CHAPTER 1

INTRODUCTION

Background and Significance of Research Problem

Nursing shortage that refers to a situation where the demand for the nurse workforce is more than the supply is currently occurring in health systems around the world. Some recent examples: Canada projects a shortfall of qualified nurses at around 78,000 nurses by 2011; Australia projects a shortage of 40,000 nurses by 2010 (Buchan & Calman, 2005); and the United States needs to find round 260,000 nurses by 2025 (Buerhaus, Auerbach, & Staiger, 2009). Internal migration from rural to urban areas, from public sector employment to private sector employment, and from nursing employment to non-nursing employment (or no employment) and international migration of nurses from developing countries to developed countries have contributed to produce a nursing shortage crisis in the world.

The shortage of nurses has also been occurring in Thai hospitals. Thailand Nursing and Midwifery Council (TNC) stated that there is nursing shortage in hospitals both under and out of the jurisdiction of the Ministry of Public Health (MoPH) around 43,070 nurses (TNC, 2009). However, public hospitals under the jurisdiction of the MoPH are the mainstay of hospitals in Thailand. They provide health services including heath promotion, disease prevention, management of acute and chronic health, and health rehabilitate. An analysis of the nursing workforce based on a geographic information system (GIS) survey and overtime paid revealed

that those hospital projects a shortage of 10,000-18,000 nurses (TNC, 2008). Moreover, the study of Boonthong (2000) and Suchaya et al. (2002) found that high workload was the problem of hospitals in public hospitals. Recently, Thai Nursing Time (2009) reported that nursing shortage around 90.5 percent were in secondary and tertiary hospitals under the jurisdiction of MoPH. This result reduced some health care services and around 28.6 percent of hospitals could not open intensive care unit (ICU) in spite of there were adequate physician and resources.

Many factors are contributing to increasing demand for nurses in public hospitals. Those factors include increasing of aging population, chronic illness patients, patients having behavior related diseases, and patients having new emerging diseases (Bureau of Policy and Strategy, Ministry of Public Health, 2004). Universal healthcare coverage (UC) policy increases access to the health care services. Globalization, international trade, Medical hubs policy are lead to more international clients and the expansion of private hospitals (Bureau of Policy and Strategy, Ministry of Public Health, 2007). Meanwhile, nursing educational institutions are able to produce undergraduate students at 6,000 nurses per year (TNC, 2009) that means if the nursing shortage in public hospitals is around 18,000 nurses, it could take 3 years to meet demand. However, there is also turnover of nurses and it is increasing, 2.4% in 2000, 3.8% in 2003, and 4.2 % in 2005 (Sawangdee, 2007). Five years ago the average turnover was 3.3%, which means only 3,000 nurses added to the nurse workforce.

Outcomes are the end results or that which results from some action or event. Nursing shortage yields many outcomes including rising of workloads, nurse overtime, stress levels among nurses, nursing turnover, migration from developing

countries to wealthier countries, the risk for error, risk of infection to patients and staff, and risk of occupational injury (Stone, Clarke, Cimiotti, & Correa-de-Araujo, 2004). Nursing shortage can adversely affect patient outcomes due to the loss of experienced staff and increased stress on the remaining nurses whose already heavy workload increases to overcome the effect of vacancies. Major concerns about nursing shortage have been compounded by evidence of undesirable nurse and patient outcomes including decreasing of job satisfaction and quality of care, and increasing burnout.

One of nurse outcomes from nursing shortage is low job satisfaction or job dissatisfaction of nurses. Job satisfaction has been referred as perceptions and attitudes individuals have and exhibit regarding their work (Pope & Stremel, 1992). It is notable because job satisfaction is a major contributory factor of intent to leave positions, and actual turnover rates (Irvine & Evans, 1995; Lake, 1998; Larrabee et al., 2003; Shader, Broome, Broome, West, & Nash, 2001) and nurses who expressed their intent to leave was negatively affected patient satisfaction (Leiter, Harvie, & Frizzel, 1998). Previous studies suggested that nurses who were more satisfied with their job are likely to resign less or have less intention to leave than other nurses. International studies suggest that hospitals with more supportive nurse work environments have higher job satisfaction of nurses (Aiken, Clarke, Sloane, Lake, & Cheney, 2008; Friese, 2005; Fynn, 2007; Laschinger, Almost, & Tuer-Hodes, 2003; Lashchinger, Shamian, & Thomson, 2001; Manojlovich, 2005; Patrician, Shang, & Lake, 2010; Raffery, Ball, & Aiken, 2001). Nurse staffing levels are associated with job satisfaction of staff nurses (Aiken et al., 2008; Aiken, Clarke, Sloane, Sochaski, & Silber, 2002; Raffery et al., 2007; Sheward, Hunt, Hagen, Macleod, & Ball, 2005). A

current study in Thailand reported that almost 20 percent of nurses in Thai public hospitals were dissatisfied with their job (Aungsuroch & Wanant, 2007). Meta-analysis of cause and effect relationships studies in Thailand conducted from 1976 to 2003 revealed that work environment factors including managerial factors and working factors were antecedent variables of job satisfaction of nurses. These included commitment, retention and performance, turnover, burnout, and intention to further study (Chumchuen, 2004).

Another outcome of nursing shortage is high levels of nurse burnout. Burnout is defined as a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who work with other people in some capacity (Maslach & Jackson, 1981a). The consequences of burnout can lead to deterioration in quality of care, such as patient satisfaction, and it also appears to be a factor in job turnover and absenteeism (Maslach, Jackson, & Leiter, 1996). A meta-analysis of 61 studies from 1982 to 1994 concluded that nurse burnout was related to turnover intention (Lee & Ashforth, 1996). That means nurses with high levels of burnout are likely to have higher turnover or intention to leave than other nurses who indicate less burnout. The body of international studies suggested that nurses' work environment is related to nurse burnout (Aiken, Clarke, & Sloane, 2002; Aiken et al., 2008; Friese, 2005; Leiter & Lachinger, 2006; Raffery et al., 2001; Vahey, Aiken, Sloane, Clarke, & Vargas, 2004). Nurse staffing levels is likewise associated with nurse burnout (Aiken et al., 2008; Aiken, Clarke, Sloane, Sochaski, et al., 2002; Raffery et al., 2007; Sheward et al., 2005). The study of nurse burnout in Thailand presented that registered nurses had burnout measured by emotional exhaustion and personal accomplishment subscales score exceeding the

norm (Aungsuroch & Wanant, 2007). Also, prior studies in Thailand suggested that burnout level in all subscales were significantly associated with personal factors (Chaichitamorn 1999; Hasithawech 2003; Jampankarm 2003; Jariyapayuklert 2007; Kachitakorn 2001; Khwanmuang1998; Puansurin 1998; Puaraksa 1998; Theucksuban 2007), job characteristics such as workload and administration system (Hasithawech, 2003; Jarernsuk, 2001; Kachitakorn, 2001; Khwanmuang, 1998; Puaraksa, 1998; Raksasuk, 2001), interrelationship (Hasithawech, 2003; Puaraksa, 1998), and social support (Hasithawech, 2003; Puansurin, 1998; Puaraksa, 1998; Sirisak, 2007).

Another outcome of nursing shortage is quality of nursing care (Institute of Medicine, 1999; 2001). Quality of nursing care is defined as perceived to relate to the degree to which patient's physical, psychosocial, and extra care needs were met (William, 1998). Quality of nursing care is remarkable because it is the fundamental concern of hospitals and nurses' work. Also, it is commonly used in numerous studies for reference on patient outcomes. The consequences of quality of care were interpreted as health/wellness level, functional ability, patient satisfaction, resource utilization/cost effectiveness/efficiency, undesirable events, and undesirable processes (Schmele, 1996). Studies from many countries revealed that hospitals supporting nurses' work environment relate to better quality of nursing care (Aiken, Clarke, & Sloane, 2002; Aiken et al., 2008; Armstrong & Lachinger, 2006; Friese, 2005; Fynn, 2007; Lachinger & Leiter, 2006; Lachinger et al., 2001; Raffery et al., 2001; Vahey et al., 2004). Nurse staffing levels significantly influence quality of nursing care (Aiken, Clarke, & Sloane, 2002; Aiken et al., 2008; Raffery et al., 2007; Sochalski, 2004). In Thailand, providing quality of care with safety, effectiveness and efficiency is the goal of Thailand Nursing and Midwifery development plan in 1997-2001 and 2007-

2011 (TNC, 2009) as well as is the health care criteria of hospital accreditation and nursing service. Prior studies presented definitions of quality of nursing care and nursing quality indicators in Thai hospitals (Kunaviktikul et al., 2001; 2005). Quality of nursing care can be reported from the perception of nurses and patients as moderate to high level (Chalortham, 2001; Kobpungton, 1997; Nampoonsak, 2005; Soisangwon, 2007). A recent Thai nurse survey revealed that a small percentage of registered nurses in Thai public hospitals describe quality of nursing care as excellent (Aungsuroch & Wanant, 2007). Other studies reported undesirable outcomes in Thai hospitals. For instance, Padungsak (2007) found that missing patient identification, patient falling, medication error, pressure sore in stage 2-stage 4, communication error on care plan, and urinary tract infection were the adverse events happening in hospitals in the fiscal year of 2007. The study of detecting adverse events in hospitalized patients in Thailand revealed that the incidence of adverse events was 9.1 percent and 71.4 percent of adverse events occurred were considered preventable (Kessomboon, Panarunothai, & Chongsuvivatwong, 2003). Based on patient data of public hospitals, Thailand in 2002, adverse events in hospitalized patient were around 5 percent and most of them are preventable (Asavaroengchai, 2003). Interestingly, the study of variables predicting quality of nursing care has not been investigated in Thai hospital.

According to the Quality Health Outcomes Model (QHOM) (Mitchell, Ferketich, & Jennings, 1998), there are many factors leading to outcomes of nursing shortage including system, intervention, and client characteristics. The QHOM allows for the interrelationship between four main constructs; system, intervention, client, and outcome. The model suggests that interventions do not have a direct effect on

outcomes but instead inform outcomes indirectly through system and client characteristics. Importantly, the system, which refers to the characteristics of the organization or provider, is widely recognized as an important factor contributing to nurse and patient outcomes. Many studies indicated that hospitals supporting nurses' work environment and having adequate nurse staffing are significantly associated with increasing of nurses' job satisfaction (Aiken et al., 2008; Aiken, Clarke, Sloane, Sochaski, et al., 2002; Friese, 2005; Fynn, 2007; Laschinger et al., 2003; Laschinger et al., 2001; Manojlovich, 2005; Raffery et al., 2001; Raffery et al., 2007; Sheward et al., 2005), decreasing of nurse burnout (Aiken et al., 2008; Aiken, Clarke, Sloane, Sochaski, et al., 2002; Friese, 2005; Leiter & Lachinger, 2006; Raffery et al., 2001; Raffery et al., 2007; Sheward et al., 2005; Vahey et al., 2004), and increasing of quality of nursing care (Aiken, Clarke, & Sloane, 2002; Aiken et al., 2008; Aiken, Clarke, Sloane, Sochaski, et al., 2002; Armstrong & Lachinger, 2006; Friese, 2005; Fynn, 2007; Laschinger & Leiter, 2006; Laschinger et al., 2001; Raffery et al., 2001; Raffery et al., 2007).

With regards to nurses' work environment, the importance of nurses' work environment originated from magnet hospitals, the hospitals which were successful in attracting and retaining nurses amid a shortage in the U.S. in early 1980s (Kramer & Hafner, 1989; McClure, Poulin, Sovie, & Wandelt, 1983). Magnet hospital studies have been developed over the last 20 years with the main message being that these hospitals appear to show reduced turnover and absenteeism, and improved quality of care (ICN, 2007). Lake (2002) conceptualized the nurses' work environment from the sociology of organizations, occupation, and work, and developed a professional model of organizational characteristics of a work setting that facilitate or constrain

professional nursing practice. She defined organizational characteristics from staff nurses' opinion in a sample of the original magnet hospitals through factor analysis. The organizational characteristics include nurse participation in hospital affairs, nursing foundations for quality of care, nurse manager ability, leadership, and support of nurses, staffing and resource adequacy, and collegial nurse-physician relations. Lake's (2002) measure was selected as the U.S. National Quality Forum's standard for measuring the hospital care environments and used to measure magnet hospital characteristics. She explained the importance of nurses' work environment that nurses are generally person to establish the ongoing surveillance system in hospitals for early detection of adverse occurrences, complications, and errors. Once a potential patient problem has been identified, organizational features determine the speed with which the institution responds to intervene. A large body of evidence from various countries such as the U.S., Canada, England, Scotland, Germany, and Iceland indicated that the consequences of nurses' work environment supporting magnet hospital characteristics are higher job satisfaction, lower nurse burnout, and higher quality of nursing care (Aiken et al., 2008; Armstrong & Laschinger, 2006; Clarke, 2007; Friese, 2005; Lake & Friese, 2006; Laschinger & Leiter, 2006; Leiter & Laschinger, 2006; Manojlovich, 2005; Schubert et al., 2008).

A number of studies reveal the situation of nurses' work environment in Thailand. For example, a study of Boonthong (2000) on current Thai nursing service with a sample size of 1,818 nurses revealed that problems in working for nurses from all levels of Thai public hospitals were high work load, doing jobs outside their duty, lack of counselor and academic resources, lack of support from the organization, and no opportunities for self development. Analysis of workload and overtime work

presented that the average workload for staff nurses in public hospitals during 2004-2005 was 31.58 days (shift)/month/nurse, which was more than the general standard (22 days or shifts) by nearly 10 days (shifts) (Sawangdee, 2008). Additionally, literature review in Thailand revealed that work environment significantly influences job satisfaction of nurses and nurse burnout (Raksasuk, 2001; Sanpornchaipong, 2002; Surayotee Na Rascharima, 1994).

Another variable affecting outcomes is nurse staffing levels. Nurse staffing levels refer to the number or amount of nursing personnel designated for either a given nursing unit or shift (Giovanetti, 1984). To measure nurse staffing levels from staff nurses who provide nursing care for inpatients, the number of patients cared for by one nurse typically specified by job category or patient to nurse ratio was generally applied. This measure of nurse staffing has been found to be superior to those derived from administrative databases because it includes only those nurses who have clinical caseloads (Aiken, Clarke, & Sloane, 2002; Aiken, Clarke, Sloane, Sochaski, et al., 2002). An adequate number of nurses will support early detection and management of patient problems. Previous studies of nurse staffing levels revealed that nurse staffing levels was associated with quality of care (Blegen & Vaughn, 1998; Fridkin, Pear, Williamson, Galgiani, & Jarvis, 1996; Hickam et al., 2003; Kane, Shamliyan, Mueller, Duval, & Wilt, 2007; Kovner & Gergen, 1998; Lang, Hodge, Olson, Romano, & Kravitz, 2004; Lichtig, Knauf, & Miholland, 1999; Seago, 2001), nurse burnout, and job satisfaction of nurses (Aiken, Clarke, & Sloane, 2002; Aiken, Clarke, Sloane, Sochaski, et al., 2002; Clarke, Sloane, & Aiken, 2002; Rafferty et al., 2007; Sochalski, 2001; 2004). Nurse staffing evidences in Thailand demonstrated that nurse staffing levels influence patient outcomes, such as in-hospital mortality (Sasichay-

Akkadechanunt, Scalzi, & Jawad, 2003), patient falls, pressure ulcers, UTIs, patient mortality, and patient satisfaction (Chitpakdee, 2006; Khumya, 2002).

In summary, nursing shortage is occurring in public hospitals in Thailand. Several factors contribute increasing the crisis of this problem. Undesirable outcomes of nursing shortage such as low job satisfaction, burnout, and nurse rated quality of nursing care as poor are presented in those hospitals. The undesirable outcomes have been concerned exist that the quality of care for patient is unequal. Literature review from international studies suggests that nurse and patient outcomes are predicted by nurses' work environment and nurse staffing levels. Previously substantial studies in Thailand present the relationship between nurse outcomes and nurses' work environment; however, there is inconsistency of findings which may be due to the different ways of measure. The relationship between nurses' work environment and patient outcome and between nurse staffing levels particularly patient to nurse ratio and nurse and patient outcomes are absent. Moreover, there is no evidence to present how nurse and patient outcomes are predicted by nurses' work environment and nurse staffing levels in public hospitals in Thailand. Therefore, this study aims to describe nurses' work environment, nurse staffing levels, and nurse and patient outcomes and then to explore the predictive ability of nurses' work environment and nurse staffing levels for nurse and patient outcomes in public hospitals in Thailand. The results will provide evidence that how the ability of nurses' work environment and nurse staffing levels could predict nurse and patient outcomes. The result will be useful to hospital administrators and policy makers to create strategies promoting desirable outcome which is the goal of Thailand Nursing and Midwifery development plan in 2007-2011in public hospitals in Thailand.

This study was secondary data analysis. The parent study was 2007 Thai nurse survey which investigated the nurses' work environment data and general data from the perception of 8,222 registered nurses in 39 public hospitals in Thailand (Aungsuroch & Wanant, 2007). The 2007 Thai nurse dataset was used because it contains study variables and can answer research questions of this study. Moreover, it was designed by experts and their sample is large enough to see relationship of study variables which has never been investigated in 2007 Thai nurse dataset before. The study sample include staff nurses who provide direct care for patients and reported a valid number of patients cared for on their last shift. They were selected because they close proximity to patients and their work brings them into contact with managerial policies and practices, physician and other clinical care providers, and most of the hospital support services.

Objectives of the Study

1. To describe the levels of nurses' work environment, nurse staffing levels, job satisfaction of nurses, nurse burnout, and quality of nursing care in public hospitals in Thailand.

2. To assess the predictive ability of the nurses' work environment and nurse staffing levels for job satisfaction of nurses in public hospitals in Thailand.

3. To assess the predictive ability of the nurses' work environment and nurse staffing levels for nurse burnout in public hospitals in Thailand.

4. To assess the predictive ability of the nurses' work environment and nurse staffing levels for quality of nursing care in public hospitals in Thailand.

Research Questions

1. What are the levels of nurses' work environment, nurse staffing levels, job satisfaction of nurses, nurse burnout, and quality of nursing care in public hospitals in Thailand?

2. To what extent can the variability in the job satisfaction of nurses in Thai public hospitals be explained by nurses' work environment and nurse staffing levels?

3. To what extent can the variability in each of nurse burnout subscales in Thai public hospitals be explained by nurses' work environment and nurse staffing levels?

4. To what extent can the variability in quality of nursing care in Thai public hospitals be explained by nurses' work environment and nurse staffing levels?

Definition of Terms

Nurses' Work Environment is defined as the organizational characteristics of a work setting that facilitate or constrain professional nursing practice. It is measured by the Practice Environment Scale of Nurse Work Index (PES-NWI) developed by Lake (2002). The PES-NWI includes five subscales that are nurse participation in hospital affairs, nursing foundations for quality of care, nurse manager ability, leadership, and support of nurses, staffing and resource adequacy, collegial nurse-physician relations.

Nurse staffing levels is defined as the number of patients cared for by one nurse in a nursing unit. The number of patients per nurse is calculated as the mean

patients load across all staff nurses who reported having responsibility for patients in the last shift worked (Aiken, Clarke, & Sloane, 2002).

Nurse outcomes are defined as the results of nurse working. Nurse outcomes of interest in this study are job satisfaction of nurses and nurse burnout.

Job satisfaction of nurses is defined as perceptions staff nurses have regarding their job. Job satisfaction of nurses is measured by nurses' evaluations of their job satisfaction with their current job developed by Aiken, Clarke, and Sloane (2002).

Nurse burnout is defined as a response to items that elicited the staff nurses' perception to their emotional exhaustion, depersonalization, and personal accomplishment. Nurse burnout is measured by the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) developed by Maslach, Jackson, and Leiter (1996). The MBI-HSS includes three subscales that are

Emotional exhaustion is defined as feelings of being emotionally overextended and exhausted by one's work.

Depersonalization is defined as an unfeeling and impersonal response toward recipients of one's service, care, treatment, or instruction.

Personal accomplishment is defined as feelings of competence and successful achievement in one's work with people.

Patient outcome is defined as the results on patients. A patient outcome of interest in this study is quality of nursing care.

Quality of nursing care is defined as nurses' perceptions of quality of nursing care as they deliver to patient. It is measured by nurses' perceptions on

quality of nursing care delivered to patient at their last shift developed by Aiken, Clarke, and Sloane (2002).

Thai public hospitals are health care settings under the jurisdiction of the Ministry of Public Health that provide health services including heath promotion, disease prevention, management of acute and chronic health, and health rehabilitation. Thai public hospitals in this study include 26 general and 13 regional hospitals in 2007 Thai nurse survey dataset.