, Central, and Southern) provide service covering primary, secondary, and tertiary medical care. In Bangkok, an urban area, there are 59 public hospitals (six medical-school hospitals, 19 specialized hospitals, 29 general hospitals and five community hospitals) and 102 private hospitals (one medical-school hospital, and 101 general hospitals). The other four regions (North, Northeastern, Central, and Southern) have 864 public hospitals (five medical-school hospitals, 40 specialized hospitals, 25 regional hospitals, 70 general hospitals, and 724 community hospitals) and 244 general private hospitals. All general private hospitals in the four directional regions of Thailand are located in urban areas, while 140 public hospitals are located in urban areas and 724 public hospitals are located in rural areas. Hospitals under MoPH and Hospitals under MoEd have major responsibility for healthcare services to Thai people; accordingly, public hospitals under these two Ministries were included in this study.

Hospitals in Thailand can also be categorized by bed size and hospital level: small (Community hospital) is defined as less than or equal to 60; medium (General hospital) is defined as 61-500; and large (Regional hospital) is defined as greater than 500 (Wibulpolprasert, 2004). In this study, the researcher was interested in describing current practice, perceived barriers, and perceived facilitators of Thai nurses on using evidence-based practices in pain assessment and pain management in older adults. Pain assessment and management is focused on postoperative pain. Consequently, the settings of this study should be hospitals that performed surgery upon older adults. In Thailand, there are 185 hospitals with 90 or more beds that have facilities that can perform surgery in older adults, with 176 hospitals under MoPH and 9 hospitals under MoEd. Specialized hospitals (i.e., children hospitals, skin hospitals, drug dependence treatment centers, psychiatric hospitals, health promotion hospitals), hospitals of less than 90 bed size, or settings without surgical facilities were excluded from this study due to their lack of surgical services for older adult.

Sample

There are two levels of Thai nurses: professional nurse and technical nurse. Professional nurses spend four years in their program, while technical nurses spend two years to complete their program. There are 116,104 nurses in Thailand: 95,834 professional nurses, and 20,268 technical nurses (Bureau of Policy and Strategy, 2004). 84,835 of nurses work at hospitals under MoPH and 8,496 nurses work at hospitals under MoEd. The population of this study includes professional or technical nurses, employed at a study organization, who have experience taking care of older adults undergoing surgery and working on the study unit (surgical ward or orthopedic ward) 50% or more of the time. A previous Thai nurse survey study found that approximately 13.5 % of Thai nurses worked in a surgical or orthopedic ward (Just, 2008). Therefore, Thai nurses who

are eligible for this study number 12,600 (professional nurses=11,453, technical nurses=1,147).

Sample Size Determination

Thailand has four regions (e.g., Central, Northeastern, Northern, and Southern), plus Bangkok is the capital. Multistage sampling or geographical cluster sampling was used in this study. Beginning with dividing nurses into 5 clusters by geographic area: Bangkok, Central, Northeastern, Northern, and Southern), each cluster contains two hospital groups: hospitals under MoPH, and hospitals under MoEd.

The most applicable approach to determine sample size for a quantitative study is to conduct a power analysis (White, 2009). Power analysis uses statistics to determine an acceptable sample size to detect true effects. Statistical power depends on three valuable parameters: (1) the significance level (α), (2) the size of the sample used for the test, and (3) an effect size (Faul, Erdfelder, Lang, & Buchner, 2007). In this study, the Power and Precision™ software program (Borenstein, Cohen, & Rothstein, 1997) was used to conduct power analysis for a one-way fixed effects analysis of variance with three levels of years of nursing experience (1-10 years, 11-20 years, and more than 21 years). The criterion for significance (α) was set at 0.05. The analysis of variance is nondirectional (that is, two tailed), which means that an effect in either direction will be interpreted. Nurses' education had three levels, with 70 cases per level and a total of 210 cases. The effect size (f) is 0.25 (medium effect), which yields power of 0.90.

The sample size of 210 was adjusted for response rate. From the previous survey study of Thai nurses, the response rates were 47.8 percent (Sindhu & Pookboonmee, 2001), 56.8 percent (Sae-Sia et al., 2008), 73 percent (Assalee, Thosingha, & Honghern, 2004), 77.7 percent (Tiloksakulchai, Apanakapant, & Karnchanakunakorn, 2000), and 78 percent (Just, 2008), with an average of response rate 65 percent. The adjusted response

rate, as recommended by Bartlett and colleague (2001), was calculated based on the formula:

$$N_a = N_s/RR$$

Where N_a = an adjusted sample size for response rate

N_s = the sample size (210)

RR = the anticipated return rate (65 percent, an average of response rate from five studies)

Therefore, an adjusted sample size for response rate and the expected questionnaires for distribution to nurses was 347. The sample size of 347 was adjusted for 10 % missing data. Thus total sample size of this study was 380 nurses.

In this study, a one factor MANOVA was conducted to determine the effect of the three levels of year of nursing experience (1-10 years, 11-20 years, and ≥ 21 years) on the six dependent variables – nurses' EBP related factors, current practice, evaluation of the cultural appropriateness, perceived barriers, perceived facilitators, and practice environment subscale scores. To select the hospitals, a stratified and cluster sampling method with probability proportion to size (pps) was used. The primary sampling units (PSU) were hospitals, and the secondary sampling units (SSU) were nurses. 889 hospitals were stratified by hospital affiliation. Hospitals under MoEd were stratified as one hospital stratum at a national level, and two hospitals per stratum were selected. Hospitals under MoPH were stratified into 5 regional strata, and three hospitals per regional strata were selected. This stratified sampling results in 6 strata and 17 selected hospitals (PSUs). Within each stratum, a simple random sampling was used to select hospitals with 90 or more beds and also equipped with surgical facilities. Within each selected hospital, the number of nurses was proportionally allocated in order to reach a required sample size ($N=380$), see Figure 2.

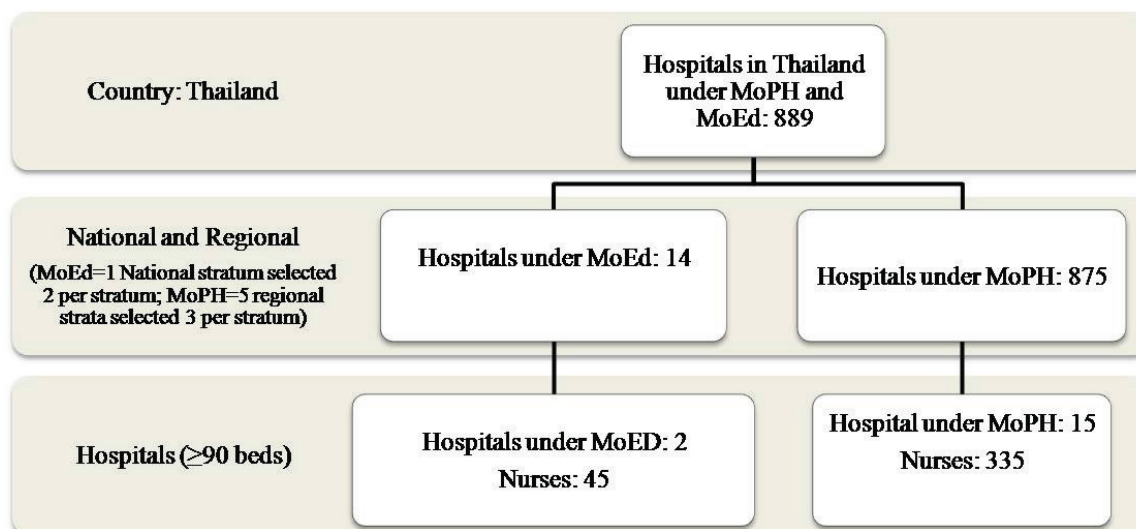


Figure 2 Sampling Strategy Plan to Obtain Nurse Subjects

After sending the invitation letter asking for a hospital's cooperation to participate in this study, two hospitals under MoED and seven hospitals under MoPH were excluded from this study. To conducting research at two hospitals under MoED, one hospital requested to have one of its staffs to be a dissertation committee member. The request was not practical as the followings: (1) throughout the process of dissertation development, the dissertation contents were rigorously supervised by five committee members in the US who donated their time and effort to develop this dissertation. To add one committee member in order to get permission for data collection might not sound ethical and appropriate, (2) the dissertation defense was planned to conduct in the US and committee members needed to present at the day of the dissertation defense. The committee from Thailand might not be able to present at the defense date due to the lack of travelling budget for research committee from Thailand to the US. Another hospital

under MoED requested for data collection cost which was over the research budget. Therefore the two hospitals under MoED were excluded from this study.

Seven hospitals out of 17 hospitals under MoPH were also excluded from this study. The reasons for excluding were the declination for invitation letter (2 hospitals), the requested for data collection cost (1 hospital), and the unresponded for the invitation letter (4 hospitals). As a result, only eight hospitals under MoPH participated. Data collection was performed during October 2009-January 2010. A total of 240 nurses from MoPH hospitals were invited to participate to this study. Two hundred and thirty-six nurses completed and returned the survey. The sample size of 236 nurses yielded power of 0.90. The sampling strategy to obtain nurse subjects after hospital contact was shown in Figure 3.

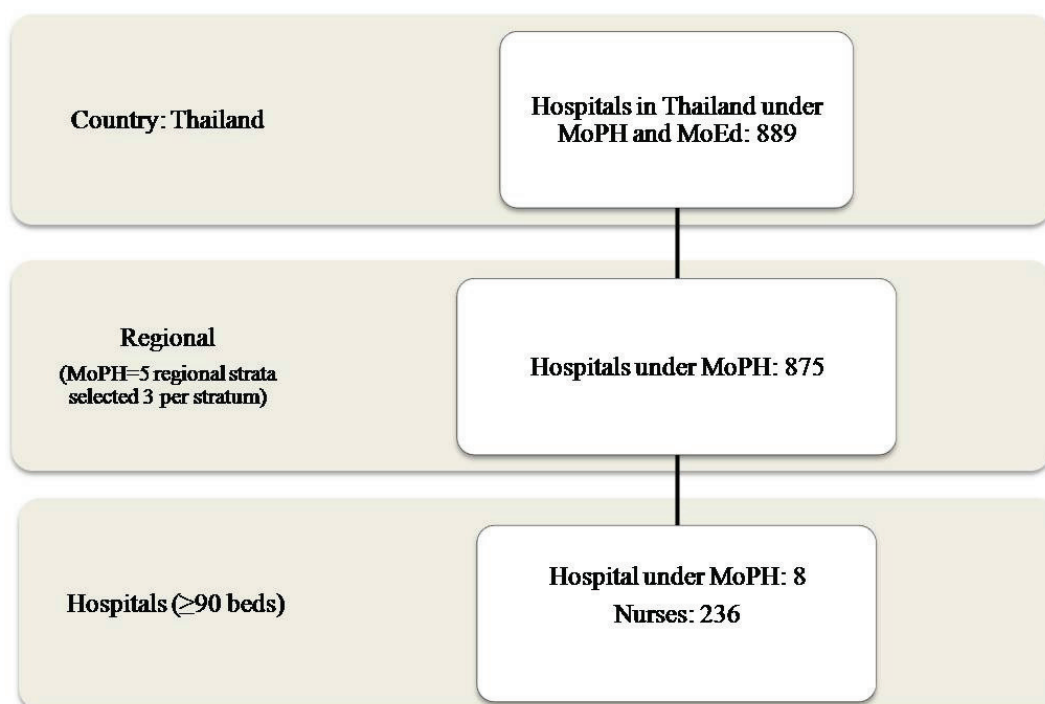


Figure 3 The Sampling Strategies to Obtain Nurse Subjects After Hospital Contact

Variables and Instruments

Acute Pain Evidence-based Practice Questionnaire for Gerontological Nursing (APEBPQ)

Acute Pain Evidence-based Practice Questionnaire for Gerontological Nursing (APEBPQ) was developed from the concepts from the OMRU and the works of various researchers (Adams, 2008; Gerrish et al., 2007; Herr, Bjoro, Steffensmeier et al., 2006). The OMRU recommends assessing barriers and facilitators to research use related to potential adopters, evidence-based innovation, and practice environment. Currently, few reliable and valid tools are available for capturing the key concepts of the OMRU (Hogan & Logan, 2004), and none of them explore the use of pain assessment and pain management in older adults. Therefore, the APEBPQ was developed. The APEBPQ has 122 items and five parts: (I) nurses' EBP related factors, (II) current practice on using pain EBPs and cultural appropriateness of using pain EBPs, (III) barriers to EBPs, (IV) facilitators to EBPs and (V) demographic data.

Part I, nurses' EBP related factors, modified from Adams (2008) and Gerrish and colleague (2007), has two sections: (1) awareness, needs, implementation skill, and context (Adams, 2008), and (2) base of practice knowledge (Gerrish et al., 2007). The first section has 21 items, and each item was scored on a 5-point scale from strongly disagree (score 1) to strongly agree (score 5). The second section has 18 items, and each item was scored on a 5-point scale from never (score 1) to always (score 5). The test of internal consistency (Cronbach α) of section one was tested by Adams (2008), with α value of .86, .82, .67, and .60 respectively for awareness, needs, implementation skill, and context. In this study, Cronbach α value was .73, .85, .64, and .49 respectively for four subscales of section one. In section two, Cronbach α value was .79 (Gerrish et al., 2007) and .85 for this study.

Part II, current practice related to pain assessment and management in older adults, is selected from the recommendations of "Evidence-based Practice Guideline:

Acute Pain Management in Older Adults” (Herr, Bjoro, Steffensmeier et al., 2006). It consists of two sections: (A) current practice on using EBPs, and (B) cultural appropriateness of using pain EBPs. This is the most current guideline focusing on acute pain in the older adult population. It was used as a tool to promote the use of acute pain in older adults in various settings, such as acute care and hospice (Fine, 2008; Herr, 2009; Titler et al., 2009). The guideline was tested for its applicability in Korea (Son & Park, 2006). The results showed several recommendations related to ‘pain assessment tools in older adults’, ‘education of pain assessment’, and ‘drugs to avoid or use with extreme caution’ with lower scores. The researchers explained that low score of the recommendations may be due to nurses’ lack of knowledge related to pain management in older adults. They suggested that the study of the applicability of the guideline will be used as baseline data for tailoring guideline implementation in Korea. In Thailand, the state of science related to pain assessment and management in older adults is very limited. The current practice of nurses related to pain assessment and management in older adults is unknown, and no research tool in Thailand is available to capture current practice of nurses. Therefore, key recommendations from ‘EBPG: Acute Pain Management in Older Adults’ were selected to develop indicators that measure Thai nurses’ current practice related to pain assessment and management in older adults.

Fifty-three items are incorporated into sections A and B of APEBPQ. Both sections A and B consist of six subscales: initial, rapid pain assessment; pain assessment of cognitively impaired older adults; pain management plan; pharmacological and non-pharmacological management; evaluation of effectiveness; and pain management discharge plan. Each item on section A was scored on a 5-point scale, from not applicable (score 1) to all of at the time (score 5) and then the score was converted to not applicable (score 0) and all of the time (score 4). Each item on section B was scored on a 5-point scale, from not appropriate at all (score 1) to extremely appropriate (score 5). In this study, internal consistency (Cronbach α) was tested with α value of 0.85, 0.73, 0.81, 0.74,

0.84, and 0.87 respectively for six subscales of section A and with α value of 0.86, 0.87, 0.86, 0.83, 0.89, and 0.91 respectively for six subscales of section B.

Part III, barriers to EBPs explores nurses' perception of the confidence they feel about overcoming barriers to achieving evidence-based practice. The Gerrish (2007) original scale consisted of 14 items, one open-ended question, and two subscales: (1) barriers to finding research (9 items), and (2) barriers to changing practice (6 items). In this study, per the recommendation from previous studies, the item "Research reports or research articles are published in English, thus creating a barrier" was added in the 'barriers to finding' research subscale because it is a specific barrier for nurses who use English as a second language. Thus, final barriers to EBPs consisted of 15 items. Each item was scored on a 5-point scale, from strongly agree (score 5) to strongly disagree (score 1). The test of internal consistency (Cronbach α) was tested by Gerrish (2007), with α value of 0.84 and 0.81 respectively for barriers to finding research and barriers to changing practice subscale. In this study internal consistency (Cronbach α) was 0.88 and 0.81 respectively for barriers to finding research and barriers to changing practice.

Part IV, Facilitators to EBPs explores the extent to which nurses' colleagues may support nurses' practice. It consists of four items and one open-ended question. Each question was scored on a 5-point scale, from never (score 1) to always (score 5). Internal consistency (Cronbach α) for the facilitators to EBPs was 0.73 (Gerrish et al., 2007) with Cronbach α of 0.77 for this study.

Part V, Demographic data consists of 10 items.

Free text response or open questions were also provided at the end of each section of the APEBPQ in order to allow respondents to provide more in-depth response. Free text comments can inform future questionnaire development by introducing new items for future inclusion, or a poorly constructed item for discard (Rattray & Jones, 2007). The content validity of the APEBPQ was established by three experts in evidence-based practice in pain, and then was translated into Thai language. Detailed information of

concepts and original sources to develop the APEBPQ and psychometric properties of the APEBPQ are shown in Appendix B.

Translating the Acute Pain Evidence-based Practice Questionnaire for Gerontological Nursing Into Thai Language

Cross-cultural research has become an area of concern for researchers, and its tremendous growth over the past decade demonstrated an interest in understanding health phenomena among different cultures and groups of people (Willgerodt, Kataoka-Yahiro, Kim, & Ceria, 2005). Research is considered to be cross-cultural when it compares behaviors across two or more cultures, when it is conducted with a culture different from that of an investigator's, and/or when it uses instruments that were developed and intended for use in a different culture (Rogler, 1999).

Typically, instruments have been developed from the perspective of the cultures under the investigation (Flaherty et al., 1988). Problems related to meaning of concepts, instrument validity, and reliability are concerned among researchers who use instruments that are developed in different cultures. Concepts such as quality of life, gender, disease, severity, and caregiving can have different nuances of meaning across cultures and within different ethnic groups in the same society (Strickland, 2003). Since culture influences people's perceptions and health practices, it cannot be assumed that theories or instruments developed in one culture have the same relevance across cultures (Hilton & Skrutkowski, 2002). In addition, a questionnaire that is reliable in one culture cannot be assumed to be the same in another culture (Meadows, 2003).

An increasing number of multinational studies are conducted within the field of health care. Since most instruments are originally developed in English, an increasing number of instruments have been translated to allow for cross-cultural comparisons (Hunt et al., 1991). Translating questionnaires for cross-cultural research is fraught with methodological pitfalls, such as colloquial phrases, jargon, idiomatic expression, and

clarity of wording and word meanings commonly used in English. These pitfalls affect the questionnaires' validity. Some flaws are difficult to detect when they stem from inconsistencies in meaning, and they lead to incorrect conclusions that cultural differences are substantive (Sperber, 2004). It cannot be assumed that a particular concept has the same relevance across cultures. Therefore, simply translating an English version word-for-word into another language is not adequate to account for linguistic and cultural differences. Developing a culturally equivalent translated instrument by incorporating a familiarity with basic problems of linguistic adaptation, cultural constructs, and psychometric changes is required in the translation process (Hilton & Skrutkowski, 2002). In addition, in the process of adapting instruments in cross-cultural studies, some words or the order of questions may be changed in order to maintain the equivalence of the instruments. The alteration of a word or order of a question can impact how people answer and may affect the reliability and validity of an instrument. Therefore, psychometric properties of the instrument should be retested when using an instrument in a different culture.

To ensure the quality of the translation, the process of translating should rigorously follow the guideline recommendations for good translation practices, and the issues of semantic, conceptual, and normative equivalence of the instrument should be monitored through the process of translating or adapting the existing instrument (Hilton & Skrutkowski, 2002; Peters & Passchier, 2006).

Issues of Semantic, Conceptual, and Normative Equivalence

Equivalence is a form of validity that refers to the agreement among two measurements of the same construct (Chang, Chau, & Holroyd, 1999). The instruments are considered to be culturally equivalent when all forms of bias or social norms specific to the culture of origin have been removed (Smit, van den Berg, Bekker, Seedat, & Stein, 2006). Equivalence cannot be assumed unless instruments perform similarly (Strickland,

2003). There are eight different types of equivalence proposed by various cross-cultural researchers (Behlings & Law, 2000; Hilton & Skrutkowski, 2002; Meadows, 2003; Peters & Passchier, 2006; Willgerodt et al., 2005). Conceptual and semantic equivalences are mentioned in almost every study related to cross-cultural research (Herdman, Fox-Rushby, & Badia, 1997). These two concepts are important issues to be addressed when dealing with adapting instruments. Another that is considered equally important as semantic and conceptual equivalence is normative equivalence. Therefore, three equivalences (e.g., *semantic, conceptual, and normative*) need to be achieved before adopting instruments to use in different language.

Semantic equivalence is the first equivalence that must be achieved. It is a key issue in achieving cultural equivalence of the instruments (Meadows, 2003). Semantic equivalence involves: (1) the choice of terms and sentence structures that ensure that the meaning of the source language statement is preserved, and that said meaning remains conceptually and idiomatically the same after the instruments have been translated (Behlings & Law, 2000; Willgerodt et al., 2005); and (2) the transfer of meaning across language (Herdman, Fox-Rushby, & Badia, 1998). Achieving semantic equivalence requires that many types of meaning are taken into account, and it can be done by two approaches - either translating an existing instrument, or creating a new instrument. Rather than develop entirely new instruments, it is sometimes possible to use or adapt an existing one or use some of its questions (Meadows, 2003).

Conceptual equivalence is another crucial method of ensuring the quality of translation of the existing instrument. Conceptual equivalence refers to the degree to which a concept exists in the same form in the source and target cultures, independent of the words used to operationalize it (Behlings & Law, 2000). Conceptual equivalence consists of three components: the definition of the concept of interest, the theories that explain the concept, and the nature of any differences between the source and the target culture.

Using this approach, the same construct is being measured in each culture (Willgerodt et al., 2005). Conceptual equivalence between the source and the target instruments is achieved when the instrument has the same relationship to the underlying concept in each culture (Herdman et al., 1998). There are three steps to achieve conceptual equivalence. First, an initial assessment of the nature of the concept in both the source and target cultures is performed. In the source culture, information on its form and content is obtained through literature reviews concerning the theoretical and the empirical aspects of the concept. In the target culture, the nature of the concept of interest is found in local literature or local instruments dealing with similar or related topics. The second step consists of consulting with an expert in the target culture in order to obtain a picture of the cultural environment in which the instrument may be employed. Last, the concept is explored via a wider representation of the general population. Since the concepts are examined from the perspective of the targets, the likelihood of capturing the targets' views about the concepts increases.

Four possible outcomes can be obtained from using conceptual equivalence. First, the domains employed in the source instrument are equally relevant to the concept in the target culture, thus indicating that the construct in the original instrument is likely to be equal in the target instrument. Second, the importance of the domains varies between the two cultures, although the domains in the original instrument are relevant conceptually in the target culture. Third, one or more domains used in the original instrument are not relevant to the concept in the target culture. Fourth, the domains of concept are wholly different in the source and target cultures.

Normative equivalence refers to the degree to which the researcher has dealt successfully with the problems created by differences in societal rules, such as the openness with which particular topics are discussed, the manner in which ideas are expressed, or the way in which strangers are treated (Behlings & Law, 2000). To deal with normative equivalence problems, researchers should attempt: (1) to develop close

relations with respondents, or using trusted agents, and/or (2) to assure the respondent of anonymity and confidentiality (e.g., confidentially keeping respondents' names, demographic data, or affiliations; not numbering questionnaires; returning respondents' questionnaire only to someone the respondents trust; and, asking sensitive questions only as necessary). In a culture with strong reticence norms, applying these practices make respondents more willing to respond openly.

Although other forms of bias in cross-cultural instruments (e.g., *construct bias*, *method bias*, and *item bias*) cannot be completely removed, the limitations should be acknowledged and openly discussed (Smit et al., 2006; Van de Vijver & Poortinga, 1997). *Construct bias* occurs when the concept under investigation differs across culture groups. *Method bias* occurs when the methods used to examine a construct are culturally unfamiliar or inappropriate. *Item bias* occurs when items of an instrument exhibit discrepancies. To overcome these biases, cross-cultural researchers should search for an appropriate instrument and ensure the cultural equivalence of the instrument (Flaherty et al., 1988).

Understanding issues of semantic, conceptual, and normative equivalence allows cross-cultural researchers to carefully monitor the quality of the translating process for an existing or developing instrument.

Types of Translation

There are two types of instruments used in cross-cultural research: an existing instrument and a developing instrument. The process of translating an existing instrument requires a shorter developmental period and lower cost than developing a new instrument cross-culturally (Hunt et al., 1991). The purpose of translating an instrument is to develop another version of the instrument with the equivalence to the original instrument (Hilton & Skrutkowski, 2002). Two types of translations, symmetrical and asymmetrical, are applied in cross-cultural research (Behlings & Law, 2000; Hilton & Skrutkowski, 2002;

Peters & Passchier, 2006; Sperber, 2004). Symmetrical translation requires the original and translated instruments to be equally familiar, and to have fidelity of meaning and colloquiality. Items are specific to the target population because they have cultural relevance and employ language expressions that are commonly used (Peters & Passchier, 2006). Asymmetrical translation emphasizes fidelity to one language, usually the original. This means that items translated into another language maintain a one-to-one correspondence between words (Hilton & Skrutkowski, 2002). The translated version therefore is often unnatural in the new language, and problems can arise if the original instrument has a history of use and the developers resist altering the content as items are translated. Before beginning translation of the instrument, it is important that the meaning of key words and expressions are clearly understood (Meadows, 2003). The disadvantages of asymmetrical translations that convey culturally inappropriate idioms and less colloquiality to the target language have led to the increase of applying symmetrical translation method in cross-cultural research (Im, Page, Lin, Tsai, & Cheng, 2004; Meadows, 2003; Small et al., 1999).

Translation Methods

To translate the cross-cultural research instrument, there are three approved types of translation methods: *one-way translation*, *forward and backward translation*, and *committee approach* are recommended by cross-cultural researchers. *One-way translation* is the fastest and cheapest method to translate an instrument, but the quality of the translation is an issue of concern. *Forward and backward translation* is the most frequently recommended or used approach within translation guidelines (Bullinger et al., 1998; Keller et al., 1998; Wagner et al., 1998). Forward and backward translation requires at least two translators, who work independently. The first translator translates the original language of the instrument into the target language, and the second translator translates the translated version back to the original language (Hilton & Skrutkowski,

2002). When discrepancies occur between the original and back translated versions, the researchers need to assess the significance of these discrepancies, and, if necessary, the translated version is modified to produce a more appropriate and adequate translation.

The last approach is the *committee approach*, or panel translations. This method has also been suggested as the best method to ensure high-quality translations (Swaine-Verdier, Doward, Hagell, Thorsen, & McKenna, 2004). This approach involves two panels with five to seven members each; one panel conducts the forward translation, and the second panel, including lay people who speak the target language only, assess the translation. A third panel, to include in a backward translation, could also be involved. Thus, the panel approach may also involve forward and back translation. The difference between the panel approach and forward and back translation is that, in the panel approach, multiple translators translated the instrument simultaneously, whereas the forward and back translation is carried out by one translator, or several translators who work independently.

Different translation techniques can be combined within one project and have been reported in the literature, such as forward and back translation, pilot-test techniques, and committee approach (Guillemin, 1995; Guillemin, Bombardier, & Beaton, 1993), or back translation combined with the committee approach (Brislin, 1970). Favorable results have been reported from using a combination of techniques, and therefore Brislin (1970) recommended that it is desirable to use multiple methods whenever possible.

The Process of Translation the Acute Pain Evidence-based Practice Questionnaire into Thai Language

The 122 items of APEBPQ were translated into Thai using a forward-backward technique (Guillemin et al., 1993; Jones & Kay, 1992). In forward-backward translation, a bilingual expert translates an instrument from an original language to a target language, and then the translated version is translated back into the original language by a different translator. The translators were persons who were bilingual in English and Thai, working

in the United States for more than 5 years, and specialist in Linguistics. After applying forward-backward translation, two English versions (i.e., original version and back translated version) of APEBPQ for Gerontological Nursing were obtained.

To ensure the semantic, conceptual, and normative equivalence of the two English version of APEBPQ for Gerontological Nursing, three Thai PhD students were recruited to provide their perspective on the two English versions of the questionnaire. First, they were asked to compare the equivalence of the two versions of scales using the content validity index (CVI), the degree to which a scale has an appropriate sample of items to represent the construct of interest (Polit, Beck, & Owen, 2007). CVI is the most widely reported measure of content validity among nurse researchers (Polit & Beck, 2006). Each PhD student was asked to rate the relevance of each item from the two versions of scales on a 4-point scale (1=not relevant, 2=somewhat relevant, 3=quite relevant, 4=highly relevant). Then each item on a scale (I-CVI) is computed as the number of experts giving a rating either 3 or 4, divided by the number of experts. This method is called the proportion in agreement about relevance. The widely cited guidelines of an acceptable I-CVI by Lynn (1986) recommended that when there are five or fewer experts, the I-CVI must be 1.00, which means all the experts must agree that the item is content valid. On the other hand, Polit and colleague (2007) argued convincingly that items with an I-CVI of .78 or higher for three or more experts could be considered evidence of good content validity. Following Polit's reasoning, in this dissertation an I-CVI of .78 was used as the cutting point. Items with an I-CVI lower than .78 would be considered candidates for revision and those with very low values would be considered for deletion.

Sixteen items that did not reach an I-CVI of .78 were modified and returned to each PhD student. The researcher met with each PhD student and used cognitive interviews to clarify the items that were not clearly understood and had failed to reach an I-CVI of .78. Cognitive interview is the method used to detect items that are not understood by respondents as intended by the survey developers (Napoles-Springer,

Santoyo-Olsson, O'Brien, & Stewart, 2006). It is the technique to ask respondents to verbalize their thoughts while answering survey questions (thinking aloud). Cognitive interviews involve four stages: comprehension, retrieval, judgment, and response (Tourangeau, Rips, & Rasinski, 2000). In the process of using cognitive interviews, after respondents understand the question, they will recall information from their past experiences. Then, the respondents decide about the item from its relevance. Last, they will formulate the answer in the format provided by the interviewer. A cognitive interviewer uses probes, the scripted or spontaneous questions are created by the interviewer, to identify types of errors made by respondents, and how they interpret and answer questions (Harris-Kojetin, Fowler, Brown, Schnaier, & Sweeny, 1999; Holliday, 2003; Knafl et al., 2007; Miller, 2003; Napoles-Springer et al., 2006; Prochaska, Leek, Hall, & Hall, 2007). After applying cognitive interviews, recommendations from each PhD student were recorded and used for modifying the scale. The modified items were sent to each PhD student to give the second rating. All 122 modified items had CVI of more than .78.

Before using the Thai version of APEBPQ for Gerontological Nursing in Thai healthcare setting, the APEBPQ was tested for content validity using the CVI method. The CVI method is a creditable method of estimating the content validity of the new or revised scale (Polit et al., 2007). As suggested by Lynn (1986) and Polit and colleagues (2007), in order to have at least three content experts incorporated in a panel of experts, three Thai nursing experts on pain and evidence-based practice were invited. To minimize bias, the questionnaire used to elicit content validity information from experts should be conducted in systematic manner (Grant & Davis, 1997). After inviting a panel of experts, an explanatory cover letter, reviewer instructions, definition of terms, and content review questionnaire were sent to each expert. The cover letter explained why the individual was selected to serve as an expert, and also included general information regarding item representativeness, relevant construct dimensions, clarity of items, and the

comprehensiveness of the entire questionnaire. The reviewer's instructions also provided information on how to complete the questionnaire review. After receiving feedback from the content expert panel, the content validity index for each item (I-CVI) and for scale (S-CVI) were calculated. The items with I-CVI less than .78 were revised or deleted. From 122 items of APEBPQ for Gerontological Nursing, 13 items were planned for deletion due to I-CVI less than .78. Generally, shorter scales are better than longer scales because they can reduce a burden on respondents. On the other hand, longer scales tend to be more reliable than shorter scales (DeVellis, 2003). However, with the purpose of developing future questions, one committee member recommended retaining all the items in APEBPQ in order to evaluate how a large group of Thai nurses reacted to the questionnaire. All 13 items were in Part II of the APEBPQ which were explored Thai nurses' current practice related to pain assessment and management in older adults. Those 13 items were selected from "EBPG: Acute Pain for Older Adults" and might be served as the practice recommendation for Thai nurses who taking care of older adults suffering from pain. Deleting these items would lose key information for future implementation of EBPG in Thailand. Thus, the final APEBPQ for Gerontological Nursing retained all items and consisted of 112 items.

After completion of the translation process, an instrument needs to be pilot tested in its translated version and within the new target population. This is very important to verify the validity and reliability of the translated version (Peters & Passchier, 2006) and the translation accuracy (Willgerodt et al., 2005). If the psychometric properties of the original and the translated version are found to be similar, the equivalence of the translation and back translation version is achieved. When no errors are found in meaning, pilot testing the translated version will be performed on target language-speaking individuals.

Ten Thai nurses were included in pilot testing. Based upon the findings of the pilot testing, the translated and/or original version was revised as necessary. Inter-rater

reliability (Cohen's Kappa), the measure of agreement, was computed to examine the stability of translation as suggested by Nunnally (1978). Values of Kappa range from 0 to 1.0. As a rule of thumb, Kappa values from 0.40 to 0.59 are considered moderate, 0.60-0.79 substantial, and 0.80 outstanding (Landis & Koch, 1977). Similarly to Altman's recommendation (1991), Kappa values less than 0.2 are considered poor agreement, 0.20 to 0.40 fair agreement, 0.40 to 0.60 moderate agreement, 0.60 to 0.80 good agreement, and 0.80 to 1.00 very good agreement. Therefore most statisticians prefer Kappa values to be at least 0.6, or most often higher than 0.7, to be considered a good agreement level. In this study, the kappa from 10 Thai nurses ranged from 0.68-0.84.

Human Subjects Protection

Both the pilot study and the main study were conducted with the approval of the Institutional Review Board (IRB-02) of the University of Iowa and the IRB of Thailand's hospitals that require the approval from their committee. Based on the requirement by the IRB-02 of University of Iowa for conducting behavioral/social science research, the respondent was provided a cover letter that contained an explanation of the research and its purpose, expectation of respondents, an offer to answer questions, information of how to contact the research team, a statement of anonymity and confidentiality, and risks and benefits. The voluntary nature of completing the questionnaire was emphasized.

Data Collection

The researcher made preliminary contact with target hospitals for information regarding the number of nurses who work at surgical and/or orthopedic wards, and the policy of each hospital regarding IRB approval. Data were collected during October 2009 to January 2010. After receiving the approval by the IRB of the University of Iowa on October 17, 2009, as well as that of the target hospitals in Thailand, the researcher mailed a package of documents to the hospital directors in order to solicit their cooperation about data collection. The documents included the following: 1) a letter soliciting the

cooperation and permission to collect data in nurses; 2) a head nurse organizational questionnaire; 3) a questionnaire package, which includes a cover letter explaining why a response is important, and a copy of the questionnaire; and, 4) a postage prepaid envelope. Each hospital director was asked for permission to collect data in his/her organization, and to provide a letter of permission to collect data. One week after sending the package to the hospital director, the researcher called the hospital director regarding the data collection permission. Currently in Thailand, to conduct research in the hospital, the approval of IRB is requested by every hospital. In each hospital, the hospital director referred the researcher to the hospital human subject committee. The committee requested the researcher submit an application for the hospital IRB approval. The IRB application process took about 1-3 months.

Seventeen hospitals were randomly selected into the study; however, only eight hospitals agreed to participate in this study. Each hospital received 30 questionnaires. As soon as the data collection permission was received, the researcher called the head nurse at each hospital to solicit his/her cooperation in completing an organizational questionnaire, as well as distributing a packet of questionnaires to nurses who work in surgical and/or orthopedic wards. Then the package of questionnaires was sent to each head nurse. The package of questionnaires consisted of two parts: a packet of questionnaires for a head nurse and a packet of questionnaires for nurses. The packet of questionnaires for the head nurse included: (1) a cover letter explaining why response is important, (2) a copy of a head nurse organizational questionnaire, (3) a postage prepaid envelope, and (4) a check for \$28 (1,000 baht) for hospital data collection. The packet of questionnaires for nurses included: (1) a cover letter explaining why response is important, (2) a copy of APEBPQ for Gerontological Nursing, and (3) a participation incentive (\$1.50 or 50 baht per person).

After the head nurse informed the staff about the study at the weekly meeting, the head nurse (or the coordinator) was to distribute the study packet to nurses who were

eligible for the study. He/She provided instructions to nurses to return a questionnaire in a sealed envelope to said head nurse within 1 week after receiving a questionnaire. Time commitment was anticipated at 30 minutes to complete the questionnaire, and there was no long-term follow-up involved. The head nurse was to collect all questionnaires and then send them back to the researcher in a sealed envelope within two weeks after receiving the package of questionnaires. The third week after sending the questionnaires, the researcher called the head nurse (or coordinator) to determine if she/he had distributed, collected, and/or sent the questionnaires back to the researcher. If he/she had not done so, the researcher encouraged her/him to send the completed questionnaire back to the researcher as soon as possible. If a package had not been returned to the researcher by the fifth week after sending the questionnaires, the researcher made one last call to see if the package had been sent. If it had been sent, the researcher thanked the head nurse for his/her help. If it had not been sent, the researcher asked about the possible date of the questionnaire being sent.

The total of 240 questionnaires was sent to eight participating hospitals. Two hundred and thirty-six questionnaires were returned with response rate of 98.8 percent.

Data Analysis

Data analysis includes two topics: data management and statistical analysis. Before performing statistical data analysis, data management is needed in order to minimize the possibility of errors. Data management includes several steps, such as coding data appropriately, entering data into a database, conducting range and visual checks, making all needed corrections, checking for duplicate records in key fields, merging data from different instruments, archiving a copy of the database in a safe and fireproof place, and limiting access to sensitive data (Peat, Mellis, Williams, & Xuan, 2005). Two types of data were analyzed: quantitative data from the self report questionnaire, and qualitative data from open-ended questions. The data from the

questionnaire were entered into a well-designed database which includes: data type, data size, permitted categories or permitted range of values, definition of pre-determined study groups, coding to identify sub-categories of variables, validation of permitted values, and codes to identify missing data. All data were done in numeric coding in order to simplify data analysis. Missing value was coded as a “.” (a full stop), because it will be treated as a missing value in all analyses. Then, all data entered into the database were verified to assure that they were correct using the ‘double entry’ method. Goldberg and colleague (2008) used the ‘double entry’ method to detect errors from several research databases at an academic medical center. They found that the ‘double entry’ method detected errors due to both mistakes in data entry and misinterpretation of the information, and ranged from 2.3 to 26.9 percent. ‘Double entry’ was also found to be the most accurate method when compared to ‘single entry’ and ‘single entry with visual checking’ (Barchard & Pace, 2008; J. R. Scott, Thompson, Wright-Thomas, Xu, & Barchard, 2008). Using the ‘double entry’ method, all data were entered onto the spreadsheet twice by two different persons; then the two spreadsheets were set to automatically compare for their mismatches. All the errors detected, along with their corrections, were recorded in the database management manual. The database was examined for outliers of data using range check. The qualitative data from open-ended question was entered into Microsoft Word 2007.

Statistical analyses, a second step for data analysis, were used as a different approach to perform statistics analysis for quantitative data (i.e., data from questionnaires) and qualitative data (i.e., data from open-ended questions). The complete quantitative database was loaded into SPSS statistics 17.0, and then statistical analyses for research questions 1 to 7 were performed. For qualitative data from open-ended questions, inductive content analysis was performed using open coding, and creating categories and subcategories.

For quantitative data, both descriptive statistics (i.e., frequency, percentage, mean, standard deviation, and rank) and inferential statistics (i.e., MANOVA) were used accordingly by type of data and research question. In questions 1, 2, 3, 4, 5, and 6 (which describe Thai nurses' EBP related factors, current practice, evaluation of the cultural propriety of Acute pain EBPGs, perceived barriers, perceived facilitators, and practice environment on using evidence-based practices for acute pain assessment and management in older adults), the descriptive statistics such as mean and standard deviation were used. In question 7 (concerning years of nursing experience) that compares the differences between groups, the MANOVA was used.

In question 4 and 5, a content analysis of the open-ended question of barriers to EBP and facilitators to EBP was performed to describe Thai nurses' barriers and facilitators toward using EBPs related to pain assessment and pain management in older Thai adults. Qualitative data were individually reviewed and coded by two researchers. After finishing coding, the two researchers had a meeting and then the coding was compared and discussed to verify for agreement.

Summary

A national survey using a descriptive exploratory survey and a qualitative descriptive design was used to describe Thai nurses' current practice, perceived barriers, and perceived facilitators toward using EBPs related to pain assessment and management in older adults. Nurses who work on surgical and/or orthopedic wards and who have experience giving care to postoperative older adults were invited to participate in this study. The sample size of 380 nurses was obtained. APEBPQ for Gerontological Nursing was used to collect the data from October 2009-January 2010. Using a stratified and cluster sampling method, with probability proportion to size (pps), 17 hospitals across Thailand were targeted for this study but only eight hospitals agreed to participate. 240 questionnaires were sent and 236 questionnaires were returned with a response rate of

98.8 percent. Quantitative data were analyzed using both descriptive statistics and inferential statistics. Qualitative data were analyzed using content analysis.

CHAPTER IV RESULTS

This study has two purposes: (1) to describe nurses' EBP related factors, current use of EBPs, perceived barriers, perceived facilitators, evaluation of the cultural appropriateness, and practice environment of Thai nurses on using evidence-based practices for acute pain assessment and management in older adults, and (2) to describe the differences of nurses' characteristics, (year of nursing experience) on perceived barriers and perceived facilitators of using EBP acute pain.

The results of statistical analyses of the study were presented by seven specific aims as follows: (1) Describe Thai nurses' EBP related factors, such as awareness, needs, implementation skills, context, and source of practice knowledge, on using evidence-based practices for acute pain assessment and management in older adults; (2) Describe Thai nurses' current use of evidence-based practices for acute pain assessment and management in older adults; (3) Describe Thai nurses' perceived barriers to using evidence-based practices for acute pain assessment and management in older adults; (4) Describe Thai nurses' perceived facilitators for using evidence-based practices for acute pain assessment and management in older adults; (5) Describe Thai nurses' evaluation of the cultural propriety of "Evidence-based Practice Guideline: Acute Pain Management in Older Adults (Herr, Bjoro, Steffensmeier et al., 2006); (6) Describe the effect of Thai nurses' hospital size (practice environment), on using evidence-based practices for acute pain assessment and management in older adults; and (7) Describe the differences of years of nursing experience (nurses' characteristics), with perceived barriers, and perceived facilitators for acute pain management in older adults.

Table 2 Thai Nurses Demographic Characteristics

Variables	N	%
Gender (n=222)		
Female	215	96.8
Male	7	3.2
Types of Hospitals (n=236)		
General Hospital	178	75.5
Regional Hospital	58	24.6
Current Role (n=222)		
Surgical Ward Nurse	123	55.4
Orthopedic Ward Nurse	83	37.4
Other	16	7.2
Education (n=222)		
TN/Diploma	11	5
RN/BSN	202	91
MSN	9	4
Age (n=222) mean=35.35; Range=23-54; SD=6.6		
20-29	29	13.1
30-39	136	61.3
40-49	46	20.7
50-59	11	5
Years of Nursing Experience (n=221)		
1-10	51	21.6
11-20	127	53.8
≥20	43	18.2
Years since most recent education (N=172)		
1-10	124	72.1
11-20	41	23.8
≥21	3	4.1
Work hours/week (N=209)		
40	56	26.8
≥ 40	153	73.2
Internet Access (N=221)		
Yes	177	80.1

Table 2 Continued

No	18.6	19.9
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Thai nurses' demographic characteristics are shown in Table 2. Almost all nurses were female (96.8%) and their mean age was 35.35 years (range=23-54; SD=6.6). More than half of them worked at general hospitals (75.5%) and currently had a role as a surgical ward nurse (55.4%). The majority of nurses had completed RN/BSN (91%), with 10-20 years of nursing experience. Almost all nurses have access to the internet at work (80.1%). Most Thai nurses had completed nursing education within 1-10 years and worked more than 40 hours per week. Almost all nurses can access the internet at work (80.1%). These demographics are typical for Thai nurses population since majority of Thai nurses are female with mean age 36 years.

Aim1 Describe Thai nurses' EBPs related factors on using evidence-based practice for acute pain assesment and management in older adults

Table 3 Ratings and Ranking of Thai Nurses' EBP Related Factors (N=236)

Item	Mean (SD)	Rank
<i>3.1 Nurses' EBP Related Factors: Awareness, Needs, Implementation Skills, and Context</i>		
Evidence-based practice is important to me.	4.27 (.65)	1
I would find evidence-based practice guidelines (developed and ready to use in acute care setting) useful to improve my practice	4.26 (.61)	2
I would find it helpful to network with colleagues who are also using evidence-based practice.	4.12 (.66)	3
For successful evidence-based nursing practice, I need information on ways to implement evidence-based practices in my setting.	4.18 (.57)	4
Someone to assist with a literature search and obtain articles would increase use of evidence-based practices in my practice area.	4.17 (.66)	5
I would find it helpful to have information on ways to evaluate the impact of evidence-based practice in my setting.	4.14 (0.57)	6
I am aware of nursing research related to pain assessment and pain management in older adults.	4.13 (0.65)	7
I am aware of evidence-based nursing practices applicable to pain assessment and pain management in older adults.	4.13 (0.55)	8
For successful evidence-based nursing practice, I need information on how to conduct literature reviews.	4.11 (0.55)	9
For successful evidence-based nursing practice, I need conveniently available educational opportunities to learn about methods for critiquing research and other types of evidence.	4.06 (0.61)	10
The majority of the times, my bosses are cooperative in the implementation of evidence-based practices for acute care.	3.95 (0.69)	11
In general, I care about evidence-based practice.	3.90 (0.60)	12
I am willing to try out new innovations based on research that I read about in nursing journals or articles.	3.89 (0.61)	13
I know where to find evidence to guide my practice.	3.89 (0.66)	14
I am aware of evidence-based practice in general.	3.85 (0.60)	15
I am aware of evidence-based practices implemented in my setting.	3.74 (0.63)	16
I understand how to implement evidence-based practice in my setting.	3.59 (0.67)	17

Table 3 Continued

I can read a nursing research report and make a sound judgment about its scientific merit.	3.57 (.66)	18
I am able to develop an evaluation plan to monitor practice improvements made through use of evidence-based nursing.	3.56 (.63)	19
I could explain evidence-based practice to a peer.	3.44 (.65)	20
I have convenient access to evidence-based practice journals related to pain assessment and pain management in older adults.	3.38 (.74)	21
<i>3.2 Sources of Practice Knowledge</i>		
Information I get from policy/procedure/guidelines	3.99 (0.67)	1
Table 3 Continued		
Information I learn about each patient/client as an individual.	3.93 (0.63)	2
Information in textbooks.	3.92 (0.72)	3
Information I learned from my training.	3.89 (0.76)	4
Information I get from attending in-service training/conferences.	3.89 (0.74)	5
The way I have always performed it.	3.77 (0.70)	6
New treatments and medications that I learn about when doctors prescribe them for patients.	3.75 (0.78)	7
What doctors discuss with me.	3.72 (0.68)	8
What has worked for me for years.	3.70 (0.83)	9
Information I get from audit reports.	3.59 (0.82)	10
My personal experience of caring for patients/clients over time.	3.56 (0.87)	11
My intuitions about what seems to be 'right' for the patient/client.	3.46 (1.02)	12
Information I get from the internet.	3.25 (0.97)	13
Information my fellow practitioners share.	3.14 (0.72)	14
Articles published in nursing or professional journals.	2.99 (0.87)	15
Articles published in medical journal.	2.96 (0.94)	16
Articles published in research journal.	2.87 (0.86)	17
Information I get from the media.	2.66 (0.94)	18

“Items on *awareness, needs, implementation skills, and context* were scored 1-5 with 1 strongly disagree and 5 strongly agree”

“Items on *sources of practice knowledge* were scored 1-5 with 1 never and 5 always”

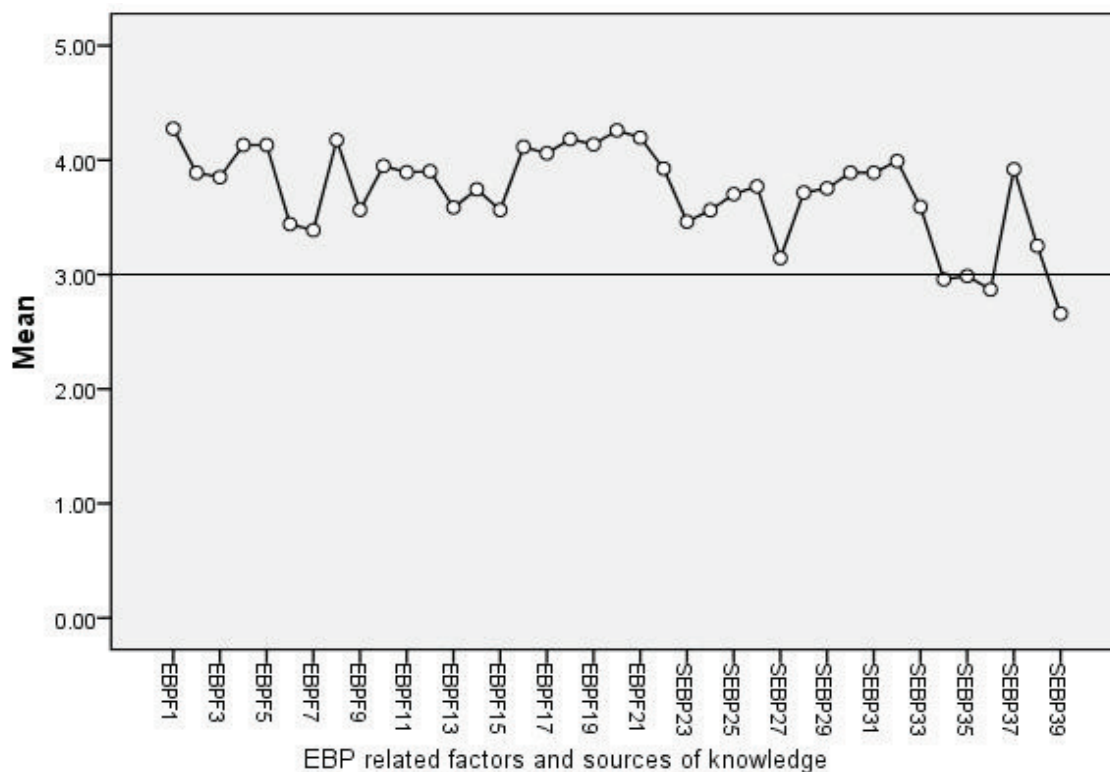


Figure 4 Mean Scores of Nurses' EBP Related Factors and Sources of Knowledge by Item

Table 3 presents the ratings and ranking of Thai nurses' EBP related factors. Mean scores of nurses' EBP related factors and sources of knowledge by item are shown in Figure 4. Overall Thai nurses rated agree/strongly agree on all the statements in the subscale of *awareness, needs, implementation skills, and contexts* (mean range=3.38-4.27). On the subscale *awareness, needs, implementation skills, and contexts*, awareness of the importance of EBPs for their practice had the highest score, and the convenient access to EBPs related to pain in older adults had the lowest score. With regard to sources of knowledge used in practice, Thai nurses frequently used sources of practice

knowledge from policy, manuals/guideline, patients, textbooks, training, attending in-service and so on (mean range=3.14-3.99) but sometimes used sources of knowledge from media and research/medical/nursing journals (mean range=2.66-2.99). Thai nurses used information from policy/procedural manual/guideline, information learned from patients, and information from textbooks for the top three rankings. The use of information from media, research journals, and medical journals were ranked at the lowest end. None of the source of practice knowledge item was rated as always use in practice setting.

Aim 2 Describe Thai nurses' current use of evidence-based
practices for acute pain assessment and management in
older adults

Table 4 Ratings and Ranking of Thai Nurses' Current Practice on Using Acute Pain EBPs (n=236)

Item	Mean (SD)	Rank
<i>4.1 Initial, Rapid Pain Assessment</i>		
I obtain a self-report of pain from the older adult patients if at all possible.	3.41 (0.64)	1
I do a rapid or complete pain assessment for older adult patients presenting in acute pain of moderate to severe intensity.	3.20 (0.76)	2
I allow sufficient time for the older adult to process information and to respond to pain assessment tools.	2.99 (0.81)	3
I use pain assessment tools that are appropriately for older adults' level of education.	2.99 (1.05)	4
I adapt tools to compensate for sensory impairment.	2.91 (1.03)	5
I assess pain intensity by selecting a tool (e.g., Numeric Rating Scale, Verbal Descriptive Scale, Faces Rating Scale) based on older adults' preference and cognitive/functional abilities, and then use the same tool consistently.	2.85 (0.99)	6
If a self-report of pain from the older adults cannot be obtained due to altered level of consciousness or possible cognitive impairment, I do access pain with nonverbal cues of pain.	2.80 (0.92)	7
I use the pain terminology typically used by the older adult individuals and use this term throughout assessment of pain.	2.75 (1.04)	8
I document pain in a visible place that can be used by other health care providers.	2.64 (1.15)	9
I establish a comfort-function goal with the patient.	2.64 (0.92)	10
I ask older adult patients to mark on diagram or to point to the site of the pain.	2.55 (1.09)	11
<i>4.2 Pain Assessment of Cognitively Impaired Older adults</i>		
For older adults with cognitive impairment unable to report pain, I assess for vocalizations (e.g., groaning, moaning, crying, yelling, sighing, and grunting).	3.49 (0.69)	1
For older adults with cognitive impairment unable to report pain, I assess for facial expressions of pain (e.g., brow lowering with jaw drop or mouth open; brow lowering with narrowing or closing eyes, clenched teeth, sad or distorted expression).	3.46 (0.66)	2
For older adults with cognitive impairment unable to report pain, I assess for the presence of factors that cause	3.17 (0.79)	3

Table 4 continued

pain (e.g., distended bladder, incision, infection, inflammation, fracture, positioning, urinary tract infection, and constipation).		
If the patient is verbally unresponsive or noncommunicative, I try to elicit from the family or care giver the patient's usual pain behaviors such as withdrawal, agitation, facial grimacing, guarding, moaning.	2.97 (1.01)	4
For older adults with cognitive impairment unable to report pain, I assess for mental status change (e.g., new onset or increased severity of delirium, agitation, irritability, anxiety, depression).	2.93 (0.92)	5
For older adults with cognitive impairment unable to report pain, I assess for a change in usual behavior (e.g., aggression, withdrawal, impaired mobility, altered sleep, fatigue).	2.90 (0.94)	6
I use self-report instruments (e.g., Verbal Descriptive Scale, Pain Thermometers, Faces Pain Scale) to assess pain in older adults with mild to moderate cognitive impairment.	2.63 (1.08)	7
I assess cognitive status (e.g., using Mini Mental State Examination: MMSE) of older adult patients.	1.74 (1.15)	8
<i>4.3 Pain Management Plan</i>		
I include multiple strategies in the comprehensive pain management plan including patient education, choice of pharmacologic and nonpharmacologic treatment options, and treatment plan.	3.00 (0.89)	1
I develop and document the pain management treatment plan as early in the course of the acute pain episode as possible.	2.98 (0.94)	2
I set realistic comfort-function goals in collaboration with the older adult patient.	2.89 (0.78)	3
<i>4.4 Pharmacological and Nonpharmacological management</i>		
I assess for presence of common opioid side effects (e.g., nausea, vomiting, constipation/ileus, delirium, respiratory depression, sedation, pruritus, urinary retention, and hypotension) and treat prophylactically when possible.	3.67 (0.59)	1
I carefully monitor older adult patients for NSAID complications such as GI bleed, Nephrotoxicity.	3.45 (0.72)	2
I schedule opioid and nonopioid pain medication with acute pain around-the-clock.	3.22 (0.85)	3
I use nonpharmacologic intervention (e.g., repositioning, relaxation, distraction, massage) to complement	3.03 (0.81)	4

Table 4 continued

analgesics.

I avoid using more than one opioid at the same time.	3.01 (0.97)	5
I monitor and titrate intravenous PCA (Patient Controlled Analgesic) cautiously due to an increased potential for toxicity.	2.98 (1.32)	6
If analgesics are prescribed for as needed (prn) administration, I offer them regularly and administer analgesia 30 minutes prior to activities.	2.85 (0.89)	7
I administer acetaminophen or a NSAID with an opioid (unless contraindicated) because of their dose-sparing effects on postoperative pain and a consequent reduction in incidence or severity of opioid-induced side effects.	2.78 (0.95)	8
I use the same route and opioid for breakthrough pain as are used ATC (around the clock) for the ongoing pain.	2.74 (0.95)	9
I use opioids in the management of moderate to severe acute pain in older adults.	2.53 (0.99)	10
I avoid intramuscular (IM) administration in older adults.	2.47 (0.87)	11
I avoid using pethidine (meperidine or demerol) in older adults.	2.41 (0.93)	12
I use an equianalgesic table to estimate the new dose when changing to a new opioid or a different route of administration.	1.80 (1.16)	13
<i>4.5 Evaluation of Effectiveness</i>		
I consult with the patient's physician or nursing staff if pain relief is not adequate.	3.49 (0.65)	1
I assess for pain related complications at least every 2 hours during the first 24 hours postoperatively then every four to eight hours, based on treatment responses, including pulmonary function.	3.45 (0.69)	2
I assess pain relief from pharmacologic interventions.	3.44 (0.68)	3
I adjust postoperative pain reassessment schedule to the patient's situation such as reassessment pain every 1-2 hours for the first 24 hour postoperative period; every 2-4 hours for subacute postoperative period.	3.41 (0.69)	4
I ask about pain and observe nonverbal pain related behaviors during transfers or patient care activities.	3.35 (0.69)	5
I revise pain management plan if pain relief is not adequate.	3.29 (0.74)	6
I establish regular reassessment and documentation of pain, including intensity, location, quality and duration, and impact of pain using selected assessment tools.	3.28 (0.71)	7
I document all pharmacologic and nonpharmacologic	3.21 (0.84)	8

Table 4 continued

pain interventions in a visible record such as where vital signs are recorded or on a flowsheet.		
I assess postoperative pain in older adults around the clock and during rest, during activity, and through the nighttime when pain is often heightened.	3.07 (0.79)	9
I evaluate the effectiveness of pain management interventions and revise plan as needed.	3.06 (0.69)	10
<i>4.6 Pain Management Discharge Plan</i>		
I teach the older adult and family/care giver who will assist the older adult with pain management in the home.	3.01 (0.85)	1
I begin discharge planning at admission to ensure an effective and safe pain management program for use at home, continuity of care and pain management and promote understanding of the treatment plan.	3.01 (0.90)	2
I develop and document the discharge plan in collaboration with the older adult and his/her family including the following elements.	2.89 (0.98)	3
I assess the patient's and family members' abilities to obtain analgesics and ensure availability of analgesics prior to discharge.	2.89 (0.98)	4
I assess the capability of the older adult and/or family to manage pain at home after discharge.	2.87 (0.86)	5
I assure sufficient transition time to determine effectiveness and potential adverse effects when changing pain management regimens prior to hospital discharge.	2.84 (0.96)	6
I provide the older individual with written instructions that clearly describes the pain management plan.	2.30 (1.04)	7
If the older adult is discharged to a facility or location other than home, provide a comprehensive pain management plan with clearly communicated transfer orders.	2.02 (1.24)	8

“Items on *current use of EBPs acute pain* were scored 0-4 with 0 not applicable and 4 all the time”

The ratings and ranking of Thai nurses' current use of acute pain EBPs is shown in Table 4. Thai nurses rated using 51 of 53 recommendations from EBPs acute pain most of the time to all the time in their daily practice (mean range=2.02-3.67). Two

recommendations that they used a little of the time were the use of MMSE to assess cognitive status (mean=1.74, SD=1.15) and the use of equianalgesic table to estimate the new opioid dose (mean=1.80, SD=1.16). Focusing on each subscale, all the recommendations of the *evaluation of effectiveness* subscale were rated as all the time used by Thai nurses. The highest of means for each subscale were obtaining a self-report of pain from older adults, assessing vocalizations for pain in cognitively impaired older adults, including multiple strategies in comprehensive pain management, assessing the presence of common opioid effects, consulting with the patient's physician or nursing staff for adequate pain control, and teaching older adults and family with pain management at home respectively for *the initial and rapid pain assessment, pain assessment for cognitively impaired older adults, pain management plan, pharmacological and nonpharmacological management, evaluation of effectiveness, and pain management discharge plan subscales*. Almost all the highest mean scores for each subscale indicated "all the time" use of the recommendations in daily practice except for pain management subscale. The lowest mean scores for each subscale included asking older adults to mark on a diagram of pain, assessing cognitive status using MMSE, setting realistic comfort-function goals with older adults, using an equianalgesic table, evaluating the effectiveness of pain management, and providing a comprehensive pain management plan with clearly communicated transfer order.

Aim 3 Describe Thai nurses' perceived barriers on using evidence-based practices for acute pain assessment and management in older adults

Table 5 Ratings and Ranking of Thai Nurses' Perceived Barriers to Acute pain EBP (n=236)

Item	Mean (SD)	Rank
<i>5.1 Barriers to Finding Research</i>		
Research reports or research articles are published in English thus creating a barrier.	3.76 (0.97)	1
I find it difficult to identify the implications of research findings for my own practice.	3.27 (0.90)	2
I find it difficult to understand research reports.	3.22 (1.01)	3
I do not feel confident in judging the quality of research reports.	3.20 (0.91)	4
I do not have sufficient time to find research reports.	3.17 (1.02)	5
Research reports are not easy to find.	3.00 (1.00)	6
I do not have sufficient time to find organizational information (guidelines, protocols etc).	2.85 (1.07)	7
Organizational information (protocols, guidelines etc.) is not easy to find.	2.83 (1.01)	8
I do not know how to find appropriate research reports.	2.36 (0.97)	9
I do not know how to find organizational information (guidelines, protocols etc).	2.16 (0.89)	10
<i>5.2 Barriers to Changing Practice</i>		
There are insufficient resources (e.g. equipment) to change practice.	3.39 (1.00)	1
I lack the authority in the work place to change practice.	3.22 (1.01)	2
There is insufficient time at work to implement changes in practice.	3.10 (0.99)	3
I do not feel confident about beginning to change my practice.	2.85 (1.00)	4
The culture of my team is not receptive to changing practice.	2.67 (1.00)	5

"Items on *barriers to EBPs acute pain* were scored 1-5 with 1 strongly disagree and 5 strongly agree"

The rating of Thai nurses' perceived barriers to finding research and changing practice related to Acute Pain EBPs in older adults are shown in Table 5. Three top

barriers related to finding research were “research reports or research articles are published in English thus creating a barrier”, “I find it difficult to identify the implications of research findings for my own practice”, and “I find it difficult to understand research reports.” The item “I do not know how to find organizational information (guidelines, protocols etc)” had the lowest mean score. For barriers to changing practice, the items “there are insufficient resources (e.g. equipment) to change practice”, “I lack the authority in the work place to change practice”, and “there is insufficient time at work to implement changes in practice” were rated as the three top barriers. The item “the culture of my team is not receptive to changing practice” had the lowest rating.

Additional data, from an open-ended question asked of Thai nurses related to their perceived barriers to using Acute Pain EBPs in older adults, were analyzed using inductive content analysis method by two researchers. The process of inductive content analysis included open coding, creating categories, and abstraction. Barriers to EBP data from opened-ended question were individually read by each researcher several times in order to make sense of the data. In the process of open coding, notes and headings describing all the aspects of the content were written in text while being. Headings were collected to create categories. Similar or dissimilar headings were collapsed into broader categories. Then, the investigator made a decision as to which things to put in the same categories. Each category was named using content-characteristic words and then was grouped to create domains. Two domains related to perceived barriers to use of Acute Pain EBPs emerged from the data: (1) nurses, and (2) administration (environment). Three broader categories of nurses’ domain included: (1) knowledge, (2) attitude, and (3) practice and skills. The administrative domain had five categories: (1) policy, (2) knowledge and awareness, (3) resources, (4) workload, and (5) organizational culture. Subcategories of each category are displayed in Figure 4 and Figure 5. The detail of coding is shown in Appendix C.

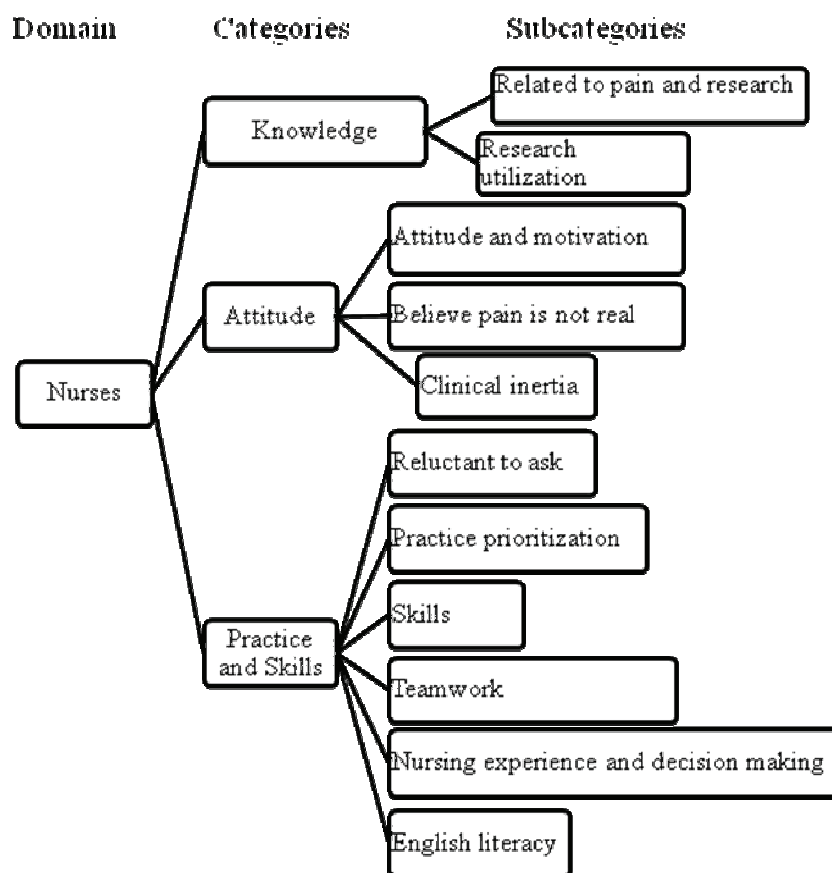


Figure 5 Domain, Categories, and Subcategories of Thai Nurses' Perceived Barriers

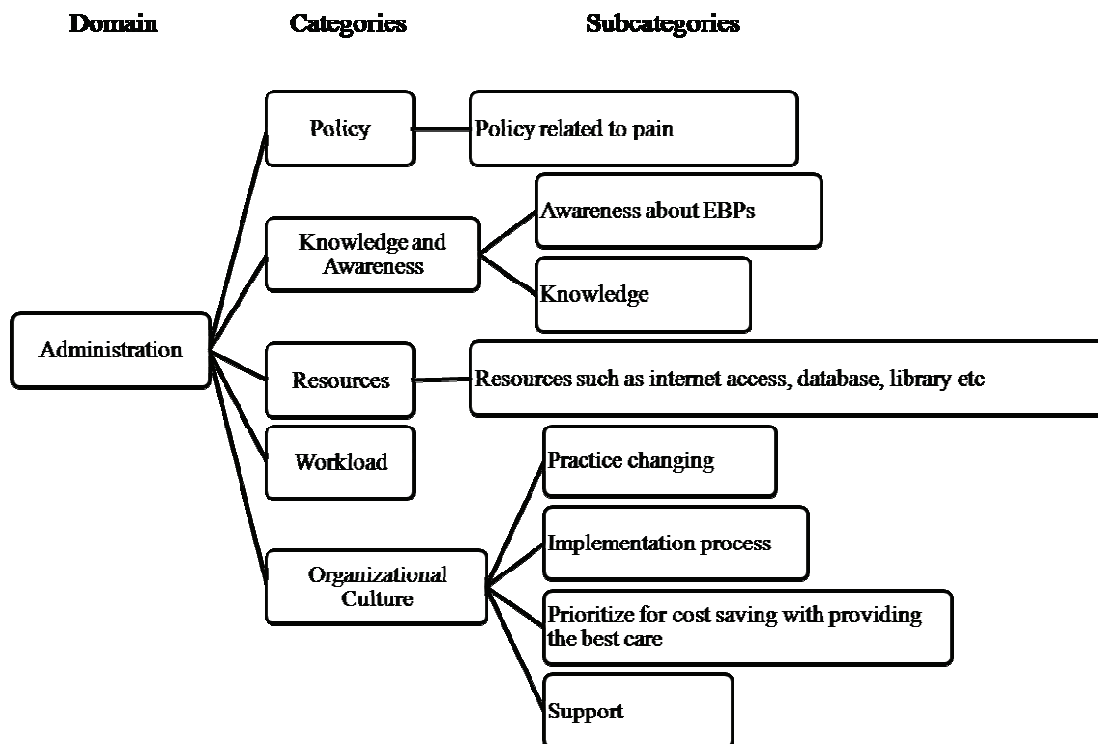


Figure 6 Domain, Categories, and Subcategories of Thai Nurses' Perceived Facilitators

Aim 4 Describe Thai nurses' perceived facilitators on using evidence-based practices for acute pain assessment and pain management in older adults

Table 6 Ratings and Ranking of Thai Nurses' Perceived Facilitators to EBP Acute Pain (n=236)

Item	Mean (SD)	Rank
Head ward is supportive of my changing practice.	3.56 (0.78)	1
Nursing colleagues are supportive of my changing practice.	3.32 (0.69)	2
Nursing supervisor or head of nursing department is supportive of my changing practice.	3.10 (0.85)	3
Doctors with whom I work are supportive of my changing practice.	3.00 (0.80)	4

“Items on *facilitators to EBPs acute pain* were scored 1-5 with 1 never and 5 always”

To change practice related to EBP acute pain in older adults, Thai nurses perceived sometimes support from a head ward, nursing colleagues, a nursing supervisor, and doctors (mean=3.00-3.56). Among those four groups, Thai nurses perceived the greatest support from a head ward (3.56 ± 0.78) and perceived the lowest support from doctors (3.00 ± 0.80). Content analysis was performed on an open-ended question asking Thai nurses' about perceived facilitators to using EBP acute pain in older adults. Two domains emerged: (1) nurses, and (2) administration (environment). The nurses' domain had three categories: (1) practice recommendation, (2) knowledge, and (3) attitude changing. The administrative domain had three categories: (1) policy, (2) resources, and (3) support. The subcategories of each category are displayed in Figure 6 and Figure 7. The detail of coding is shown in Appendix C.

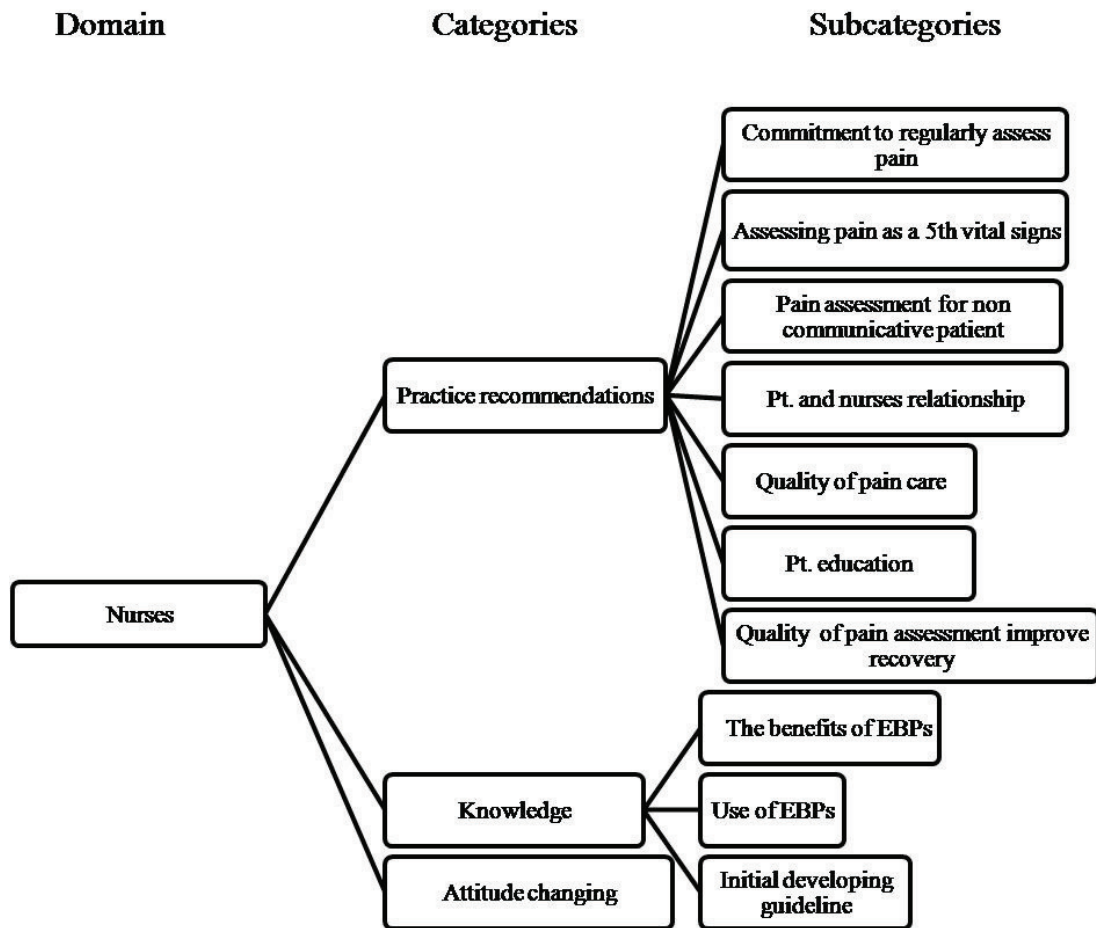


Figure 7 Nurses Domain, Categories, and Subcategories of Thai Nurses Facilitators to EBPs

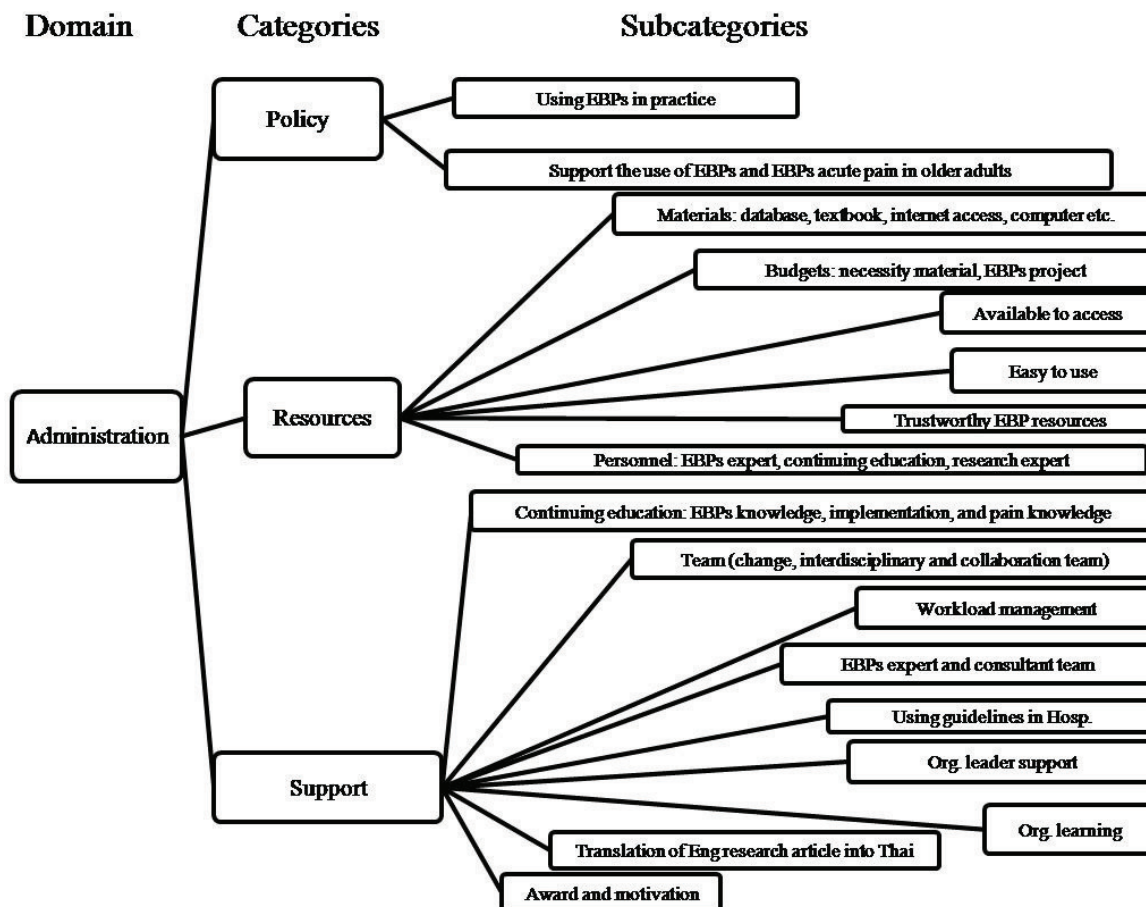


Figure 8 Administration Domain, Categories, Subcategories of Thai Nurses Facilitators to EBPs

Aim 5 Describe Thai nurses' evaluation of the cultural appropriateness of "Evidence-based Practice Guideline: Acute Pain Management in Older Adults (Herr, Bjoro, Steffensmeier et al., 2006)

Table 7 Ratings and Ranking of Thai Nurses' Perceived Cultural Appropriateness (n=236)

Item	Mean (SD)	Rank
<i>7.1 Initial, Rapid Pain Assessment</i>		
I obtain a self-report of pain from the older adult patients if at all possible.	4.12 (0.78)	1
I use pain assessment tools that are appropriate for older adults' level of education.	4.05 (0.83)	2
I adapt tools to compensate for sensory impairment.	4.04 (0.82)	3
I allow sufficient time for the older adult to process information and to respond to pain assessment tools.	4.00 (0.75)	4
I assess pain intensity by selecting a tool (e.g., Numeric Rating Scale, Verbal Descriptive Scale, Faces Rating Scale) based on older adults' preference and cognitive/functional abilities, and then use the same tool consistently.	4.00 (0.83)	5
I do a rapid or complete pain assessment for older adult patients presenting in acute pain of moderate to severe intensity.	3.97 (0.77)	6
If a self-report of pain from the older adults cannot be obtained due to altered level of consciousness or possible cognitive impairment, I do assess pain with nonverbal cues of pain.	3.87 (0.92)	7
I ask older adult patients to mark on diagram or to point to the site of the pain.	3.85 (0.89)	8
I document pain in a visible place that can be used by other health care providers.	3.80 (0.95)	9
I establish a comfort-function goal with the patient.	3.80 (0.81)	10
I use the pain terminology typically used by the older adult individuals and use this term throughout assessment of pain.	3.71 (0.98)	11
<i>7.2 Pain Assessment of Cognitively Impaired Older adults</i>		
For older adults with cognitive impairment unable to report pain, I assess for facial expressions of pain.	4.31 (0.72)	1
For older adults with cognitive impairment unable to report pain, I assess for vocalizations (e.g., groaning, moaning, crying, yelling, sighing, and grunting).	4.22 (0.76)	2
For older adults with cognitive impairment unable to report pain, I assess for the presence of factors that cause pain (e.g., distended bladder, incision, infection, inflammation, fracture, positioning, urinary tract infection, and constipation).	4.10 (0.79)	3

Table 7 continued

I use self-report instruments (e.g., Verbal Descriptive Scale, Pain Thermometers, Faces Pain Scale) to assess pain in older adults with mild to moderate cognitive impairment.	3.87 (0.88)	4
For older adults with cognitive impairment unable to report pain, I assess for mental status change (e.g., new onset or increased severity of delirium, agitation, irritability, anxiety, depression).	3.87 (0.91)	5
If the patient is verbally unresponsive or noncommunicative, I try to elicit from the family or care giver the patient's usual pain behaviors such as withdrawal, agitation, facial grimacing, guarding, moaning.	3.86 (0.95)	6
For older adults with cognitive impairment unable to report pain, I assess for a change in usual behavior (e.g., aggression, withdrawal, impaired mobility, altered sleep, fatigue).	3.86 (0.89)	7
I assess cognitive status (e.g., using Mini Mental State Examination) of older adult patients.	3.38 (0.94)	8
<i>7.3 Pain Management Plan</i>		
I include multiple strategies in the comprehensive pain management plan including patient education, choice of pharmacologic and nonpharmacologic treatment options, and treatment plan.	4.08 (0.77)	1
I develop and document the pain management treatment plan as early in the course of the acute pain episode as possible.	4.05 (0.84)	2
I set realistic comfort-function goals in collaboration with the older adult patient.	3.96 (0.85)	3
<i>7.4 Pharmacological and Nonpharmacological management</i>		
I assess for presence of common opioid side effects (e.g., nausea, vomiting, constipation/ileus, delirium, respiratory depression, sedation, pruritus, urinary retention, and hypotension) and treat prophylactically when possible.	4.56 (0.67)	1
I carefully monitor older adult patients for NSAID complications such as GI bleed, Nephrotoxicity.	4.38 (0.77)	2
I monitor and titrate intravenous PCA (Patient Controlled Analgesic) cautiously due to an increased potential for toxicity.	4.20 (0.95)	3
I schedule opioid and nonopioid pain medication with acute pain around-the-clock.	4.17 (0.78)	4
I use nonpharmacologic intervention to complement analgesics.	4.13 (0.75)	5

Table 7 continued

I avoid using more than one opioid at the same time.	4.04 (0.92)	6
If analgesics are prescribed for as needed (prn) administration, I offer them regularly and administer analgesia 30 minutes prior to activities.	3.97 (0.93)	7
I administer acetaminophen or a NSAID with an opioid (unless contraindicated) because of their dose-sparing effects on postoperative pain and a consequent reduction in incidence or severity of opioid-induced side effects.	3.92 (0.85)	8
I use the same route and opioid for breakthrough pain as are used ATC (around the clock) for the ongoing pain.	3.74 (0.89)	9
I use opioids in the management of moderate to severe acute pain in older adults.	3.66 (0.99)	10
I avoid using pethidine (meperidine or demerol) in older adults.	3.62 (0.86)	11
I avoid intramuscular (IM) administration in older adults.	3.60 (0.90)	12
I use an equianalgesic table to estimate the new dose when changing to a new opioid or a different route of administration.	3.54 (1.02)	13
<i>7.5 Evaluation of Effectiveness</i>		
I consult with the patient's physician or nursing staff if pain relief is not adequate.	4.42 (0.70)	1
I assess for pain related complications at least every 2 hours during the first 24 hours postoperatively then every four to eight hours, based on treatment responses, including pulmonary function.	4.39 (0.65)	2
I adjust postoperative pain reassessment schedule to the patient's situation such as reassessment pain every 1-2 hours for the first 24 hour postoperative period; every 2-4 hours for subacute postoperative period.	4.35 (0.73)	3
I establish regular reassessment and documentation of pain, including intensity, location, quality and duration, and impact of pain using selected assessment tools.	4.33 (0.72)	4
I assess pain relief from pharmacologic interventions.	4.33 (0.77)	5
I revise pain management plan if pain relief is not adequate.	4.28 (0.73)	6
I document all pharmacologic and nonpharmacologic pain interventions in a visible record such as where vital signs are recorded or on a flowsheet.	4.28 (0.79)	7
I ask about pain and observe nonverbal pain related behaviors during transfers or patient care activities.	4.25 (0.71)	8
I evaluate the effectiveness of pain management interventions and revise plan as needed.	4.09 (0.75)	9

Table 7 continued

I assess postoperative pain in older adults around the clock and during rest, during activity, and through the nighttime when pain is often heightened.	4.06 (0.75)	10
<i>7.6 Pain Management Discharge Plan</i>		
I teach the older adult and family/care giver who will assist the older adult with pain management in the home.	4.24 (0.71)	1
I begin discharge planning at admission to ensure an effective and safe pain management program for use at home, continuity of care and pain management and promote understanding of the treatment plan.	4.18 (0.86)	2
I develop and document the discharge plan in collaboration with the older adult and his/her family including the following elements.	4.11 (0.80)	3
I assess the patient's and family members' abilities to obtain analgesics and ensure availability of analgesics prior to discharge.	4.08 (0.81)	4
I assess the capability of the older adult and/or family to manage pain at home after discharge.	4.04 (0.88)	5
I assure sufficient transition time to determine effectiveness and potential adverse effects when changing pain management regimens prior to hospital discharge.	4.01 (0.83)	6
I provide the older individual with written instructions that clearly describes the pain management plan.	3.87 (0.88)	7
If the older adult is discharged to a facility or location other than home, provide a comprehensive pain management plan with clearly communicated transfer orders.	3.67 (1.07)	8

“Items on *cultural appropriateness of EBPG Acute pain* were scored 1-5 with 1 not appropriate at all and 5 extremely appropriate

Table 7 shows the rating and ranking of Thai nurses' perceived cultural appropriateness of acute pain EBPs in older adults. Overall Thai nurses rated all the recommendation from EBPG Acute Pain as very/extremely appropriate (mean range=3.38-4.56). 30 of 53 items (56.6%) were rated as extremely appropriate. Obtaining a self-report of pain from older adults if at all possible, assessing facial expression of pain

for cognitively impaired older adults who are unable to report pain, including multiple strategies in comprehensive pain management, assessing the presence of opioid side effects, consulting with the patient's physician and nursing staff for adequate pain relief, and teaching older adults or caregivers about pain management in home were rated as the top appropriate practices for subscales of *initial and rapid pain assessment*, *pain assessment for cognitively impaired older adults*, *pain management plan*, *pharmacological and nonpharmacological management*, *evaluation of effectiveness*, and *pain management pain* respectively.

Aim 6 Describe Thai nurses' practice environment, such as hospital size, on using evidence-based practices for acute pain assessment and management in older adults

Table 8 Frequency and Percentage of Acute Pain EBPs that Thai Nurses at Mid Size and Large Hospital Use Most and All of the Time

EBPs Acute Pain Use by Thai Nurses	Mid Size Hospital (N=178)	Large Hospital (N=58)
Most of the Time or All the Time	n (%)	n (%)
<i>8.1 Initial, Rapid Pain Assessment</i>		
I do a rapid or complete pain assessment for older adult patients presenting in acute pain of moderate to severe intensity.	145 (81.5)	53 (91.4)
I obtain a self-report of pain from the older adult patients if at all possible.	166 (93.3)	55 (94.8)
If a self-report of pain from the older adults cannot be obtained due to altered level of consciousness or possible cognitive impairment, I do access pain with nonverbal cues of pain	120 (67.4)	43 (74.1)
I ask older adult patients to mark on diagram or to point to the site of the pain.	100 (56.2)	41 (70.7)
I use the pain terminology typically used by the older adult individuals and use this term throughout assessment of pain.	109 (61.2)	43 (74.1)
I assess pain intensity by selecting a tool (e.g., Numeric Rating Scale, Verbal Descriptive Scale, Faces Rating Scale) based on older adults' preference and cognitive/functional abilities, and then use the same tool consistently.	113 (63.5)	43 (74.1)
I use pain assessment tools that are appropriate for older adults' level of education.	132 (74.2)	42 (72.4)
I adapt tools to compensate for sensory impairment.	126 (70.8)	45 (77.6)
I allow sufficient time for the older adult to process information and to respond to pain assessment tools.	132 (74.2)	47 (81.0)
I establish a comfort-function goal with the patient.	106 (59.6)	39 (67.2)
I document pain in a visible place that can be used by other health care providers.	91(51.1)	43 (74.1)
<i>8.2 Pain Assessment of Cognitively Impaired Older adults</i>		
I assess cognitive status (e.g., using Mini Mental State Examination) of older adult patients.	51 (28.7)	18 (31.0)
I use self-report instruments (e.g., Verbal Descriptive Scale, Pain Thermometers, Faces Pain Scale) to assess pain in older adults with mild to moderate cognitive impairment.	97 (54.5)	42 (72.4)
For older adults with cognitive impairment unable to	142 (79.8)	52 (89.7)

Table 8 continued

report pain, I assess for the presence of factors that cause pain (e.g., distended bladder, incision, infection, inflammation, fracture, positioning, urinary tract infection, and constipation).		
For older adults with cognitive impairment unable to report pain, I assess for facial expressions of pain (e.g., brow lowering with jaw drop or mouth open; brow lowering with narrowing or closing eyes, clenched teeth, sad or distorted expression).	158 (88.8)	58 (100)
For older adults with cognitive impairment unable to report pain, I assess for vocalizations (e.g., groaning, moaning, crying, yelling, sighing, and grunting).	159 (89.3)	54 (93.1)
For older adults with cognitive impairment unable to report pain, I assess for mental status change (e.g., new onset or increased severity of delirium, agitation, irritability, anxiety, depression).	122 (68.5)	45 (77.6)
For older adults with cognitive impairment unable to report pain, I assess for a change in usual behavior (e.g., aggression, withdrawal, impaired mobility, altered sleep, fatigue).	111 (62.4)	48 (82.8)
If the patient is verbally unresponsive or noncommunicative, I try to elicit from the family or care giver the patient's usual pain behaviors such as withdrawal, agitation, facial grimacing, guarding, moaning.	118 (66.3)	44 (75.9)
<i>8.3 Pain Management Plan</i>		
I develop and document the pain management treatment plan as early in the course of the acute pain episode as possible.	128 (71.9)	50 (86.2)
I set realistic comfort-function goals in collaboration with the older adult patient.	118 (66.3)	48 (82.8)
I include multiple strategies in the comprehensive pain management plan including patient education, choice of pharmacologic and nonpharmacologic treatment options, and treatment plan.	125 (70.2)	53 (91.4)
<i>8.4 Pharmacological and Nonpharmacological management</i>		
I schedule opioid and nonopioid pain medication with acute pain around-the-clock.	141 (79.2)	53 (91.4)
If analgesics are prescribed for as needed (prn) administration, I offer them regularly and administer analgesia 30 minutes prior to activities.	112 (62.9)	51 (87.9)
I avoid intramuscular (IM) administration in older adults.	87 (48.9)	32 (55.2)
I monitor and titrate intravenous PCA (Patient	126 (70.8)	42 (72.4)

Table 8 continued

Controlled Analgesic) cautiously due to an increased potential for toxicity.		
I administer acetaminophen or a NSAID with an opioid (unless contraindicated) because of their dose-sparing effects on postoperative pain and a consequent reduction in incidence or severity of opioid-induced side effects.	115 (64.6)	46 (79.3)
I carefully monitor older adult patients for NSAID complications such as GI bleed, Nephrotoxicity.	156 (87.6)	54 (93.1)
I use opioids in the management of moderate to severe acute pain in older adults.	92 (51.7)	33 (56.9)
I use the same route and opioid for breakthrough pain as are used ATC (around the clock) for the ongoing pain.	111 (62.4)	34 (58.6)
I avoid using more than one opioid at the same time.	125 (70.2)	41 (70.7)
I use an equianalgesic table to estimate the new dose when changing to a new opioid or a different route of administration.	46 (25.8)	20 (34.5)
I avoid using pethidine (meperidine or demerol) in older adults.	90 (50.6)	33(56.9)
I assess for presence of common opioid side effects (e.g., nausea, vomiting, constipation/ileus, delirium, respiratory depression, sedation, pruritus, urinary retention, and hypotension) and treat prophylactically when possible.	166 (93.3)	57 (98.3)
I use nonpharmacologic intervention (e.g., repositioning, relaxation, distraction, massage) to complement analgesics.	136 (76.4)	46 (79.3)
<i>8.5 Evaluation of Effectiveness</i>		
I evaluate the effectiveness of pain management interventions and revise plan as needed.	141 (79.2)	52 (89.7)
I assess pain relief from pharmacologic interventions.	162 (91.0)	56 (96.6)
I establish regular reassessment and documentation of pain, including intensity, location, quality and duration, and impact of pain using selected assessment tools.	150 (84.3)	57 (98.3)
I adjust postoperative pain reassessment schedule to the patient's situation such as reassessing pain every 1-2 hours for the first 24 hour postoperative period; every 2-4 hours for subacute postoperative period.	156 (87.6)	56 (96.6)
I assess postoperative pain in older adults around the clock and during rest, during activity, and through the nighttime when pain is often heightened.	136 (76.4)	47 (81.0)
I ask about pain and observe nonverbal pain related behaviors during transfers or patient care activities.	158 (88.8)	54 (93.1)
I assess for pain related complications at least every 2 hours during the first 24 hours postoperatively then	155 (87.1)	57 (98.3)

Table 8 continued

every four to eight hours, based on treatment responses, including pulmonary function.

I document all pharmacologic and nonpharmacologic pain interventions in a visible record such as where vital signs are recorded or on a flowsheet.	146 (82.0)	54 (93.1)
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I consult with the patient's physician or nursing staff if pain relief is not adequate.	158 (88.8)	57 (98.3)
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I revise pain management plan if pain relief is not adequate.	148 (83.1)	52 (89.7)
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8.6 Pain Management Discharge Plan

I begin discharge planning at admission to ensure an effective and safe pain management program for use at home, continuity of care and pain management.	125 (70.2)	52 (89.7)
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Table 8 Continued

I assure sufficient transition time to determine effectiveness and potential adverse effects when changing pain management regimens prior to hospital discharge.	123 (69.1)	46 (79.3)
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I assess the capability of the older adult and/or family to manage pain at home after discharge.	118 (66.3)	47 (81.0)
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I develop and document the discharge plan in collaboration with the older adult and his/her family including the following elements.	106 (59.6)	45 (77.6)
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I teach the older adult and family/care giver who will assist the older adult with pain management in the home.	131 (73.6)	48 (82.8)
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I provide the older individual with written instructions that clearly describes the pain management plan.	73 (41.0)	29 (50.0)
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If the older adult is discharged to a facility or location other than home, provide a comprehensive pain management plan with clearly communicated transfer orders.	65 (36.5)	27 (46.6)
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I assess the patient's and family members' abilities to obtain analgesics and ensure availability of analgesics prior to discharge.	112 (62.9)	45 (77.6)
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Frequency and percentage of acute pain EBPs used most and all of the time by Thai nurses at mid size and large hospital are depicted in Table 8. Nurses who were employed at large size hospitals had a higher frequency and percentage of using acute

pain EBPs than those who worked at mid size hospital in almost every circumstance, except for using appropriate pain assessment tools for older adults' level of education and using the same route and opioids for breakthrough pain. All nurses in large size hospital reported using facial expression to assess pain for cognitively impaired older adults.

Table 9 Frequency and Percentage of the Pain Service Availability and Use of EBPs Reported by Head Nurses at Thai Hospitals (N=4)

	N (%)
Pain Service Availability	4 (100)
Service Availability for Postoperative Pain in Older Adults	0
The Use of EBPGs in Hospital	3 (75)
The Use of EBPGs pain	1 (25)

Table 9 shows frequency and percentage of the pain service availability at Thai Hospitals. Eight administrative questionnaires were sent to eight participating hospitals. Four questionnaires were returned. Nursing administrators at four hospitals in Thailand reported that their hospitals provided pain service in general, but no service availability specifically for postoperative pain in older adults. Three hospitals reported the use of EBPGs in their hospital, but only one hospital used pain EBPGs and they were not used for older adult patients.

Aim 7 Describe the differences of nurses' characteristics, such as years of nursing experience, with perceived barriers and perceived facilitators for acute pain management in older adults

Table 10 Mean, Standard Deviation, and Number of Barriers to Finding Research, Barriers to Changing Practice, and Facilitators to EBP by Years of Nursing Experience

	Years of Nursing Experience	Mean	SD	N
Barriers to finding research	1-10 years	2.74	0.76	51
	11-20 years	3.07	0.65	127
	>20 years	2.95	0.67	43
	Total	2.97	0.69	221
Barriers to changing practice	1-10 years	2.98	0.87	51
	11-20 years	3.04	0.75	127
	>20 years	3.03	0.78	43
	Total	3.03	0.78	221
Facilitators to EBP	1-10 years	3.20	0.69	51
	11-20 years	3.20	0.56	127
	>20 years	3.41	0.59	43
	Total	3.24	0.60	221

Mean, standard deviation and number of barriers to finding research, barriers to changing practice and facilitators to EBPs by years of nursing experience of Thai nurses are shown in Table 10. Thai nurses who had 11-20 years of nursing experience perceived more barriers to finding research and barriers to changing practice than nurses with 1-10 or > 20 years of nursing experience. While nurses with nursing experience more than 20 years perceived more support of using EBPs than other groups.

Table 11 Multivariate analyses of variance of barriers to finding research, barriers to changing practice, and facilitators to EBPs by years of nursing experience

Effect	Wilks' Lambda	F	Hypothesis df	Error df	Significance	Partial Eta Squared
Year of Nursing Experience*	.923	2.94	6	423	.008	.039

p <.05

*Years of nursing experience: (1) practitioner level nurse (1-10 yrs), (2) professional level nurse (11-20 yrs), and (3) senior professional level nurse (<20 yrs)

Multivariate analyses of the variance of barriers to finding research, barriers to finding practice, and facilitators to EBPs by years of nursing experience is displayed in Table 11. The Wilks' Lamda multivariate test of all difference among groups was statistically significant (p=.008). Although significant, the effect size of this relationship was weak as indicated by partial Eta Squared score of .039.

Univariate between subject tests showed that years of nursing experience was significantly related to barriers to finding research (p=0.016; partial eta-squared =0.037). When follow up of univariate post-hoc comparisons between groups using F statistics and Turkey HSD test was completed, the significant differences were identified between nurses who have 11-20 years of nursing experience (3.07±.65) and those who have 1-10 years of nursing experience (2.74±.76). Nurses with 11-20 years of nursing experience had higher reported barriers than those with 1-10 years of nursing experience.

Summary

Almost all Thai nurses in this study are female (96.8%) with mean age 35.5 years (range=23-54). Most of them completed RN/BSN (91%), worked at general hospital (75.5%), and had 10-20 years of nursing experience (53.8%). They had awareness of the important of EBPs for their practice but had limited access to EBPs resources. The

information from policy/procedural manual/guideline was the source of information that Thai nurse used the most but they used less information from media, research journal, and medical journal. Almost all the recommendations from EBPG Acute Pain (51 out of 53 items) were used most of the time/always (95%). Two recommendations that were only occasionally used by Thai nurses were the use of an equianalgesic table and the use of MMSE to assess cognitive status in older adults. The highest current use of EBPs related to acute pain by Thai nurses for each subscale included: using a self-report to obtain pain from older adults, assessing for vocalizations of pain for older adults with cognitively impairment, using multiple strategies in comprehensive pain management, assessing the presence of common opioid side effects, consulting with the patient's physician or nursing staff for pain relief, and teaching older adults and caregivers about pain management at home. Thai nurses rated research reports published in English as the highest barriers to finding research and insufficient resources as the highest barriers to changing practice. Head ward was rated as the highest reported facilitator item. The content analysis of the open-ended questions for the barriers and facilitators showed that both Thai nurses perceived barriers to EBPs and perceived facilitators to EBPs had two domains: nurses and administrative. Thai nurses perceived that all the recommendations from the EBPGs acute pain were very appropriate to use in Thai hospital settings. When comparing the EBPGs acute pain recommendation that nurses use most of the time and all the time by hospital size, nurses at the large size hospitals had higher percentages of using each of EBPGs acute pain recommendations compared to those at mid size hospitals. The results from four hospitals in Thailand displayed that all four of participating hospitals had pain service available but none of them provided pain service specifically to older adults. When testing the differences of perceived barriers and perceived facilitators among groups of nurses with different years of experience using MANOVA, the Wilks' Lamda multivariate test was statistically significant ($p=.008$). Post hoc comparison between groups found the difference between nurses with 11-20 years of

nursing experience and nurses with 1-10 years of nursing experience. Nurses with 11-20 years of nursing experience had higher reported barriers than those with 1-10 years of nursing experience.

CHAPTER V DISCUSSION AND IMPLICATIONS

This chapter discusses a series of topics, including: Thai nurses' demographic data; nurses' EBP related factors; current use of EBPs; perceived barriers; perceived facilitators; evaluation of the cultural appropriateness; the practice environment of Thai nurses for using acute pain EBPs in older adults; and, the effects that differences in Thai nurses' characteristics defined as years of nursing experience have on their perceptions of barriers and facilitators toward using acute pain EBPs in older adults. The limitations of the study are identified and discussed, and the implications for education, practice, research, and policy are considered.

Thai Nurses' Demographic Data

A vast majority of the participants in this study were female (96.8%), with a mean age of 35.5 years (range=23-54). This comports with the known population, as approximately 95 percent of Thai nurses are female (Boontong, 2001). A different study found that approximately 98 percent of nurses in Thailand are female, with a mean age of 36.7 years (Just, 2008). Only five percent of the participants were Technical Nurses. Technical Nurses were introduced on a short-term basis in 1990 by MoPH in order to alleviate the problem of nursing shortages. In 2000, this program was discontinued. Since then, with the goal of enhancing the efficiency of health services in Thailand, only professional nurses (RN/BSN) have been produced (Wibulpolprasert, 2004). In this study, most Thai nurses have either their RN or BSN (91%), and also have 10-20 years of nursing experience (53.8%). The number of nurses in this study who completed RN/BSN programs is almost ten percent higher than the previous study done by Just (2008). This may be due to the First National Nursing and Midwifery Development Plan, which prompted Technical Nurses to pursue their RN/BSN, stopped the production of Technical Nurses, and increased the production of RN/BSN nurses (Srisuphan et al., 2005; Srisuphan et al., 1998; Srisuphan et al., 2002).

Nurses' EBP Related Factors

To successfully adopt EBP, a nurse (adopter) should have five EBP related factors (i.e., awareness, needs, implementation skills, context, and sources of knowledge). The results show that Thai nurses had a high awareness of the importance of EBP (item mean=4.27, item SD=.65; subscale mean=3.87, subscale SD=.41). Awareness of the importance of EBP relies upon the nurses' ability to know and understand EBP, and such awareness served as a change stimulus to promote or inhibit EBP changes (Leasure et al., 2008; McSherry, Artley, & Holloran, 2006). Various studies across the world extensively explored nurses' awareness toward EBP, with results both consistent and conflicting with this study.

In the US, Adams (2009) explored the awareness of EBP in Midwestern (United States) school nurses. She found that school nurses had a mid to upper level of awareness of EBP (subscale mean=3.59, subscale SD=.67); by comparison, nurses with a BSN or higher, accompanied by membership in a professional organization, were significantly more likely to be aware of EBP ($P < .001$). Surprising results revealed that Thai nurses had a higher subscale score of EBP awareness than the U.S. school nurses. In the U.S., where the concept of EBPs has fruitfully developed for almost three decades (Jennings & Loan, 2001), awareness of EBPs should exceed that of Thai nurses. The unexpected results might be due to the participants' work settings. Thai nurses in the study worked in acute care settings, where EBPs might be prioritized for quality of care and supported by colleagues and organization; in contrast, where school nurses in the U.S. worked as an individual in schools (Adams, 2009), the isolation of school nurses from colleagues knowledgeable in EBPs would likely decrease the EBP awareness of a school nurse.

Various methods of EBP dissemination might increase nurses' awareness of EBPs. A Swedish study of evidence-based nursing (EBN) concepts in psychiatric nurses found that Swedish nurses increased their awareness of EBP after disseminating two EBNs related to psychiatric nursing supplemented with a series of complimentary 1-day

lectures and 3-day courses. However, they had difficult access to EBN (Bahtsevani, Khalaf, & Willman, 2005). In the Netherlands, 67 percent of surgical nurses were unaware of EBPs, and their unawareness of EBPs was the major barrier to using them in practice (Knops et al., 2009). In sum, awareness of EBPs had an impact on promoting or impeding the adoption of EBPs. Nurses with a BSN or higher and with professional membership were more likely to be aware of EBPs.

Thai nurses in this study reported that they frequently used information from textbooks, patients, and policy/procedural manuals/guidelines as their primary sources of knowledge (mean=3.99, SD=.67), but they sometimes used information from media, research journals, and medical journals (mean=2.66, 2.87, 2.96; SD=.94, .86, .94 respectively). The study was consistent with Ozsoy and Ardahan (2008) that found Turkish nurses also used less sources of knowledge from media, intuition, and nursing publications but used primary sources of knowledge from peers, and previous nursing experience. In Thai nurses, Just (2008) found that her participants used standards/protocols and textbooks the most due to their availability, accessibility, and trustworthiness. Using information from a policy/procedural manual/guideline was the most appropriate source of knowledge to get up to date and high quality EBPs. Using patient information as one of the primary sources of knowledge might allow Thai nurses to deliver care specific to a patient as an individual. Relying upon knowledge from textbooks as their primary source might prevent Thai nurses from up-to-date knowledge, since the process from writing to publishing textbooks takes almost five years. Thai nurses rated using information from media, research journals, and medical journals as the three lowest items. Using less of information from media might be due to the lack of trustworthiness of media information. Kongthieng (2005) performed a survey of nursing research related to pain in Thailand. She found that 191 research studies were conducted in Thailand, but only 29 percent of them were published in nursing journals. The lack of publications related to pain might contribute to occasional use of information from

journals by Thai nurses. Using comparatively less information from research and medical journals demonstrated that the process of dissemination, implementation, and adoption of EBPs in Thailand might go slowly, particularly since up-to-date EBPs are published in journals.

Thai nurses also use less information from internet sources (mean=3.25, SD=.97), although most reported access to the internet. Thai nurses' failure to use the internet may be due to either an unawareness of internet resources or a lack of internet skills. These results were supported by various studies. Sigouin & Jadad (2002) found that Canadian oncology nurses were unaware of the existence of the Cochrane library and PubMed. Only 12 percent of them were aware of the Cochrane library, and 35 percent knew of PubMed. The study of four countries in Southeast Asia (i.e., Malaysia, Indonesia, Thailand, and Philippines) concerning knowledge and perception about access to EBPs showed that, although Thailand had the highest reported internet access, overall only ten percent of participants reported using PubMed (Martis, Ho, Crowther, & Sea-Orchid Study Group, 2008). The results demonstrated that healthcare professionals in Southeast Asia were unaware of resources from the internet. Although internet access in Thailand might not be an issue, only 41 percent of Thai nurses reported that their internet skills were good/very good (Just 2008). Further, almost 81 percent of them had never heard about the Cochrane Library, and 62 percent of them had never heard about Medline or PubMed. Unawareness of internet resources is a global phenomenon which is found in both developed and developing countries. It is considered an important issue for a developing country such as Thailand. Inadequate use of internet sources about EBPs might prevent Thai nurses from using them, thereby impeding the adoption of acute pain EBPs. Where resources are scarce, free and trustworthy information about EBPs provided via internet (such as PubMed, National Clearinghouse Guideline, and Cochrane Collaboration) is a crucial tool to promote the adoption of EBPs.

Current Use of Acute Pain EBPs

The study found that Thai nurses described using a self-report to assess pain in older adults all the time (mean=3.41, SD=0.64), and it held the first ranking in the initial, rapid pain assessment subscale. Self-report of pain is the gold standard for assessing pain in older adults (Pautex & Gold, 2006). Pain assessment and management are outcome measures for hospital quality currently required by the Institution of Hospital Quality Improvement and Accreditation (HA) and the Thai Nursing and Midwifery Council. The HA standards clearly mandate hospitals incorporate pain assessment and pain management into the hospitals' process of patient care (Institute of Hospital Quality Improvement & Accreditation, 2006). To meet HA standards, several hospitals in Thailand launched various quality improvement projects or research. For instance, the department of nursing at Maharaj Nakorn Chiang Mai Hospital developed a pain management standard and guideline, and then implemented it in the hospital (Department of Nursing, 2005). Other (university affiliate) hospitals under the Ministry of Education implemented pain assessment as a fifth vital sign (Chanvej et al., 2004; Thienthong et al., 2007). However, the recommendations of pain assessment suggested in Maharaj Nakorn Chiang Mai Hospital were for children and adults, and none was specifically for older adults. A recommendation regarding using the Visual Analog Scale (VAS) for patients who could not use the Numeric Scale to communicate their pain might not be appropriate for older adults. Since older adults who were unable to complete the Numeric Scale might have cognitive impairment at some level, the use of VAS might not be successful. Wynne and colleague (2000) found that older adults in nursing homes with Mini Mental State Examination (MMSE) less than 15 had a lower response rate using VAS. There is a need to disseminate EBPs` regarding appropriate pain assessment tool selection for older adults to Thai nurses and healthcare providers.

Assessing pain vocalizations and facial expressions, along with the presence of factors that cause pain, were the most frequently used of pain assessment techniques that

Thai nurses used for cognitively impaired older adults. These pain assessment methods are a fundamental nursing practice skill that Thai nurses use in their daily practice; therefore, they tended to use them all the time (mean range from 3.17-3.49). For adoption in clinical practice, there is currently no broadly recommended standardized nonverbal tool that assesses behavioral pain in cognitively impaired older adults (Herr, Bjoro, & Decker, 2006), although recent reports identify selected tools for use in nursing home in the U.S. (Herr, Bursch, Ersek, Miller, & Swafford, 2010). Evaluation of nonverbal pain tool appropriateness in Thai hospitals is needed to support practice recommendations for this population. However, self-report tools (i.e., Verbal Descriptive Scale, Pain Thermometers, and Face Pain Scale) were found to be useful to assess pain in older adults with mild to moderate cognitive impairment (Herr, Bjoro, Steffensmeier et al., 2006), but also need evaluation for use in Thai hospitals with older adults.

In order to select appropriate methods and pain assessment tools for use in cognitively impaired older adults, it is very important to assess their level of cognitive impairment using a Mini Mental State Examination (MMSE). MMSE is a screening tool for cognitive function where a score less than 23/30 indicates cognitive impairment (Folstein, Folstein, & McHugh, 1975). The cognitive status of older adults will impact the choice of using pain assessment tools, treatment options, and patient and family education (Herr, Bjoro, Steffensmeier et al., 2006). Thai nurses used the recommendation related to using MMSE to assess cognitive status in older adults as the lowest in pain assessment of cognitive impairment subscale. The mean score of 1.74 indicated Thai nurses use MMSE in practice very little of the time. The low use of MMSE impacts the use of appropriate pain assessment tools and quality of pain care in cognitively impaired older adults. In Thailand a Thai-MMSE which was adjusted question to be appropriate for Thai older adults was introduced to Thai healthcare professional a decade ago. The use of a Thai-MMSE in clinical settings was found only in some Thai hospitals. To

provide quality of pain care in older adults, there is a need to promote the use of a Thai-MMSE in Thai hospitals.

The equianalgesic table is a useful guide to initial dose selection when changing routes of opioids administration. The use of equianalgesic table was common practice for the American nurses. In the U.S., nurses have a primary role in recommending changes and assuring that patients receive the right dose (Brant, 2001). In Thailand the role of establishing opioid dosage belongs to physician, thus a low rating by nurses is not unexpected. In Thailand the role of establishing opioid dosage belongs to physician, thus a low rating by nurses is not unexpected. The limited number of patient controlled analgesics (PCA) machine in Thailand might also contribute to the use less of equianalgesic table. In Thailand using PCA was commonly found in a large size hospital with acute pain services or hospital with anesthesiologist presented. Although it was common practice in a large size hospital, problem of using PCA existed. Yimyaem and colleagues (2008) found that inadequate number of PCA machine and unfamiliar with using PCA machine contributed to problems of acute care services for postoperative patients. To use PCA for pain management, nurses had to understand the use of equianalgesic table. The limit numbers of using PCA machine in the hospitals might prevent Thai nurses to have experience with PCA and the use of equianalgesic table.

Some of the time Thai nurses used multiple strategies for comprehensive pain management, developed early pain management plans, and set realistic comfort goals with older adult patients using a pain management plan subscale (mean range = 2.89-3.00). Pain management planning is very important to achieve adequate pain control (VHA/DoD, 2001). Thai nursing should incorporate pain management plans for older adults as their top priorities, and they should be used all the time. Efforts for implementing and improving the use of pain management plans should be encouraged in Thailand.

The study found that Thai nurses rated assessing for presence of common opioid side effects, monitoring for NSAID complications, and around-the-clock (ATC) scheduling for opioid and nonopioid pain management as the top three strategies in pharmacological and nonpharmacological management. They also reported using those three recommendations all the time in practice (mean range = 3.22-3.67). The three practice recommendations are the important roles of nurses for pain management as mentioned by various nursing organization and researchers (Ene, Nordberg, Bergh, Johansson, & Sjostrom, 2008; Maryland Board of Nursing, 2002; McDonnell et al., 2003a; McDonnell, Nicholl, & Read, 2003b; Terry, 2004). Scheduled ATC administration of pain medication helps maintain the stability of analgesic level - thus it leads to effective pain management (Herr, Bjoro, Steffensmeier et al., 2006). A study by Titler et al. (2003) found that nurses taking care of postoperative hip fracture older adults (in 12 hospitals in the Midwest) were aware that scheduled ATC administration of analgesics was considered preferable, but that nevertheless only 33.7 percent believed that this method should be used. Accordingly, it was also found that only 22.3 percent of these hip fracture older adult patients received around-the-clock analgesics, whereas 90 percent of patients in Thailand with postoperative pain received prn analgesics for pain every 4-6 hours (Wasin-amonrn et al., (1992). Only nine percent of ATC analgesics administration was prescribed for hospital older adults with pain (Khlongyant, 2001) and only 23 percent of ATC was prescribed by physicians in the largest hospital size in Thailand (Sanansilp et al., 2002). However, the consistent results with previous studies suggest need for future research to explore these findings.

The study of acute pain in Thai older adults is too limited to make a conclusion about the state of science acute pain management in Thai older adults. Although this study did achieve a high response rate, it does reflect a convenience sample of nurses in a sample of hospitals in Thailand. It also reflects nurses self report of EBP use, not

observation of their actual performed practices. More research is needed to explore this topic.

All items in the evaluation of effectiveness subscale had a mean higher than 3.01, which indicated that Thai nurses used all the recommendations from this subscale all the time. The top three ranked items in this subscale (i.e, consult with physician or nursing staff if pain relief is not adequate, assess pain for related complication at least every 2 hours during the first 24 hours postoperatively, and assess pain relief from pharmacological intervention) reflected that the current practice of Thai nurses met the standard of practice for acute pain some of the time as described in several pain practice guidelines (American Society of Anesthesiologists Task Force, 2004; Guevara-Lopez et al., 2005; Herr, Bjoro, Steffensmeier et al., 2006; VHA/DoD, 2001). However, consistent use of these practices should be encouraged through EBP implementation efforts.

The results also revealed that teaching older adults and their families about pain management in the home was the only practice in the pain management discharge plan subscale that Thai nurses performed all the time (mean=3.01, SD=.85). The other seven practice recommendations in this subscale were used some of the time (mean range=2.02-3.01, SD=.80-1.07). Initial pain management discharge planning as early as possible is necessary to achieve adequate pain control (Herr, Bjoro, & Decker, 2006; VHA/DoD, 2001).

Perceived Barriers

One of the biggest barriers to implementing EPBs for Thai nurses is that most research reports or articles are published in English. This issue was reported by Thai nurses as an important item in the barriers to finding research subscale and subcategories, and it also emerged from content analysis of open-ended questions.

In Thailand, English is a second language (D. R. Thompson, 2004). Traditionally, teaching English began at Prathom 5 (equivalent to grade 5 in the U.S. educational

system) and continued through university level. Five years ago, Thai-English bilingual schools were implemented by the Thai government, and English was taught at kindergarten level (Kosonen, 2008). A vast improvement in English proficiency for Thais is expected in the next decade.

English skills are necessary to implement EBPs. Just (2008) revealed that Thai nurses rated their English skills as poor to fair (i.e., 70.7 percent for reading, 81.9 percent for writing, 88.4 percent for listening, and 91 percent for speaking). The barriers to EBP related to English are not unique, and are commonly found in non-speaking English countries such as Finland, Denmark, Sweden, Norway, Greece, Hong Kong China, and Iran (Adamsen, Larsen, Bjerregaard, & Madsen, 2003; Chau et al., 2008; Hommelstad & Ruland, 2004; Kajermo et al., 2008; Mehrdad, Salsali, & Kazemnejad, 2008; Patiraki et al., 2004). Fifty-four percent of Swedish nurses (Kajermo et al., 2008), 45 percent of Iranian nurses (Mehrdad et al., 2008), and 33 percent of Danish nurses (Adamsen et al., 2003) perceived English as a barrier. The variation across countries of English as a perceived barrier might be due to the degree of familiarity with both English and research. Chau et al. (2008) found that Hong Kong nurses with a BSN or Diploma perceived English as a barrier, while those with an MSN or PhD did not. The MSN or PhD programs, which emphasize conducting research, required nurses to read, appraise, and synthesize a variety of research articles published in English. Consequently, nurses with an MSN and PhD were acquainted with research published in English. Nurses who used it as a career language, and were accordingly active in research, overcame the series of barriers and had both strong desire and capacity to read research published in English (Adamsen et al., 2003)

Thai nurses also reported that other barriers to using research included: identifying the implication of the research, understanding the research reports, and judging the quality of research reports. To help Thai nurses to overcome these barriers, methodologies and knowledge about research should be promoted by means of

continuing education related to research itself. Establishing relationships and working closely with research experts in academia might also help Thai nurses to understand and to feel confident about using research and EBPs (McConnell, Lekan, Hebert, & Leatherwood, 2007). However, the problem of English proficiency might impede their finding and appraising EBPs published in English. To promote EBPs where English use is a crucial problem, providing EBPGs Acute Pain for older adults, as well as familiarity with other EBPs in Thailand, might help to resolve this problem.

Although insufficient time ranked fifth on the barriers to finding research subscale, it was the second most frequently reported by Thai nurses in the open-ended question. The importance of time barriers was supported by previous studies, both in Thailand and other countries. Sae-Sia et al. (2008) found that lack of time to conduct research was the major barrier to the master graduated Thai nurses. Lack of time was found as the highest-ranking barrier in other studies (Bryar et al., 2003; Gerrish, Ashworth, Lacey, & Bailey, 2008; Hutchinson & Johnston, 2006; Kajermo et al., 2008; Mehrdad et al., 2008). The issue of lack of time revealed in this study might be due to workload. In the open-ended question on barriers, a nurse from large size hospital stated: “Work overload and insufficient numbers of nurses for working. Each day nurses have to do non-direct nursing care activities such as documentation, computer, quality improvement activities (i.e., HA, QA, Risk Management), meeting, and attending conferences. Only 10 to 20 percent of the time is donated to direct nursing care activities. The statement “no time to search for EBP from the internet” reflected that Thai nurses felt overwhelmed by the need for quality improvement, as well as other non-directing care activities, which operated to decrease their time with the patient and to search for EBPs. Heavy responsibilities and workloads gave nurses neither time nor energy to do research-related activities (Hommelstad & Ruland, 2004). Nursing shortages might also contribute to lack of time. In Iran, Mehrdad (2008) found that the major issue related to lack of time was due to a nursing shortage. Currently Thailand is in the midst of nursing

shortage, and nearly thirty thousand professional nurses are needed. In this study, three quarters of Thai nurses worked over forty hours per week. Working long hours might lead to feeling burdened, experiencing fatigue, and overall dissatisfaction with work conditions. To overcome the barriers related to sufficient time, hospital administrators should take action to prevent these problems by providing support to alleviate workload and maintaining adequate staff.

Insufficient resources were the top barrier to changing practice, as reported by Thai nurses. Although 80 percent of subjects reported that their unit/ward had internet access, qualitative data from open-ended questioning revealed their unit or ward had lack of access of internet and Wi-Fi. Conflicts between self-reports and qualitative data indicated that the problem of internet access was one of experience and familiarity. The national study of information needs and uses of Thai nurses showed that 98 percent (n=741) of the participants had a computer connected to the internet at work, 68 percent of them use the internet to search for information related to nursing and health, but only three percent of them reported using a research/EBP database such as PubMed or CINAHL (Just, 2008). The low rate of database usage was supported by previous studies from the U.S. and Sweden. In the U.S., only 15 percent of nurses accessed the Cochrane database five or more time in the prior eight weeks (Melnyk, Fineout-Overholt, & Mays, 2008). In Sweden, a study to examine the application of EBPs in clinical practice found that only 19 percent of two year post graduate registered nurses searched a database (Bostrom, Ehrenberg, Gustavsson, & Wallin, 2009). The low usage of research/EBP databases might be due to the preferences for using information sources and the relative accessibility to database sources. Spenceley et al. (2008) reviewed studies related to sources of information used by nurses from 1985 to 2006, and found that nurses were highly reliant upon informal sources, such as information from peers. The result was consistent with findings that nurses relied heavily on personal experience and communication with colleagues (Gerrish et al., 2008). Thompson et al. (2001) supported

the notion that human resources, such as nurses, physicians, and experienced clinical colleagues, were more accessible than text based sources, and therefore nurses might prefer to use those sources in clinical practice.

The inaccessibility to EBP or research databases is a significant problem in developing countries such as Thailand. Many of the reliable and trustworthy EBP or research databases related to healthcare (e.g. Medline, CINAHL) require users to subscribe to a database before using it. In countries where resources are scarce, using other free access EBP/research databases, such as PubMed, Cochrane, or NGC, might be a solution for promoting the use of EBP. Using search engines such as Google scholar and Google directory might be other options to search for EBP/research. Google scholar allows nurses to search for scholarly literature across many disciplines and sources, while Google directory provides a collection of websites selected by open directory volunteer editors for specific topics. Those search engines might be useful for nurses to find EBP/research to support their practice, since Just (2008) found that 68 percent of Thai nurses used Google searches (for nursing and health related information) more than other sources and databases. Internet availability is critical to get free access to EBP/research databases; therefore, hospital administration should make the internet accessible for all nurses.

Perceived Facilitators

Head Ward was rated as the highest on the facilitators scale. The results also illustrate that Thai nurses receive frequent support from their nursing peers, such as head ward, nursing colleagues, and nursing supervisor or head of nursing department (mean=3.56, 3.32, and 3.10 respectively). The result was similarly found in a study of Hong Kong nurses' perception of barriers and facilitators for using research, replicating that managerial and peer support were the greatest facilitators (Chau et al., 2008). Currently, facilitators to EBP/research in nursing are being viewed both as an individual

role and as a group of nurses. A study in a large Midwestern hospital in the U.S. emphasized the success of using nursing faculties as mentors to facilitate EBPs (Jeffers, Robinson, Luxner, & Redding, 2008). A review of articles concerning facilitators in nursing from 1996 to 2008 revealed that project manager/leadership roles were the important facilitators to promote use of research (Dogherty, Harrison, & Graham, In press). In Thailand, a head ward had a crucial role to support change in a unit/ward, and sometimes she/he acted as leadership for change, or project manager. The head ward worked closely with staff nurses, and also had an accountability and responsibility for initiating and shepherding the change through the process; thus, Thai nurses might perceive the greatest support from their head ward. To promote the use of acute pain EBPs in Thailand, a head nurse should be a good candidate to adopt the role of opinion leader for an acute pain initiative.

Thai nurses perceived the least support for changing practice from physicians (mean=3.0; SD=.80). The result was consistent with Gerrish et al. (2008) that found RNs at U.K. hospitals perceived less support from physicians, and that U.S. nurses reported that communication with physicians regarding older adults' pain management was very difficult (Titler et al., 2003). For effective pain management in older adults, the collaboration between interdisciplinary teams (e.g. physicians, nurses, pharmacists, and other health professionals) is important. In Thailand, nurses had to practice under the supervision of a physician on pharmacological pain management. Only nonpharmacological management methods were an independent role within the scope of Thai nursing practice. Most of the time, the pharmacological pain management plan was solely dependent on physician decision. Thai nurses likely feel frustrated when the mutual collaboration of pain management plan between physicians and nurses was not fulfilled in Thai healthcare settings; because of that, Thai nurses might perceive the least support from physicians. However, in the past decade, several hospitals in Thailand (such as Songkha hospital in Hat Yai province and Srinagarind Hospital in Khon Khen

province) implemented pain as a fifth vital sign in their hospitals. This quality improvement project might promote more awareness, as well as more collaboration, between physician and nurses, since patient pain relief was their mutual goal. Although the implementation of pain as the fifth vital sign in Thai hospitals yielded little useful information regarding the promotion of pain EBPs in nurses (Chanvej et al., 2004; Thienthong et al., 2007), the mere factor of routine screening for pain might increase Thai nurses' awareness, and then lead nurses to search for more EBPs related to pain.

Evaluation of Cultural Appropriateness of Acute Pain EBPG

Thai nurses perceived that all the recommendations from the acute pain EBPGs were very appropriate to use in Thai hospital settings. Twenty-four of 53 recommendations were perceived as extremely appropriate by Thai nurses. The acute pain EBPGs were developed by a group of nurses who were experts in older adult pain (Herr et al. (2006). As a result, the recommendations in this guideline were more likely to be well-designed within the scope of nursing practice. The acute pain EBPG was tested for its applicability in Korea by a group of experts in older adults pain (i.e., 21 RNs, 10 physicians, and 10 nursing professors) (Son & Park, 2006). They found that group of experts rated low score on six recommendation items as followings: pain assessment tools in the elderly; education of pain assessment; route of drug administration; drugs to avoid or use with extreme caution; specific side effect common to older adults; and cognitive and behavioral therapy. Since only the abstract was obtained from Son and Park's study, it is not possible to compare and contrast the specific details of each recommendation. The evaluation of acute pain EBPGs by a panel of experts might not reflect the views of those who actually use those recommendations in practice setting.

In this study, Thai nurses who worked at acute care settings rated their perception on the cultural propriety of the acute pain EBPGs. Although the results in this study indicate that all of the recommendations were very appropriate to use in Thai acute care

settings, the interpretation of these results should be used with caution, since the data was from self-report. Previous research revealed that discrepancies exist between current nursing practice and self-report of practice (Chanvej et al., 2004); other methods, such as clinical observation or medical record abstraction, should be used in combination with self-report in order to get the best result.

Currently, many organizations in Thailand publish and disseminate guidelines related to acute pain (Department of Nursing, 2005; Hirunpuchchong, 2006; Mayurapak, 2005; Sringam, 2005; Thailand Nursing and Midwifery Council, 2008), and cancer pain (Nawarak, 2005). Only one guideline is related to acute pain in older adults (Siriburanonta, 2008; Siriburanonta, Toskulkaio, & Satayawiwat, 2009). The Thai acute pain guideline in older adults was developed by the syntheses from 12 EBPs evidence and two out of 12 were from clinical practice guidelines. The main results included recommendations regarding seven topics: (1) initial pain assessment, (2) education for patient and family, (3) use of pain assessment tools, such as Numeric Rating Scale and Face Pain Scale, (4) pharmacological management and monitoring of side effects, (5) nonpharmacological management, (6) pain reassessment after treatment, and (7) advising on pain before discharge. The components of the recommendations were similar to the previous work by Herr and colleague (2006); hence, the Thai acute pain guidelines might be developed based on the acute pain EBPGs. The results from Thai nurses indicated that all recommendation from the acute pain EBPGs were very appropriate to use in Thai acute care settings. If the Thai acute pain guidelines are developed from the acute pain EBPGs, those results would likely be culturally appropriate as well.

Practice Environment of Thai Nurses on Using Acute Pain EBPG

The results revealed that nurses at the larger size hospitals had a higher percentage of using each of the acute pain EBPGs recommendations than those at mid size hospitals, with the exception of two of the recommendations: *I use pain assessment*

tools that are appropriate for older adults' level of education, and I use the same route and opioid for breakthrough pain as are used ATC for the ongoing pain. The higher percentile of large size hospital nurses using acute pain EBP recommendations might be due to a relative abundance of resources provided at the large size hospitals. Cummings et al. (2007) found that hospital size had positive relationship for the opportunities of staff development, staffs' support and services, and facilitation. The opportunities provided for nurses at large size hospital might serve to increase the awareness of nurses on searching for EBP (or the access to sources of EBP) via the internet or research databases.

Four Thai hospitals in the study had pain alleviation services available, but none of them provided pain mitigation specifically to older adults. The great attention given to quality health improvement, as related to the quality of pain care, was introduced to Thai nurses by the implementation of pain as a fifth vital sign, accompanied by the use of pain EBPGs in the hospital. In this study, the use of pain EBPGs was reported in one of the large hospitals, but the acute pain EBP used was not focused specifically on an older adult population. Knowledge about pain in older adults in Thailand is rare, possibly due to the lack of knowledge of Thai nursing scholars regarding pain in older adults. In Thailand, the teaching of Gerontological nursing was incorporated into BSN programs only a decade ago; since then it has become one of the subjects that is required for nursing license examination in Thailand. However, pain in older adults has not yet been included in Gerontological nursing courses. With an increasing older adult population in Thailand, there is a real need to add pain in older adults as one of those topics.

Years of Nursing Experience and Perceived Barriers and Perceived Facilitators toward EBPs

In this study, nurses with more experience (11-20 years) perceived more barriers to finding research than those with less experience (1-10 years). In contrast, Gerrish (2008) found that senior nurses had low barriers to finding research, and also had more

confidence in accessing all sources. The difference between these two results might be due to the relative lack of computer skills in Thai nurses. Computer skills are the most important asset for searching databases for EBPs. Overall Thai nurses rate their computer skill as poor to fair, with approximately 94 percent lacking the skill for database searching (Just, 2008). Not only experienced nurses had high barriers toward using EBP; less experienced nurses had this problem as well. Brostrom et al.(2009) found newly graduated Swedish nurses with two years of nursing experience applied the components of EBPs to the very lowest extent; only one third of them appraised the content of articles and other reviews, as well as participated in changing clinical practice. Another study found that the proportion of nurses using research was lower in those with three years nursing experience than those who had one year nursing experience (Forsman, Gustavsson, Ehrenberg, Rudman, & Wallin, 2009). With the conflicting results, it might be concluded that barriers to finding and utilizing research could be found in both high experience nurses and low experience nurses. To promote the use of EBPs in Thai nurses, hospital administrative personnel must target the implementation specifically to their needs.

The concept of EBP was introduced to Thailand a decade ago. Currently in Thailand, the concept of EBP has diffused and disseminated to nursing education. Many Thai nursing institutions adopted and incorporated EBP in their nursing curriculum. Newer graduate nurses were more familiar with EBP concept and the use of EBP than the senior nurse since they were taught about EBP while attending nursing college/school. Thus, newer nurses (1-10 years) perceived fewer barriers to EBP than those with 11-20 years of experience.

Summary

The majority of Thai nurses in this study are female, with an average age of 35.5 years. The number of RNs was significantly higher than Technical Nurses, due to the

termination of the Technical Nurses program in 2000. Thai nurses had a higher awareness of the importance of EBPs than school nurses in the U.S., which might be due to the nature of their workplace (acute care setting vs. school setting). The source of knowledge most frequently used by Thai nurses was the information from policy/procedural manuals and guidelines because of their availability, accessibility, and trustworthiness. Less use of research journals in the study might result from the lack of Thai publications related to pain. In spite of reporting high numbers of internet access at work, Thai nurses reported using less use of information from the internet. Unawareness of the source of EBPs from the internet might contribute to this problem.

Self-report of pain was the highest ranked practice of the initial rapid pain assessment subscale, and nurses reported using it most of the time for their practice. The mandate from HA and TNMC might have promoted the adoption of self-report. The use of MMSE and the use of the equianalgesic table were very low in Thai nurses' practice, and they need to be improved. The sometimes use of pain management subscales suggested urgent attention to incorporate pain management plan as the priorities for quality improvement. Using the recommendations related to observing side effects of opioids, monitoring for NSAID complications, administering analgesic drugs ATC, and all items from the evaluation of effectiveness scale reflected good nursing pain practices that should be further promoted.

The fact that the vast majority of research reports and/or articles are published in English was Thai nurses' biggest barrier to finding research. Nurses' lack of English skills contributes to this barrier. All countries using English as the second language had this barrier, but the severity of the problem differs. Various possible solutions specific to Thailand were suggested. Thai nurses agreed that they had insufficient time to finding research reports. The time issue was very frequently mentioned in the qualitative data of open-ended questions. This barrier might be a result from work overload. Therefore, hospital administration should be aware and try to address this problem. Inadequate

resources were the top barriers to changing practice. Where the resources are scarce such as Thailand, free access to the resources might eliminate this problem.

The nurses frequently perceived support from a head nurse, but lesser support from physicians. Implementing interdisciplinary quality improvement projects related to pain might increase the support from physicians. All the recommendations from the evaluation of cultural appropriateness of acute pain EBPGs were perceived as appropriate to use for Thai nurses. Thus, this guideline might be used in acute care settings in Thailand. Nurses at large size hospitals had a higher percentage of using almost all the acute pain EBPGs. This might be due to the resource availability provided in a large hospital. Although the result showed that nurses with more years of experience had higher barriers to finding research, the recommendation regarding promoting EBP specifically to years of nursing experience might not be made due to the conflicting findings of other studies.

Limitations of the Study

This study has limits on how generally the findings may be construed. Participants of this study are from hospitals under MoPH, so the study may not be generalized to other Thai hospitals under other affiliates. The nurses also represent a convenience sample. Although the response rate was high for those invited to participate, it is not clear how many nurses were not invited to participate because the sample goal was met.

Data gathering from self-report instruments may not be reflective of actual practice of using EBPs due to response biases. The study instrument had 122 items; therefore respondents may have felt burden and fatigue. The instrument also asked about current use of EBPs, as well as barriers and facilitators toward using acute pain EBPs. Some questions represented the expected nursing role toward those topics. Thai nurses

may have answered the questions congruent with prevailing social values, which may create a social desirability response bias.

Implications for Practice

Given that research reports and/or research articles are published in English was the highest barrier to finding research, as reported by nurses in acute care settings, providing EBP resources in Thai language might help promote the use of EBPs in Thailand. Translating culturally appropriate acute pain EBPgs and then disseminating those via websites that nurses access the most (such as Ministry of Public Health website, or www.gotoknow.org) might promote the accessibility of acute pain EBPgs.

Nurses' lack of resources to reference EBPs (e.g. internet access, research databases, computers, textbooks, nursing journals, EBP experts) might impede their use. In countries where resources are inadequate, such as Thailand, promoting the use of EBPs might be challenging. Most hospitals in Thailand cannot afford to buy expensive research databases for seeking information to guide practice. Public access databases might help to alleviate this problem. Currently there are various EBP/research databases that provide open access to the public, such as PubMed, NCG, and the Cochrane Collaboration. Those databases provide abstracts, EBPgs, or even full text in some topics. In Thailand, the Thai Center of Evidence-based Nursing and Midwifery Center provides a translated EBP related to nursing.

Institutional commitment to improve use of EBPs in caring for older adults with pain is needed. Strategies to secure buy-in and provision of resources to support EBP use should be explored and can build on those successful in the U.S., although cultural appropriateness of these must also be evaluated.

Implications for Education

Thai nurses are generally aware of EBP knowledge. However, they have had a difficult time applying research or EBPs into practice. EBP knowledge and the process of

implementing EBPs should be incorporated into Thai nursing curricula at both undergraduate and graduate levels. At an undergraduate level, where a research course is commonly taught, incorporating simple EBP processes (e.g., ask clinical question in PICOT format, search for the best evidence, and critical appraisal of the evidence) will help nursing students to gain more understanding regarding EBPs concepts and encourage future use of EBPs in their practice. At the graduate level, where graduate nurses are prepared for the role of educator, researcher, nurse practitioner, or clinical nurse specialist, EBPs plays an even more important role in their career and their future. Nursing institutions in Thailand should provide courses and opportunities for graduate students for engaging, designing, delivering and evaluating EBPs care to improve patient outcomes.

Thai nursing institutions should promote academic-practice partnerships to accelerate the use of EBPs into practice. Nursing educators in Thailand have graduated with doctoral degrees in nursing, and are familiar with EBPs and research. The collaboration between academics and nursing practice allows staff nurses to work closely with experts from nursing institutions that might lead to the rapid adoption of EBPs in hospital settings.

Specifically considering improving use of Acute Pain EBP for older adults, undergraduate and graduate curricula should be evaluated to assure content related to assessment and treatment of pain in older persons is included. Encouraging faculty to identify and use EBPGs as the basis for teaching Thai nursing students would help provide a foundation for practice that emphasizes EBP.

Implications for Research

Future research of nurses' current practice on using acute pain EBPs in Thailand should incorporate both self-report and other methods, such as medical record abstraction

or practice observation, in order to document Thai nurses' real practices and decrease reliance upon self-report.

The results of this study indicated that overall the recommendations of EBPG Acute Pain were culturally appropriate to use in Thai hospitals. Evidence from previous studies suggested that the implementation of EBPG Acute Pain improved quality of pain care (Herr et al., 2004; Titler et al., 2009; Titler et al., 2003). Thus, future research related to the implementation of the EBPG Acute Pain should be conducted in Thai hospitals. Before implementation, some recommendations might need to be revised or adjusted for nurses' role in Thailand such as the item related to the use of equianalgesic table or the intravenous PCA titration. Knowledge related to pain assessment and pain management in older adults might need to be assessed since the topic of older adults pain was not addressed in Thai nursing curriculum. The role responsibility for pain assessment and pain management might need to be clarified among Thai hospital healthcare team (i.e., TN, RN, physician, pharmacist, and physical therapy).

This study had a very high response rate (response rate =98.8%). Several factors that might contribute to the high response rate were as follows: including a small amount of incentive (\$1.5) with a questionnaire packet, an expectation set by the Head Nurse, and EBP as a current topic of interest among nurses. Although the contributing factors related to a high response rate might not clear, incorporating these methods for future research might increase the response rate of survey research.

Implications for Health Policy

The Thai government should support the establishment of a Thai National Guideline Clearinghouse that is open to the public for accessing clinical practice guidelines. Currently, Thai EBPGs are disseminated via hospitals, nursing institutions, or professional websites that are relatively difficult to access. The collection of syntheses of selected guidelines in specific topics that are appropriate to problems/needs in Thailand

might promote the use of EBPG in Thailand; further, access by the public to those guidelines might encourage their acceptance.

The biggest barrier to EBPs for Thai nurses in this study was the issue related to English barriers. This issue might prevent Thai nurses to read and appraisal the up-to-date EBPs which were disseminated in English. Providing the Thai translated version of the up-to-date EBPs might facilitate the use of EBPs in Thai nurses. Thus, the Thai government should support resources for EBP center for translating EBPs into Thai.

The increasing of the older adult population in Thailand indicated a great need for quality of care for this population. Acute pain is a major problem for postoperative older adults. The problem of inadequate pain assessment and pain management in older adults was commonly found in Thai hospital. Although various organizations in Thailand developed EBPG related to pain, only one guideline was specifically for older adults and it has not been tested or implemented in a hospital setting. In Thailand, the Healthcare Accreditation Institute (HA) sets a standard for quality of care in hospitals and other healthcare organization. HA has a similar role as the Joint Commission in the US. To improve the quality of pain care for older adults, Thai policy-makers should incorporate adequate pain assessment and pain management for older adults as quality indicators in HA to mandate Thai hospitals to address this problem and prioritize this problem as a quality improvement project of each hospital.

APPENDIX A
THE RESEARCH QUESTIONNAIRE

Acute Pain Evidence-based Practice Questionnaire for Gerontological Nursing (APEBPQ) (Original Version)

The purpose of this questionnaire is to learn what Gerontological nurses know about evidence-based practice related to pain assessment and pain management, and to learn ways to help Gerontological nurses get the information they need to improve their practice. It will also provide information to help develop strategies to overcome barriers to implementing practice changes in their setting. Your help in providing information is greatly appreciated.

There are 5 parts to this questionnaire. The entire questionnaire should take approximately 20 minutes to complete. You may write additional comments if desired. Directions are provided for each section.

For this Study:

Evidence-based practice (EBP) is defined as:

A process of combining the best evidence available with nursing expertise and the preference of older adults and family members to determine optimum care.

EBP activities include, but are not limited to, a literature search; reading, critiquing and synthesizing the evidence; development of evidence-based guidelines (e.g., an evidence-based nursing policy); pilot testing the practice change; and use of evidence-based guidelines in daily practice.

Best evidence primarily refers to the results of research. Where research is limited, best evidence may consist of case studies, expert opinion, and scientific principles.

Older adult is the person who are 60 year or older.

Postoperative Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage after and operation or surgical procedure, or describe in term of such damage.

For a researcher only
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Part I EBP

Section I Awareness, needs, implementation skills, and context

Directions: Think in terms of your own practice in your immediate practice setting (e.g., surgical ward, orthopedic ward). Then please indicate if you strongly disagree, disagree, are uncertain, agree, or strongly agree with the following statements. Read each statement and circle the most appropriate number.

		Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
1.	Evidence-based practice is important to me.	1	2	3	4	5
2.	I know where to find evidence (e.g., research findings or evidence-based clinical guidelines) to guide my practice.	1	2	3	4	5
3.	I am aware of evidence-based practice in general.	1	2	3	4	5
4.	I am aware of nursing research related to pain assessment and pain management in older adults.	1	2	3	4	5
5.	I am aware of evidence-based nursing practices applicable to pain assessment and pain management in older adults.	1	2	3	4	5
6.	I could explain evidence-based practice to a peer.	1	2	3	4	5
7.	I have convenient access to evidence-based practice journals related to pain assessment and pain management in older adults.	1	2	3	4	5

		Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
8.	Someone to assist with a literature search and obtain articles would increase use of evidence-based practices in my practice area.	1	2	3	4	5
9.	I can read a nursing research report and make a sound judgment about its scientific merit.	1	2	3	4	5
10.	The majority of the times, my bosses are cooperative in the implementation of evidence-based practices for acute care.	1	2	3	4	5
11.	I am willing to try out new innovations based on research that I read about in nursing journals or articles.	1	2	3	4	5
12.	In general, I care about evidence-based practice.	1	2	3	4	5
13.	I understand how to implement evidence-based practice in my setting.	1	2	3	4	5
14.	I am aware of evidence-based practices implemented in my setting.	1	2	3	4	5
15.	I am able to develop an evaluation plan to monitor practice improvements made through use of evidence-based nursing.	1	2	3	4	5

Section II Bases of Practice Knowledge

Directions: Think in terms of your own practice in your immediate practice setting (e.g., surgical ward, orthopedic ward). Then please indicate **how often do you use these sources of knowledge for your practice related to pain assessment and pain management in older adults**. Read each statement and circle the most appropriate number.

		Never	Seldom	Sometimes	Frequently	Always
22.	Information I learn about each patient/client as an individual.	1	2	3	4	5
23.	My intuitions about what seems to be 'right' for the patient/client.	1	2	3	4	5
24.	My personal experience of caring for patients/clients over time.	1	2	3	4	5
25.	What has worked for me for years.	1	2	3	4	5
26.	The way I have always performed it.	1	2	3	4	5
27.	Information my fellow practitioners share.	1	2	3	4	5
28.	What doctors discuss with me.	1	2	3	4	5

		Never	Seldom	Sometimes	Frequently	Always
29.	New treatments and medications that I learn about when doctors prescribe them for patients.	1	2	3	4	5
30.	Information I learned from my training.	1	2	3	4	5
31.	Information I get from attending in-service training/conferences.	1	2	3	4	5
32.	Information I get from policy/procedure manuals/	1	2	3	4	5
33.	Information I get from audit reports.	1	2	3	4	5
34.	Articles published in medical journal.	1	2	3	4	5
35.	Articles published in nursing or professional journals.	1	2	3	4	5
36.	Articles published in research journal.	1	2	3	4	5

		Never	Seldom	Sometimes	Frequently	Always
37.	Information in textbooks.	1	2	3	4	5
38.	Information I get from the internet.	1	2	3	4	5
39.	Information I get from the media.	1	2	3	4	5

Part II Current Practice Related to Pain Assessment and Pain Management in Older Adults

Directions: Please think in terms of your own practice in your immediate setting (e.g., surgical ward, or orthopedic ward), then indicate how often your practice matches the following statements **and** how appropriate to use each of the following statement in your practice setting. If you delegate some of these responsibilities to another person, please mark according to the practice you recommend. To answer these questions, you will need to do the following:

- Read through the following explanation to understand each choice
- Then circle the most appropriate number to rate how often your practice matches with the following statements.

The explanation of responses for the question “**How often your practice matches with the following statements**” are the followings:

All the time = the statement is integral to your everyday practice

Most of the time = the statement is generally a part of your everyday practice

A little of the time = the statement is occasionally a part of your everyday practice

Never = the statement is not really part of your everyday practice

Not applicable = the practice is not suitable for your setting.

- Finally, circle the most appropriate number to rate how appropriate to use each of the following statement in your practice setting.

The explanation of responses for the question **“How appropriate to use each of the following statements in your practice setting?”** are the followings:

Extremely appropriate = the statement is 81-100 percent appropriate to use in your setting

Very appropriate = the statement is 61-80 percent appropriate to use in your setting

Moderately appropriate = the statement is 41-60 percent appropriate to use in your setting

Not that appropriate = the statement is 21-40 percent appropriate to use in your setting

Not appropriate at all = the statement is 0-20 percent appropriate to use in setting

	Current practice related to pain assessment and pain management in older adults.	How OFTEN your practice matches with the following statements?					How APPROPRIATE to use each of the following statement in your practice setting?				
		All the Time	Most of the time	A little of the Time	Never	Not Applicable	Extremely Appropriate	Very Appropriate	Moderately Appropriate	Not that appropriate	Not Appropriate at all
40.	I do a rapid or complete pain assessment for older adult patients presenting in acute pain of moderate to severe intensity.	5	4	3	2	1	5	4	3	2	1
41.	I obtain a self-report of pain from the older adult patients if at all possible.	5	4	3	2	1	5	4	3	2	1
42.	If a self-report of pain from the older adults cannot be obtained due to altered level of consciousness or possible cognitive impairment, I do access pain with nonverbal cues of pain	5	4	3	2	1	5	4	3	2	1
43.	I ask older adult patients to mark on diagram or to point to the site of the pain.	5	4	3	2	1	5	4	3	2	1
44.	I use the pain terminology typically used by the older adult individuals and use this term throughout assessment of pain.	5	4	3	2	1	5	4	3	2	1
45.	I assess pain intensity by selecting a tool (e.g., Numeric Rating Scale, Verbal Descriptive Scale, and Faces Rating Scale) based on older adults' preference and cognitive/functional abilities, and then use the same tool consistently.	5	4	3	2	1	5	4	3	2	1
46.	I use pain assessment tools that are appropriately for older adults' level of education.	5	4	3	2	1	5	4	3	2	1
47.	I adapt tools to compensate for sensory impairment.	5	4	3	2	1	5	4	3	2	1

	Current practice related to pain assessment and pain management in older adults.	How OFTEN your practice matches with the following statements?					How APPROPRIATE to use each of the following statement in your practice setting?				
		All the Time	Most of the time	A little of the Time	Never	Not Applicable	Extremely Appropriate	Very Appropriate	Moderately Appropriate	Not that appropriate	Not Appropriate at all
48.	I allow sufficient time for the older adult to process information and to respond to pain assessment tools.	5	4	3	2	1	5	4	3	2	1
49.	I establish a comfort-function goal with the patient.	5	4	3	2	1	5	4	3	2	1
50.	I document pain in a visible place that can be used by other health care providers.	5	4	3	2	1	5	4	3	2	1
51.	I assess cognitive status (e.g., using Mini Mental State Examination) of older adult patients.	5	4	3	2	1	5	4	3	2	1
52.	I use self-report instruments (e.g., Verbal Descriptive Scale, Pain Thermometers, Faces Pain Scale) to assess pain in older adults with mild to moderate cognitive impairment.	5	4	3	2	1	5	4	3	2	1
53.	For older adults with cognitive impairment unable to report pain, I assess for the presence of factors that cause pain (e.g., distended bladder, incision, infection, inflammation, fracture, positioning, urinary tract infection, and constipation).	5	4	3	2	1	5	4	3	2	1
54.	For older adults with cognitive impairment unable to report pain, I assess for facial expressions of pain (e.g., brow lowering with jaw drop or mouth open; brow lowering with narrowing or closing eyes, clenched teeth, sad or distorted expression).	5	4	3	2	1	5	4	3	2	1
55.	For older adults with cognitive impairment unable to report pain, I assess for vocalizations (e.g., groaning, moaning, crying, yelling, sighing, and grunting).	5	4	3	2	1	5	4	3	2	1
56.	For older adults with cognitive impairment unable to report pain, I assess for mental status change (e.g., new onset or increased severity of delirium, agitation, irritability, anxiety, depression).	5	4	3	2	1	5	4	3	2	1
57.	For older adults with cognitive impairment unable to report pain, I	5	4	3	2	1	5	4	3	2	1

	Current practice related to pain assessment and pain management in older adults.	How OFTEN your practice matches with the following statements?					How APPROPRIATE to use each of the following statement in your practice setting?				
		All the Time	Most of the time	A little of the Time	Never	Not Applicable	Extremely Appropriate	Very Appropriate	Moderately Appropriate	Not that appropriate	Not Appropriate at all
	assess for a change in usual behavior (e.g., aggression, withdrawal, impaired mobility, altered sleep, fatigue).										
58.	If the patient is verbally unresponsive or noncommunicative, I try to elicit from the family or care giver the patient's usual pain behaviors such as withdrawal, agitation, facial grimacing, guarding, moaning.	5	4	3	2	1	5	4	3	2	1
59.	I develop and document the pain management treatment plan as early in the course of the acute pain episode as possible.	5	4	3	2	1	5	4	3	2	1
60.	I set realistic comfort-function goals in collaboration with the older adult patient.	5	4	3	2	1	5	4	3	2	1
61.	I include multiple strategies in the comprehensive pain management plan including patient education, choice of pharmacologic and nonpharmacologic treatment options, and treatment plan.	5	4	3	2	1	5	4	3	2	1
62.	I schedule opioid and nonopioid pain medication with acute pain around-the-clock.	5	4	3	2	1	5	4	3	2	1
63.	If analgesics are prescribed for as needed (prn) administration, offer them regularly and administer analgesia 30 minutes prior to activities.	5	4	3	2	1	5	4	3	2	1
64.	I avoid intramuscular (IM) administration in older adults.	5	4	3	2	1	5	4	3	2	1
65.	I monitor and titrate intravenous PCA (Patient Controlled Analgesic) cautiously due to an increased potential for toxicity.	5	4	3	2	1	5	4	3	2	1
66.	I administer acetaminophen or a NSAID with an opioid (unless contraindicated) because of their dose-sparing effects on postoperative pain and a consequent reduction in incidence or severity of opioid-	5	4	3	2	1	5	4	3	2	1

	Current practice related to pain assessment and pain management in older adults.	How OFTEN your practice matches with the following statements?					How APPROPRIATE to use each of the following statement in your practice setting?				
		All the Time	Most of the time	A little of the Time	Never	Not Applicable	Extremely Appropriate	Very Appropriate	Moderately Appropriate	Not that appropriate	Not Appropriate at all
	induced side effects.										
67.	I carefully monitor older adult patients for NSAID complications such as GI bleed, Nephrotoxicity.	5	4	3	2	1	5	4	3	2	1
68.	I use opioids in the management of moderate to severe acute pain in older adults.	5	4	3	2	1	5	4	3	2	1
69.	I use the same route and opioid for breakthrough pain as are used ATC (around the clock) for the ongoing pain.	5	4	3	2	1	5	4	3	2	1
70.	I avoid using more than one opioid at the same time.	5	4	3	2	1	5	4	3	2	1
71.	I use an equianalgesic table to estimate the new dose when changing to a new opioid or a different route of administration.	5	4	3	2	1	5	4	3	2	1
72.	I avoid using pethidine (meperidine or demeral) in older adults.	5	4	3	2	1	5	4	3	2	1
73.	I assess for presence of common opioid side effects (e.g., nausea, vomiting, constipation/ileus, delirium, respiratory depression, sedation, pruritus, urinary retention, and hypotension) and treat prophylactically when possible.	5	4	3	2	1	5	4	3	2	1
74.	I use nonpharmacologic intervention (e.g., repositioning, relaxation, distraction, massage) to complement analgesics.	5	4	3	2	1	5	4	3	2	1
75.	I evaluate the effectiveness of pain management interventions and revise plan as needed.	5	4	3	2	1	5	4	3	2	1
76.	I assess pain relief from pharmacologic interventions.	5	4	3	2	1	5	4	3	2	1
77.	I establish regular reassessment and documentation of pain, including intensity, location, quality and duration, and impact of pain using selected assessment tools.	5	4	3	2	1	5	4	3	2	1
78.	I adjust postoperative pain reassessment schedule to the patient's	5	4	3	2	1	5	4	3	2	1

	Current practice related to pain assessment and pain management in older adults.	How OFTEN your practice matches with the following statements?					How APPROPRIATE to use each of the following statement in your practice setting?				
		All the Time	Most of the time	A little of the Time	Never	Not Applicable	Extremely Appropriate	Very Appropriate	Moderately Appropriate	Not that appropriate	Not Appropriate at all
	situation such as reassessment pain every 1-2 hours for the first 24 hour postoperative period; every 2-4 hours for subacute postoperative period.										
79.	I assess postoperative pain in older adults around the clock and during rest, during activity, and through the nighttime when pain is often heightened.	5	4	3	2	1	5	4	3	2	1
80.	I ask about pain and observe nonverbal pain related behaviors during transfers or patient care activities.	5	4	3	2	1	5	4	3	2	1
81.	I assess for pain related complications at least every 2 hours during the first 24 hours postoperatively then every four to eight hours, based on treatment responses, including pulmonary function.	5	4	3	2	1	5	4	3	2	1
82.	I document all pharmacologic and nonpharmacologic pain interventions in a visible record such as where vital signs are recorded or on a flow sheet.	5	4	3	2	1	5	4	3	2	1
83.	I consult with the patient's physician or nursing staff if pain relief is not adequate.	5	4	3	2	1	5	4	3	2	1
84.	I revise pain management plan if pain relief is not adequate.	5	4	3	2	1	5	4	3	2	1
85.	I begin discharge planning at admission to ensure an effective and safe pain management program for use at home, continuity of care and pain management and promote understanding of the treatment plan.	5	4	3	2	1	5	4	3	2	1
86.	I assure sufficient transition time to determine effectiveness and potential adverse effects when changing pain management regimens prior to hospital discharge.	5	4	3	2	1	5	4	3	2	1
87.	I assess the capability of the older adult and/or family to manage pain at home after discharge.	5	4	3	2	1	5	4	3	2	1
88.	I develop and document the discharge	5	4	3	2	1	5	4	3	2	1

	Current practice related to pain assessment and pain management in older adults.	How OFTEN your practice matches with the following statements?					How APPROPRIATE to use each of the following statement in your practice setting?				
		All the Time	Most of the time	A little of the Time	Never	Not Applicable	Extremely Appropriate	Very Appropriate	Moderately Appropriate	Not that appropriate	Not Appropriate at all
	plan in collaboration with the older adult and his/her family including the following elements.										
89.	I teach the older adult and family/care giver who will assist the older adult with pain management in the home.	5	4	3	2	1	5	4	3	2	1
90.	I provide the older individual with written instructions that clearly describes the pain management plan.	5	4	3	2	1	5	4	3	2	1
91.	If the older adult is discharged to a facility or location other than home, provide a comprehensive pain management plan with clearly communicated transfer orders.	5	4	3	2	1	5	4	3	2	1
92.	I assess the patient's and family members' abilities to obtain analgesics and ensure availability of analgesics prior to discharge.	5	4	3	2	1	5	4	3	2	1

To help us understand why the activities may not be appropriate please briefly explain:

Part III Barriers to EBP

From the previous section you can see that there are different sources of knowledge or 'evidence' that can be used to support practice. These include:

- Professional judgment or expert opinion, your own, and others
- The patient's perspective
- Professional development and education

- Organizational information such as policies, procedures, audit reports etc.
- Published research reports

Directions: The following questions explore your views on how confident you feel about overcoming barriers to achieving evidence-based practice. The first set of barriers refers to finding and reviewing research reports and organizational information such as policies, guidelines and clinical protocols.

Think in terms of your own practice in your immediate practice setting (e.g., surgical ward, orthopedic ward) about barriers to finding and reviewing research reports and organizational information, and barriers to changing practice on the basis of evidence. Then please indicate if you strongly disagree, disagree, are uncertain, agree, or strongly agree with the following statements. Read each statement and circle the most appropriate number.

		Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
93.	I do not know how to find appropriate research reports.	1	2	3	4	5
94.	I do not know how to find organizational information (guidelines, protocols etc).	1	2	3	4	5
95.	I do not have sufficient time to find research reports.	1	2	3	4	5
96.	I do not have sufficient time to find organizational information (guidelines, protocols etc).	1	2	3	4	5
97.	Research reports are not easy to find.	1	2	3	4	5
98.	Organizational information (protocols, guidelines etc.) is not easy to find.	1	2	3	4	5

		Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
99.	I find it difficult to understand research reports.	1	2	3	4	5
100.	I do not feel confident in judging the quality of research reports.	1	2	3	4	5
101.	I find it difficult to identify the implications of research findings for my own practice.	1	2	3	4	5
102.	I do not feel confident about beginning to change my practice.	1	2	3	4	5
103.	The culture of my team is not receptive to changing practice.	1	2	3	4	5
104.	I lack the authority in the work place to change practice.	1	2	3	4	5
105.	There are insufficient resources (e.g. equipment) to change practice.	1	2	3	4	5
106.	There is insufficient time at work to implement changes in practice.	1	2	3	4	5

		Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
107.	Research reports or research articles are published in English thus creating a barrier.	1	2	3	4	5

Part VI Facilitators to EBP

Directions: The following questions explore the extent to which your colleagues may support you to change practice. Read each statement and circle the most appropriate number.

		Never	Seldom	Sometimes	Frequently	Always
108.	Nursing colleagues are supportive of my changing practice.	1	2	3	4	5
109.	Head ward is supportive of my changing practice.	1	2	3	4	5
110.	Doctors with whom I work are supportive of my changing practice.	1	2	3	4	5
111.	Nursing supervisor or head of nursing department is supportive of my changing practice.	1	2	3	4	5

112 Please identify any additional barriers to your providing evidence-based care

113 Please identify three factors which you think would facilitate you in providing evidence-based care.

1-----

2-----

3-----

Part VI Demographics

Directions: Please enter information or check the one that best corresponds to your answer.

114	Please indicate if you are <input type="checkbox"/> female <input type="checkbox"/> Male
115	Please give you age_____years
116	Which of the following is your work place? <input type="checkbox"/> Community Hospital <input type="checkbox"/> General Hospital <input type="checkbox"/> Regional Hospital <input type="checkbox"/> Medical School (University affiliate) <input type="checkbox"/> Other please specify.....
117	Which of the following best describes your current role?

	<input type="checkbox"/> Surgical Ward Nurse <input type="checkbox"/> Orthopedic Ward Nurse <input type="checkbox"/> Other please specify.....
118	What is your highest nursing degree you have completed? <input type="checkbox"/> TN/Diploma in Nursing Science <input type="checkbox"/> RN/Diploma in Nursing Science Equivalent to Bachelor of Science in Nursing or RN/ Bachelor of Science in Nursing <input type="checkbox"/> Master of Science in Nursing or Master of Nursing Science <input type="checkbox"/> Higher than Master degree
119	What year did you first gain a nursing qualification?.....
120	What year did you gain your most recent professional qualification?.....
121	How many hours do you work per week?.....
122	Can you use internet at work? <input type="checkbox"/> Yes <input type="checkbox"/> No

Feel free to add your additional thoughts regarding evidence-based practice, evidence-based practice resources, barriers, and facilitators.

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Thank you so much for completing the questionnaire.

Marisa Suwanraj RN, MSN, PhD candidate

The University of Iowa College of Nursing

แบบสอบถามเรื่องกระบวนการใช้ความรู้เชิงประจักษ์ในการจัดการความปวดเฉียบพลันหลังผ่าตัด
สำหรับพยาบาลที่ดูแลผู้ป่วย

เฉพาะผู้วิจัยเท่านั้น

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แบบสอบถามนี้มีวัตถุประสงค์เพื่อที่จะเรียนรู้ว่าพยาบาลที่ดูแลผู้ป่วยมีความรู้เชิงประจักษ์ที่เกี่ยวข้องกับการประเมินความปวดและการจัดการความปวดในผู้ป่วยอย่างไร และเพื่อที่จะเรียนรู้วิธีทางที่จะช่วยให้พยาบาลที่ดูแลผู้ป่วย ได้รับข้อมูลทางวิชาการที่ต้องการเพื่อใช้ในการปรับปรุงการปฏิบัติการพยาบาล

แบบสอบถามนี้จะช่วยให้ข้อมูลเพื่อที่จะนำไปสู่การพัฒนากลยุทธ์เพื่อจัดอุปสรรคในการเปลี่ยนแปลงการปฏิบัติการพยาบาลในหอผู้ป่วยที่พยาบาลเหล่านั้นทำงานอยู่ ขอขอบคุณที่ท่านให้ความช่วยเหลือในการให้ข้อมูล

แบบสอบถามนี้มีส่วนประกอบย่อย 5 ส่วน ใช้เวลาประมาณ 30 นาทีในการทำแบบสอบถามทั้งหมดหากท่านมีความคิดเห็นใดเพิ่มเติม ขอความกรุณาท่านเขียนข้อความคิดเห็นเพิ่มเติมของท่านได้ในตอนท้ายของแบบสอบถามแต่ละส่วนคำแนะนำในการทำแบบสอบถามได้แสดงไว้ในแต่ละส่วนของแบบสอบถามนั้น ๆ

ในการวิจัยครั้งนี้:

ความรู้เชิงประจักษ์ (Evidence-based practice) หมายถึงกระบวนการในการผสมผสานระหว่างการใช้หลักฐานเชิงประจักษ์ ที่ดีที่สุด (Best evidence) กับความเชี่ยวชาญทางการพยาบาลและความต้องการของ ผู้สูงอายุและสมาชิกในครอบครัวเพื่อนำไปสู่การดูแลที่ดีที่สุด

หลักฐานเชิงประจักษ์ที่ดีที่สุด (Best evidence) หมายถึง ข้อสรุปของการวิจัย หลักฐานเชิงประจักษ์ ที่ดีที่สุดอาจรวมถึง การศึกษาเฉพาะกรณี (Case study) ความคิดเห็นจากผู้เชี่ยวชาญ (Expert Opinion) และ กฎเกณฑ์ทางด้านวิทยาศาสตร์ (Scientific Principle)

กิจกรรมที่เกี่ยวข้องกับความรู้เชิงประจักษ์ประกอบด้วย การสืบค้นข้อมูล การอ่าน การวิพากษ์การสังเคราะห์ หลักฐานเชิงประจักษ์ การพัฒนาแนวปฏิบัติจากความรู้เชิงประจักษ์ การทดสอบเบื้องต้น เกี่ยวกับการเปลี่ยนแปลงการปฏิบัติ และการใช้แนวปฏิบัติจากความรู้เชิงประจักษ์ในการปฏิบัติงานประจำวัน

ความปวดเฉียบพลันหลังผ่าตัด หมายถึง ประสบการณ์ที่ไม่พึงประสงค์ด้านความรู้สึกรวมทั้ง อารมณ์ ที่เกี่ยวข้องกับ การบาดเจ็บของเนื้อเยื่อที่เกิดขึ้นหรืออาจจะเกิดขึ้นได้หลังจากการผ่าตัดหรือกระบวนการผ่าตัด

ผู้สูงอายุ หมายถึง ผู้ป่วยอายุ 60 ปีขึ้นไปทั้งเพศชายและเพศหญิงที่เข้ารับการผ่าตัดในโรงพยาบาล

ส่วนที่ 1 ความรู้เชิงประจักษ์ที่เกี่ยวกับความปวดในผู้ป่วย

หัวข้อที่ 1 ความตระหนัก ความต้องการ ทักษะการนำความรู้สู่การปฏิบัติ และบริบท

คำแนะนำ คิดทบทวนเกี่ยวกับการปฏิบัติการพยาบาลของท่านในหอผู้ป่วยที่ท่านทำงานอยู่ขณะนี้ เช่น ในหอผู้ป่วยศัลยกรรม หอผู้ป่วยศัลยกรรมกระดูก จากนั้นโปรดระบุความคิดเห็นของท่านต่อข้อความดังต่อไปนี้ว่าท่านเห็นด้วยในระดับใด *ไม่เห็นด้วยอย่างยิ่ง ไม่เห็นด้วย อย่างไรก็ดี เห็นด้วย และเห็นด้วยอย่างยิ่ง* กรุณาอ่านข้อความเห็นแต่ละข้อแล้ววงกลมรอบตัวเลขเพื่อเลือกข้อความคิดเห็นที่เหมาะสมกับท่านมากที่สุด

ความตระหนัก ความต้องการ ทักษะการนำความรู้สู่การปฏิบัติ และบริบท		ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่เห็นใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
1.	ความรู้เชิงประจักษ์เป็นสิ่งที่สำคัญต่อท่าน	1	2	3	4	5
2.	ท่านรู้แหล่งหาความรู้เชิงประจักษ์เพื่อใช้เป็นแนวทางในการปฏิบัติการพยาบาล เช่น จากข้อค้นพบทางการวิจัย หรือ จากแนวทางการปฏิบัติการพยาบาลเชิงประจักษ์ทางคลินิก	1	2	3	4	5
3.	โดยทั่วไปท่านตระหนักว่ามีความรู้เชิงประจักษ์อยู่	1	2	3	4	5

	ความตระหนัก ความต้องการ ทักษะการนำความรู้สู่การปฏิบัติ และบริบท	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
4.	ท่านตระหนักว่ามีภารกิจทางการแพทย์ที่เกี่ยวข้องกับการประเมินและการจัดการกับความปวดในผู้สูงอายุ	1	2	3	4	5
5.	ท่านตระหนักว่ามีความรู้เชิงประจักษ์ทางการแพทย์ที่สามารถนำไปสู่การปฏิบัติที่เกี่ยวข้องกับการประเมินและการจัดการกับความปวดในผู้สูงอายุ	1	2	3	4	5
6.	ท่านสามารถอธิบายความรู้เชิงประจักษ์ให้กับเพื่อนร่วมงานฟังได้	1	2	3	4	5
7.	ท่านสามารถเข้าถึงวารสารที่มีความรู้เชิงประจักษ์ที่เกี่ยวข้องกับการประเมินและการจัดการกับความปวดอย่างสะดวก	1	2	3	4	5
8.	หากมีคนช่วยท่านเกี่ยวกับการทบทวนวรรณกรรมและการสืบค้นเอกสารการวิจัยจะช่วยให้ท่านมีการใช้ความรู้เชิงประจักษ์ทางคลินิกเพิ่มขึ้น	1	2	3	4	5
9.	ท่านสามารถอ่านเอกสารทางการแพทย์ทางการแพทย์และสามารถวิเคราะห์ได้ว่าการวิจัยนั้นๆมีความน่าเชื่อถือในทางวิทยาศาสตร์เพียงใด	1	2	3	4	5
10.	โดยส่วนมากหัวหน้าของท่านให้ความร่วมมือในการนำความรู้เชิงประจักษ์สู่การปฏิบัติในหอผู้ป่วยของท่าน	1	2	3	4	5
11.	ท่านต้องการที่จะลงแนวคิดใหม่ที่ได้จากการทำวิจัยที่ท่านได้อ่านจากวารสารทางการแพทย์หรือเอกสารการวิจัย	1	2	3	4	5
12.	โดยส่วนมากท่านให้ความสนใจอย่างมากต่อความสำคัญของความรู้เชิงประจักษ์	1	2	3	4	5
13.	ท่านเข้าใจวิธีการที่จะนำความรู้เชิงประจักษ์สู่การปฏิบัติในหอผู้ป่วยของท่าน	1	2	3	4	5
14.	ท่านตระหนักว่ามีผู้นำเอาความรู้เชิงประจักษ์สู่การปฏิบัติในหอผู้ป่วยของท่าน	1	2	3	4	5

ความตระหนัก ความต้องการ ทักษะการนำความรู้สู่การปฏิบัติ และบริบท		ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
15.	ท่านสามารถพัฒนาแผนการประเมินผลเพื่อติดตามการเปลี่ยนแปลงในการปฏิบัติการพยาบาลจากการใช้ความรู้เชิงประจักษ์	1	2	3	4	5
16.	เพื่อความสำเร็จของความรู้เชิงประจักษ์ทางการปฏิบัติการพยาบาล ท่านต้องการข้อมูลเกี่ยวกับวิธีการทบทวนเอกสารการวิจัย	1	2	3	4	5
17.	เพื่อความสำเร็จของความรู้เชิงประจักษ์ทางการปฏิบัติการพยาบาลท่านต้องการโอกาสในการได้เรียนรู้เกี่ยวกับวิธีการวิเคราะห์วิพากษ์งานวิจัยและชนิดของหลักฐานเชิงประจักษ์อื่น ๆ	1	2	3	4	5
18.	เพื่อความสำเร็จของความรู้เชิงประจักษ์ทางการปฏิบัติการพยาบาลท่านต้องการข้อมูลเรื่องวิธีการต่างๆในการนำความรู้เชิงประจักษ์สู่การปฏิบัติในหอผู้ป่วยของท่าน	1	2	3	4	5
19.	ท่านเห็นว่าท่านจะได้รับประโยชน์จากการได้รับข้อมูลเรื่องวิธีการต่างๆในการประเมินผลกระทบของการนำความรู้เชิงประจักษ์สู่การปฏิบัติในหอผู้ป่วยของท่าน	1	2	3	4	5
20.	ท่านคิดว่าแนวทางการปฏิบัติการพยาบาลโดยใช้ความรู้เชิงประจักษ์เรื่องการจัดการกับความปวดเฉียบพลันที่ได้รับการพัฒนาและพร้อมที่จะใช้มีประโยชน์ในการพัฒนาการปฏิบัติการพยาบาลของท่าน	1	2	3	4	5
21.	ท่านคิดว่าการมีเครือข่ายกับผู้ที่ใช้ความรู้เชิงประจักษ์กับคนอื่นๆจะเป็นประโยชน์ต่อท่าน	1	2	3	4	5

โปรดให้ข้อคิดเห็นเพิ่มเติม

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หัวข้อที่ 2 แหล่งของความรู้ที่เกี่ยวข้องกับการปฏิบัติ

คำแนะนำ คิดทบทวนเกี่ยวกับการปฏิบัติการพยาบาลของท่านตามความเป็นจริงในหอผู้ป่วยที่ท่านทำงานอยู่ขณะนี้เช่นในหอผู้ป่วยศัลยกรรม หอผู้ป่วยศัลยกรรมกระดูก จากนั้น โปรดระบุว่าท่านใช้แหล่งความรู้เหล่านี้บ่อยครั้งเท่าใด ในการปฏิบัติการพยาบาลของท่านที่เกี่ยวข้องกับการประเมินและจัดการความปวดในผู้สูงอายุ โปรดอ่านข้อความแต่ละข้อต่อไปนี้และวงกลมหมายเลขที่เหมาะสมกับท่านมากที่สุด

	แหล่งของความรู้ที่เกี่ยวข้องกับการปฏิบัติ	ไม่เคย	ไม่บ่อย	บางครั้ง	บ่อย ๆ	ทุกครั้ง
22.	ท่านใช้ข้อมูลที่ท่านเรียนรู้เกี่ยวกับผู้ป่วยสูงอายุในความปลอดภัยของท่านเป็นรายบุคคล	1	2	3	4	5
23.	ท่านใช้สัญชาตญาณของท่านในการพิจารณาว่าสิ่งใดควรจะเหมาะสมกับผู้ป่วยสูงอายุในความปลอดภัยของท่าน	1	2	3	4	5
24.	ท่านใช้ประสบการณ์ส่วนตัวของท่านในการดูแลผู้ป่วยสูงอายุมาเป็นระยะเวลานาน	1	2	3	4	5
25.	ท่านใช้สิ่งที่ท่านทำแล้วประสบความสำเร็จมาตลอดระยะเวลา	1	2	3	4	5
26.	ท่านใช้สิ่งที่ท่านมักจะทำปฏิบัติอย่างสม่ำเสมอ	1	2	3	4	5
27.	ท่านใช้ข้อมูลที่เพื่อนร่วมงานของท่านเล่าให้ฟัง	1	2	3	4	5
28.	ท่านใช้สิ่งที่แพทย์ได้มีการพูดคุยกับท่าน	1	2	3	4	5
29.	ท่านใช้การรักษาใหม่หรือยาใหม่ที่ท่านเรียนรู้เมื่อแพทย์ใช้รักษาผู้ป่วย	1	2	3	4	5
30.	ท่านใช้ข้อมูลที่ท่านได้เรียนรู้จากการฝึกอบรม	1	2	3	4	5
31.	ท่านใช้ข้อมูลที่ท่านได้จากการเข้าฟังการอบรมต่าง ๆ หรือจากการฝึกอบรมในหน่วยงาน	1	2	3	4	5
32.	ท่านใช้ข้อมูลที่ท่านได้จากคู่มือการปฏิบัติการหรือแผนการปฏิบัติ	1	2	3	4	5
33.	ท่านใช้ข้อมูลที่ท่านได้จากรายงานการตรวจสอบภายใน (audit reports)	1	2	3	4	5
34.	ท่านใช้รายงานการวิจัยที่ตีพิมพ์ในวารสารทางการแพทย์	1	2	3	4	5
35.	ท่านใช้รายงานการวิจัยที่ตีพิมพ์ในวารสารทางการแพทย์หรือวารสารทางวิชาชีพอื่น	1	2	3	4	5
36.	ท่านใช้รายงานการวิจัยที่ตีพิมพ์ในวารสารการวิจัย	1	2	3	4	5
37.	ท่านใช้ข้อมูลในตำราทางวิชาการ	1	2	3	4	5
38.	ท่านใช้ข้อมูลที่ท่านได้จากอินเทอร์เน็ต	1	2	3	4	5
39.	ท่านใช้ข้อมูลที่ท่านได้จากสื่อมวลชน	1	2	3	4	5

ส่วนที่ 2 การปฏิบัติการพยาบาลในปัจจุบันที่เกี่ยวกับการประเมินความปวดและการจัดการกับความปวดในผู้สูงอายุ

คำแนะนำ: คิดทบทวนเกี่ยวกับการปฏิบัติการพยาบาลของท่านในหอผู้ป่วยที่ท่านทำงานอยู่ขณะนี้ เช่น ในหอผู้ป่วยศัลยกรรม หอผู้ป่วยศัลยกรรมกระดูก จากนั้นโปรดระบุว่าบ่อยครั้งเพียงใดที่การปฏิบัติของท่านตรงกับแนวทางปฏิบัติแต่ละข้อต่อไปนี้ และแนวปฏิบัติดังกล่าวมีความเหมาะสมที่จะใช้ในหอผู้ป่วยของท่านหรือไม่ ในกรณีที่ท่านให้ผู้อื่นทำกิจกรรมการพยาบาลเหล่านั้นแทนท่าน โปรดเลือกคำตอบที่ท่านได้แนะนำให้ผู้ปฏิบัติท่านเพื่อที่จะตอบคำถามส่วนที่ 2 ซึ่งประกอบด้วยส่วนที่ 2.1 และ 2.2 ขอให้ท่านทำตามคำแนะนำต่อไปนี้:

- อ่านคำอธิบายข้อคำตอบทั้งสองข้อต่อไปนี้

ส่วนที่ 2.1 คำอธิบายข้อคำตอบของคำถาม “บ่อยครั้งแค่ไหนที่การปฏิบัติของท่านตรงกับแนวทางการปฏิบัติต่อไปนี้”:

ตลอดเวลา = แนวทางการปฏิบัตินี้เป็นส่วนประกอบสำคัญของการปฏิบัติการพยาบาลประจำวัน

บางครั้ง = แนวทางการปฏิบัตินี้เป็นส่วนหนึ่งของการปฏิบัติการพยาบาลประจำวันโดยทั่วไป

ไม่บ่อย = แนวทางการปฏิบัตินี้เป็นส่วนหนึ่งของการปฏิบัติการพยาบาลประจำวันเป็นบางครั้งบางคราว

ไม่เคย = แนวทางการปฏิบัติไม่ได้เป็นส่วนหนึ่งของการปฏิบัติการพยาบาลประจำวันของท่านโดยแท้จริง

ไม่สามารถนำไปปรับใช้ได้ = แนวทางการปฏิบัติไม่เหมาะสมที่จะใช้ในหอผู้ป่วยของท่าน

ส่วนที่ 2.2 คำอธิบายข้อคำตอบของคำถาม “ท่านคิดว่าแนวทางการปฏิบัติดังกล่าวมีความเหมาะสมที่จะใช้ในหอผู้ป่วยของท่าน เพียงใด”

เหมาะสมที่สุด = แนวทางการปฏิบัติมีความเหมาะสม 81-100 เปอร์เซ็นต์ที่จะใช้ในหอผู้ป่วยของท่าน

เหมาะสมมาก = แนวทางการปฏิบัติมีความเหมาะสม 61-80 เปอร์เซ็นต์ที่จะใช้ในหอผู้ป่วยของท่าน

เหมาะสมปานกลาง = แนวทางการปฏิบัติมีความเหมาะสม 41-60 เปอร์เซ็นต์ที่จะใช้ในหอผู้ป่วยของท่าน

ไม่เหมาะสม = แนวทางการปฏิบัติมีความเหมาะสม 21-40 เปอร์เซ็นต์ที่จะใช้ในหอผู้ป่วยของท่าน

ไม่เหมาะสมที่สุด = แนวทางการปฏิบัติมีความเหมาะสม 0-20 เปอร์เซ็นต์ที่จะใช้ในหอผู้ป่วยของท่าน

- จากนั้นให้วงกลมล้อมรอบตัวเลขที่เหมาะสมกับการปฏิบัติของท่านที่สุด

แนวทางการปฏิบัติที่เกี่ยวข้องกับการประเมินความปวดและการจัดการกับความปวดในผู้สูงอายุ	2.1 บ่อยครั้งแค่ไหนที่การปฏิบัติการพยาบาลของท่านสอดคล้องกับแนวทางการปฏิบัติต่อไปนี้					2.2 ท่านคิดว่าแนวทางการปฏิบัติดังกล่าวมีความเหมาะสมที่จะใช้ในหอผู้ป่วยของท่าน เพียงใด				
	ตลอดเวลา	บางครั้ง	ไม่บ่อย	ไม่เคย	ไม่ได้ปฏิบัติ	เหมาะสมที่สุด	เหมาะสมมาก	เหมาะสมปานกลาง	ไม่เหมาะสม	ไม่เหมาะสมที่สุด
40. ท่านทำการประเมินความปวดแบบรวดเร็ว (Rapid) หรือแบบครอบคลุม (Complete) สำหรับผู้ป่วยสูงอายุที่มีความปวดเฉียบพลันในระดับปานกลางถึงรุนแรง	5	4	3	2	1	5	4	3	2	1
41. ท่านให้ผู้สูงอายุบอกความปวดด้วยตัวเอง (a self-report of pain) ทุกครั้งที่เจ็บไป	5	4	3	2	1	5	4	3	2	1
42. หากผู้สูงอายุไม่สามารถบอกความปวดด้วยตนเองได้เนื่องจากการเปลี่ยนแปลงของระดับความรู้สึกหรืออาจมีความพร่องของการรู้คิด (Cognitive Impairment) ท่านประเมินความปวดของผู้สูงอายุโดยใช้แบบบ่งชี้ความปวดที่ไม่ใช้คำพูด	5	4	3	2	1	5	4	3	2	1
43. ท่านให้ผู้สูงอายุทำเครื่องหมายแสดงบริเวณที่มีความปวดบน แผนภูมิแสดงความเจ็บปวด (pain diagram) หรือชี้ไปที่บริเวณที่มีความปวด	5	4	3	2	1	5	4	3	2	1
44. ท่านใช้คำศัพท์เกี่ยวกับความปวดที่ใช้ทั่วไปโดย	5	4	3	2	1	5	4	3	2	1

แนวทางการปฏิบัติที่เกี่ยวข้องกับการประเมิน ความปวดและการจัดการกับความปวดในผู้สูงอายุ	2.1 บ่อยครั้งแค่ไหนที่การปฏิบัติการ พยาบาล ของท่านสอดคล้องกับแนวทางการปฏิบัติต่อไปนี้					2.2 ท่านคิดว่าแนวทางการปฏิบัติดังกล่าวมีความ เหมาะสม ที่จะใช้ในหอผู้ป่วยของท่าน เพียงใด				
	ตลอด เวลา	บาง ครั้ง	ไม่ บ่อย	ไม่ เคย	ไม่ได้ ปฏิบัติ	เหมาะ สม ที่สุด	เหมาะ สม มาก	เหมาะ สม ปาน กลาง	ไม่ เหมาะ สม	ไม่ เหมาะ สม ที่สุด
ผู้สูงอายุและใช้คำนี้ตลอดการประเมินความปวด										
45. ท่านประเมินระดับความรุนแรงของความปวดโดยเลือกแบบประเมินความปวด เช่น Numeric Rating Scale, Verbal Descriptive Scale, Faces Rating Scale ตามความชอบของผู้สูงอายุและตามระดับความสามารถในการรู้คิดและความสามารถในการทำกิจกรรม และใช้แบบประเมินนั้นตลอดการให้การรักษา	5	4	3	2	1	5	4	3	2	1
46. ท่านใช้แบบประเมินความปวดที่เหมาะสมกับระดับการศึกษาของผู้สูงอายุ	5	4	3	2	1	5	4	3	2	1
47. ท่านปรับเปลี่ยนแบบประเมินความปวดเพื่อให้เหมาะสมกับความเสื่อมของการรับรู้ของผู้สูงอายุ	5	4	3	2	1	5	4	3	2	1
48. ท่านให้เวลาที่เพียงพอสำหรับผู้สูงอายุในการทำ ความเข้าใจและตอบสนองต่อแบบประเมินความปวด	5	4	3	2	1	5	4	3	2	1
49. ท่านตั้งเกณฑ์เกี่ยวกับความสุขสบายและ ความสามารถในการทำกิจกรรมร่วมกับผู้ป่วย ผู้สูงอายุ	5	4	3	2	1	5	4	3	2	1
50. ท่านเก็บบันทึกความปวดในที่สามารถเห็นได้ชัดเจน เพื่อให้ผู้ดูแลผู้สูงอายุคนอื่นสามารถใช้ บันทึกความปวดนั้น ได้โดยสะดวก	5	4	3	2	1	5	4	3	2	1
51. ท่านประเมินระดับความสามารถในการรู้คิด (cognitive status) ของผู้ป่วยสูงอายุ เช่น ใช้ เครื่องมือ Mini Mental State Examination	5	4	3	2	1	5	4	3	2	1
52. ท่านใช้แบบประเมินความปวดด้วยตนเอง เช่น Verbal Descriptive Scale, Pain Thermometers, Faces Pain Scale เพื่อประเมินความปวดใน ผู้สูงอายุที่มีปัญหาเกี่ยวกับความพร่องในการรู้คิด ในระดับน้อยถึงปานกลาง	5	4	3	2	1	5	4	3	2	1
53. สำหรับผู้สูงอายุที่มีปัญหาเกี่ยวกับความพร่องใน การรู้คิดที่ไม่สามารถบอกความปวดได้ด้วยตนเอง ท่านประเมินปัจจัยอื่น ๆ ที่เป็นสาเหตุให้เกิดความ ปวดเช่น กระเพาะปัสสาวะเต็ม มีแผลผ่าตัด มีการ คิดเชื่อ มีการอักเสบ มีกระดูกหัก มีการคิดเชื่อที่ ทางเดินปัสสาวะ มีท้องผูก	5	4	3	2	1	5	4	3	2	1
54. สำหรับผู้สูงอายุที่มีความพร่องในการรู้คิดไม่ สามารถบอกความปวดด้วยตนเอง ท่านประเมิน การแสดงออกทางสีหน้าที่บ่งถึงความเจ็บปวด เช่น คิ้วขมวดร่วมกับขากรรไกรตกรหรืออ้าปาก คิ้ว ขมวดร่วมกับหลับตา กัดฟัน ชีมนเศร้าหรือมีการ	5	4	3	2	1	5	4	3	2	1

แนวทางการปฏิบัติที่เกี่ยวข้องกับการประเมิน ความปลอดภัยและการจัดการกับความปวดในผู้สูงอายุ	2.1 บ่อยครั้งแค่ไหนที่การปฏิบัติการ พยาบาล ของท่านสอดคล้องกับแนวทางการปฏิบัติต่อไปนี้					2.2 ท่านคิดว่าแนวทางการปฏิบัติดังกล่าวมีความ เหมาะสม ที่จะใช้ในหอผู้ป่วยของท่าน เพียงใด				
	ตลอด เวลา	บาง ครั้ง	ไม่ บ่อย	ไม่ เคย	ไม่ได้ ปฏิบัติ	เหมาะ สม ที่สุด	เหมาะ สม มาก	เหมาะ สม กลาง	ไม่ เหมาะ สม	ไม่ เหมาะ สม ที่สุด
แสดงออกที่ผิดปกติจากเดิม										
55. สำหรับผู้สูงอายุที่มีความพร้อมของความรู้คิดไม่สามารถบอกความปวดด้วยตนเอง ท่านประเมินความปวดจากลักษณะของเสียงที่ผู้สูงอายุแสดงออก เช่น ร้องครวญคราง ร้องโหยหวน ร้องไห้ ร้องตะโกน ถอนหายใจและร้องโอดโอด	5	4	3	2	1	5	4	3	2	1
56. สำหรับผู้สูงอายุที่มีความพร้อมของความรู้คิดไม่สามารถบอกความปวดด้วยตนเอง ท่านประเมินความปวดจากการเปลี่ยนแปลงของสภาวะด้านสุขภาพจิต เช่น การเกิดภาวะสับสน หรือการเพิ่มความรุนแรงของภาวะสับสน การไม่อยู่นิ่ง มีการแสดงควมรำคาญ มีความวิตกกังวล มีความเศร้าสร้อย	5	4	3	2	1	5	4	3	2	1
57. สำหรับผู้สูงอายุที่มีความพร้อมของความรู้คิดไม่สามารถบอกความปวดด้วยตนเอง ท่านประเมินความปวดจากการเปลี่ยนแปลงของพฤติกรรม ไปจากปกติ เช่น มีความก้าวร้าว เลิกทำกิจกรรมบางอย่าง มีปัญหาในการเคลื่อนไหว นอนไม่หลับเมื่อขี้	5	4	3	2	1	5	4	3	2	1
58. หากผู้สูงอายุไม่สามารถสื่อสารด้วยการพูดได้ ท่านสอบถามเกี่ยวกับพฤติกรรมที่เกี่ยวข้องกับความปวด เช่น ปฏิกริยาการถอนหนีจากความปวด (withdrawal), อยู่ไม่สุข (agitation), สีหน้าบูดบึ้ง (facial grimacing), ปฏิกริยาตอบสนองที่นอกเหนืออำนาจการควบคุมเพื่อปกป้องบริเวณที่มีความปวด (guarding), ร้องครวญคราง (moaning) จากสมาชิกในครอบครัวหรือผู้ดูแลผู้สูงอายุ	5	4	3	2	1	5	4	3	2	1
59. ท่านจัดทำและบันทึกการวางแผนการจัดการความปวดให้กับผู้สูงอายุเร็วที่สุดเท่าที่จะเป็นไปได้	5	4	3	2	1	5	4	3	2	1
60. ท่านวางแผนเป้าหมายที่เป็นไปได้จริงเกี่ยวกับความสุขสบายและความสามารถในการทำกิจกรรมร่วมกับผู้ป่วยสูงอายุ	5	4	3	2	1	5	4	3	2	1
61. ท่านใช้แผนกลยุทธ์ที่หลากหลายในการจัดการกับความปวด ซึ่งครอบคลุมถึงการให้ความรู้กับผู้ป่วย ทางเลือกในการใช้การจัดการกับความปวดแบบใช้ยาและไม่ใช้ยา และการวางแผนการรักษา	5	4	3	2	1	5	4	3	2	1
62. ท่านวางแผนในการให้ยาบรรเทาอาการปวดกลุ่ม opioid (สารประกอบสังเคราะห์ที่มีฤทธิ์คล้ายแอลกอฮอล์ของฝิ่น) และ nonopioid แบบตามเวลา (around-the-clock) แก่ผู้ป่วยที่มีความปวดเฉียบพลัน	5	4	3	2	1	5	4	3	2	1

แนวทางการปฏิบัติที่เกี่ยวข้องกับการประเมิน ความปลอดภัยและการจัดการกับความปวดในผู้สูงอายุ		2.1 บ่อยครั้งแค่ไหนที่การปฏิบัติการ พยาบาล ของท่านสอดคล้องกับแนวทางการปฏิบัติต่อไปนี้					2.2 ท่านคิดว่าแนวทางการปฏิบัติดังกล่าวมีความ เหมาะสม ที่จะใช้ในหอผู้ป่วยของท่าน เพียงใด				
		ตลอด เวลา	บาง ครั้ง	ไม่ บ่อย	ไม่ เคย	ไม่ได้ ปฏิบัติ	เหมาะ สม ที่สุด	เหมาะ สม มาก	เหมาะ สม ปาน กลาง	ไม่ เหมาะ สม	ไม่ เหมาะ สม ที่สุด
63.	หากยาระงับปวดถูกสั่งให้ให้แบบเมื่อมีความปวด (prn) ท่านเสนอให้ยานี้แก่ผู้ป่วยอย่างสม่ำเสมอและให้ยาระงับปวดนี้ 30 นาทีก่อนทำกิจกรรม	5	4	3	2	1	5	4	3	2	1
64.	ท่านหลีกเลี่ยงการให้ยาทางกล้ามเนื้อแก่ผู้สูงอายุ	5	4	3	2	1	5	4	3	2	1
65.	ท่านติดตามและควบคุมการให้ยา PCA (Patient Controlled Analgesic) ทางหลอดเลือดดำอย่างระมัดระวังเนื่องจากมีความเสี่ยงต่อการเกิด toxicity	5	4	3	2	1	5	4	3	2	1
66.	ท่านให้ยาพาราเซตามอล หรือ NSAID ร่วมกับยา opioid (หากไม่มีข้อห้าม) เนื่องจากยาที่ให้ร่วมกันนี้เสริมฤทธิ์กันซึ่งมีผลคือความปวดหลังผ่าตัดและทำให้ลดอุบัติการณ์หรือความรุนแรงของอาการ ช้างเคียงของยา opioid	5	4	3	2	1	5	4	3	2	1
67.	ท่านเฝ้าระวังภาวะแทรกซ้อนเช่น เลือดออกในกระเพาะอาหาร พืชต่อไต ในผู้สูงอายุที่ใช้ NSAID	5	4	3	2	1	5	4	3	2	1
68.	ท่านใช้ยา opioid หลากหลายชนิดในการจัดการกับความปวดเฉียบพลันระดับปานกลางถึงรุนแรงในผู้สูงอายุ	5	4	3	2	1	5	4	3	2	1
69.	ท่านใช้ opioid และใช้วิธีการบริหารยาแบบเดิมทุกครั้งสำหรับความปวดที่เกิดขึ้นใหม่และใช้การบริหารยาแบบตามเวลา (around-the-clock) สำหรับความปวดที่ต่อเนื่อง	5	4	3	2	1	5	4	3	2	1
70.	ท่านหลีกเลี่ยงที่จะใช้ยากลับ opioid มากกว่าหนึ่งตัวในการบริหารยารวดเดียวกัน	5	4	3	2	1	5	4	3	2	1
71.	ท่านใช้ตาราง equianalgesic เพื่อจะคาดประมาณขนาดของยาใหม่เมื่อมีการเปลี่ยนยา opioid ตัวใหม่หรือมีการบริหารยาต่างวิธี	5	4	3	2	1	5	4	3	2	1
72.	ท่านหลีกเลี่ยงที่จะใช้ pethidine (meperidine or demeral) ในผู้สูงอายุ	5	4	3	2	1	5	4	3	2	1
73.	ท่านประเมินอาการไม่พึงประสงค์จากการใช้ยากลับ opioid เช่น คลื่นไส้ อาเจียน ท้องผูก สับสน กลดการหายใจ ไม่รู้สึกตัว ความดันต่ำ และ พยายามอย่างเต็มที่ในการป้องกันไม่ให้เกิดอาการไม่พึงประสงค์ดังกล่าว	5	4	3	2	1	5	4	3	2	1
74.	ท่านใช้การบรรเทาอาการปวดโดยไม่ใช้ยา เช่น การเปลี่ยนท่าทาง การผ่อนคลาย การเบี่ยงเบนความสนใจ การนวด เพื่อที่จะเสริมผลการใช้ยาระงับปวด	5	4	3	2	1	5	4	3	2	1

แนวทางการปฏิบัติที่เกี่ยวข้องกับการประเมิน ความปลอดภัยและการจัดการกับความปวดในผู้สูงอายุ		2.1 บ่อยครั้งแค่ไหนที่การปฏิบัติการ พยาบาล ของท่านสอดคล้องกับแนวทางการปฏิบัติต่อไปนี้					2.2 ท่านคิดว่าแนวทางการปฏิบัติดังกล่าวมีความ เหมาะสม ที่จะใช้ในหอผู้ป่วยของท่าน เพียงใด				
		ตลอด เวลา	บาง ครั้ง	ไม่ บ่อย	ไม่ เคย	ไม่ได้ ปฏิบัติ	เหมาะ สม ที่สุด	เหมาะ สม มาก	เหมาะ สม กลาง	ไม่ เหมาะ สม	ไม่ เหมาะ สม ที่สุด
75.	ท่านประเมินประสิทธิผลของการจัดการความปวด และเปลี่ยนการวางแผนใหม่เมื่อจำเป็น	5	4	3	2	1	5	4	3	2	1
76.	ท่านประเมินความปวดที่บรรเทาจากการใช้ยา บรรเทาความปวด	5	4	3	2	1	5	4	3	2	1
77.	ท่านมีการประเมินความปวดซ้ำอย่างสม่ำเสมอและ บันทึกความปวด รวมถึง ความรุนแรง ตำแหน่ง คุณลักษณะและช่วงเวลา และผลกระทบของความ ปวด โดยใช้แบบประเมินความปวดที่ได้เลือกไว้	5	4	3	2	1	5	4	3	2	1
78.	ท่านปรับแผนการประเมินความปวดหลังผ่าตัดซ้ำ ตามอาการของผู้ป่วยเช่น ประเมินความปวดซ้ำทุก 1-2 ชั่วโมง ใน 24 ชั่วโมงแรกหลังผ่าตัด ทุก 2-4 ชั่วโมงหลังจากวันแรกของการผ่าตัด	5	4	3	2	1	5	4	3	2	1
79.	ท่านประเมินความปวดหลังผ่าตัดในผู้สูงอายุตาม เวลาที่กำหนดและเวลาที่มักจะพบว่าผู้ป่วยมีความ ปวดเพิ่มขึ้นกว่าปกติ เช่นระหว่างผู้ป่วยพัก ระหว่างการทำกิจกรรมและในเวลากลางคืน	5	4	3	2	1	5	4	3	2	1
80.	ท่านประเมินความปวดและสังเกตพฤติกรรมแสดง ความปวดของผู้ป่วยระหว่างที่เคลื่อนย้ายผู้ป่วย หรือผู้ป่วยทำกิจกรรม	5	4	3	2	1	5	4	3	2	1
81.	ท่านประเมินภาวะแทรกซ้อนที่เกี่ยวข้องกับความ ปวดอย่างน้อยทุก 2 ชั่วโมงในระหว่าง 24 ชั่วโมง แรกหลังผ่าตัดจากนั้นทุก 4-8 ชั่วโมง การประเมิน นี้ขึ้นอยู่กับการตอบสนองต่อการรักษา รวมถึง ภาวะการทำงานของระบบหายใจ	5	4	3	2	1	5	4	3	2	1
82.	ท่านบันทึกยาทุกชนิดที่ให้ผู้สูงอายุ และวิธีการ บรรเทาความปวดด้วยการไม่ใช้ยาในแบบบันทึกที่ สามารถมองเห็นได้ง่ายเช่นในแบบบันทึกสัญญาณ ชีพหรือแบบบันทึกขั้นตอนการทำงาน	5	4	3	2	1	5	4	3	2	1
83.	ท่านปรึกษากับแพทย์ผู้ทำการรักษาหรือกับ พยาบาลเจ้าของไข้หากความปวดในผู้สูงอายุไม่ บรรเทาลงในระดับที่น่าพอใจ	5	4	3	2	1	5	4	3	2	1
84.	ท่านเปลี่ยนแปลงแผนการจัดการเกี่ยวกับความ ปวดใหม่หากการบรรเทาความปวดไม่ได้ผล	5	4	3	2	1	5	4	3	2	1
85.	ท่านเริ่มต้นวางแผนการจำหน่ายผู้ป่วยตั้งแต่เมื่อ ผู้ป่วยเริ่มต้นเข้ามารักษาเพื่อที่จะสร้างโปรแกรม การจัดการกับความปวดที่ปลอดภัยและมี ประสิทธิภาพสำหรับใช้ที่บ้าน การดูแลรักษาและ การจัดการกับความปวดอย่างต่อเนื่อง และการ เสริมสร้างความเข้าใจอันดีต่อการวางแผนการ	5	4	3	2	1	5	4	3	2	1

แนวทางการปฏิบัติที่เกี่ยวข้องกับการประเมิน ความปลอดภัยและการจัดการกับความปวดในผู้สูงอายุ	2.1 บ่อยครั้งแค่ไหนที่การปฏิบัติการ พยาบาล ของท่านสอดคล้องกับแนวทางการปฏิบัติต่อไปนี้					2.2 ท่านคิดว่าแนวทางการปฏิบัติดังกล่าวมีความ เหมาะสม ที่จะใช้ในหอผู้ป่วยของท่าน เพียงใด				
	ตลอด เวลา	บาง ครั้ง	ไม่ บ่อย	ไม่ เคย	ไม่ได้ ปฏิบัติ	เหมาะ สม ที่สุด	เหมาะ สม มาก	เหมาะ สม ปาน กลาง	ไม่ เหมาะ สม	ไม่ เหมาะ สม ที่สุด
รักษา										
86. ก่อนที่จะจำหน่ายผู้สูงอายุจากโรงพยาบาลท่านให้ เวลาสำหรับการเปลี่ยนแปลงอย่างเพียงพอในการ ประเมินประสิทธิภาพและความเป็นไปได้ของการ เกิดภาวะไม่พึงประสงค์เมื่อเปลี่ยนแผนการจัดการ ความปวด	5	4	3	2	1	5	4	3	2	1
87. ท่านประเมินความสามารถของผู้สูงอายุและ ครอบครัวต่อการจัดการกับความปวดที่บ้านและ หลังจากจำหน่ายผู้ป่วย	5	4	3	2	1	5	4	3	2	1
88. ท่านทำและบันทึกแผนการจำหน่ายโดยใช้การ ร่วมมือกับผู้สูงอายุ และสมาชิกในครอบครัว ผู้สูงอายุ	5	4	3	2	1	5	4	3	2	1
89. ท่านสอนผู้สูงอายุและครอบครัวหรือผู้ดูแล ผู้สูงอายุเกี่ยวกับการจัดการความปวดที่บ้าน	5	4	3	2	1	5	4	3	2	1
90. ท่านจัดหาเอกสารคำแนะนำที่อธิบายอย่างชัดเจน เกี่ยวกับแผนการจัดการเกี่ยวกับความปวดแก่ ผู้สูงอายุทุกคน	5	4	3	2	1	5	4	3	2	1
91. หากผู้สูงอายุถูกจำหน่ายไปที่สถานที่อื่นที่ไม่ใช่ บ้าน ท่านจัดส่งแผนการจัดการกับความปวดอย่าง ละเอียดไปพร้อมกับเอกสารการส่งตัว	5	4	3	2	1	5	4	3	2	1
92. ก่อนจำหน่ายผู้ป่วยท่านประเมินความสามารถของ ผู้สูงอายุและสมาชิกในครอบครัวเกี่ยวกับการใช้ยา บรรเทาความปวดและตรวจสอบเพื่อให้มั่นใจว่า ผู้ป่วยจะได้รับยาแก้ปวดเพื่อใช้ที่บ้าน	5	4	3	2	1	5	4	3	2	1

ขอความกรุณาท่านช่วยอธิบายอย่างย่อ ๆ ว่าทำไมข้อปฏิบัติด้านบนนี้ไม่เหมาะสมที่จะใช้ในหอผู้ป่วยของท่าน

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ส่วนที่ 3 อุปสรรคต่อความรู้เชิงประจักษ์

จากข้อคำถามที่ผ่านมามีท่านคงได้เรียนรู้ว่าแหล่งความรู้หรือหลักฐานเชิงประจักษ์ที่สามารถนำไปใช้เพื่อสนับสนุนการปฏิบัติการพยาบาลนั้นมีอยู่มากมาย แหล่งความรู้เหล่านี้ประกอบด้วย

- ข้อสรุปเชิงวิชาชีพพยาบาล ความคิดเห็นจากผู้เชี่ยวชาญ ความคิดเห็นของท่านและของผู้อื่น
- มุมมองของผู้ป่วยสูงอายุ
- พัฒนาการและการศึกษาด้านวิชาชีพพยาบาล
- ข้อมูลขององค์กรเช่น นโยบาย แผนการปฏิบัติการ รายงานการตรวจสอบภายใน เป็นต้น
- รายงานการวิจัยที่ได้รับการตีพิมพ์

คำแนะนำ จากข้อคำถามต่อไปนี้ท่านมีผู้สักมีความมั่นใจที่จะจัดอุปสรรคเพื่อที่บรรลุความรู้เชิงประจักษ์เพียงใด อุปสรรคในกลุ่มแรกเกี่ยวข้องกับ การสืบค้นและ ทบทวนรายงานการวิจัย และข้อมูลขององค์กรเช่น นโยบาย แนวทางการปฏิบัติ และหลักการปฏิบัติในคลินิก

คิดทบทวนเกี่ยวกับการปฏิบัติการพยาบาลของท่านตามความเป็นจริงในหอผู้ป่วยที่ท่านทำงานอยู่ขณะนี้ เช่น ในหอผู้ป่วยศัลยกรรม หอผู้ป่วยศัลยกรรม กระดูก เกี่ยวกับอุปสรรคในการสืบค้นและทบทวนรายงานวิจัยและข้อมูลขององค์กร และอุปสรรคในการเปลี่ยนแปลงการปฏิบัติการพยาบาลที่ใช้ความรู้เชิงประจักษ์ โปรดระบุมุมมองความคิดเห็นของท่านต่อความดังต่อไปนี้ว่าท่านเห็นด้วยในระดับใด ไม่เห็นด้วยอย่างยิ่ง ไม่เห็นด้วย ไม่แน่ใจ เห็นด้วย และเห็นด้วยอย่างยิ่ง กรุณาอ่าน ข้อความเห็นแต่ละข้อแล้ววงกลมรอบตัวเลขเพื่อเลือกข้อความความคิดเห็นที่เหมาะสมกับท่านมากที่สุด

อุปสรรคต่อความรู้เชิงประจักษ์		ไม่เห็น ด้วยอย่าง ยิ่ง	ไม่เห็น ด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วย อย่างยิ่ง
93.	ท่านไม่รู้จักรหัสที่จะสืบค้นข้อมูลการวิจัยที่เหมาะสม	1	2	3	4	5
94.	ท่านไม่รู้จักรหัสที่จะสืบค้นข้อมูลขององค์กรท่าน เช่น นโยบาย แนวปฏิบัติ	1	2	3	4	5
95.	ท่านไม่มีเวลาเพียงพอในการสืบค้นข้อมูลทางการวิจัย	1	2	3	4	5
96.	ท่านไม่มีเวลาเพียงพอที่จะสืบค้นข้อมูลขององค์กรท่าน เช่น แนวทางการปฏิบัติ กฎเกณฑ์การปฏิบัติ	1	2	3	4	5
97.	รายงานการวิจัยสืบค้นได้ยาก	1	2	3	4	5
98.	ข้อมูลขององค์กรสืบค้นได้ยาก	1	2	3	4	5
99.	ท่านพบว่ารายงานการวิจัยยากต่อการทำความเข้าใจ	1	2	3	4	5
100.	ท่านไม่มีความมั่นใจในการตัดสินคุณภาพของรายงานการวิจัย	1	2	3	4	5
101.	ท่านพบความยากลำบากในการคัดสรรผลของการวิจัยเพื่อนำไปประยุกต์ใช้ในหอผู้ป่วยของท่าน	1	2	3	4	5
102.	ท่านรู้สึกไม่มั่นใจที่จะเริ่มการเปลี่ยนแปลงการปฏิบัติการพยาบาลของท่าน	1	2	3	4	5

อุปสรรคต่อความรู้เชิงประจักษ์		ไม่เห็น ด้วยอย่าง อื่น	ไม่เห็น ด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วย อย่างยิ่ง
103.	วัฒนธรรมในคณะทำงานของท่านไม่ยอมรับการเปลี่ยนแปลงการปฏิบัติ	1	2	3	4	5
104.	ท่านไม่มีอำนาจในหอผู้ป่วยที่จะเปลี่ยนแปลงการปฏิบัติการพยาบาล	1	2	3	4	5
105.	มีแหล่งสนับสนุนไม่เพียงพอ เช่น ขาดอุปกรณ์ เพื่อที่จะเปลี่ยนแปลงการปฏิบัติ	1	2	3	4	5
106.	ไม่มีเวลาเพียงพอในหอผู้ป่วยที่จะนำความรู้เชิงประจักษ์สู่การปฏิบัติ	1	2	3	4	5
107.	รายงานการวิจัยหรือวารสารการวิจัยส่วนใหญ่ตีพิมพ์ในภาษาอังกฤษ ดังนั้นจึงทำให้เกิดอุปสรรค	1	2	3	4	5

ส่วนที่ 4 แหล่งสนับสนุนความรู้เชิงประจักษ์

คำแนะนำ จากข้อคำถามต่อไปนี้ ท่านคิดว่าเพื่อนร่วมงานของท่านจะสนับสนุนท่าน ในการเปลี่ยนแปลงการปฏิบัติการพยาบาลในระดับใด กรุณาอ่านข้อความเห็นแต่ ละข้อแล้ววงกลมเลือกข้อความคิดเห็นที่เหมาะสมกับท่านมากที่สุด

แหล่งสนับสนุนความรู้เชิงประจักษ์		ไม่เคย	แทบไม่ เคย	บางครั้ง	บ่อย ๆ	ทุกครั้ง
108.	เพื่อนร่วมงานของท่านสนับสนุนการเปลี่ยนแปลงการปฏิบัติการพยาบาลของท่าน	1	2	3	4	5
109.	หัวหน้าหอผู้ป่วยสนับสนุนการเปลี่ยนแปลงการปฏิบัติการพยาบาลของท่าน	1	2	3	4	5
110.	แพทย์ที่ท่านทำงานด้วยสนับสนุนการเปลี่ยนแปลงการปฏิบัติการพยาบาลของท่าน	1	2	3	4	5
111.	ผู้ตรวจการพยาบาลหรือหัวหน้าฝ่ายการพยาบาลสนับสนุนการเปลี่ยนแปลงการปฏิบัติการพยาบาลของท่าน	1	2	3	4	5

112. โปรดระบุอุปสรรคต่อการใช้ความรู้เชิงประจักษ์เพิ่มเติม

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113. โปรดระบุปัจจัยสามประการที่ท่านคิดว่าจะส่งเสริมการนำความรู้เชิงประจักษ์ไปใช้

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ส่วนที่ 5 ข้อมูลส่วนบุคคล

คำแนะนำ โปรดกรอกข้อมูลหรือทำเครื่องหมายในคำถามแต่ละข้อที่ตรงกับคุณลักษณะของท่านมากที่สุด

114	โปรดระบุเพศของท่าน <input type="checkbox"/> หญิง <input type="checkbox"/> ชาย
115	ท่านอายุเท่าไร..... ปี
116	หน่วยงานที่ท่านปฏิบัติหน้าที่ <input type="checkbox"/> โรงพยาบาลชุมชน <input type="checkbox"/> โรงพยาบาลทั่วไป <input type="checkbox"/> โรงพยาบาลศูนย์ <input type="checkbox"/> โรงพยาบาลมหาวิทยาลัย <input type="checkbox"/> อื่น ๆ โปรดระบุ.....
117	ประเภทงานที่ท่านปฏิบัติ (ตอบเฉพาะงานที่ท่านปฏิบัติหลักเท่านั้น) <input type="checkbox"/> หอผู้ป่วยศัลยกรรม <input type="checkbox"/> หอผู้ป่วยศัลยกรรมกระดูก <input type="checkbox"/> อื่น ๆ โปรดระบุ.....
118	ระดับการศึกษาสูงสุดทางการพยาบาลของท่าน <input type="checkbox"/> ประกาศนียบัตร (ผู้จบพยาบาลเทคนิคหรือวุฒิอื่นทางด้านสาธารณสุขก่อนระดับปริญญาตรีพยาบาล) <input type="checkbox"/> ประกาศนียบัตรพยาบาลศาสตร์หรือปริญญาตรีทางการพยาบาล <input type="checkbox"/> ปริญญาโททางการพยาบาล สาขา..... <input type="checkbox"/> ปริญญาเอกทางการพยาบาล สาขา..... <input type="checkbox"/> อื่น ๆ โปรดระบุ.....
119	ท่านจบการศึกษาทางการพยาบาลครั้งแรกเมื่อไหร่.....(โปรดระบุปีพ.ศ.)
120	ท่านจบการศึกษาทางการพยาบาลครั้งสุดท้ายเมื่อไหร่.....(โปรดระบุปีพ.ศ.)
121	ท่านทำงานโดยเฉลี่ยสัปดาห์ละกี่ชั่วโมง.....
122	ท่านสามารถใช้อินเทอร์เน็ตในที่ทำงานของท่านหรือไม่ <input type="checkbox"/> สามารถใช้ได้ <input type="checkbox"/> ใช้ไม่ได้

หากท่านมีความคิดเห็นเพิ่มเติมเกี่ยวกับความรู้เชิงประจักษ์ แหล่งข้อมูลเชิงประจักษ์ อุปสรรคและแหล่งประโยชน์อื่น ๆ ที่ท่านคิดว่าผู้วิจัยควรทราบเพิ่มเติม โปรดเขียนความคิดเห็นของท่านในที่ว่างด้านล่างนี้

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ขอขอบคุณทุกท่านที่ให้ความช่วยเหลือในการตอบและส่งคืนแบบสอบถามนี้

มาริสสา สุวรรณราช RN, MSN, PhD (c)

นักศึกษายาบาลปริญญาเอก มหาวิทยาลัยไอโอว่า

6. Number of nurses in your hospital:

Registered nurses _____ Technical nurses _____

Advance practice nurses _____ Others _____

7. Service availability:

Please describe your hospital service offered related to pain assessment and pain management (For example: Acute pain service unit, acute pain specialist, or pain assessment every 1 hour in 24 hours postoperative)

8. Service availability for postoperative older adults:

Please describe your hospital service offered related to pain assessment and pain management specifically for older adults (For example: Geriatric ward, acute pain specialist in older adults, or pain assessment tool for older adults)

9. The use of evidence-based practice guideline (EBPG) in the hospital (please specific name the guideline title, target population, ward of implementing EBPG and time period of using:

No.	Evidence-based Practice Guideline Title	Target Population	Ward of Implementing EBPG	Time Period of Using

10. The use of evidence-based practice guideline (EBPG) specifically in pain or in older adults population in the hospital (please specific name the guideline title, target population, ward of implementing EBPG and time period of using:

แบบสอบถามข้อมูลเกี่ยวกับองค์กร

คำแนะนำ: โปรดตอบคำถามในแบบสอบถามนี้ เมื่อเสร็จสิ้นแล้วโปรดส่งกลับตามที่อยู่ในท้ายแบบสอบถามนี้

1. ข้อมูลองค์กร (โรงพยาบาล)

ชื่อขององค์กร:	
ที่อยู่:	
ผู้ประสานงานการเก็บข้อมูล:	
ตำแหน่ง:	
โทรศัพท์:	
แฟกซ์:	
อีเมล:	
เว็บไซต์ขององค์กร:	

2. กรุณาเลือกประเภทของโรงพยาบาล (โปรดเลือกเพียงหนึ่งคำตอบ)

- โรงพยาบาลชุมชน
 โรงพยาบาลทั่วไป
 โรงพยาบาลศูนย์หรือโรงพยาบาลมหาราช
 โรงพยาบาลสังกัดมหาวิทยาลัย

3. จำนวนเตียง: _____

4. จำนวนของผู้สูงอายุที่เข้ารับการรักษาในโรงพยาบาลด้วยการผ่าตัดต่อปี (มกราคม 2551- ธันวาคม 2551) _____

5. จำนวนของหอผู้ป่วยที่ให้การพยาบาลหลังผ่าตัดแก่ผู้ป่วยสูงอายุ (กรุณาระบุชื่อของหอผู้ป่วย และจำนวนของพยาบาลในแต่ละหอผู้ป่วย)

เลขที่	ชื่อหอผู้ป่วย	จำนวนพยาบาล		
		ผู้เชี่ยวชาญพิเศษ (APN)	พยาบาลวิชาชีพ (RN)	พยาบาลเทคนิค (TN)

6. จำนวนของพยาบาลในโรงพยาบาลของท่าน

พยาบาลวิชาชีพ _____ คน

พยาบาลเทคนิค _____ คน

พยาบาลผู้เชี่ยวชาญพิเศษ _____ คน

อื่น ๆ _____ คน

7. การบริการในโรงพยาบาลของท่าน

กรุณาอธิบายการบริการในโรงพยาบาลของท่านที่เกี่ยวข้องกับการประเมินและการจัดการกับความปวด (ตัวอย่างเช่น Acute pain service unit, ผู้เชี่ยวชาญด้านความปวดเฉียบพลัน, การประเมินความปวดทุก 1 ชั่วโมงภายใน 24 ชั่วโมงแรกหลังผ่าตัด)

10. การใช้แนวทางปฏิบัติความรู้เชิงประจักษ์ (EBPG) ที่เกี่ยวข้องกับความปลอดภัยในผู้สูงอายุใน
โรงพยาบาล(โปรดระบุชื่อของแนวทางปฏิบัติความรู้เชิงประจักษ์ กลุ่มเป้าหมาย หอผู้ป่วยที่
นำเอาแนวปฏิบัติความรู้เชิงประจักษ์ไปใช้ และช่วงเวลาที่นำเอาแนวปฏิบัติไปใช้

ไม่มี มี โปรดระบุรายละเอียดในตารางข้างล่างนี้

เลขที่	ชื่อของแนวทางปฏิบัติ ความรู้เชิงประจักษ์	กลุ่มเป้าหมาย	หอผู้ป่วยที่นำเอาแนวปฏิบัติ ความรู้เชิงประจักษ์ไปใช้	ช่วงเวลาที่นำเอา แนวปฏิบัติไปใช้

โปรดส่งแบบสอบถามกลับไป

มาริสตา สุวรรณราช

600/1 ถ.ชยางกูร ต.ในเมือง

อ.เมือง จ.อุบลราชธานี 34000

โทร 084-522-1883

APPENDIX B
CONCEPTS AND ORIGINAL SOURCES TO DEVELOP ACUTE PAIN
EVIDENCE-BASED PRACTICE QUESTIONNAIRE

B1: Concepts and Original Sources to Develop Acute Pain Evidence-Based Practice Questionnaire

Part	Item	Concepts	Concepts and Original Sources	Item
1	1-39	Nurses' EBP related factors	(Adams, 2008; Gerrish, et al., 2007)	
	1-21	Section I Awareness, needs, implementation skills, and context	Awareness (1,2,3,4,5,6,8) Needs (10,21-26) Implementation skills (12,15,17,19) Context (13,16,18) (Adams, 2008)	1-7 8, 16-21 9, 11, 13, 15 10,12,14
	22-39	Section II Bases of practice knowledge	Bases of practice knowledge (1-22) (Gerrish, et al., 2007)	22-39
2	40.1-92.1 40.2-92.2	Current Practice on Using EBP pain and Cultural Appropriateness of Using EBP Pain		
2.1	40.1-92.1	Current practice related to pain assessment and pain management in older adults	Acute pain guideline (Herr, et al., 2006)	
	40.1-50.1	Initial, rapid pain assessment	Initial, rapid pain assessment	
	51.1-58.1	Pain assessment of cognitively impaired older adults	Pain assessment of cognitively impaired older adults	
	59.1-61.1	Pain management plan	Pain management plan	
	62.1-74.1	Pharmacological and non-pharmacological management	Pharmacological and non-pharmacological management	
	75.1-84.1	Evaluation of effectiveness	Evaluation of effectiveness	
	85.1-92.1	Pain management discharge plan	Pain management discharge plan	
2.2	40.2 -92.2	Cultural Appropriateness of Using EBP pain	Acute pain guideline (Herr, et al., 2006)	
	40.2-50.2	Initial, rapid pain assessment	Initial, rapid pain assessment	
	51.2-58.2	Pain assessment of cognitively impaired older adults	Pain assessment of cognitively impaired older adults	
	59.2-61.2	Pain management plan	Pain management plan	
	62.2-74.2	Pharmacological and non-pharmacological management	Pharmacological and non-pharmacological management	
	75.2-84.2	Evaluation of effectiveness	Evaluation of effectiveness	
	85.2-92.2	Pain management discharge	Pain management discharge	

Part	Item	Concepts	Concepts and Original Sources	Item
		plan	plan	
3	93-107,112	Barriers to EBP	Barriers to finding research and changing practice (Gerrish, et al., 2007)	
			Barriers to finding research (23-32) (Gerrish, et al., 2007)	93-101
			Barriers to changing practice (33-37) (Gerrish, et al., 2007)	102-107
4	108-111, 113	Facilitators to EBP	Facilitators to changing practice (Gerrish, et al., 2007)	108-111
			Facilitators to changing practice (38-41) (Gerrish, et al., 2007)	
5	114-122	Demographic		

B2: Develop Acute Pain Evidence-Based Practice Questionnaire Psychometric properties and Scoring

Part	Item	Concepts	Level of measurements	Psychometrics Properties		Scoring
				Validity	Reliability	
1	1-39	Nurses' EBP related factors (Adams, 2008; Gerrish, et al., 2007)				
	1-21	Section I Awareness, needs, implementation skills, and context (Adams, 2008)	Interval	3 EBP experts	Cronbach's coefficient alpha Awareness=.86 Needs=.82 Implementation Skills=.67 Context=.60 (Adams, 2008) Awareness=.73 Needs=.85 Implementation Skills=.64 Context=.49 (Suwanraj, 2010)	1=Strongly disagree=Low EBP 5=Strongly agree=High EBP
	22-39	Section II Bases of practice knowledge (Gerrish, et al., 2007)	Interval		Cronbach's coefficient alpha=.788 (Gerrish, et al., 2007) ; .85 (Suwanraj, 2010)	1=Never 2=Seldom 3=Sometimes 4=Frequently 5=Always
2	40.1-92.1; 40.2-92.2	Current Practice on Using EBP pain and Cultural Appropriateness of EBP Pain				
2.1	40.1-92.1	Current practice related to pain assessment and pain management in older adults Acute pain guideline (Herr, et al., 2006)	Interval	3 experts		Recode 1→0=Not applicable 2→1=Never 3→2=A little of the time 4→3=Some of the time 5→4=All the time
	40.1-50.1	Initial, rapid pain assessment			Cronbach's coefficient alpha= .85 (Suwanraj, 2010)	
	51.1-58.1	Pain assessment of cognitively impaired older adults			Cronbach's coefficient alpha= .73 (Suwanraj, 2010)	
	59.1-61.1	Pain management plan			Cronbach's coefficient alpha= .81 (Suwanraj, 2010)	
	62.1-74.1	Pharmacological and non-pharmacological management			Cronbach's coefficient alpha= .74 (Suwanraj, 2010)	
	75.1-84.1	Evaluation of effectiveness			Cronbach's coefficient alpha= .84 (Suwanraj, 2010)	
	85.1-92.1	Pain management discharge plan			Cronbach's coefficient alpha= .87 (Suwanraj, 2010)	
2.2	40.2-92.2	Cultural Appropriateness of Using EBP Pain (Herr, et al., 2006)	Interval	3 experts		1=Not appropriate at all 2=Not that appropriate

Part	Item	Concepts	Level of measurements	Psychometrics Properties	Scoring
					3=Moderately appropriate 4=Very appropriate 5=Extremely appropriate
	40.2-50.2	Initial, rapid pain assessment		Cronbach's coefficient alpha= .86 (Suwanraj, 2010)	
	51.2-58.2	Pain assessment of cognitively impaired older adults		Cronbach's coefficient alpha= .87 (Suwanraj, 2010)	
	59.2-61.2	Pain management plan		Cronbach's coefficient alpha= .86 (Suwanraj, 2010)	
	62.2-74.2	Pharmacological and non-pharmacological management		Cronbach's coefficient alpha= .83 (Suwanraj, 2010)	
	75.2-84.2	Evaluation of effectiveness		Cronbach's coefficient alpha= .89 (Suwanraj, 2010)	
	85.2-92.2	Pain management discharge plan		Cronbach's coefficient alpha= .91 (Suwanraj, 2010)	
3	93-107,112	Barriers to EBP (Gerrish, et al., 2007)			
	93-101	Barriers to finding research (Gerrish, et al., 2007)	Interval	Cronbach's coefficient alpha=.843(Gerrish, et al., 2007) ; .88 (Suwanraj, 2010)	1=Strongly disagree 2=Disagree 3=Uncertain 4=Agree 5=Strongly agree
	102-107	Barriers to changing practice (Gerrish, et al., 2007)	Interval	Cronbach's coefficient alpha=.805(Gerrish, et al., 2007) ; .81 (Suwanraj, 2010)	1=Strongly disagree 2=Disagree 3=Uncertain 4=Agree 5=Strongly agree
4	108-111, 113	Facilitators to EBP(Gerrish, et al., 2007)	Interval		1=Never 2=Seldom 3=Sometimes 4=Frequently 5=Always
	108-111	Facilitators to changing practice (Gerrish, et al., 2007)		Cronbach's coefficient alpha=.730; .77 (Suwanraj, 2010)	
5	114-122	Demographic	Nominal		

*Participants: Gerrish and colleague (2007): Hospital nurses and Community nurses in UK
Adams (2008): School nurses in the US
Suwanraj (2010): Thai surgical nurses

APPENDIX C
QUALITATIVE DATA CODINGS

Thai Nurses' Perceived Barriers on Using EBPs

Nurses

Nurses-Reluctant to ask

Some nurses are lazy to go to patients' bed and assess patients' pain. If the patient has pain, the patient will tell his/her caregiver to ask for pain medication from nurse.

Nurses- Believe Pain is not real

Some nurses do not believe that the patient has real pain. Some nurses injected sterile water instead of pain medication for relieving pain.

Nurses- Practice Prioritization

Over workload therefore staff nurses couldn't completely relieving pain for the patients.

Nurses-Skills

Lack of skill to search information from the internet.

Searching for information is difficult and the implementation of EBP is very challenging because each person has his/her own thought.

Nurses-Teamwork

Collaboration from staffs

Nurses-Attitude and Motivation

Attitude of staffs toward the use of knowledge (EBP)

Sometimes these nurses have no interest to improve themselves and organization. Their interests are on their family and making money.

Lack of confidence about the benefit of the use of EBP

Nurses-Knowledge

Staffs have little knowledge related to pain management in older adult patients.

Lack of knowledge in research

Nurses-Clinical Inertia

Staffs do not accept change.

Familiar with routine work. Think that the same practice is good and no need to be change.

Nurses-Nursing Experience and decision making

Lack of nursing experience

Lack of confident to make decision to use EBP in practice

Nurses-English literacy

Research articles are published in English. No time to search for new information.

Nurses- Research Utilization

Nurses read a little of research article.

Nurses rarely conduct and disseminate research.

Nurses frequently use knowledge which they have learnt long time ago.

Nurses rarely use research in practice.

Administration (environment)

Administration (environment)- Policy and Procedure such as resources provided, workload adjustment, workload restructuring)

Team is lack of knowledge regarding pain and the hospital doesn't have policy related to pain.

Admin (environment)- Awareness about EBPs

It is very challenging to implement research finding into nursing practice setting because the administration (Nursing Department) doesn't know about the implementation of new research finding in ward.

Administrative personnel do not see the important of EBP or support materials such as internet.

Admin (environment)- Lack of knowledge

The use of EBP

Admin (environment)- Lack of resources

Lack of source of knowledge to use or implement. Lack of facilitators. Lack of motivation and support.

It is very difficult to search information and understand the content. No expert to assist with understanding the content.

Insufficient source of information.

Materials and tools for searching information such as Wi-fi internet and computer.

Resource of searching information such as library.

The access to research or best practice is limited because hospital doesn't buy the database. The searching outcome is limited only to abstract.

Lack of useful source of EBP information and database.

Cannot search research information due to lack of internet access. Only place to use internet is at the hospital library.

Administrative personnel do not see the important of EBP or support materials such as internet.

Cannot search research information at work due to lack of internet access.

No source of information searching

Lack of source of information and inconvenient to search information.

No time to search for new information.

Searching for sources of information. Difficulty to access to information needed.

Lack of budget support

Admin (environment)- Workload

Insufficient time to use knowledge. Should fix about work load first.

The number of patients admitted is more than the number of beds in ward therefore it is difficult to manage.

Over workload is the main reason for ineffective implementation of EBP into practice setting.

Time: Insufficient number of nurses and over workload.

Routine work overload, fatigue, and burden to searching new evidence.

Work overload and insufficient numbers of nurses for working. Each day nurses have to do non-direct nursing care activities such as documentation, computer, quality improvement activities (i.e., HA, QA, Risk Management, HPH), meeting, attend conference. Only 10 to 20 percent of the time donated to direct nursing care activities. No time to search for EBP from the internet.

Organization and ward owned a small number of research article and most of them are out of date.

Not have enough time. Over workload

Overwhelming with routine work

Admin (environment)- Practice Changing

Organizational culture does not accept the change.

Organization culture does not accept change.

Admin (environment)- Implementation Process

Meeting and training

Pilot study of using EBP

Admin (environment)- Implementation Process Weakness

Using EBP in practice need time to change the practice of colleague.

Collaboration from staffs

Lack of support from organization. Organization does not accept the change that initiates by staff nurses (lower level).

Admin (environment)- Prioritize for Cost Saving or not providing the best care

Attitude toward changing practice such as emphasis on making money more than the achievement of work.

Admin (environment)- Support

Lack of support from organization. Organization does not accept the change that initiates by staff nurses (lower level).

It is very difficult to create new EBP project without the support from EBP expert and colleague.

Lack of support from administrative personnel

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