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ของโรงพยาบาลพระนารายณ์มหาราช จังหวัดลพบุรี ประเทศไทย

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MEASURING SAFETY CULTURE ATTITUDE OF  
HEALTH PROFESSIONALS AT KING NARAI HOSPITAL,  
LOP BURI PROVINCE, THAILAND

Miss Nachaphun Sukhnim

A Thesis Submitted in Partial Fulfillment of the Requirements  
for the Degree of Master of Public Health Program in Public Health

College of Public Health Sciences

Chulalongkorn University

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Thesis Title MEASURING SAFETY CULTURE ATTITUDE OF HEALTH PROFESSIONALS  
AT KING NARAI HOSPITAL, LOP BURI PROVINCE, THAILAND.

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นพพรณ สุขนิม: การวัดระดับทัศนคติเกี่ยวกับวัฒนธรรมความปลอดภัยในบุคลากรสายวิชาชีพของ  
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วัตถุประสงค์ของการศึกษานี้เพื่ออธิบายและเปรียบเทียบลักษณะการรับรู้ในด้านทัศนคติเกี่ยวกับวัฒนธรรม  
ความปลอดภัยในปัจจุบัน ระหว่างบุคลากรสายวิชาชีพ ที่มีต่อตนเองและทีมสุขภาพต่อองค์กร การศึกษานี้ เป็น  
การศึกษาแบบตัดขวาง (cross-sectional study) กลุ่มตัวอย่าง 380 รายส่งแบบสอบถามกลับ ซึ่งประกอบด้วย แพทย์  
ทันตแพทย์ พยาบาลวิชาชีพ นักเทคนิคการแพทย์ เภสัชกร นักกายภาพบำบัด นักวิชาการสาธารณสุข และนักโภชนาการ  
เก็บข้อมูลระหว่างเดือนมกราคมถึงกุมภาพันธ์ 2555 โดยนำแบบสำรวจชื่อ Hospital Survey On Patient Safety Culture  
ซึ่งได้รับอนุญาตให้นำมาใช้จาก Agency for Healthcare Research and Quality ประเทศสหรัฐอเมริกา และมีการแปล  
ฉบับภาษาไทยจาก เครือข่ายคลินิกสหสถาบัน(CRCN)ร่วมกับการวิจัยเพื่อพัฒนาคุณภาพ(R4Q) การศึกษาในครั้งนี้ได้  
ผ่านการพิจารณาจริยธรรมการวิจัยในมนุษย์ ของโรงพยาบาลพระนารายณ์มหาราช ลงวันที่ 30 ธันวาคม 2554 การ  
วิเคราะห์ข้อมูลใช้สถิติเชิงบรรยาย (ความถี่ ร้อยละ ค่าเฉลี่ย และส่วนเบี่ยงเบนมาตรฐาน) และสถิติเชิงอ้างอิง One- way  
ANOVA เพื่อตรวจสอบความสัมพันธ์ระหว่างตัวแปรอิสระและตัวแปรตาม

ผลการศึกษาพบว่าทั้ง 8 วิชาชีพ มีทัศนคติเกี่ยวกับวัฒนธรรมความปลอดภัยในเชิงบวกไม่แตกต่างกันใน  
ภาพรวม ค่าเฉลี่ยมากที่สุดคือมิติการเป็นองค์กรแห่งการเรียนรู้หรือการพัฒนาอย่างต่อเนื่อง ค่าเฉลี่ยคือ  $3.89 \pm 0.60$   
และมิติของการจัดคนทำงานน้อยที่สุด มีค่าเฉลี่ยคือ  $3.10 \pm 0.74$  ตามลำดับ วิชาชีพที่มีทัศนคติในด้านบวกดีที่สุดคือ  
พยาบาล โดยมีเภสัชกรเป็นลำดับสุดท้ายกล่าวคือกลุ่มวิชาชีพเภสัชกรมีทัศนคติด้านความปลอดภัยต่ำที่สุดใน 8 วิชาชีพ  
ระดับความปลอดภัยของผู้ป่วยอยู่ในระดับที่ยอมรับได้มากที่สุด 55.52%

การศึกษาในอนาคตควรคำนึงถึงกลุ่มคนอื่น ๆ ที่ทำงานในโรงพยาบาลโดยไม่จำกัดเฉพาะสายวิชาชีพ การทำให้  
ผู้บริหารมีส่วนร่วมอย่างจริงจังและนำข้อมูลที่ได้มาปรับปรุงแก้ไขหรือสร้างนโยบายเพื่อให้บุคลากรในโรงพยาบาล  
ตระหนักถึงความปลอดภัยในการทำงานทั้งต่อตนเองและต่อผู้รับบริการเพื่อปลูกฝังให้เป็นวัฒนธรรมหยั่งรากลึก ลด  
ภาวะเสี่ยงต่าง ๆ ที่อาจจะเกิดขึ้นซึ่งจะนำไปใช้ในการพัฒนาปรับปรุงการดำเนินการอย่างมีจุดหมายมากขึ้น เสริมสร้าง  
วัฒนธรรมความปลอดภัย นำไปสู่วัฒนธรรมคุณภาพ และวัฒนธรรมการเรียนรู้ในอนาคต

สาขาวิชา สาธารณสุขศาสตร์.....ลายมือชื่อนิลิต.....

ปีการศึกษา 2554.....ลายมือ อ.ที่ปริกษาวิทยานิพนธ์หลัก.....

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KEYWORDS : ATTITUDE/ MEASURE/ SAFETY CULTURE/ PATIEN SAFETY /  
HEALTH PROFESSIONAL/ PERCEPTION/ SAFETY CLIMATE

NACHAPHUN SUKHUIM : MEASURING SAFETY CULTURE ATTITUDE  
OF HEALTH PROFESSIONALS AT KING NARAI HOSPITAL, LOP BURI  
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The objectives of this of study were to describe and compare the characteristics of perception in terms of attitude on existing safety culture among health professionals both on themselves and on health team of King Narai Hospital. It was a cross-sectional study with a total of 380 respondents comprising of physicians, dentists, registered nurses, technicians, pharmacists, physical therapists, academicians, and dieticians. Data collection was from January-February 2012. The research tool was the survey questionnaire from Hospital Survey On Patient Safety Culture authorized by the Agency for Healthcare Research and Quality, the United States of America, and the Thai version from the Clinical Research Collaboration Network jointly with the Research for Quality. This study earned the ethics committee's approval for research in human at King Narai Hospital on 30 December 2011. Descriptive statistics (frequency, percentage, mean, and standard deviation) was employed for data analysis and inferential statistics of One-way ANOVA was used to test the relationship between independent and dependent variables.

The result revealed that, over all, the 8 categories of health professionals had positive attitude on safety culture with no difference. The highest mean was the dimension of learning organization or continuous development, mean score was  $(3.89 \pm 0.60)$  while the dimension of staffing had the lowest mean  $(3.10 \pm 0.74)$ . The health professional category with the most positive attitude was registered nurses while pharmacists were the least. The level of highest acceptance for patient safety was 55.52%.

Future research should take into consideration other groups working at the Hospital and should not be limited only to health professionals. The acquired information should be used to encourage the executives for serious participation and for making an improvement. It should also be used to issue the policy so as to urge the Hospital's personnel to be aware of safety both for themselves and for service receivers/patients. This would serve as the deep-rooted culture aimed to reduce various potential risky situations for continuous improvement with purposive goals. It would also help promoting safety culture, bringing about quality culture, and enabling learning culture in the future.

Field of Study: Public Health

Student's Signature: .....

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**LIST OF ABBREVIATIONS**

AHQR	Agency for Healthcare Research and Quality
CRCN	Clinical Research Collaboration Network
HSOPSC	Hospital Survey on Patient Safety Culture
JCAHO	Joint Commission Accreditation of Healthcare Organization
KNH	King Narai Hospital
OMERET	Online Medical Research Tools
R4Q	Research for Quality
UK	United Kingdom
WHO	World Health Organization

## CHAPTER I

### INTRODUCTION

#### 1.1 Background and Significance of the problem

*“People attitudes and opinions have been formed over decades of life and cannot be changed by having a few meetings or giving a few lectures. Mao Tse Tung (Fleming, 2008).”*

Humans instinctively seek to avoid pain and death. Yet, we may often behave in a manner that threatens our well-being. There are a couple of reasons this occurs. The First is due to lack of knowledge. What one does not know can hurt him/her. The second reason we may act in a risky manner is attitude. What are general attitude toward safety? When asked, some may say they are completely supportive of all safety measures. Others may complain about any safety efforts being made. The difference between the two perspectives can be attributed to attitude. A attitude affects almost all that human beings do and how we do it. For instance, people who are successful in life, or are just happy, tend to have a more positive attitude than those who are not? The same applies for safety. Safety rules and procedures are written to protect human beings from harm. They are not written to make life more uncomfortable or inconvenient. If human has a positive attitude, the odds are greater that humans will exhibit safe behavior. A negative attitude toward safety will only cause conflict, stress and, ultimately, an accident. In this respect one can say that attitude does, in fact, affect behavior.

It is widely accepted that human factors are the main contributory factor in accidents (Wagenaar and Groeneweg, 1987). This human element, of course, extends beyond those personally involved in an accident. It also incorporates all those who influence safety in the workplace, whether directly, consciously and immediately, or indirectly, unintentionally and perhaps with an extended time lag. Effective risk management therefore depends at least on the part of the behavior of all individuals who are operating in a specific organizational context. Corporate culture describes shared values in an organization which influence the attitudes and behavior of its

members, and safety culture describes the members' attitudes, values and beliefs in relation to safety (Cooper, 2000).

In 1999 landmark report *To Err Is Human*, the Institute of Medicine stated that the healthcare industry had an estimate up to 98,000 people who die because of medical errors each year in the United States' hospitals. The total national cost of preventable adverse events was estimated to be between \$17 billion and \$29 billion per year, of which over half are health care costs (CQHCA, 2000). Another report from Johns Hopkins Children's Center and the Agency for Healthcare Research and Quality reviewed 5.7 million records of patients under nineteen years of age who were hospitalized in 2000; the records were from twenty-seven states. Of the 52,000 children identified by the researchers as being harmed by unsafe medical care during their hospital stay, 4,483 suffered a fatal injury (Miller and Zhan , 2004).

In recent years, the promotion of safety culture in many countries become one of the key issues in patient care. There has been an increasing focus in the United Kingdom and other countries in various on approaches to improve safety. This has led to greater recognition of the importance of organizations culture and teamworks in the improvement process. A number of surveys, frameworks and assessment tools have been developed to understand the types of culture an organization has and whether an organization is ready for improvement initiatives and the factors that perhaps most help or hinder improvement the most.

Though less well – documented yet, the scope of the patient safety problem in developing countries including South East Asia Region is believed to be far more serious. WHO estimates that people residing in South East Asia receive more than 5 injections per year and 50% of the injections are 'unsafe'. Furthermore, WHO estimated that countries in South-East Asia produce over 1,000 metric tons of health care waste including injection-related waste daily which is not properly disposed.

As the complexity of care provided by the health care system increases, the chance of error or failure thus increases. Safety has always been a major issue and often a problem in Thai health care organizations as well. Based on an audit of medical records at two major hospitals, the prevalence of hospital-related adverse events in Thailand is similar to that prevailing in other industrialized countries: 10% of

in -patients developed adverse events, 10% of adverse events led to death, and half of the events were preventable (WHO, 2006).

In addition, the Joint Commission Accreditation of Healthcare Organization (JCAHO) is the organization in charge that plays the key role for quality assurance to hospital to help accredited organizations address specific areas of concern in regards to patient safety. Thailand is no exception. Measuring the safety culture of an organization can provide an insight into areas for improvement and help monitor changes over time. Several tools have been used in various healthcare settings (The health foundation, 2011).

In 2004, AHRQ released the Hospital Survey on Patient Safety Culture, a tool to help hospitals evaluate how well they have established a culture of safety in their institutions. The survey and its accompanying toolkit materials are designed to provide hospital officials with the basic knowledge and tools needed to conduct a safety culture assessment, along with guidelines for data use. This tool was piloted across 21 American hospitals and had robust psychometric properties to be included in items and scales. The survey was designed to be completed by all hospital staff, including those with and those without direct patient contacts. It measures quality across seven unit level dimensions of safety culture, three hospital level dimensions of safety culture and two outcomes. Most existing questionnaires which have been developed in other countries are in English. Therefore, some items seem inappropriate for the needs of Thai society due to differences in culture and health care systems. However, a strength is that the tool assesses safety culture at the individual, unit and organizational level better (Healthcare Foundation, 2011).

As a consequence, the purpose of this study were to:

- Determine the perception of the safety culture attitude.
- Compare the attitudes among different types of Health Professionals.

## **1.2 Research questions**

- 1.2.1 What is the direction of safety attitude (negative or positive) in health professionals of King Narai Hospital?
- 1.2.2 Are all of health Professionals be conscious in the patient safety culture?
- 1.2.3 Which type of health professionals have the best positive attitude for the safety culture?

## **1.3 Objectives**

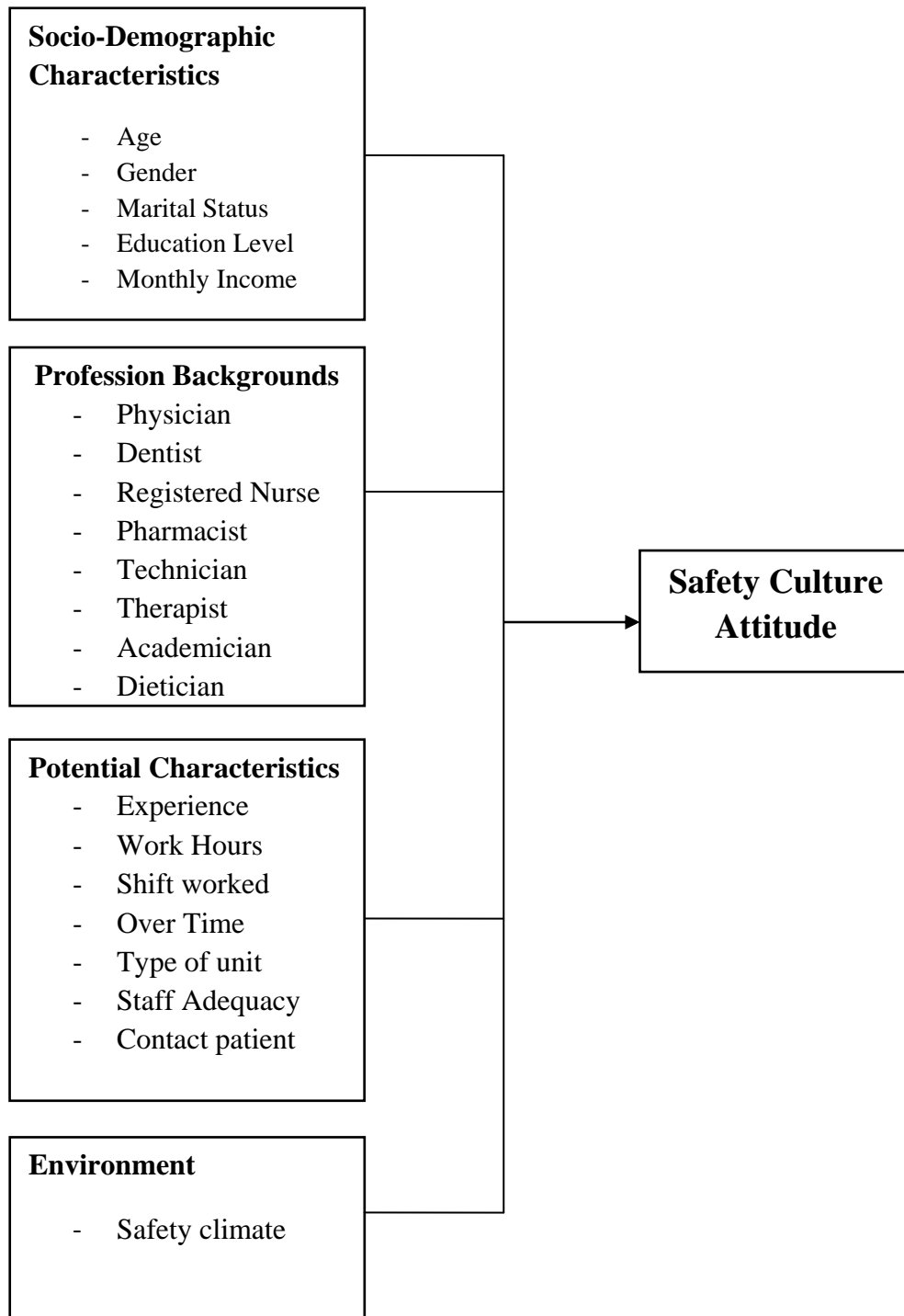
- 1.3.1 To determine the perception of the safety culture attitude of health professionals who are working at King Narai hospital, Lop Buri Province, Thailand
- 1.3.2 To compare safety attitudes among different types of health professionals at King Narai Hospital, Lop buri Province, Thailand.



## 1.4 Conceptual framework

### Independent variables

### Dependent Variable



**Figure 1:** Conceptual Framework

### 1.5 Operational Definitions

- **Attitude:** viewpoint as expressive of an action or emotion among organizational health professionals.
- **Health professional:** any person who has completed a course of study in a field of health, such as physician, dentist, a registered nurse, therapist, pharmacist, technician (radiological technicians, medical technologists), academician and dietician. They are usually licensed by a government agencies or certified by the professional organizations and work at King Narai Hospital at present.
- **Measure:** an inspection of dimension (s) for patient safety culture attitude by health professionals.
- **Patient safety:** beliefs, behaviors, norms, and environment of health professionals for patient care where safety is the first priorities.
- **Perception:** process of knowledge gained by perceiving.
- **Safety culture:** process which develops characteristics and attitude in all sections and individual of health professionals.
- **Safety Climate:** a subset of broader culture which refers to staff attitudes and to more intangible issues in hospitals such as a “snapshot” of health professional perceptions of the current environment.

## **CHAPTER II**

### **LITERATURE REVIEW**

Safety culture refers to the way patient safety is thought about and implemented within an organization and the structures and processes in place to support this. Safety climate is a subset of broader culture and refers to staff attitudes about patient safety within the organization. Measuring safety culture or climate is important because the culture of an organization and the attitudes of the teams have been found to influence patient safety outcomes and these measures can be used to monitor change over time. As well, attitudes towards human and organizational factors can have an impact on effective team performance and consequently, an impact on patient safety (Health Foundation, 2011).

#### **2.1 What is the safety culture?**

The safety culture defined by an organization is the product of the individual 's and group's values, attitudes, competencies as well as and patterns of behavior that determine the commitment to, the style and proficiency of, an organization's health and safety management. Organizations with a positive safety culture are characterized by communications founded in mutual trust, by shared perceptions of the importance of safety, and by confidence in the efficacy of preventative measures (Health and Safety Executive Research Report, 2005).

Although there is some uncertainty and ambiguity in defining safety culture, there is no uncertainty over the relevance or significance of the concept (Yule, 2003). Mearns and colleagues (2003) stated that "safety culture is an important concept that forms the environment within which individual safety attitudes develop and persist and safety behavior are promoted". Incidents like Piper Alpha and Kings Cross Station have raised an awareness of the effect of organizational, managerial and human factors on safety outcomes. As several reports of major disasters have identified, safety culture is the factor that decisively affected the outcome (Reason, 1990).

It is argued that "a 'good' safety culture might reflect and be promoted by at least four factors" (Pidgeon and O'Leary 1994). These four factors include "senior

management's commitment to safety, shared care and concern for hazards and solicitude for impacts on people, realistic and flexible norms and rules about hazards, and continual reflection upon practice through monitoring, analysis and feedback systems (organizational learning)" (Pidgeon and O'Leary, 2000). It has also been argued that fundamental leadership is the key to affect a safety culture (Burman and Evans, 2008).

There is a trend for safety culture to be expressed in terms of attitudes or behavior. Glendon and colleagues (2006) highlight that when define safety culture as that of the premise of researchers is to focus on attitudes, where others emphasize safety culture being expressed through their behavior and work activities. In other words, the safety culture of an organization acts as a guide as to how employees will behave in the workplace. In fact, their behavior will be influenced or determined by what behaviors are rewarded and acceptable within the workplace. For instance, Clarke (2006) states that the safety culture is not only observed within the "*general state of the premises and conditions of the machinery but in the attitudes and behaviors of the employees towards safety*".

Marx (2001) has identified four types of behavior that might result in unsafe acts. The issue that has been raised by Marx (2001) is that not all of these behaviors necessarily warrant disciplinary sanction.

1. *Human error* – is when there is general agreement that the individual should have done other than what they did. In the course of that conduct where they inadvertently caused (or could have caused) an undesirable outcome, the individual is labeled as having committed an error.
2. *Negligent conduct* – Negligence is the conduct that falls below the standard required as normal in the community. Negligence, in its legal sense, arises both in the civil and criminal liability contexts. It applies to a person who fails to use the reasonable level of skill expected of a person engaged in that particular activity, whether by omitting to do something that a prudent and reasonable person would do in the circumstances or by doing something that no prudent or reasonable person would have done in the circumstances. To raise a question of negligence, there needs to be a duty of care on the person, and harm must be caused by the negligent action. In other words, where there is a duty to exercise

care, reasonable care must be taken to avoid acts or omissions which can reasonably be foreseen to be likely to cause harm to persons or property. If, as a result of a failure to act in this reasonably skillful way, harm/injury/damage is caused to a person or property, the person whose action caused the harm is liable to pay damages to the person who is, or whose property is, harmed.

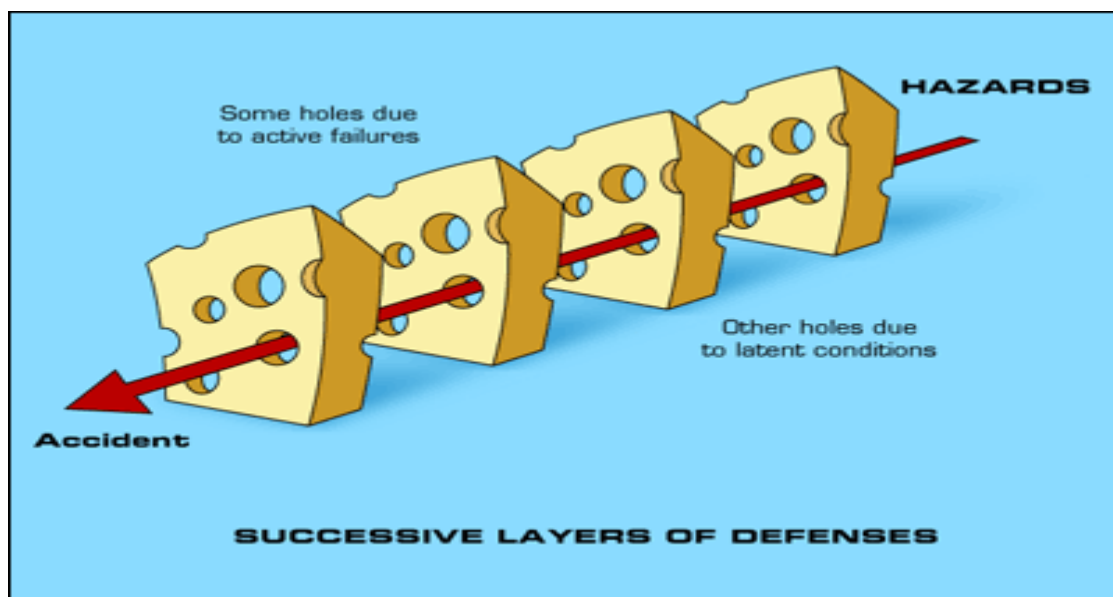
3. *Reckless conduct* – (gross negligence) is more culpable than negligence. The definition of reckless conduct varies between countries, however the underlying message is that to be reckless, the risk has to be one that would have been obvious to a reasonable person. In both civil and criminal liability contexts it involves a person taking a conscious unjustified risk, knowing that there is a risk that harm would probably result from the conduct, and foreseeing the harm, he or she nevertheless took the risk. It differs from negligence (where negligence is the failure to recognize a risk that should have been recognized), while recklessness is a conscious disregard of an obvious risk.
4. *Intentional “willful” violations* – when a person knew or foresaw the result of the action, but went ahead and did it anyway.

Within a healthcare context, safety culture influences patient safety by motivating healthcare professionals to choose behaviors that enhance, rather than reduce, patient safety (Nieva and Sorra, 2003). Singer and colleagues (2003) identified the following seven patient safety culture elements:

- Leadership commitment to safety
- Organizational resources for patient safety
- Priority of safety versus production
- Effectiveness and openness of communication
- Openness about problems and errors
- Organizational learning
- Frequency of unsafe act

Furthermore, Donaldson (2005) emphasized the importance of a systems focus in patient safety. Drawing on an analogy to Swiss cheese, he described patient safety as a series of defenses (slices of cheese) which prevent minor mishaps from turning

into major failures. These included procedures such as the use of standardized treatment guidelines, physical barriers e.g., the special handling and dispensing of potentially harmful drugs when they are delivered into clinical areas, pertinent information such as information on patient's drug allergies, and decisions e.g., clinical judgments on patients made by clinical staff based on their training and experience. He went on to compare the gaps and weaknesses in patient safety to the holes in Swiss cheese. These might include inadequate or ignored protocols, faulty equipment, missing information, or inadequate supervision. In such situations, the holes of the Swiss cheese can line up resulting in patient harm and sometimes even death.



**Figure 2** Swiss cheese Model

Source: [http://patientsafetyed.duhs.duke.edu/module\\_e/swiss\\_cheese.html](http://patientsafetyed.duhs.duke.edu/module_e/swiss_cheese.html), accessed on 24<sup>th</sup> October, 2011

The Swiss Cheese model of accident causation is a model used in risk analysis and risk management of human systems, commonly aviation, engineering, and healthcare. It compares human systems to multiple slices of Swiss cheese, stacked together, side by side. It was originally propounded by British psychologist James T. Reason of the University of Manchester in 1990 (Reason, 1990).

## 2.2 Safety Culture in Development

In recent years, the promotion of a culture of safety has been found in many countries and become one of the key issues in patient care with increasing attention worldwide (Donaldson SL, 2009). It has been argued that a positive safety culture (or climate) is essential for minimizing the number of preventable patient injuries and their overall cost to society (e.g., Kohn et al., 1999; Nieva and Sorra, 2003; Zhan and Miller, 2003). At the same time, there is also an increasing recognition that it is necessary to determine the relationship between the effects of safety culture on healthcare outcome. (Gershon, et al., 2004; Marshall and Davies, 2003). Efforts in this direction are, however, hampered in two aspects: first, patient safety outcomes are hard to establish and validate across different patient populations and healthcare services; and second, there is no generally accepted model of safety culture and climate, identifying its components and their interrelationships (Flin, et al., 2000).

In the United Kingdom, a similar historical development took place, and patient safety and safety culture were put on the agenda, reflected in the reforms of the National Health Service (NHS) (Scott et al., 2003). A highly significant publication was the report published by the Department of Health (2000), the organization with a memory". Both of these reports, "To Err is Human" and "An organization with a memory, signaled the discussion - not only in the English-speaking world but also internationally - about the role of organizational culture in the occurrence of preventable adverse events in healthcare settings. Prompted in large measure by the experience from other domains, especially aviation and the nuclear industry, new conceptions of human error were suggested to healthcare that stressed a systems-based and organizational perspective (Sexton, Thomas and Helmreich, 2000; Reason, 2000). As an alternative to reactive strategies for error management, a systems approach based on proactive strategies - and thus involving systematic reporting of errors and adverse events - was recommended in order to identify and ultimately control so-called "latent conditions" (Reason, 1990).

The landmark paper *To Err is Human: Building a Safer Health System* published by the Institute of Medicine highlighted the extent of patient harm and served the catalyst for international effort to improve the quality and safety of patient care. While much of this effort has been on improving the structures and processes of

healthcare delivery, recent attention has focused on the patient safety culture of an organization and its impact on patient outcomes. This interest stems from several evidence that in highly hazardous industries such as the aviation, nuclear power, oil and gas exploration, a strong safety culture has been associated with low levels of adverse incidents.

Over several years, much attention has focused on the causes of occupational incidents (Haslam et al., 2005). When incidents occur in the workplace it is important to understand what factors (human, technical, organizational) may have contributed to the outcome in order to avoid similar incidents in the future. Through developing an understanding of why and how incidents occur, appropriate methods for incident prevention can be developed (Williamson and Feyer, 2002). In the past, any attempt to improve workplace safety or to control workplace risks had focused on technical aspects (design of safer systems) and on the direct influence of human behavior (operator's error) (Gadd and Collins, 2002). However, a number of major disasters have brought attention to the impact of organizational factors (policies and procedures) on the outcome of safety performance, with numerous inquiries identifying safety culture as having a definitive impact on the outcome of the disaster (Reason, 1990). Such incidents as Chernobyl, King's Cross Station, and Piper Alpha explosion have been the examples of how organizational and human factors can have an impact on safety performance. Following the Piper Alpha explosion Lord Cullen said that, "it is essential to create a corporate atmosphere or culture in which safety is understood to be and is accepted as, the number one priority" (Cullen, 1990). In that same year a report into the Space Shuttle Challenger disaster identified numerous "flawed" decisions on behalf of NASA and Thiokol management as contributing factors to the disaster.

Several papers have aimed at identifying specific safety management practices that act as a predictor of safety performance (Mearns et al., 2003). Through examining organizations with good safety performance, it was intended to identify common features that are associated with good safety performance. Some examples of studies that have examined the safety performance of organizations include: Cohen (1977) reviewed 4 organizations; Shafai-Sahrai (1971) examined 11; Cohen and colleagues (1975) , Smith and colleagues (1975) examined 42; Shannon and



colleagues (1996) conducted a postal survey of over 400 manufacturing companies; Shannon and colleagues (1997) reviewed 10 studies. Certainly in high-risk industries or healthcare organization, safety should be considered the number one priority. It is easy to see how the management system and culture of an organization are closely related.

It has been argued that while healthcare has always been concerned with patient safety, it hasn't advanced much past the reactive stage. How do we therefore move healthcare further along the continuous? The current interest in patient safety culture in healthcare could represent initial steps in becoming more proactive in improving safety by examining the context in which healthcare exists – the attitudes, beliefs and behaviors that are the driving force behind achieving better safety performance.

In October 2005, the Alliance launched the first Global Patient Safety Challenge with the theme 'Clean Care is Safer Care', to bring together the WHO Guidelines on hand hygiene in healthcare with ongoing work on blood safety, injection and immunization safety, safer clinical practices, and safe water, sanitation and healthcare waste management. It emphasizes that hand hygiene is the primary measure to reduce healthcare associated infection, which is a major area of concern in patient safety, and the spread of antimicrobial resistance. Among other activities to address patient safety, it is noteworthy that by end of June 2007, 44 countries, including Bangladesh, Bhutan, India and Thailand from the WHO South East Asian (SEA) region, have signed the pledge to address healthcare associated infections. Additionally, the first regional patient safety workshop on "Clean Care is Safer Care" was also organized successfully to share experiences among SEA countries during 20-22 June 2007 in Bangkok, Thailand (Peerapakorn and Jayawickramarajah, 2007).

In a recent attempt to draw the scope of the problem in member countries of WHO SEA Region where lapses in patient safety are yet to be documented, revealed that Thai and Indonesian situations are similar to those in industrialized nations where it has been estimated that 10% of hospitalized patients suffer an adverse event and 5–10% acquire a healthcare associated infection (Mugrditchian and Khanum, 2006).

As in other countries in the region, there has been a dramatic increase in the number of complaints and legal suits filed by patients with the Thai Medical Council.

This trend has damaged the doctor-patient relationship and contributed to health care professionals' resistance to reporting adverse events. The fear of litigation has hidden the problem of medical errors and adverse events underground where they cannot be effectively addressed. The fear of blame and punishment thus hinders efforts to improve patient safety and the quality of care in Thailand. A more transparent and trusting environment needs to be cultivated as the first step to address patient safety. It is only in such an environment that information on adverse events can be collected, the nature and underlying causes understood, and better policies formulated and implemented.

Sir Liam Donaldson (Donaldson, 2005) once wrote:

*“The biggest challenge for patient safety is not to place blame or to punish, but to prevent errors—both human and systemic—from occurring. That requires both greater transparencies in healthcare systems and greater willingness on the part of health professionals to confront our failings. To err, after all, is human. But to cover up is unforgivable, and to fail to learn is simply inexcusable. We all make mistakes, but it is our duty to learn from them and find ways to make sure they never again cause harm.” His statement clearly calls on all health professionals, including physicians, that they should be willing and have ability to learn how to prevent errors and achieve improved patient safety. Along this line and regarding doctors, medical education needs to be taken into account”.*

In 2002, the National Health Security Act was introduced which addressed the issue of compensation to patients for unintentional harm. This improved doctor-patient relationship in the context of the growing problem of litigation. In 2003, patient safety was chosen as the theme of the 4th National Forum for Quality Improvement to raise awareness on the safety of patients in the hospital quality improvement process. In 2006, the Institute of Quality Improvement and Hospital Accreditation of Thailand established a set of national patient safety goals for hospitals. These goals focus on the following eight priority areas; 1) patient identification 2) operation safety 3) medication safety 4) Health care-related infection 5) maternal and neonatal morbidity 6) delayed rescue 7) acute coronary syndrome and 8) communication failure (WHO, 2006).

### **2.3 Hospital Survey on Patient Safety Culture Tool**

The most rigorous tool and well known tools are Safety Attitudes Questionnaire, Patient Safety Culture in Healthcare Organizations, Hospital Survey on Patient Safety Culture (HSOPSC), Safety Climate Survey and Manchester Patient Safety Assessment Framework. However, the strength of HSOPSC is that the tool assesses safety culture at the individual, unit and organizational level. Organizations can use this tool to assess their patient safety culture, track changes over time and evaluate the impact of patient safety interventions. This is currently mainly used by United States' hospitals but AHRQ is collecting feedback on the use in other countries.

The tool has been used in combination with other tools on large scale studies. It has also been used to make comparison between different industries and countries, which suggests some degree of external reliability.

The Hospital Survey on Patient Safety Culture (HSOPSC) is developed under the sponsorship of the U.S. Agency for Healthcare Research and Quality. This tool was piloted across 21 American hospitals and has robust psychometric properties to be included in items and scales. The survey was designed to be completed by all hospital staff, including those with and those without direct patient contacts. It measures quality across seven unit level dimensions of safety culture, three hospital level dimensions of safety culture and two outcomes as shown below:

### **HSOPSC Survey dimensions and definitions**

#### **Dimensions**

**Definitions:** *The extent to which....*

#### **Unit level**

- |   |  |
|---|--|
| 1. Supervisor / manager expectations and actions promoting patient safety | Supervisors/managers consider staff suggestions for improving patient safety, praise staff for following patient safety procedures, and do not overlook patient safety problems. |
| 2. Organizational Learning /continuous improvement                        | There is a learning culture in which mistakes lead to positive changes and changes are evaluated for effectiveness.  |
| 3. Teamwork within units  | Staff supports each other, treat each other with respect,  |

	and work together as a team.
4.Communication openness	Staff freely speaks up if they see something that may negatively affect a patient, and feel free to question those with more authority.
5.Feedback and communication about error	Staff is informed about errors that happen, given feedback about changes implemented, and discuss ways to prevent errors.
6.Non-punitive response to error	Staff feels that their mistakes and event reports are not held against them, and that mistakes are not kept in their personnel file.
7.Staffing	There is enough staff to handle the workload and work hours are appropriate to provide the best care for patients.
8.Hospital management support for patient safety	Hospital management provides a work climate that promotes patient safety and shows that patient safety is a top priority.
9.Teamwork across units	Hospital units are good cooperation and work well together.
10.Hospital handovers and transition	Hospital units cooperate and coordinate with one another to provide the best care for patients.
<b>Outcomes</b>	
11.Overall perceptions of safety	Procedures and systems are good at preventing errors and there is a lack of patient safety problems.
12.Frequency of incident reporting	Mistakes of the following types are reported. Mistakes caught and corrected before affecting the patient. Mistakes with no potential to harm the patient. Mistakes that could harm the patients, but do not.
<b>Overall patient safety grade</b>	Staff rates the overall patient safety grade for the organization.

The Hospital Survey on Patient Safety (HSOPSC) also has sound and comprehensive psychometrics based on pilot testing in 21 hospitals and has been used extensively, providing comparative data from over 600 hospitals. More recent work has been undertaken to assess external validity of the HSOPS survey, with promising results (Mardon, 2008).

This tool has been widely used outside the United States' where it was developed. For instance it was applied in five Belgian general hospitals. With 3,940 staff responding, the response rate was 77%. Respondents included nurses and assistants nurses, doctors, physiotherapists, laboratory and radiology assistants, social workers and pharmacists as well as pharmacy assistants. Scores were found to be low to average in all five hospitals. The lowest scores were 'hospital management support for patient safety' (35%), 'non-punitive response to error' (36%), 'hospital transfers and transitions' (36%), 'staffing' (38%), and 'teamwork across hospital units' (40%). 'Teamwork within hospital units' had the highest score (70%) (Hellings et al., 2007).

Researchers in the United states' also looked at the relationship between safety culture and safety climate. They defined safety climate as shared perceptions of what an organization is like regarding safety, whereas safety culture refers to staffs' fundamental ideology and orientation an explained reason why safety is pursued in a particular way within an organization. One hundred percent of senior managers and doctors and 10% of other hospital workers were invited to take part at 92 hospitals.

Other researchers have used this tool to make comparison between countries. For instance 788 doctors, nurses and non-clinical staff from 42 hospitals in Taiwan were surveyed and the data was compared to United States' findings. United States' data had an average score of 61% for the 12 patient safety domains and the data from Taiwan had an average of 64%. In both the United States' and Taiwan the dimension that received the highest positive response was 'teamwork within units.' The dimension with the lowest percentage of positive responses was 'staffing'. There were differences between the United States' and Taiwan on three dimensions: 'feedback and communication about error', 'communication openness' and 'frequency of event reporting' (Chen and Li, 2010).

Researchers in the Netherlands examined a Dutch translated version of the Hospital Survey on Patient Safety Culture. The survey was completed by 583 staff

from four general hospitals, three teaching hospitals and one university hospital. Of the 12 dimensions from the original survey, 11 appeared to work well, but two items were removed from the questionnaire and some items were positioned. The authors concluded that the Dutch version translation had acceptable reliability and good construct validity and is similar to the original survey structure (Smits, et al., 2008).

In Spain, the Hospital Survey on Patient Safety Culture questionnaire was distributed to a random sample of health professionals from 24 hospitals, stratified by hospital size. There was a response rate of 40%, with 2,503 participants. 'Teamwork within hospital units' and 'supervisor or manager expectations and actions promoting safety' were the most highly ranked dimensions. 'Staffing,' 'teamwork across hospital units,' 'overall perceptions of safety' and 'hospital management support for patient safety' were identified as weaknesses. There were significant differences depending on hospital size, type of professional and service.

There was a more positive safety climate in small hospitals and pharmacy services, and a more negative safety climate perceived by doctors (Saturno, et al., 2008).

In Norway, the survey was translated and 1,919 staff from one hospital responded, providing a response rate of 55%. Half of staff thought patient safety was good or excellent. There was significant variation between disciplines in the culture of reporting incidents. Social educators, nurses and specialist nurses rated patient safety lower than other professional groups. The authors found that Norwegian professionals perceived safety culture to be less adequate than reported by American professionals, with the exception of three dimensions: communication openness, non-punitive response to error and supervisor or manager expectations and actions promoting patient safety (Olsen E, 2007).

The Hospital Survey on Patient Safety Culture has also been used to make comparison between various industries (Olsen, 2010). For instance, researchers in Norway used the tool to measure the safety climate in two organizations: a large university hospital offering a wide range of hospital services and a large petroleum company producing oil and gas worldwide. The authors found that safety culture is positively related to outcome measures. Safety culture is generally higher in the petroleum industry compared to healthcare (Olsen and Aase, 2010).

The same researcher sent the survey to all hospitals in Riyadh, including nine public hospitals and two private hospitals. In total, 1,224 questionnaires were returned over a six-month period, a response rate of 47%. Organizational learning had the highest positive response (76%) and non-punitive response to error had the lowest score (21%). Key areas of dimension of HSOPSC in need of improvement in public hospitals were handovers and transitions, communication openness, staffing, and non-punitive response to error. In private hospitals, improvements were needed in staffing and non-punitive response to error. Event reporting was influenced by feedback and communication about error, staff position, teamwork across units, non-punitive response to error, supervisor or managers expectations and actions promoting patient safety, and type of hospital (Al-Ahmadi, 2009).

Other researchers examined the extent to which organizational culture supported patient safety in hospitals in Saudi Arabia. Thirteen general hospitals in Riyadh city took part. Health professionals including nurses, technicians, managers and medical staff responded, totaled in 223 respondents. Patient safety was rated as excellent or very good by 60% of respondents but more than half of respondents thought that managers overlooked safety problems that repeatedly happen. Areas of strength for most hospitals were organizational learning and continuous improvement, teamwork within units, feedback and communication about errors. Areas that could be improved were under reporting of events, non-punitive response to error, staffing and teamwork across hospital units (Al-Ahmadi, 2010).

In Turkey, 309 doctors and nurses working in public hospitals in the large city of Konya tested the survey. Most of the scores were lower than the US benchmark scores. 'Teamwork within hospital units' received the highest score (70%), and 'frequency of events reported' received the lowest score (15%). The authors concluded that the Turkish version of the survey was valid and reliable in determining patient safety culture (Bodur and Filiz, 2010).

In Lebanon, 68 hospitals and 6,807 staff took part including hospital doctors, nurses, clinical and non-clinical staff and others. The dimensions with the highest positive ratings were 'teamwork within units,' 'hospital management support for patient safety,' and 'organizational learning and continuous improvement.' Areas with

the lowest ratings included 'staffing' and 'non-punitive response to error.' There were differences across hospitals of status (El-Jardali, et al., 2010).

The Patient Safety Climate in Healthcare Organizations and the Zammuto and Krakower organizational culture surveys measured safety climate and group, entrepreneurial, hierarchical, and production orientation. The safety culture survey 18,361 was completed by people and 5,894 completed the organizational culture survey. Aspects of general organizational culture were strongly related to safety climate.

Organizations with a group culture had a better safety climate and more hierarchical culture was associated with lower safety climate (Singer, et al., 2009).

In Thailand, the Hospital Survey on Patient Safety Culture has also been used and translated into Thai language by Clinical Research Collaboration Network (CRCN). CRCN works with Research for Quality (R4Q). The program use OMERET (Online Medical Research Tools) to analyze the data of research since 2008. All hospitals that passed accreditation program from the Healthcare Accreditation Institute of Thailand are the members and other hospitals which has not yet passed, want to be the member of this program. They can register online. Nowadays, this program is not well known and it is not easy to go through because of non-user friendliness as they have to buy OMERET.



## CHAPTER III

### METHODOLOGY

#### 3.1 Research Design

Cross- sectional design

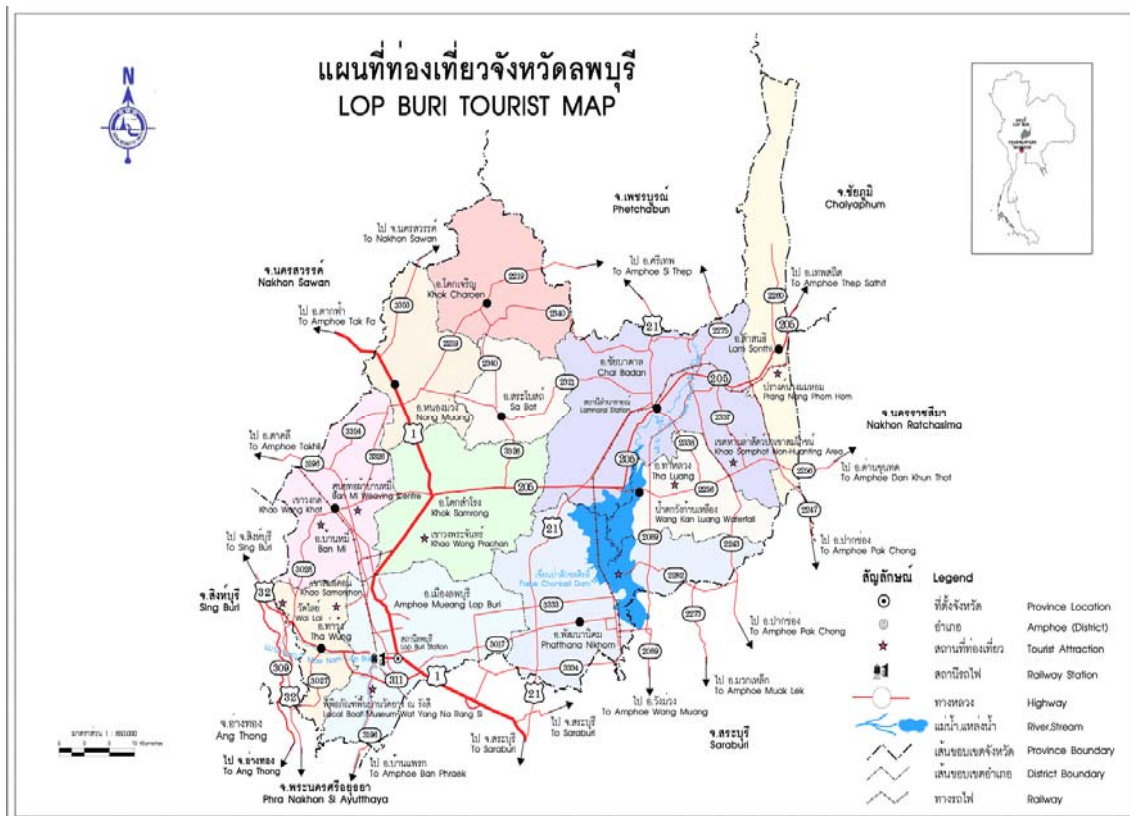
#### 3.2 Study Area

Population was at King Narai Hospital in Lop Buri Province, Thailand. King Narai Hospital is one of the largest government hospitals in Lop Buri. There is also a referral center for neighboring hospitals in Ang Thong, Sing Buri and Chai Nat provinces. The total hospital bed capacity is 428.



**Figure 3:** Map of Thailand

Source: <http://www.gotoknow.org/file/sasinanda/view/128773>, accessed on 24<sup>th</sup> October, 2011.



**Figure 4:** Map of Lop Buri Province, Thailand

Source: [http://www.tourthai.com/province/lop\\_buri/map.php?site1](http://www.tourthai.com/province/lop_buri/map.php?site1), accessed on 24<sup>th</sup> October, 2011

### 3.3 Study Population

The health professionals who are working in all organizations of King Narai Hospital including physicians, dentists, registered nurses, technician (radiological technicians, medical technologists), pharmacists, therapists, academicians and dieticians.

### 3.4 Sampling Technique

This research used purposive sampling based on respondents' willingness to participate in this study which finally included 51 physicians, 9 dentists, 337 registered nurses, 14 technicians, 23 pharmacists, 4 physiotherapists, 5 academicians and 4 dieticians, totaled in 447 respondents. Staff who was out of hospital at the time of data collection was excluded. The investigation was conducted from January 2012 to February 2012.

### **3.5 Sample & Sample size**

Four hundred and forty-seven participants who were working at King Narai Hospital, Lop Buri Province, Thailand were asked to fill a questionnaire.

### **3.6 Measurement Tools**

This thesis used the Hospital Survey on Patient Safety Culture (HSOPSC) which was designed by Agency for Healthcare Research and Quality (AHRQ) in 2004 to assess health professionals' perspective of patient safety culture (PSC) across whole units, tracked changes in PSC overtime, and evaluated the effect on patient safety interventions. This instrument contained subscales that consider many attributes known to be related to culture of patient safety. Specially, the subscales of the instrument included 12 PSC dimensions compound with: (1) supervisor/manager expectations and actions promoting safety; (2) organizational learning and continuous improvement; (3) teamwork within units; (4) communication openness; (5) feedback and communication about error; (6) non-punitive response to errors; (7) staffing; (8) management support for patient safety; (9) handovers and transitions; (10) teamwork across units; For 'outcome measures': (11) number of events reported; (12) overall patient safety goal.

In addition, the survey collected several demographic variables, such as department, number of events reported, length of time worked in the hospital, length of time in current work area, length of time in current specialty or profession, hours worked per week, staff position, and whether or not the respondents had direct interacts with patients. Respondents were also asked to give their department a grade on patient safety.

The survey used 5 point likert scale, 1 = strongly disagree; 2 = disagree; 3 = neither; 4 = agree; and 5 = strongly agree. For questions assessing frequency of event reporting, 1 = never; 2 = rarely; 3 = sometimes; 4 = most of the time; and 5 = always.

Twenty one of items from total forty two items were reverse coded, which A(5, 7, 8, 10, 12, 14, 16 and 18); B(3 and 4); C(6); D(1,2, and 4); F(2, 3, 5, 6, 7, 9 and 11) because of negative questions as shown in Table of Appendix C.

This study was used SPSS 17.0 to perform the statistic analysis. First, descriptive statistics of demographic characteristics of respondents, characteristics of professional background, and average percentage and standard deviation of positive responses on patient safety culture were computed.

The dimensions of HSOPSC represent the perception of respondents on patient safety culture within this group. Appendix C showed the average percentage, mean and standard deviation of positive responses for each of the 12 dimensions and 42 items that HSOPSC measures by using cutting score of (Best and Kahn, 1993.) for the data from this study. The results were sorted in order based on cutting mean score in 5 levels as follow:

Average	4.50 – 5.00	Highest
	3.50 – 4.49	High
	2.50 – 3.49	Moderate
	1.50 – 2.49	Low
	1.00 – 1.49	Lowest

Cutting score in 3 levels of each dimension in HSOPSC indicated the level of positive attitude in respondents. Cut-off mean score in 3 levels was set as follow: by Best and Kakn, 1993.

- 3.50 - 5.00 High level of positive attitude
- 2.50 - 3.49 Moderate level of positive attitude
- 1.00 - 2.49 Low level of positive attitude

Comparison across health professional variables for each of the twelve dimensions of HSOPSC, and on two measures (outcome measures and safety culture measure) were done using one way ANOVA.

The HSOPSC questions were translated into Thai language by the Clinical Research Collaboration Network and Research for Quality. Both institutes work together with Hospital Accreditation institute which supports quality assurance to all hospitals in Thailand.

The items in the Hospital Survey on Patient Safety Culture were grouped according to the safety culture dimensions they are intended to measure. The item's

survey location was shown to the left of each item. Negatively worded items included. Reliability statistics was based on the pilot test from more than 56 health professionals at Phra Putthabat Hospital, Saraburi Province, Thailand. This Hospital has the same baselines data as King Narai Hospital(KNH) (same secondary level hospital. The consistency of reliability assessed using Cronbach's Alpha to calculate.

### **3.7 Data Collection**

The researcher asked the director of King Narai Hospital for permission to collect the data among health professionals. Before meeting with respondents, the researcher explained the purpose of this study to the head of the groups of healthcare professional. Thereafter, the researcher distributed the questionnaire to the respondents to fill it.

King Narai Hospital also has a tradition to support researchers by providing all necessary feedback from the questionnaires. This study was no exception. The questionnaires were numbered for anonymity. The head of sections had control over each for everyone hand out questionnaire by number.

Researcher separated the health professional positions of work to calculate for comparing.

### **3.8 Data Analysis**

This study used SPSS 17.0 (licensed for Chulalongkorn University) to perform the statistic analysis. First, descriptive statistics (frequency, percentage) was use for demographic characteristics of respondents, and professional background, while mean and standard deviation on positive responses items regarding patient safety culture were computed.

One-way analysis of variance (ANOVA) was used for each of the 12 HSOPSC dimensions, as well as for two measurement: outcome measures and safety culture measures in order to determine the extent to which composite scores on these safety culture scales differentiated across the health professionals sat King Narai Hospital.

### **3.9 Ethical Consideration**

Before data collection, ethics approval was sought from the Ethics Review Committee at King Narai Hospital, Lop Buri Province. The covering letter was attached to the questionnaire to explain the purpose of the study with an emphasis that participants would remain anonymous and informed consent had to be gained before the fill-in of the questionnaires.

### **3.10 Obstacles and strategies to solve the problems**

Patient safety culture measurement should consider the interaction between individual and organizational factors by providing better understanding of individual attitudes and group dynamics regarding patient safety culture. Different countries may not use the same factors.

At first, some participants may deny to give an answer on the questionnaires due to length. The researcher then had to make contacts to the director, to create understanding whereby participation went well.

## **. CHAPTER IV**

### **RESULTS**

This study was conducted in King Narai Hospital in Lop Buri Province, Thailand, during on January to February 2012. Total of 447 health professionals who are working in all organizations of King Narai Hospital including physicians, dentists, registered nurses, technician (radiological technician, medical technologist), pharmacists, physiotherapists, academicians and dieticians were using the questionnaire HSOPSC. This chapter documents the main finding of the analysis of Hospital Survey on Patient Safety Culture (HSOPSC) the subscales of the instrument include 12 patient safety culture dimensions compound with: (1) manager expectations and actions promoting safety; (2) organizational learning and continuous improvement; (3) teamwork within units; (4) communication openness; (5) feedback and communication about error; (6) non-punitive response to errors; (7) staffing; (8) management support for patient safety; (9) teamwork across units; (10) handoffs and transitions; and 'outcome measures' compound with : (11) number of events reported; (12) overall patient safety goal.

#### **4.1 Socio-demographic characteristics of respondents**

The response rate was 85.01% (380 respondents out of 447) respondents. The characteristics of the respondents were summarized in Table 4.1. The highest age bracket was in 40 to 49 years (34.47%) and most of them were female (86.58%). Table 4.2 showed that the highest numbers of respondents were registered nurses (75%= 285 respondents), followed with physicians (10.53% =40 respondents). The respondents had been working for a period of 21 years or more (26.84%=102 respondents). Sixteen point zero five percent (61 respondents) worked in medicine, followed by surgery 12.89% (49 respondents) and obstetrics 8.95% (34 respondents). They worked for 40 to 59 hours per week (57.63 % =219 respondents), 19.74% (75 respondents) worked for 60 to 79 hours per week, and 9.21% (35 respondents) worked between 80 to 99 hours per week. Furthermore, 28% remained working in current department.

The respondents had direct contacts with the patients for 94.21% while 5.79% of non-contract with patients were academicians with some of pharmacists and dieticians.

**Table 4.1:** Number and percentage of respondents by socio-demographic characteristics (n=380)

	Socio-demographic characteristics	Number	Percentage
Age (Years)	20-29	77	20.26
	30-39	126	33.16
	40-49	131	34.47
	≥ 50	46	12.11
Gender	Male	51	13.42
	Female	329	86.58
Education level	Bachelor's Degree	289	76.05
	More than Bachelor's Degree	91	23.95
Marital status	Single	137	36.05
	Marriage	217	57.11
	Widow	5	1.32
	Divorce/Separate	21	5.53
Monthly Income (Bath)	5,000 – 10,000	107	0.79
	>10,000 – 20,000	94	28.16
	>20,000 – 30,000	117	24.74
	>30,000 – 40,000	59	30.79
	>40,000	3	15.53



**Table 4.2:** Number and percentage of respondents by background information(n=380)

Background Information	Number	Percentage
Work Area/Unit		
Many different hospital units/No specific unit	23	6.05
Medicine (non surgical)	61	16.05
Surgery	49	12.89
Obstetric	34	8.95
Pediatrics	28	7.37
Emergency department	24	6.32
Intensive care unit (Any type)	30	7.89
Psychiatry/mental	4	1.05
Rehabilitation	4	1.05
Pharmacy	19	5.00
Laboratory	10	2.63
Radiology	7	1.84
Anesthesiology	10	2.63
Outpatient Department (OPD)	18	4.74
Eye Nose Throat Department	19	5.00
Orthopedic	22	5.79
Academic	5	1.32
Dentistry	9	2.37
Nutrition	4	1.05

**Table 4.2:** (Continued) Number and percentage of respondents by background information (N=380)

	Background Information	Number	Percentage
<b>Professionals Background</b>			
	Physicians	40	10.53
	Registered Nurse	285	75.00
	Dentists	9	2.37
	Pharmacist	19	5.00
	Technician	14	3.68
	Physiotherapist	4	1.05
	Dietician	4	1.05
	Academician	5	1.32
<b>Working time in hospital.</b>			
	Less than 1 year	36	9.48
	1 to 5 years	70	18.42
	6 to 10 years	52	13.68
	11 to 15 years	75	19.74
	16 to 20 years	45	11.84
	21 years or more	102	26.84
<b>Working time in current working area.</b>			
	Less than 1 year	51	13.42
	1 to 5 years	103	27.11
	6 to 10 years	87	22.89
	11 to 15 years	65	17.11
	16 to 20 years	32	8.42
	21 years or more	42	11.05

**Table 4.2:** (Continued) Number and percentage of respondents by background information (n=380)

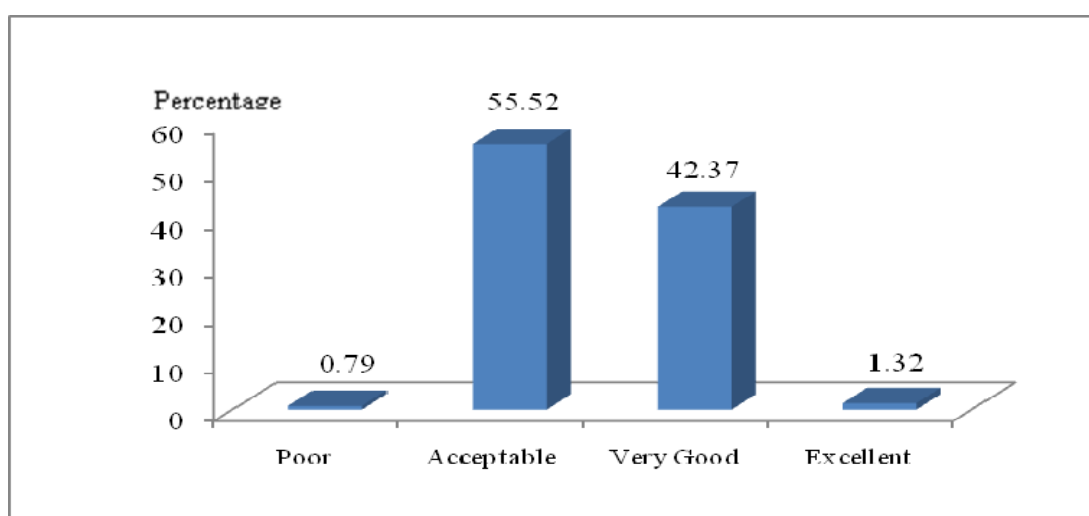
	Background Information	Number	Percentage
<b>Working hours</b>			
	Less than 20 hours per week	0	0
	20 to 39 hours per week	32	8.42
	40 to 59 hours per week	219	57.63
	60 to 79 hours per week	75	19.74
	80 to 99 hours per week	35	9.21
	100 hours per week or more	19	5
<b>Working time in current profession.</b>			
	Less than 1 year	21	5.53
	1 to 5 years	61	16.05
	6 to 10 years	54	14.21
	11 to 15 years	78	20.53
	16 to 20 years	58	15.26
	21 years or more	108	28.42
<b>Contract with patients.</b>			
	Yes	358	94.21
	No	22	5.79

## 4.2 Patient Safety Grade

The total of 380 respondents from eight health professionals of KNH, most of them were acceptable for patient safety grade 55.53%, followed by very good in 42.37%. The small group of respondents was grade excellent and poor 1.32 %, 0.79% respectively as shown in Table 4.3 and Figure 5.

**Table 4.3:** Patient Safety Grade

Health Profession position	Poor n (%)	Acceptable n (%)	Very Good n (%)	Excellent n (%)
Physician(n=40)	2 (5.00)	24 (60.00)	12 (30.00)	2 (5.00)
Registered Nurse(n=285)	0 (0)	163 (57.19)	119 (41.75)	3 (1.05)
Dentists(n=9)	0 (0)	4 (44.44)	5 (55.56)	0 (0)
Pharmacist(n=19)	0( 0)	11 (57.89)	8 (42.11)	0 (0)
Technician(n=14)	1 (7.14)	3 (21.43)	10 (71.43)	0 (0)
Physiotherapist(n=4)	0 (0)	1 (25.00)	3 (75.00)	0 (0)
Dietician(n=4)	0 (0)	4 (100.00)	0 (0)	0 (0)
Academician(n=5)	0 (0)	1 (20.00)	4 (80.00)	0 (0)
<b>Total(n=380)</b>	<b>3 (0.79)</b>	<b>211 (55.52)</b>	<b>161 (42.37)</b>	<b>5 (1.32)</b>



**Figure 5:** Percentage in Patient safety grade

### 4.3 Survey Finding

#### 4.3.1 Reliability

Reliability statistics based on the pilot test data from 56 respondents of Phra Phutthabat Hospital, Saraburi Province, Thailand. There were at the same hospitals level of KNH, which secondary level hospital, provided for the dimensions of HSOPSC. The reliability expressed as Cronbach's alpha for the AHRQ ranged from 0.63 to 0.84, whereas for the data in this research. The Cronbach's alpha ranged from 0.63 to 0.85, Cronbach's alpha, slightly in the *hospital handovers and transition* dimension different with AHRQ was lowest in staffing dimension. The other dimensions reached acceptable reliability coefficients. Compared with the results found from AHQR United State data (AHQR, 2010), *Communication openness* dimension higher alpha as shown in Table 4.4

**Table 4.4:** Reliability of HSOPSC Dimensions

HSOPSC Dimensions	Cronbach's Alpha
<b>1. Overall perceptions of safety</b>	<b>0.75</b>
A15. Patient safety is never sacrificed to get more work done (A15)	
A18. Our procedures and systems are good at preventing errors from happening.	
A10. It is just by chance that more serious mistakes don't happen around here.	
A17. We have patient safety problems in this unit.	
<b>(4 items)</b>	

**Table 4.4:** (Continued) Reliability of HSOPSC Dimensions

HSOPSC Dimensions	Cronbach's Alpha
<p><b>2. Frequency of event reporting</b></p> <p>D1. When a mistake is made, but is <i>caught and corrected before affecting the patient</i>, how often is this reported?</p> <p>D2. When a mistake is made, but has <i>no potential to harm the patient</i>, how often is this reported?</p> <p>D3. When a mistake is made that <i>could harm the patient</i>, but does not, how often is this reported?</p> <p style="text-align: center;"><b>(4 items)</b></p>	<b>0.83</b>
<p><b>3. Supervisor / manager expectations and actions promoting patient safety</b></p> <p>B1. My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures.</p> <p>B2. My supervisor/manager seriously considers staff suggestions for improving patient safety.</p> <p>B3. Whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means taking shortcuts.</p> <p>B4. My supervisor/manager overlooks patient safety problems that happen over and over</p> <p style="text-align: center;"><b>(4 items)</b></p>	<b>0.79</b>

**Table 4.4:** (Continued) Reliability of HSOPSC Dimensions

HSOPSC Dimension	Cronbach's Alpha
<p><b>4. Organizational Learning /continuous improvement.</b></p> <p>A6. We are actively doing things to improve patient safety.</p> <p>A9. Mistakes have led to positive changes here.</p> <p>A13. After we make changes to improve patient safety, we evaluate their effectiveness.</p> <p style="text-align: center;"><b>(3 items)</b></p>	<b>0.77</b>
<p><b>5. Teamwork within units</b></p> <p>A1. People support one another in this unit</p> <p>A3. When a lot of work needs to be done quickly, we work together as a team to get the work done.</p> <p>A4. In this unit, people treat each other with respect.</p> <p>A11. When one area in this unit gets really busy, others help out.</p> <p style="text-align: center;"><b>(4 items)</b></p>	<b>0.77</b>
<p><b>6. Communication openness</b></p> <p>C2. Staff will freely speak up if they see something that may negatively affect patient care.</p> <p>C4. Staff feel free to question the decisions or actions of those with more authority.</p> <p>C6. Staff are afraid to ask questions when something does not seem right.</p> <p style="text-align: center;"><b>(3 items)</b></p>	<b>0.85</b>

**Table 4.4:** (Continued) Reliability of HSOPSC Dimensions

HSOPSC Dimensions	Cronbach's Alpha
<p><b>7. Feedback and communication about error</b></p> <p>C1. We are given feedback about changes put into place based on event reports.</p> <p>C3. We are informed about errors that happen in this unit.</p> <p>C5. In this unit, we discuss ways to prevent errors from happening again.</p> <p style="text-align: center;"><b>(3 items)</b></p>	<b>0.78</b>
<p><b>8. Non-punitive response to error</b></p> <p>A8. Staff feel like their mistakes are held against them.</p> <p>A12. When an event is reported, it feels like the person is being written up, not the problem.</p> <p>A16. Staff worry that mistakes they make are kept in their personnel file</p> <p style="text-align: center;"><b>(3 items)</b></p>	<b>0.76</b>
<p><b>9. Staffing</b></p> <p>A2. We have enough staff to handle the workload.</p> <p>A5. Staff in this unit work longer than what is/that is best for patient care.</p> <p>A7. We use more agency/temporary staff than what is/that is best for patient care.</p> <p>A14. We work in "crisis mode" trying to do too much, too quickly.</p> <p style="text-align: center;"><b>(4 items)</b></p>	<b>0.78</b>



**Table 4.4:** (Continued) Reliability of HSOPSC Dimensions

HSOPSC Dimensions	Cronbach's Alpha
<b>10. Hospital management support for patient safety</b>	<b>0.80</b>
F1. Hospital management provides a work climate that promotes patient safety.	
F8. The actions of hospital management show that patient safety is a top priority.	
F9. Hospital management seems interested in patient safety only after an adverse event happens.	
<b>(3 items)</b>	
<b>11. Teamwork across units</b>	<b>0.81</b>
F4. There is good cooperation among hospital units that need to work together.	
F10. Hospital units work well together to provide the best care for patients.	
F2. Hospital units do not coordinate well with each other.	
F6. It is often unpleasant to work with staff from other hospital units.	
<b>(4 items)</b>	
<b>12. Hospital handovers and transition</b>	<b>0.63</b>
F3. Things “fall between the cracks” when transferring patients from one unit to another.	
F5. Important patient care information is often lost during shift changes.	
F7. Problems often occur in the exchange of information across hospital units.	
F11. Shift changes are problematic for patients in this hospital.	
<b>(4 items)</b>	

### 4.3.2 Statistical Analysis

The average of highest mean score level in positive attitude was all dimensions of safety culture measurement with: (3)supervisor / manager expectations and actions promoting patient safety ( $3.85 \pm 0.67$ ); (4) organizational Learning /continuous improvement ( $3.89 \pm 0.60$ ); (5)teamwork within units ( $3.76 \pm 0.69$ );(6) communication openness ( $3.60 \pm 0.67$ ); (7)feedback and communication about error ( $3.83 \pm 0.60$ ) ; and (11) teamwork across units ( $3.68 \pm 0.61$ ).

The others dimension with: (8) non-punitive response to error( $3.13 \pm 0.90$ ); (9) staffing ( $3.10 \pm 0.74$ ); (10) hospital management support for patient safety ( $3.40 \pm 0.65$ ); and (12) hospital handovers and transition ( $3.12 \pm 0.75$ ). There were 4 dimensions of safety culture dimension need to improve more understanding because all of them in moderate level. Furthermore, the outcome measurement included “overall perception of safety” and “frequency of event reporting” were indication of good procedures but both dimensions still want to be improved to get developing. There had similar moderate level in both (mean score  $3.47 \pm 0.56$  and  $3.27 \pm 0.97$ ). The positive attitude had no lowest level in any dimensions.

The highest mean score of positive attitude responses was obtained from “*Organizational Learning /continuous improvement*” dimension, mean score was  $3.89 \pm 0.60$ , whereas items in the “*Staffing*” dimension received the lowest mean score of positive response, mean score was  $3.10 \pm 0.74$ .

Meanwhile, comparison between the perception patient safety culture of outcome and safety culture measurement in two big pictures of HSOPSC, the survey result was found that outcome measurement had lowest score of mean ( $2.73 \pm 0.97$ ) than safety culture ( $3.49 \pm 0.40$ ) and whole picture of HSOPSC ( $3.45 \pm 0.51$ ).

The result indicated that most of respondents in this study had feel supportive and good understanding of patient safety culture in positive way more than 50% of each items. Descriptive statistics, including means and standard deviations for all items within the scales, are presented Appendix C.

One way ANOVA test was used to assess within-group versus between-group variance for HSOPSC overall and for each dimension. Analysis showed that there was several of the dimensions have significant difference between the eight groups of health professionals (the significance was less than 0.05). The six dimensions of

HSOPSC included outcome measurement and safety culture measurement were significantly different in between eight health professionals, where 1) overall perceptions of safety ( $P = 0.01$ ); 2) frequency of event reporting ( $P = 0.00$ ); 4) organizational Learning /continuous improvement ( $P = 0.00$ ); 6)communication openness ( $P = 0.00$ ); 7) feedback and communication about error ( $P = 0.00$ ); 10) hospital management support for patient safety ( $P = 0.03$ ); outcome dimensions ( $P = 0.01$ ); safety culture dimensions ( $P = 0.04$ ). Therefore, it can say that there was a significant difference between physicians, dentists, registered nurses, technicians (radiological technician, medical technologist), pharmacists, therapists, academicians and dieticians at least one health professional in between this group had no the same attitude direction.

Another six dimensions of HSOPSC included overall of HSOPSC did not differ significantly between health professionals that mean they had the same direct attitude of patient safety culture in ; 3) supervisor / manager expectations and actions promoting patient safety ( $P = 0.12$ ); 5) teamwork within units ( $P = 0.16$ ); 8) non-punitive response to error ( $P = 0.24$ ) ; 9) staffing ( $P = 0.13$ ); 11) teamwork across units ( $P = 0.78$ ); 12) hospital handovers and transition ( $P = 0.35$ ); and overall of HSOPSC ( $P = .05$ ) as shown in Table 4.5.

**Table 4.5:** Relation between health professionals with one way ANOVA analysis for HSOPSC dimensions composite score across respondents. (n=380)

HSOPS Survey Dimensions		Sum of Squares	df	Mean Square	F	Sig.
1. Overall perceptions of safety	Between Groups	3.17	7.00	0.45	2.55	<b>0.01*</b>
	Within Groups	66.04	372.00	0.18		
	Total	69.21	379.00			
2. Frequency of event reporting	Between Groups	20.85	7.00	2.98	3.37	<b>0.00*</b>
	Within Groups	328.61	372.00	0.88		
	Total	349.46	379.00			
3. Supervisor / manager expectations and actions promoting patient safety	Between Groups	4.07	7.00	0.58	1.66	0.12
	Within Groups	130.23	372.00	0.35		
	Total	134.30	379.00			
4. Organizational Learning /continuous improvement	Between Groups	8.78	7.00	1.25	4.49	<b>0.00*</b>
	Within Groups	103.91	372.00	0.28		
	Total	112.69	379.00			
5. Teamwork within units	Between Groups	4.24	7.00	0.61	1.52	0.16
	Within Groups	148.59	372.00	0.40		
	Total	152.83	379.00			
6. Communication openness	Between Groups	8.93	7.00	1.28	3.86	<b>0.00*</b>
	Within Groups	123.10	372.00	0.33		
	Total	132.03	379.00			
7. Feedback and communication about error	Between Groups	10.87	7.00	1.55	5.60	<b>0.00*</b>
	Within Groups	103.24	372.00	0.28		
	Total	114.11	379.00			
8. Non-punitive response to error	Between Groups	6.51	7.00	0.93	1.32	0.24
	Within Groups	261.76	372.00	0.70		
	Total	268.27	379.00			
9. Staffing	Between Groups	5.37	7.00	0.77	1.61	0.13
	Within Groups	176.98	372.00	0.48		
	Total	182.35	379.00			
10. Hospital management support for patient safety	Between Groups	5.46	7.00	0.78	2.29	<b>0.03*</b>
	Within Groups	126.68	372.00	0.34		
	Total	132.14	379.00			
11. Teamwork across units	Between Groups	1.29	7.00	0.18	0.57	0.78
	Within Groups	119.63	372.00	0.32		
	Total	120.92	379.00			

\*Significantly different at  $P < 0.05$  level

**Table4.5:** (Continued) Relation between health professionals with one way ANOVA analysis for HSOPSC dimensions composite score across respondents. (n=380)

HSOPS Survey Dimensions		Sum of Squares	df	Mean Square	F	Sig.
12. Hospital handovers and transition	Between Groups	4.03	7.00	0.58	1.12	0.35
	Within Groups	191.13	372.00	0.51		
	Total	195.16	379.00			
Outcome Measurement (1-2 dimensions)	Between Groups	3.91	7.00	0.56	2.64	<b>0.01*</b>
	Within Groups	78.67	372.00	0.21		
	Total	82.59	379.00			
Safety Culture Measurement (3-12 dimensions)	Between Groups	2.29	7.00	0.33	2.14	<b>0.04*</b>
	Within Groups	57.04	372.00	0.15		
	Total	59.33	379.00			
HSOPSC (1-12 dimensions)	Between Groups	1.66	7.00	0.24	2.07	0.05
	Within Groups	42.69	372.00	0.11		
	Total	44.35	379.00			

\*Significantly different at  $P < 0.05$  level

Table 4.6 shown the analysis of HSOPS Survey dimensions with the results are sorted in descending order based on the data in this study and one way ANOVA for comparison mean and standard deviation between eight health professionals composite; physician, dentist, registered nurses, technician (radiological technician, medical technologist), pharmacists, therapists, academician and dietician.

**Table 4.6:** Comparison of mean among health professionals with One0- way ANOVA analysis across respondent group (n=380)

Health Professions (n)	Physicians (40)	RNs (285)	Dentists (9)	Pharmacists (19)	Technicians (14)	Physiotherapists (4)	Dieticians (4)	Academicians (5)	Total (n=380)
HSOPSC Dimensions	Mean ±Standard Deviation								
1. Overall perceptions of safety	3.06 0.60	<b>3.34***</b> 0.40	<b>3.42**</b> 0.28	3.28 0.34	<b>3.34***</b> 0.39	3.13 0.43	3.25 0.20	<b>3.45*</b> 0.11	3.31 0.43
2. Frequency of event reporting	<b>3.19***</b> 0.91	2.64 0.95	<b>3.52*</b> 0.80	2.51 1.00	2.67 0.84	2.58 0.57	<b>3.33**</b> 0.72	<b>3.33**</b> 1.00	2.73 0.96
3. Supervisor / manager expectations and actions promoting patient safety	3.50 0.71	<b>3.80**</b> 0.57	3.56 0.30	3.68 0.81	<b>3.93*</b> 0.44	<b>3.69***</b> 0.31	3.63 0.60	3.75 0.73	3.76 0.60
4. Organizational Learning /continuous improvement	3.63 0.80	<b>3.97*</b> 0.47	3.33 0.33	3.63 0.59	<b>3.88**</b> 0.56	3.75 0.50	<b>3.83***</b> 0.33	3.73 0.80	3.89 0.55

Note: RNs = Registered Nurses; Ranking positive attitude with: \* 1<sup>st</sup> Number; \*\*2<sup>nd</sup> Number; \*\*\* 3<sup>rd</sup> Number

**Table 4.6:** (Continued) Comparison of mean among health professionals with One-way ANOVA analysis across respondent group.(n=380)

Health Professions (n)	Physicians (40)	RNs (285)	Dentists (9)	Pharmacists (19)	Technicians (14)	Physiotherapists (4)	Dieticians (4)	Academicians (5)	Total (n=380)
HSOPSC Dimensions	Mean ±Standard Deviation								
5. Teamwork within units	<b>3.63**</b> 0.69	<b>3.63**</b> 0.60	3.11 0.88	3.32 0.95	<b>3.63**</b> 0.39	<b>3.44***</b> 0.59	<b>3.75*</b> 0.00	<b>3.75*</b> 0.40	3.60 0.64
6. Communication openness	3.25 0.85	<b>3.67**</b> 0.52	<b>3.41***</b> 0.74	3.37 0.61	<b>3.76*</b> 0.30	3.33 0.82	<b>3.67**</b> 0.90	3.20 0.38	3.59 0.59
7. Feedback and communication about error	3.53 0.73	<b>3.92*</b> 0.47	3.22 0.69	<b>3.60***</b> 0.73	<b>3.90**</b> 0.33	<b>3.92*</b> 0.42	3.58 0.42	3.53 0.90	3.84 0.55
8. Non-punitive response to error	<b>3.27*</b> 0.92	<b>3.15**</b> 0.85	2.81 0.85	3.04 0.76	2.76 0.59	2.50 1.00	2.58 0.32	<b>3.07***</b> 0.28	3.12 0.84

Note: RNs = Registered Nurses; Ranking positive attitude with: \* 1<sup>st</sup> Number; \*\*2<sup>nd</sup> Number; \*\*\* 3<sup>rd</sup> Number

**Table 4.6:** (Continued) Comparison of mean among health professionals with One-way ANOVA analysis across respondent group.(n=380)

Health Professions (n)	Physicians (40)	RNs (285)	Dentists (9)	Pharmacists (19)	Technicians (14)	Physiotherapists (4)	Dieticians (4)	Academicians (5)	Total (n=380)
HSOPSC Dimensions	Mean ±Standard Deviation								
9. Staffing	2.93	2.97	<b>3.58*</b>	<b>3.01***</b>	2.66	<b>3.06**</b>	2.63	2.90	2.97
	0.82	0.69	0.79	0.62	0.47	0.52	0.32	0.29	0.69
10. Hospital management support for patient safety	3.17	<b>3.50***</b>	<b>3.56**</b>	3.26	3.31	3.33	<b>3.67*</b>	3.27	3.45
	0.77	0.58	0.29	0.47	0.44	0.38	0.54	0.15	0.59
11. Teamwork across units	3.49	<b>3.58***</b>	3.44	3.41	3.52	<b>3.81*</b>	3.56	<b>3.70**</b>	3.56
	0.78	0.55	0.39	0.50	0.41	0.47	0.24	0.33	0.56
12. Hospital handovers and transition	2.93	<b>3.21**</b>	3.00	3.04	2.73	<b>3.31*</b>	<b>3.13***</b>	3.05	3.15
	0.79	0.64	0.50	0.58	0.52	0.66	0.43	0.69	0.66

Note: RNs = Registered Nurses; Ranking positive attitude with: \* 1<sup>st</sup> Number; \*\*2<sup>nd</sup> Number; \*\*\* 3<sup>rd</sup> Number



**Table 4.6:** (Continued) Comparison of mean among health professionals with One-way ANOVA analysis across respondent group.(n=380)

Health Professions (n)	Physicians (40)	RNs (285)	Dentists (9)	Pharmacists (19)	Technicians (14)	Physiotherapists (4)	Dieticians (4)	Academicians (5)	Total (n=380)
HSOPSC Dimensions	Mean ±Standard Deviation								
Outcome Measurement (1-2 Dimensions)	3.36	3.31	<b>3.75*</b>	3.11	3.21	3.04	<b>3.64**</b>	<b>3.63***</b>	3.31
	0.48	0.46	0.36	0.44	0.54	0.29	0.38	0.46	0.47
Safety Culture Measurement (3-12 Dimensions)	3.34	<b>3.53*</b>	3.32	3.34	<b>3.42***</b>	<b>3.43**</b>	3.40	3.40	3.49
	0.62	0.36	0.31	0.45	0.18	0.47	0.27	0.21	0.40
HSOPSC (1-12 Dimensions)	3.33	<b>3.49*</b>	3.38	3.29	3.36	3.36	<b>3.43***</b>	<b>3.44**</b>	3.45
	0.54	0.31	0.26	0.40	0.18	0.43	0.28	0.17	0.34

Note: RNs = Registered Nurses; Ranking positive attitude with: \* 1<sup>st</sup> Number; \*\*2<sup>nd</sup> Number; \*\*\* 3<sup>rd</sup> Number

HSOPSC dimensions did not significantly between eight health professionals. Ranking mean of positive attitudes on HSOPSC as shown in Table 4.7:

**Table 4.7:** Ranking positive attitudes of KNH's health professionals on HSOPSC

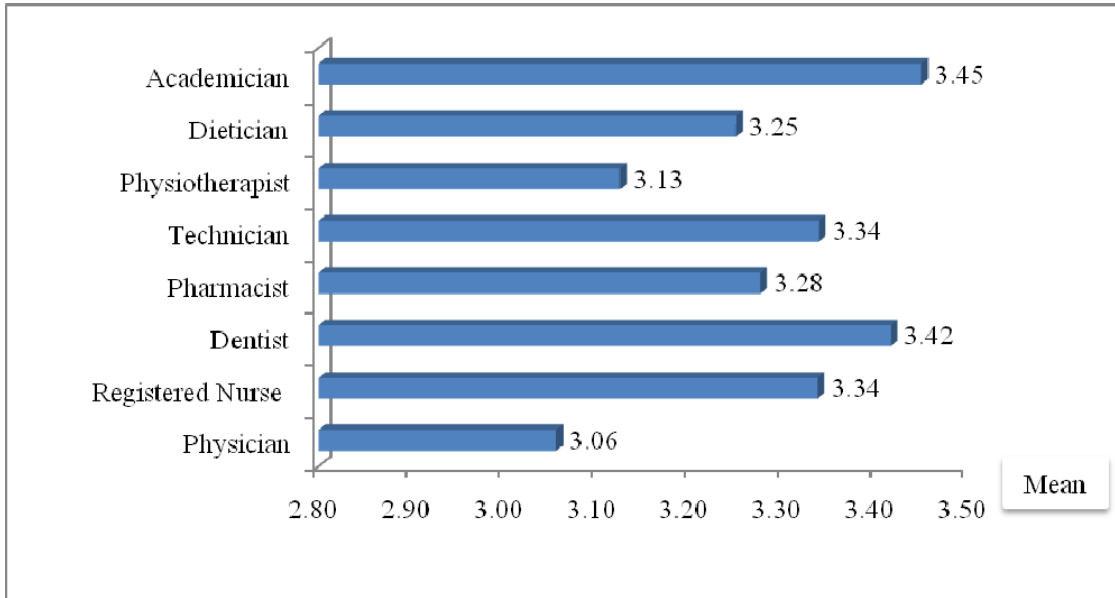
Ranking	Mean $\pm$ Standard deviation
1. Registered nurse	(3.49 $\pm$ 0.31)
2. Academician	(3.44 $\pm$ 0.17)
3. Dietician	(3.43 $\pm$ 0.28)
4. Dentist	(3.38 $\pm$ 0.26)
5. Technician and Physiotherapist	(3.36 $\pm$ 0.18) and (3.36 $\pm$ 0.43)
6. Physician	(3.33 $\pm$ 0.54)
7. Pharmacist	(3.29 $\pm$ 0.40)

**The result of comparison mean and standard deviation of one way ANOVA between 12 safety culture dimensions and health professional of King Narai Hospital**

**The dimensions were significantly different at P < .05 level**

(1) Overall perceptions of safety

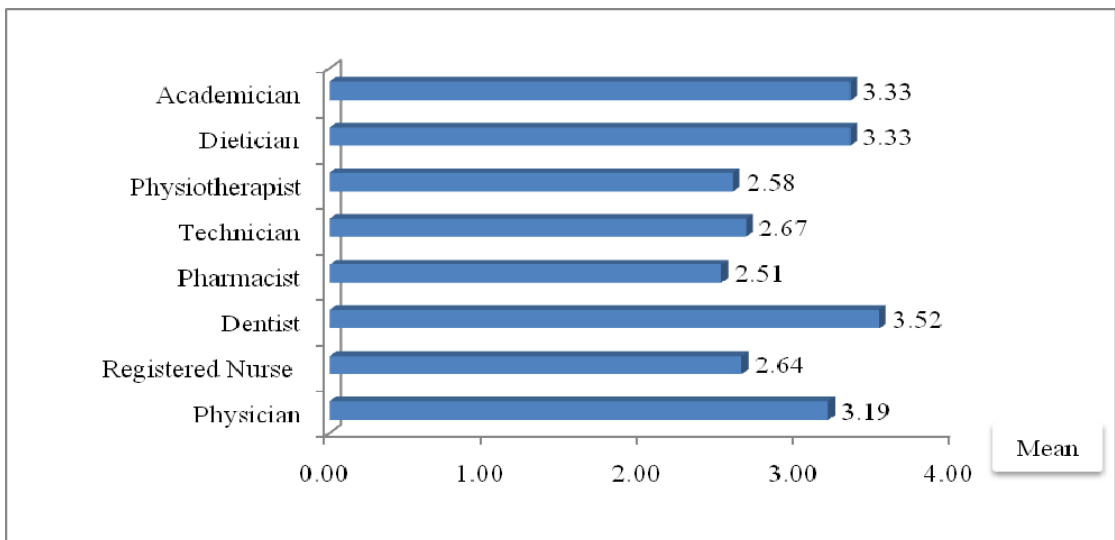
Academician had a highest positive attitude of HSOPSC than the others health professional (mean 3.45  $\pm$  0.11). Physician had a lowest positive attitude of HSOPSC than the others health professional (mean 3.06  $\pm$  0.60) shown in Table 4.6 and Figure 6.



**Figure 6:** Comparison of mean score on overall perceptions of safety among health professionals

(2) Frequency of event reporting

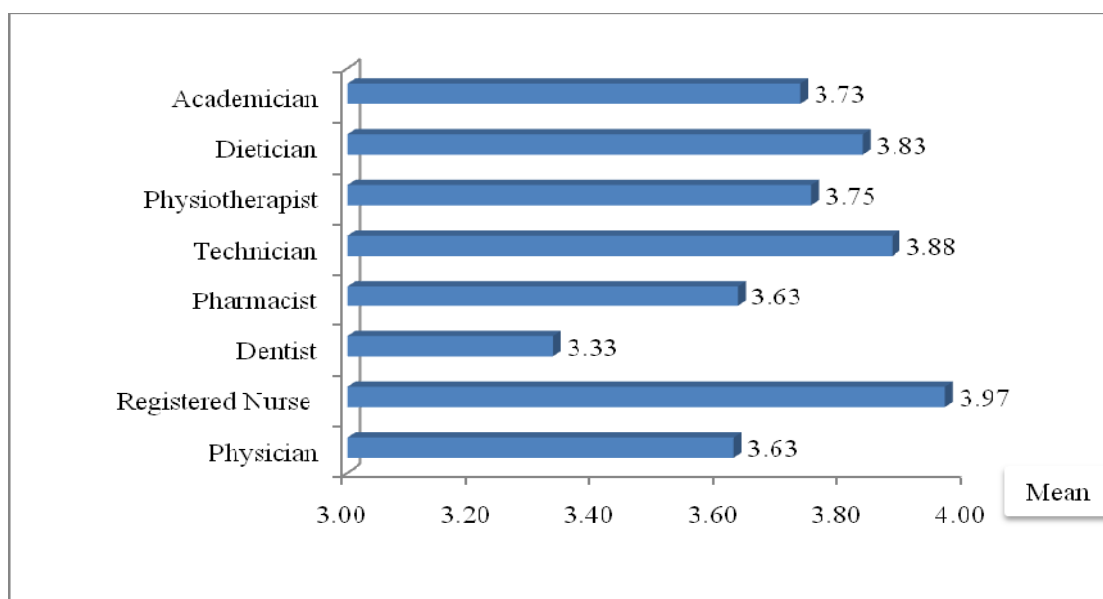
Dentist had a highest positive attitude of HSOPSC than the others health professional (mean  $3.52 \pm 0.80$ ). Pharmacist had a lowest positive attitude of HSOPSC than the others health professional (mean  $2.51 \pm 1.00$ ) as shown in Table 4.6 and Figure 7.



**Figure 7:** Comparison of mean score on frequency of event reporting among health professionals

#### (4) Organizational Learning /continuous improvement

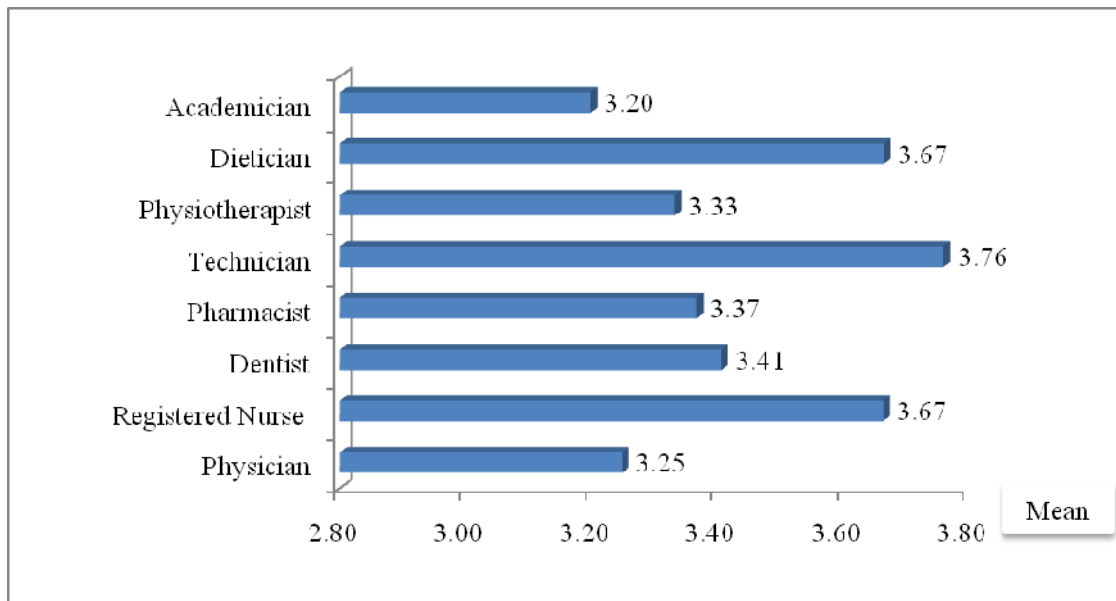
Registered nurse had a highest positive attitude of HSOPSC than the others health professional (mean  $3.97 \pm 0.47$ ). Dentist had a lowest positive attitude of HSOPSC than the others health professional (mean  $2.51 \pm 1.00$ ) as shown in Table 4.6 and Figure 8.



**Figure 8:** Comparison of means score on organizational learning /continuous improvement among health professionals

#### (6) Communication openness

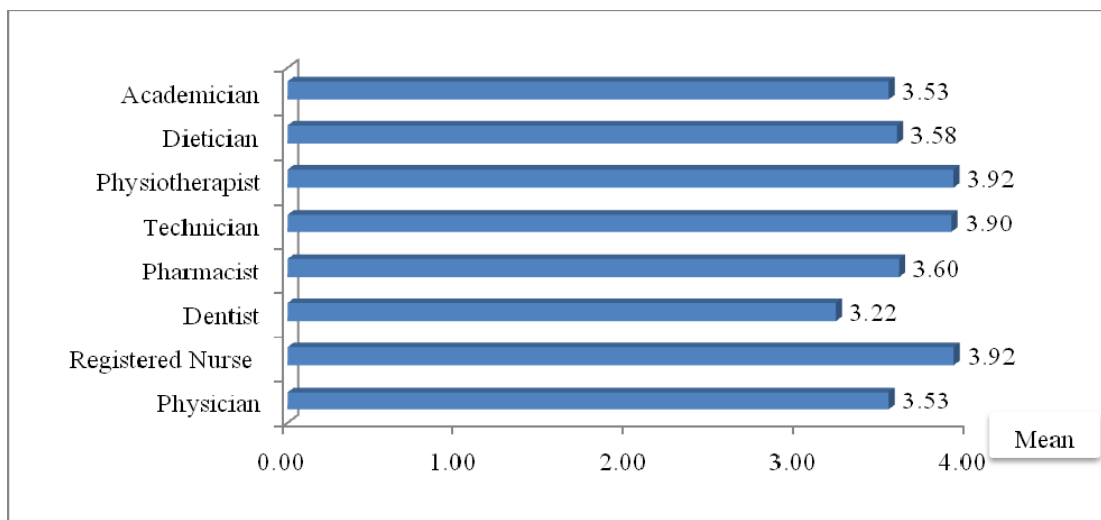
Technician had a highest positive attitude of HSOPSC than the others health professional (mean  $3.76 \pm 0.30$ ). Academician had a lowest positive attitude of HSOPSC than the others health professional (mean  $3.20 \pm 3.38$ ) as shown in Table 4.6 and Figure 9.



**Figure 9:** Comparison of mean score on communication openness among health professionals

(7) Feedback and communication about error

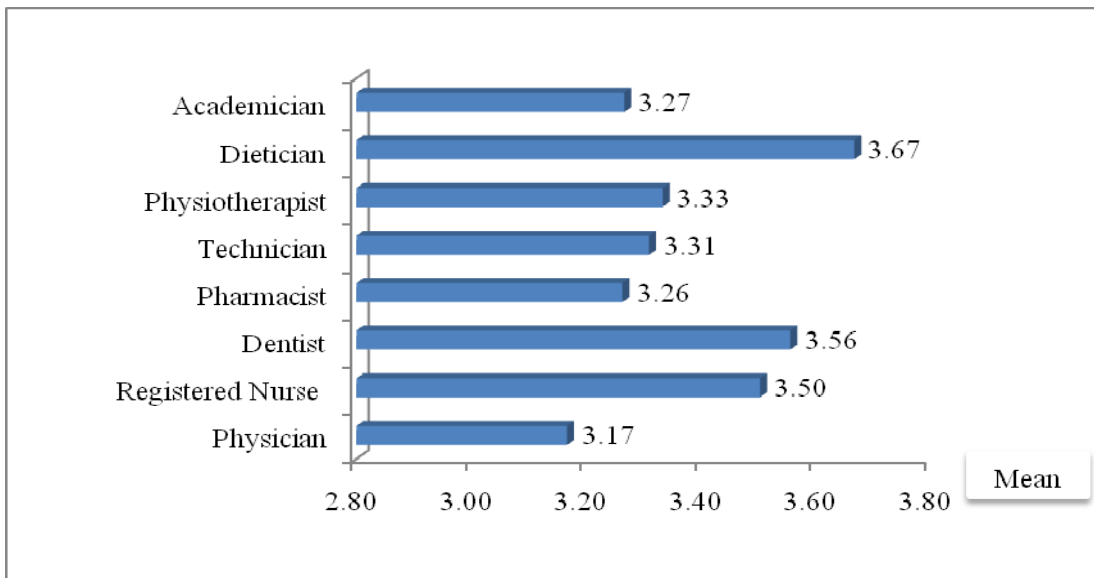
Registered nurse had a highest positive attitude of HSOPSC than the others health professional (mean  $3.92 \pm 0.47$ ). Dentist had a lowest positive attitude of HSOPSC than the others health professional (mean  $3.22 \pm 0.69$ ) as shown in Table 4.6 and Figure 10



**Figure 10:** Comparison of mean score on feedback and communication about error among health professionals

(10) Hospital management support for patient safety

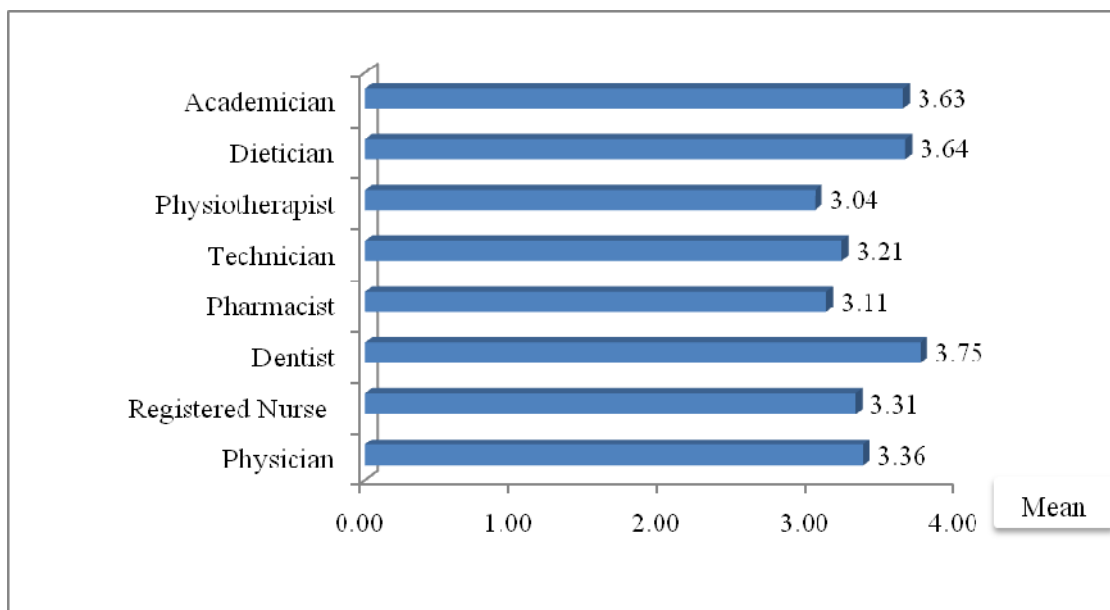
Dietician had a highest positive attitude of HSOPSC than the others health professional (mean  $3.67 \pm 0.54$ ). Physician had a lowest positive attitude of HSOPSC than the others health professional (mean  $3.17 \pm 0.77$ ) as shown in Table 4.6 and Figure 11.



**Figure 11:** Comparison of mean score on hospital management support for patient safety among health professionals

Outcome Measurement

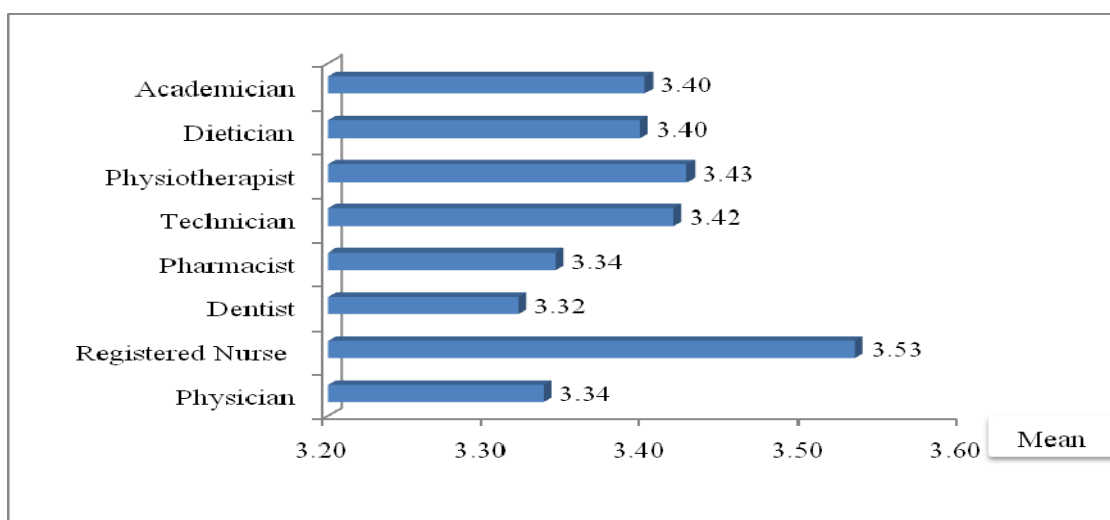
Dentist had a highest positive attitude of HSOPSC than the others health professional (mean  $3.75 \pm 0.36$ ). Physiotherapist had a lowest positive attitude of HSOPSC than the others health professional (mean  $3.11 \pm 0.44$ ) as shown in Table 4.6 and Figure 12.



**Figure 12:** Comparison of mean score on outcome measurement among health professionals

#### Safety Culture Measurement

Registered nurse had a highest positive attitude of HSOPSC than the others health professional (mean  $3.53 \pm 0.36$ ). Dentist had a lowest positive attitude of HSOPSC than the others health professional (mean  $3.32 \pm 0.31$ ) as shown in Table 4.6 and Figure 13.



**Figure 13:** Comparison of mean score on safety culture measurement among health professionals

**The dimensions did not significant at  $P < .05$  level****(3) Supervisor / manager expectations and actions**

The higher mean of supervisor / manager expectations and actions held positive attitudes toward technician ( $3.93 \pm 0.44$ ), the second was registered nurse ( $3.80 \pm 0.57$ ) and the third was physiotherapist ( $3.69 \pm 0.31$ ) as shown in Table 4.6.

**(5) Teamwork within units**

The higher mean of teamwork within units held positive attitudes toward dietician ( $3.75 \pm 0.00$ ) and academician ( $3.75 \pm 0.40$ ), the second was physician ( $3.63 \pm 0.69$ ), registered nurse ( $3.63 \pm 0.60$ ), and technician ( $3.63 \pm 0.39$ ), the third was physiotherapist ( $3.44 \pm 0.59$ ) as shown in Table 4.6. This dimension had similar mean in the same level for health professionals. It shown with more than two group of participate had the same level of positive attitudes in patient safety culture.

**(8) Non-punitive response to error**

The higher mean of non-punitive response to error held positive attitudes toward physician ( $3.27 \pm 0.92$ ), the second was registered nurse ( $3.15 \pm 0.85$ ) and the third was academician ( $3.07 \pm 0.28$ ) as shown in Table 4.6.

**(9) Staffing**

The higher mean of staffing held positive attitudes toward physician ( $3.58 \pm 0.79$ ), the second was physiotherapist ( $3.06 \pm 0.52$ ) and the third was pharmacist ( $3.01 \pm 0.62$ ) as shown in Table 4.6.

**(11) Teamwork across units**

The higher mean of teamwork across units held positive attitudes toward physiotherapist ( $3.81 \pm 0.47$ ), the second was academician ( $3.70 \pm 0.33$ ) and the third was registered nurse ( $3.58 \pm 0.55$ ) as shown in Table 4.6.

**(12) Hospital handovers and transition**

The higher mean of hospital handovers and transition held positive attitudes toward physiotherapist ( $3.31 \pm 0.66$ ), the second was registered nurse ( $3.21 \pm 0.64$ ) and the third was dietician ( $3.13 \pm 0.43$ ) as shown in Table 4.6.



### Hospital Survey on Patient Safety Culture

HSOPSC dimensions did not significantly between eight health professionals. The higher mean of whole picture of HSOPSC held positive attitudes toward registered nurse ( $3.49 \pm 0.31$ ), the second was academician ( $3.44 \pm 0.17$ ) and the third was dieticians ( $3.43 \pm 0.28$ ) as shown in Table 4.6.

## CHAPTER V

### SUMMARY, DISCUSSION, RECOMMENDATION

#### 5.1 Summary

The data from this study demonstrate that six dimensions were in moderate level of positive attitude in patient safety culture and six dimensions were in the highest level. The results revealed that HSOPSC dimensions did not significantly different among eight health professional groups. The highest mean score of positive attitude responses was obtained from “Organizational learning /continuous improvement” dimension, mean score was  $3.85 \pm 0.67$ , whereas items in the “Staffing” dimension received the lowest mean score of positive response, mean score was  $3.10 \pm 0.74$ . Registered nurses had higher perception of good collaboration with their nurse peers than the other health professionals. The highest of mean score in positive attitude was registered nurses and the lower mean score were in physicians and pharmacists. Patient safety grade in most acceptable situation was at 55.53%.

#### 5.2 Discussion

The HSOPSC has been translated into several languages and has been administrated in United States, European countries and Asia countries (Mardon, 2008). In Thailand, it was translated into Thai language by CRCN and R for Q, both institutes work together with Hospital Accreditation Institute (HA). HA support quality assurance to all Thailand hospitals. HSOPSC has been well known at present to the hospitals getting support from HA.

The questionnaire used in this study has been used to evaluate safety culture from employees' points of view. HSOPSC is one of the most frequently used questionnaires to assess safety culture in health care settings. There are increasing numbers of study testing how consistently the HSOPSC questionnaire measures safety culture dimensions (Pfeiffer and Manser, 2010). However, these surveys have all been tested with medical staff only. Since it is important to test whether the HSOPSC can be applicable for an assessment from others' views regarding hospital's safety culture, the purpose of this study was to determine the perception of safety culture and to make

comparison regarding positive attitudes among different types of health professional at KNH.

The research on “Measuring Safety Culture Attitude of Health Professionals at King Narai Hospital, Lob Buri Province, Thailand” found other factors affecting the problem of respondents that could not be captured by the instrument created by the United States’ organizations. Some dimensions/items were not locally suitable for use due to difference in culture, race, language, and religion (Schneider and Francisco, 1990).

However, given the small numbers and unequal distribution of the respondents among health professionals at only KNH in this study, there is no representativeness in Thailand which is regarded as one of the study’s limitation for generalization.

The results of socio-demographic characteristics become important to be considered whether the long working hours can affect their attitude and behavior toward patient safety. If this is the case, it is likely to have an influence on the interpretation as the survey results. For instance, respondents working hours ranged from 40 to 59 hours per week for 57.63 % (219 respondents), 60 to 79 hours per week for 19.74% (75 respondents) and 80 to 99 hours per week for 9.21% (35 respondents). AT times support is provided for the staff to, reflective valuations of their practice, thus mediating the negative impact over work (Lewandowski and Kramer, 1980). There can impact to safety culture attitude as well as the staff has gotten weakness from jobs’ overloading, it might out of their head when they lack of ability for working.

Pace of work and work load can count as work pressure (Flin et al., 2000). They suggest that the balance between pressure for production and safety is a related theme which is recognized as a key component of safety culture (ACSNI, 1993), Having respondents with graduate degree and higher in this study reflected other studies stating that having higher degree of education can increase one’s self-esteem and help improve performance, and, consequently, provide more mental (Lewandowski and Kramer, 1980).

In addition, the analysis of Cronbach’s Alpha signified the dimensions’ acceptable level of reliability. In 11 out of 12 dimensions, the Cronbach’s Alpha

values ranged between 0.63 and 0.85. The lower values of Cronbach's Alpha can probably be attributed to the perception of health professionals toward their hospitals, depend on what was the situation of organization in mean time such as Phra Putthabat hospital have been with the problem several year on hospital handovers and transition, that they got the lower values in this dimension 0.63 for Cronbach's Alpha.

The study results were based on a cross sectional survey with a response rate of 85.01% (380 respondents out of 447) who were asked for a self-administrated survey regarding patient safety culture while some of the respondents were in face- to-face interview. Self- administrated instruments are commonly used in spite of the fact their weaknesses are widely recognized. In this case, the researcher noticed that some respondents simply lost interest and lost ability to answer questions accurately. Additionally, people are sometimes not the best judges of their own behavior. Some individuals may try to hide their feeling, thoughts and attitudes. On the positive side, self- administered questionnaire are often a good solution when researchers need to administer a large number of tests in a relatively short period of time. Scoring of the tests is standardized and based on previously established norms.

The relatively hard-to-access health professional groups were pharmacists and physicians due to their time constraints (Armstrong and Ashworth, 2000).

The researcher found that most of respondents had acceptable patient safety grade at 55.53% and fewer on very good and excellent level at 42.37% and 1.32% respectively. This was not a good indication of the level for patient safety grade in the realm of patient safety culture. The respondents need to improve their practice and organization-wide policies should be issued to help the health professionals understand better so to get better grade.

The findings of this study were significantly different among eight health professionals regarding HSOPSC in 6 out of 12 dimensions. However, as an overall of HSOPSC, there was no significant difference. Yet the mean of the eight groups of health professional went into the same direction of positive attitude toward patient safety culture at KNH - desirable results.

The major finding of the study was that perceptions of safety culture in 12 dimensions across health professionals groups through the ranking of the positive attitudes fell into the registered nurse group ( $3.48 \pm 0.31$ ) while the least fell into

physicians and pharmacists ( $3.33\pm 0.54$ ,  $3.29\pm 0.40$ ). The researcher assumed that registered nurses had frequent contacts with patients and spent time with patients round the clock. Thus, they need to be aware of and concerned with every task they do for the patients. The pharmacists may have fewer direct contacts with the clients perhaps is the reflection of their scores.

Within the scope of this study, the researcher was not able to examine the relationship between patient safety culture, outcomes, HSOPSC measurement and different among health professionals' units. Only an overall comparison was made due to limited time. Therefore, researcher agreed with previous suggestion (Sorra and Dyer, 2010) that more evidence is required to indicate the relationship among patient safety culture, patient safety outcomes and HSOPSC measurement as well as among health professionals.

There are strengths and weaknesses in using a survey approach in this study. The strengths included the fact that surveys are relatively easy to administer, are relatively simple to score and code, and can determine the values and relations of variables and constructs. Surveys can be generalized to other members of the population studied and often to other similar populations. They can be reused easily and provide an objective way of comparing responses over different groups, times, and places. Surveys can sometimes be used to predict behavior and can help confirm and quantify the findings of qualitative research (MISQ Discovery, 1998).

On the other hand, weaknesses of the survey method includes the fact that surveys are just a snapshot of behavior at one place and time. One must be careful upon an assumption that they are valid in different contexts. Surveys do not provide a description of the situation that is as rich as a case study. They also do not provide evidence for causality between surveyed constructs that is as strong as a well-designed experiment (MISQ Discovery, 1998).

### **5.3 Study Limitations**

The lengthy (6-page) of self-administered questionnaire used in this study seems not to be user-friendly which might cause the loss of interest of the respondents who might not answer all items accurately. People are sometimes not the best judges

of their own behavior. Some individuals may try to hide their true feelings, thoughts, and attitudes.

However, inherent to cross-sectional studies, the data presented in this study represented only one point in time which may be a particular concern given ongoing efforts to measure HSOPSC at King Narai Hospital. In addition, there may have been other factors possibly affecting the problem of response rate that could not be captured by this instrument – the instrument created by the United States’ organizations. Within some dimensions, there is a use of both Thai and English wording, the respondents might get confused and it was hard for them to understand the true meaning of the questionnaire.

Moreover, the analytical results had no standard in terms of age, gender, jobs, seniorities, working unit, and hospital characteristics. More studies are required to explore the influences of these individual and organizational factors toward the safety culture (Lee et al., 2000).

#### **5.4 Benefit & Application**

One of the benefits of measuring safety culture is that it can provide a tangible indicators of the current status and progress over time of organizations and teams wishing an implementation for improvements. Other measures of patient safety such as error rates were reflected by reporting errors. Outcome measures are, however, insensitive or time-consuming to be impacted by changes in processes and systems.

One of the goals of this study was to help hospitals improve their patient safety culture. This report shows some encouraging signs of this phenomena.

Creating a measuring for patient safety culture promotes one of the key challenges facing healthcare organizations. The results from this study may create new knowledge body that might lead to an improvement in patient safety culture attitude for KNH, and might be a forming point for other researches to come.

#### **5.5 Conclusion**

Patient safety culture at KNH is an important issue. Determining the patient safety culture level should be a continuous process. KNH need to continue to make improvement for their patient safety culture. While patient safety is everyone’s

concern, it is not easy for ones who work in health care setting to understand this concept. In KNH, most health professionals have had different training and often hold a value system that is specific to their professional groups. To be truly effective, patient safety culture needs to be incorporated/cultivated into the education of health professionals across the spectrum of health care settings.

The outcome of this study may help conducting a policy dialogue meeting for policy makers and stakeholders in KNH in order to discuss the findings and make deliberate considerations regarding potential next steps. Senior policy makers, managers and leaders are the only stakeholders who are able to create the culture and inspire commitment required to identify and resolve underlying systemic causes related to patient safety culture.

## **5.6 Recommendations**

The study results demonstrated that patient safety culture should be a top strategic priority for the health care organizations and their leaders to get success rates for patient safety culture. Four important study recommendations that come out of this project: first, there should be a collaborative environment so that all health professionals in the health care departments can share and exchange information about patient safety to facilitate changes in terms of cultural behaviors. Second, the hospital director should assess and redesign if necessary their current patient safety system including governance and reporting structures. Third, hospitals should provide their health professionals with comprehensive training on patient safety concepts, tools, interventions, and implementations. Fourth, progress in this type of study will be needed more to initiate policies where health professionals are actively encouraged to report errors for the purpose of learning and improvement within the organization. While bearing in mind that unsatisfactory survey results can also serve as warning signs to healthcare authorities, hospitals, and public at large.

Further research is required to learn about the association between patient safety culture and clinical outcomes as well as incorporating other groups of medical healthcare employees. To facilitate changes in terms of cultural behaviors, the hospital director should assess and pay serious attention to improve so as to link to enlightened

policies where health professionals are actively encouraged to participate in patient safety culture.



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## **APPENDICES**

## APPENDIX A

### The questionnaire

**This survey asks for your opinions about patient safety issues, medical error, and event reporting in your hospital and will take about 10 to 15 minutes to complete.**

- An “event” is defined as any type of error, mistake, incident, accident, or deviation, regardless of whether or not it results in patient harm.
- “Patient safety” is defined as the avoidance and prevention of patient injuries or adverse events resulting from the processes of health care delivery.

### **SECTION A: Your Work Area/Unit**

**In this survey, think of your “unit” as the work area, department, or clinical area of the hospital where you spend most of your work time or provide most of your clinical services.**

**What is your primary work area or unit in this hospital? Mark ONE answer by filling in the circle.**

- a. Many different hospital units/No specific unit
- |  |   |   |
|--|---|---|
| <input type="radio"/> b. Medicine (non-surgical) | <input type="radio"/> g. Intensive care unit (any type) | <input type="radio"/> l. Radiology              |
| <input type="radio"/> c. Surgery                 | <input type="radio"/> h. Psychiatry/mental health       | <input type="radio"/> m. Anesthesiology         |
| <input type="radio"/> d. Obstetrics              | <input type="radio"/> i. Rehabilitation                 | <input type="radio"/> n. Other, please specify: |
| <input type="radio"/> e. Pediatrics              | <input type="radio"/> j. Pharmacy                       |   |
| <input type="radio"/> f. Emergency department    | <input type="radio"/> k. Laboratory                     |   |

**Please indicate your agreement or disagreement with the following statements about your work area/unit.**

<b>Think about your hospital work area/unit...</b>	<b>Strongly Disagree</b> ▼	<b>Disagree</b> ▼	<b>Neither</b> ▼	<b>Agree</b> ▼	<b>Strongly Agree</b> ▼
1. People support one another in this unit.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2. We have enough staff to handle the workload .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3. When a lot of work needs to be done quickly, we work together as a team to get the work done.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
4. In this unit, people treat each other with respect .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
5. Staff in this unit work longer hours than is best for patient care .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
6. We are actively doing things to improve patient safety .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
7. We use more agency/temporary staff than is best for patient care .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
8. Staff feel like their mistakes are held against them .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
9. Mistakes have led to positive changes here .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
10. It is just by chance that more serious mistakes don't happen around here .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
11. When one area in this unit gets really busy, others help out .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
12. When an event is reported, it feels like the person is being written up, not the problem .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
13. After we make changes to improve patient safety, we evaluate their effectiveness .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
14. We work in "crisis mode" trying to do too much, too quickly .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5



**SECTION A: Your Work Area/Unit (continued)**

<b>Think about your hospital work area/unit...</b>	<b>Strongly Disagree</b> ▼	<b>Disagree</b> ▼	<b>Neither</b> ▼	<b>Agree</b> ▼	<b>Strongly Agree</b> ▼
15. Patient safety is never sacrificed to get more work done .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
16. Staff worry that mistakes they make are kept in their personnel file	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
17. We have patient safety problems in this unit .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
18. Our procedures and systems are good at preventing errors from happening.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

**SECTION B: Your Supervisor/Manager**

**Please indicate your agreement or disagreement with the following statements about your immediate supervisor/manager or person to whom you directly report.**

<b>Think about your hospital work area/unit...</b>	<b>Strongly Disagree</b> ▼	<b>Disagree</b> ▼	<b>Neither</b> ▼	<b>Agree</b> ▼	<b>Strongly Agree</b> ▼
1. My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2. My supervisor/manager seriously considers staff suggestions for improving patient safety .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3. Whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means taking shortcuts.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
4. My supervisor/manager overlooks patient safety problems that happen over and over .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

**SECTION C: Communications**

How often do the following things happen in your work area/unit?

Think about your hospital work area/unit...	Never ▼	Rarely ▼	Some- times ▼	Most of the time ▼	Always ▼
1. We are given feedback about changes put into place based on event reports .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2. Staff will freely speak up if they see something that may negatively affect patient care .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3. We are informed about errors that happen in this unit .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
4. Staff feel free to question the decisions or actions of those with more authority .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
5. In this unit, we discuss ways to prevent errors from happening again .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
6. Staff are afraid to ask questions when something does not seem right .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

**SECTION D: Frequency of Events Reported**

In your hospital work area/unit, when the following mistakes happen, how often are they reported?

Think about your hospital work area/unit...	Never ▼	Rarel y ▼	Some- times ▼	Most of the time ▼	Always ▼
1. When a mistake is made, but is <i>caught and corrected before affecting the patient</i> , how often is this reported? .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2. When a mistake is made, but has <i>no potential to harm the patient</i> , how often is this reported? .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3. When a mistake is made that <i>could harm the patient</i> , but does not, how often is this reported? .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

**SECTION E: Patient Safety Grade**

Please give your work area/unit in this hospital an overall grade on patient safety.

- A**       **B**       **C**       **D**       **E**  
 Excellent    Very Good    Acceptable    Poor    Failing

**SECTION F: Your Hospital**

**Please indicate your agreement or disagreement with the following statements about your hospital.**

<b>Think about your hospital...</b>	<b>Strongly Disagree</b> ▼	<b>Disagree</b> ▼	<b>Neither</b> ▼	<b>Agree</b> ▼	<b>Strongly Agree</b> ▼
1. Hospital management provides a work climate that promotes patient safety .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2. Hospital units do not coordinate well with each other.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3. Things “fall between the cracks” when transferring patients from one unit to another .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
4. There is good cooperation among hospital units that need to work together ..	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
5. Important patient care information is often lost during shift changes .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
6. It is often unpleasant to work with staff from other hospital units .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
7. Problems often occur in the exchange of information across hospital units	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
8. The actions of hospital management show that patient safety is a top priority ...	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
9. Hospital management seems interested in patient safety only after an adverse event happens.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
10. Hospital units work well together to provide the best care for patients .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
11. Shift changes are problematic for patients in this hospital .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

**SECTION G: Number of Events Reported**

**In the past 12 months, how many event reports have you filled out and submitted?**

- |  |  |
|--|--|
| <input type="checkbox"/> a. No event reports     | <input type="checkbox"/> d. 6 to 10 event reports    |
| <input type="checkbox"/> b. 1 to 2 event reports | <input type="checkbox"/> e. 11 to 20 event reports   |
| <input type="checkbox"/> c. 3 to 5 event reports | <input type="checkbox"/> f. 21 event reports or more |

**SECTION H: Background Information**

**This information will help in the analysis of the survey results.**

**1. How long have you worked in this hospital?**

- |  |  |
|--|--|
| <input type="checkbox"/> a. Less than 1 year | <input type="checkbox"/> d. 11 to 15 years   |
| <input type="checkbox"/> b. 1 to 5 years     | <input type="checkbox"/> e. 16 to 20 years   |
| <input type="checkbox"/> c. 6 to 10 years    | <input type="checkbox"/> f. 21 years or more |

**2. How long have you worked in your current hospital work area/unit?**

- |  |  |
|--|--|
| <input type="checkbox"/> a. Less than 1 year | <input type="checkbox"/> d. 11 to 15 years   |
| <input type="checkbox"/> b. 1 to 5 years     | <input type="checkbox"/> e. 16 to 20 years   |
| <input type="checkbox"/> c. 6 to 10 years    | <input type="checkbox"/> f. 21 years or more |

**3. Typically, how many hours per week do you work in this hospital?**

- |   |  |
|---|--|
| <input type="checkbox"/> a. Less than 20 hours per week | <input type="checkbox"/> d. 60 to 79 hours per week    |
| <input type="checkbox"/> b. 20 to 39 hours per week     | <input type="checkbox"/> e. 80 to 99 hours per week    |
| <input type="checkbox"/> c. 40 to 59 hours per week     | <input type="checkbox"/> f. 100 hours per week or more |

**SECTION H: Background Information (continued)**

**4. What is your staff position in this hospital? Select ONE answer that best describes your staff position.**

- |   |   |
|---|---|
| <input type="checkbox"/> a. Registered Nurse                                | <input type="checkbox"/> j. Respiratory Therapist                             |
| <input type="checkbox"/> b. Physician Assistant/Nurse Practitioner          | <input type="checkbox"/> k. Physical, Occupational, or<br>Speech<br>Therapist |
| <input type="checkbox"/> c. LVN/LPN   | <input type="checkbox"/> l. Technician (e.g., EKG, Lab,<br>Radiology)         |
| <input type="checkbox"/> d. Patient Care Asst/Hospital Aide/Care<br>Partner | <input type="checkbox"/> m. Administration/Management                         |
| <input type="checkbox"/> e. Attending/Staff Physician                       | <input type="checkbox"/> n. Other, please specify:                            |
| <input type="checkbox"/> f. Resident Physician/Physician in Training        | <input style="width: 300px; height: 20px;" type="text"/>                      |
| <input type="checkbox"/> g. Pharmacist                                      |   |
| <input type="checkbox"/> h. Dietician                                       |   |
| <input type="checkbox"/> i. Unit Assistant/Clerk/Secretary                  |   |

**5. In your staff position, do you typically have direct interaction or contact with patients?**

- a. YES, I typically have direct interaction or contact with patients.
- b. NO, I typically do NOT have direct interaction or contact with patients.

**6. How long have you worked in your current specialty or profession?**

- |  |  |
|--|--|
| <input type="checkbox"/> a. Less than 1 year | <input type="checkbox"/> d. 11 to 15 years   |
| <input type="checkbox"/> b. 1 to 5 years     | <input type="checkbox"/> e. 16 to 20 years   |
| <input type="checkbox"/> c. 6 to 10 years    | <input type="checkbox"/> f. 21 years or more |

**SECTION I: Your Comments**

**Please feel free to write any comments about patient safety, error, or event reporting in your hospital.**

.....

***THANK YOU FOR COMPLETING THIS SURVEY***

## APPENDIX B

### Permission forms of HSOPSC tool

#### 1. Request form and allowance of AHQR

From: databasesonsafetyculture@ahrq.hhs.gov  
To: nacha\_me04@hotmail.com  
Subject: RE: Permission for Hospital Survey toolkit.  
Date: Mon, 10 Oct 2011 13:22:00 +0000

Hospital ...zip  
ดาวน์โหลด(1752.1 กิโลไบต์)  
ดาวน์โหลดเป็น zip

HelloSukhnim Nachaphun,

Thank you for your interest in the Agency for Healthcare Research and Quality (AHRQ) Hospital Survey on Patient Safety Culture. The survey *is free for public use* and can be downloaded with other helpful survey material on the AHRQ web site:<http://www.ahrq.gov/qual/patientsafetyculture>.

Westat is under contract with AHRQ to support the Hospital, Medical Office, and Nursing Home Surveys on Patient Safety Culture. We are emailing you to learn how international users are using the surveys and to connect international users with one another. I have added one of our users from Thailand who has translated AND administered the survey in your country. I hope that you all can connect and can learn what you both are doing with Patient Safety Culture in Thailand.

Akarin Nimmannit, MD

Assistant Dean, Quality Development

Manager, Routine to Research (R2R) Project

Faculty of Medicine Siriraj Hospital, Mahidol University

Bangkok, Thailand

akarinn@gmail.com

Website:

1. (Continued) Request form and allowance of AHQR

Thank you in advance and good luck with your work,

Dawn

Dawn Nelson

Westat

1600 Research Boulevard, RA 1161

Rockville, MD 20850

Email: [DatabasesOnSafetyCulture@ahrq.hhs.gov](mailto:DatabasesOnSafetyCulture@ahrq.hhs.gov)

Tel: (301) 294-2892

Fax: (toll free) 888-852-8277

.....

## 2. Request form and allowance of Clinical Research Collaboration Network


**เครือข่ายวิจัยคลินิกสหสถาบัน Clinical Research Collaboration Network (CRCN)**  
 เครือข่ายแห่งการเรียนรู้ที่สนับสนุนและพัฒนาระบบการให้บริการวิจัยคลินิกแบบสหสถาบันของประเทศเพื่อสร้างเสริมสุขภาพที่ดีของประชาชน  
 ที่ CRCN.2555/005

6 มกราคม 2555

เรื่อง การอนุญาตในการใช้เครื่องมือในการทำงานวิจัย

เขียน คณะบดีวิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย

อ้างถึงหนังสือ จากวิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย ที่ ศร. 0512.78/1699 เรื่อง ขออนุญาตระหว่งในการใช้เครื่องมือในการทำงานวิจัย ของ นางสาว นชพรรณ สุขนิ่ม เพื่อใช้รวบรวมข้อมูลวิทยานิพนธ์เรื่อง Measuring Safety Culture Attitude of Health Professionals at King Narai Hospital (LOPBURI)

ทางเครือข่ายฯ มีความยินดีให้ทางผู้วิจัยสามารถนำแบบสำรวจ จาก Hospital Survey on Patient Safety Culture เป็นเครื่องมือในการวิจัยเพื่อให้ได้ผลการวิจัยและการประเมินอย่างถูกต้อง และทางเครือข่ายฯยินดีให้คำปรึกษาในการวิเคราะห์ข้อมูลและแปลผลการวิจัย ทั้งนี้เมื่องานวิจัยแล้วเสร็จขอให้ผู้วิจัยส่งผลการวิเคราะห์ฉบับย่อให้กับทางเครือข่ายฯ เพื่อเก็บบันทึกเป็นรายงานต่อไป

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

  
 (นางสาว นิดยา จินปาน)  
 ผู้จัดการเครือข่ายวิจัยคลินิกสหสถาบัน


ผู้ประสานงาน  
 นาย ชาญณรงค์ โชคบำรุงสุข  
 โทร : 02-9510352/โทรสาร: 02-9510067/ E-mail: office@crcn.in.th

เครือข่ายวิจัยคลินิกสหสถาบัน เลขที่ 126/146 อาคารวิทยาลัยพยาบาลบรมราชชนนี นารายณ์ราชู ชั้น 4 ซอยติวานนท์ 14 ตำบลตลาดขวัญ อำเภอเมือง จังหวัดนนทบุรี 11000  
 โทรศัพท์ 0-2951-0352, 0-2951-0872 โทรสาร 0-2951-0067 อีเมล : office@crcn.in.th, http://www.crcn.in.th



### 3. Request form for survey and asking for ethical committee of King Narai Hospital, Lop Buri Province, Thailand.

#### 3.1 Request form for survey



## บันทึกข้อความ

ส่วนราชการ กลุ่มการพยาบาลผู้ป่วยห้องผ่าตัด กลุ่มการกิจด้านการพยาบาล  
โรงพยาบาลพระนารายณ์มหาราช

ที่ \_\_\_\_\_ วันที่ 9 ธันวาคม 2554

เรื่อง ขออนุญาตเก็บข้อมูลงานวิจัยในบุคลากรสาขาวิชาชีพโรงพยาบาลพระนารายณ์มหาราช  
เวียน ผู้อำนวยการโรงพยาบาลพระนารายณ์มหาราช

ด้วยดิฉัน นางสาวชนพรณ สุขนิม พยาบาลวิชาชีพชำนาญการ ปฏิบัติงานกลุ่มการพยาบาลผู้ป่วย  
ห้องผ่าตัด กลุ่มการกิจด้านการพยาบาล ซึ่งกำลังศึกษาหลักสูตรสาธารณสุขศาสตรมหาบัณฑิต สาขาวิชา  
สาธารณสุขศาสตร์ (หลักสูตรนานาชาติ) วิทยาลัยวิทยาศาสตร์สาธารณสุขจุฬาลงกรณ์มหาวิทยาลัย ขณะนี้อยู่ชั้น  
ดำเนินการเก็บรวบรวมข้อมูลวิทยานิพนธ์เรื่อง Measuring Safety Culture Attitude of Health  
Professionals at King Narai Hospital, Lop buri Province, Thailand. ใช้แบบสอบถามของ Hospital  
Survey On Patient Safety Culture โดย Agency of Healthcare Research and Quality จากประเทศ  
สหรัฐอเมริกาเป็นสื่อออกแบบเครื่องมือ และใช้ข้อมูลหลายในอเมริกา ยุโรป และเอเชีย โดย สถาบันรับรอง  
คุณภาพโรงพยาบาล (พรท.) และเครือข่ายวิจัยคลินิกสหสถาบัน (CRCN) ขออนุญาตและนำแบบเป็นฉบับ  
ภาษาไทย เพื่อนำมาวิเคราะห์ทัศนคติเกี่ยวกับวัฒนธรรมด้านความปลอดภัยในโรงพยาบาลต่างๆของประเทศไทย

ดังนั้น ดิฉันจึงเรียนมาเพื่อขออนุญาตเก็บข้อมูลงานวิจัยในบุคลากรสาขาวิชาชีพ ของโรงพยาบาลพระ  
นารายณ์มหาราช ซึ่งประกอบด้วย แพทย์ ทันตแพทย์ พยาบาลวิชาชีพ นักเทคนิคการแพทย์ เภสัชกร นัก  
กายภาพบำบัด นักวิชาการ และนักโภชนาการ วัตถุประสงค์ของการวิจัยในครั้งนี้เพื่อ ค้นหาทิศทางวัฒนธรรม  
ความปลอดภัยในองค์กรและทีมสุขภาพ เพื่อนำมาพัฒนาองค์กรให้ก้าว ไปสู่องค์กรที่มีวัฒนธรรมคุณภาพ และ  
เทียบเคียงกับสถาบันระดับนานาชาติเพื่อพัฒนาสู่ความเป็น โรงพยาบาลศูนย์ชั้นนำในเขตภาคกลางตามวิสัยทัศน์  
ของโรงพยาบาล

จึงเรียนมาเพื่อโปรดพิจารณา จะเป็นพระคุณอย่างยิ่ง


ผู้ขอเสนอข้อมูลบันทึกข้อความ  
นางสาวชนพรณ สุขนิม  
(นางวิชาญ อรรถเพ็ญรัตน์)  
พยาบาลวิชาชีพ ระดับชำนาญการพิเศษ  
หัวหน้างานห้องผ่าตัด  
เรียน ผู้อำนวยการโรงพยาบาลพระนารายณ์มหาราช  
เพื่อโปรดพิจารณา

(นางอรรฉัตร สุขนิม)  
หัวหน้าพยาบาล

นางสาว ชนพรณ  
(นางสาวชนพรณ สุขนิม)  
พยาบาลวิชาชีพ ระดับชำนาญการ

(นายสุชัย สุทธิภาสกร)  
ผู้อำนวยการโรงพยาบาลพระนารายณ์มหาราช

3.2 Permission forms of Ethical Committee at King Narai Hospital, Lop Buri Province, Thailand.



**บันทึกข้อความ**

ส่วนราชการ กลุ่มงานการพยาบาลผู้ป่วยห้องผ่าตัด กลุ่มภารกิจด้านการพยาบาล  
โรงพยาบาลพระนารายณ์มหาราช

ที่ ลบ 0027.201/1/- วันที่ 28 ธันวาคม 2554

เรื่อง ขออนุญาตจริยธรรมการวิจัยในมนุษย์

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เรียน คณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์ โรงพยาบาลพระนารายณ์มหาราช

ข้าพเจ้านางสาวนงพรพรณ สุชนันท์ พยาบาลวิชาชีพชำนาญการ ปฏิบัติงาน  
กลุ่มงานการพยาบาลผู้ป่วยห้องผ่าตัด กลุ่มภารกิจด้านการพยาบาล กำลังศึกษาหลักสูตร  
สาธารณสุขศาสตรมหาบัณฑิต สาขาวิชาสาธารณสุขศาสตร์ (หลักสูตรนานาชาติ) วิทยาลัย  
วิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย ขณะนี้อยู่ขั้นตอนการเก็บรวบรวมข้อมูล  
แบบสอบถามของวิทยานิพนธ์ ซึ่งเกี่ยวข้องกับการวิจัยในมนุษย์ เรื่อง การวัดระดับทัศนคติ  
เกี่ยวกับวัฒนธรรมความปลอดภัยในบุคลากรสาขาวิชาชีพของโรงพยาบาลพระนารายณ์มหาราช  
จังหวัดลพบุรี ประเทศไทย (Measuring Safety Culture Attitude of Health Professionals  
at King Narai Hospital, Lop buri Province, Thailand.)

จึงเรียนมาเพื่อโปรดพิจารณา และดำเนินการต่อไป

นางสาวนงพรพรณ สุชนันท์  
(นางสาวนงพรพรณ สุชนันท์)  
พยาบาลวิชาชีพชำนาญการ  
กลุ่มงานการพยาบาลผู้ป่วยห้องผ่าตัด  
โรงพยาบาลพระนารายณ์มหาราช

วิเชียร หาดทรายครรเศรษฐ์  
รพ.ลพบุรี  
สมิ์ อรรถพรวิวัฒน์


(นางราณี อรรถพรวิวัฒน์)  
พยาบาลวิชาชีพ ระดับผู้ชำนาญการพิเศษ  
หัวหน้างานห้องผ่าตัด


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สมิ์ อรรถพรวิวัฒน์  
๓๓ ๖๖ ๕๕


3.2 (Continued) Permission forms of Ethical Committee at King Narai Hospital,  
Lop Buri Province, Thailand.

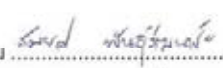
4


องค์ความถี่ของคณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์ โรงพยาบาลพระนารายณ์  
มหาราช จังหวัดลพบุรี

ลงนาม .....  ..... ประธานกรรมการ  
(นายแพทย์สมชาย โอวัฒนาพานิช)


ลงนาม .....  ..... รองประธานกรรมการ  
(แพทย์หญิงผ่องทงกร ประกอบ)

ลงนาม .....  ..... กรรมการ  
(นางวิรัตน์ สุธนันท์)

ลงนาม .....  ..... กรรมการ  
(นายสมชาย พันธุ์จันทนาชัย)

ลงนาม .....  ..... เลขานุการ  
(นายทองตุง ศรีจำปา)

4. Permission form of pilot test at Phar Phutthabat Hospital, Saraburi Province, Thailand



ที่ ศษ 0512.78 / 244

วิทยาลัยวิทยาศาสตร์สาธารณสุข  
จุฬาลงกรณ์มหาวิทยาลัย  
ข.จุฬาลงกรณ์ 62 ถนนพญาไท  
แขวงวังใหม่ เขตปทุมวัน  
กรุงเทพมหานคร 10330

24 กุมภาพันธ์ 2555


เรื่อง ขอความอนุเคราะห์และอนุญาตให้นิสิตทำ Pilot test  
เรียน ผู้อำนวยการโรงพยาบาลพระพุทธบาท จ. สระบุรี

ด้วย นางสาวนรพรรณ สุรนันทน์ รหัสประจำตัวนิสิต 5379134253 นิสิตหลักสูตรสาธารณสุขศาสตรมหาบัณฑิต สาขาวิชาสาธารณสุขศาสตร์ (หลักสูตรนานาชาติ) วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย มีความประสงค์จะทำวิทยานิพนธ์เรื่อง การวัดระดับทัศนคติเกี่ยวกับวัฒนธรรมความปลอดภัยของบุคลากรสายวิชาชีพของโรงพยาบาลพระนารายณ์มหาราช จ. ลพบุรี (Measuring Safety Culture Attitude of Health Professionals at King Narai Hospital Lopburi, Thailand)

การนี้ วิทยาลัยวิทยาศาสตร์สาธารณสุข จึงใคร่ขอความอนุเคราะห์จากท่านในการอนุญาตให้ นางสาวนรพรรณ สุรนันทน์ เก็บข้อมูลเพื่อทำ pre-test หรือ pilot test ของแบบสอบถาม เพื่อวัดค่าความเชื่อมั่น ความตรงของเครื่องมือวิจัยในโรงพยาบาลระดับเดียวกับโรงพยาบาลนารายณ์มหาราช ซึ่งโรงพยาบาลพระพุทธบาทมีศักยภาพเทียบเคียงกัน ทั้งนี้จะส่งแบบสอบถามให้กับบุคลากรสายวิชาชีพ ซึ่งประกอบด้วย แพทย์ ทันตแพทย์ พยาบาลวิชาชีพ เภสัชกร นักเทคนิคการแพทย์ นักกายภาพบำบัด นักวิชาการสาธารณสุข และนักโภชนาการ รวม 8 สาขาวิชาชีพ พร้อมกับแบบสอบถาม จำนวน 60 ชุด หากมีข้อสงสัยประการใด กรุณาติดต่อ นางสาวนรพรรณ สุรนันทน์ หมายเลขโทรศัพท์ 081-019-6917

จึงเรียนมาเพื่อโปรดพิจารณาให้ความอนุเคราะห์ด้วย จะเป็นพระคุณยิ่ง

ขอแสดงความนับถือ

  
 (รองศาสตราจารย์ ดร. สติกร พงศ์พานิช)  
 รองคณบดี  
 ปฏิบัติการแทนคณบดีวิทยาลัยวิทยาศาสตร์สาธารณสุข

โทร. 022185193-4  
โทรสาร 02-255-6046  
E-mail academic\_cp@chula.ac.th

## APPENDIX C

### Result of Statistics

**Table 4.8:** Comparison of mean and percentage for HSOPSC dimensions composite score across respondents by cutting score. (n=380)

HSOPSC Dimensions	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean $\pm$ SD
	n (%)	n (%)	n(%)	n(%)	n(%)	
<b>1. Overall perceptions of safety (4items)</b>	0	9	187	181	3	3.47**
	0	2.4	49.2	47.6	0.8	0.56
A15. Patient safety is never sacrificed to get more work done.	7	4	14	208	147	4.27***
	1.8	1.1	3.7	54.7	38.7	0.75
A18. Our procedures and systems are good at preventing errors from happening.	8	33	59	237	43	3.72***
	2.1	8.7	15.5	62.4	11.3	0.85
A10. (c) It is just by chance that more serious mistakes don't happen around here.	1	27	78	178	96	3.90***
	0.3	7.1	20.5	46.8	25.3	0.87

Note: (c) = Item was reversely coded; Number mark with: \*\*\* 3.50 - 5.00 High level of positive attitude

\*\* 2.50 - 3.49 Moderate level of positive attitude

\* 1.00 - 2.49 Lowe level of positive attitude

} Ranking of means score

**Table 4.8:** (Continued) Comparison of mean and percentage for HSOPSC dimensions composite score across respondents by cutting score.  
(n=380)

HSOPSCDimensions	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean $\pm$ SD
	n (%)	n (%)	n(%)	n(%)	n(%)	
A17. (c) We have patient safety problems in this unit.	17 4.5	123 32.4	75 19.7	126 33.2	39 10.3	3.12** 1.11
<b>2. Frequency of event reporting (3items)</b>	33 8.7	128 33.7	141 37.1	64 16.8	14 3.7	3.27** 0.97
D1. (c) When a mistake is made, but is <i>caught and corrected before affecting the patient</i> , how often is this reported?	44 11.6	156 41.1	99 26.1	71 18.7	10 2.6	2.60** 1.00
D2. (c) When a mistake is made, but has <i>no potential to harm the patient</i> , how often is this reported?	33 8.7	128 33.7	120 31.6	81 21.3	18 4.7	2.80** 1.02
D3. (c) When a mistake is made that <i>could harm the patient</i> , but does not, how often is this reported?	49 12.9	117 30.8	105 27.6	83 21.8	26 6.8	2.79** 1.13

Note: (c) = Item was reversely coded; Number mark with: \*\*\* 3.50 - 5.00 High level of positive attitude

\*\* 2.50 - 3.49 Moderate level of positive attitude

\* 1.00 - 2.49 Low level of positive attitude

} Ranking of means score

**Table 4.8:** (Continued) Comparison of mean and percentage for HSOPSC dimensions composite score across respondents by cutting score. (n=380)

HSOPSC Dimensions	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean $\pm$ SD
	n (%)	n (%)	n (%)	n (%)	n (%)	
<b>3. Supervisor / manager expectations and actions promoting patient safety (4items)</b>	0	10	87	232	51	3.85***
	0	2.6	22.9	61.1	13.4	0.67
B1. My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures.	8	23	80	238	31	3.69***
	2.1	6.1	21.1	62.6	8.2	0.79
B2. My supervisor/manager seriously considers staff suggestions for improving patient safety.	4	18	45	264	49	3.90***
	1.1	4.7	11.8	69.5	12.9	0.81
B3. (c) Whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means taking shortcuts.	5	76	95	173	31	3.39**
	1.3	20	25	45.5	8.2	0.94
B4. (c) My supervisor/manager overlooks patient safety problems that happen over and over.	4	20	60	167	129	4.04***
	1.1	5.3	15.8	43.9	33.9	0.90

Note: (c) = Item was reversely coded; Number mark with: \*\*\* 3.50 - 5.00 High level of positive attitude

\*\* 2.50 - 3.49 Moderate level of positive attitude

\* 1.00 - 2.49 Low level of positive attitude

} Ranking of means score

**Table 4.8:** (Continued) Comparison of mean and percentage for HSOPSC dimensions composite score across respondents by cutting score. (n=380)

HSOPS Survey Dimensions	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean $\pm$ SD
	n (%)	n (%)	n (%)	n (%)	n (%)	
<b>4. Organizational Learning /continuous improvement</b> (3 items)	2	5	62	275	36	3.89***
	0.5	1.3	16.3	72.4	9.5	0.60
A6. We are actively doing things to improve patient safety.	3	8	37	248	84	4.06***
	0.8	2.1	9.7	65.3	22.1	0.69
A9. Mistakes have led to positive changes here.	11	18	66	248	37	3.74***
	2.9	4.7	17.4	65.3	9.7	0.81
A13. After we make changes to improve patient safety, we evaluate their effectiveness.	5	16	39	284	36	3.87***
	1.3	4.2	10.3	74.7	9.5	0.68

Note: (c) = Item was reversely coded; Number mark with: \*\*\* 3.50 - 5.00 High level of positive attitude

\*\* 2.50 - 3.49 Moderate level of positive attitude

\* 1.00 - 2.49 Low level of positive attitude

} Ranking of means score



**Table 4.8:** (Continued) Comparison of mean and percentage for HSOPS dimensions composite score across respondents by cutting score. (n=380)

HSOPSC Dimensions	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean $\pm$ SD
	n (%)	n (%)	n (%)	n (%)	n (%)	
<b>5. Teamwork within units</b> (4 items)	2	17	84	243	34	3.76***
	0.5	4.5	22.1	63.9	8.9	0.69
A1. People support one another in this unit	5	19	21	257	78	4.01***
	1.3	5.0	5.5	67.6	20.5	0.76
A3. When a lot of work needs to be done quickly, we work together as a team to get the work done.	6	19	17	227	111	4.10***
	1.6	5.0	4.5	59.7	29.2	0.82
A4. In this unit, people treat each other with respect.	5	29	45	240	61	3.85***
	1.3	7.6	11.8	63.2	16.1	0.83

Note: (c) = Item was reversely coded; Number mark with: \*\*\* 3.50 - 5.00 High level of positive attitude

\*\* 2.50 - 3.49 Moderate level of positive attitude

\* 1.00 - 2.49 Low level of positive attitude

} Ranking of means score

**Table 4.8:** (Continued) Comparison of mean and percentage for HSOPS dimensions composite score across respondents by cutting score. (n=380)

HSOPSC Dimensions	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean $\pm$ SD
	n (%)	n (%)	n (%)	n (%)	n (%)	
A11.When one area in this unit gets really busy, others help out.	87 22.9	130 34.2	79 20.8	77 20.3	7 1.8	2.44** 1.11
<b>6. Communication openness (3 items)</b>	2 0.5	15 3.9	134 35.3	211 55.5	18 4.7	3.60*** 0.67
C2.Staff will freely speak up if they see something that may negatively affect patient care.	3 0.8	11 2.9	41 10.8	287 75.5	38 10.0	3.91*** 0.62
C4.Staff feel free to question the decisions or actions of those with more authority.	12 3.2	64 16.8	109 28.7	180 47.4	15 3.9	3.32*** 0.91
C6. (c) Staff are afraid to ask questions when something does not seem right.	7 1.8	65 17.1	66 17.4	195 51.3	47 12.4	3.55*** 0.98

Note: (c) = Item was reversely coded; Number mark with: \*\*\* 3.50 - 5.00 High level of positive attitude

\*\* 2.50 - 3.49 Moderate level of positive attitude

\* 1.00 - 2.49 Low level of positive attitude

} Ranking of means score

**Table 4.8:** (Continued) Comparison of mean and percentage for HSOPS dimensions composite score across respondents by cutting score. (n=380)

HSOPSC Dimensions	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean ±SD
	n (%)	n (%)	n (%)	n (%)	n (%)	
<b>7. Feedback and communication about error</b>	1	8	75	265	31	3.83***
	0.3	2.1	19.7	69.7	8.2	0.60
C1. We are given feedback about changes put into place based on event reports.	7	49	71	243	10	3.53***
	1.8	12.9	18.7	63.9	2.6	0.82
C3. We are informed about errors that happen in this unit.	3	17	37	281	42	3.90***
	0.8	4.5	9.7	73.9	11.1	0.68
C5. In this unit, we discuss ways to prevent errors from happening again.	3	13	27	243	94	4.08***
	0.8	3.4	7.1	63.9	24.7	0.72
<b>8. Non-punitive response to error (3 items)</b>	11	76	166	106	21	3.13**
	2.9	20	43.7	27.9	5.5	0.90

Note: (c) = Item was reversely coded; Number mark with: \*\*\* 3.50 - 5.00 High level of positive attitude

\*\* 2.50 - 3.49 Moderate level of positive attitude

\* 1.00 - 2.49 Low level of positive attitude

} Ranking of means score

**Table 4.8:** (Continued) Comparison of mean and percentage for HSOPS dimensions composite score across respondents by cutting score. (n=380)

HSOPSC Dimensions	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean ±SD
	n (%)	n (%)	n (%)	n (%)	n (%)	
A8. (c) Staff feel like their mistakes are held against them.	17 4.5	96 25.3	96 25.3	134 35.3	37 9.7	3.21** 1.07
A12. (c) When an event is reported, it feels like the person is being written up, not the problem.	17 4.5	96 25.3	96 25.3	134 35.3	37 9.7	3.21** 1.08
A16. (c) Staff worry that mistakes they make are kept in their personnel file	27 7.1	130 34.2	88 23.2	112 29.5	23 6.1	2.93** 1.08
<b>9. Staffing</b> (4items)	3 0.8	71 18.7	197 51.8	103 27.1	6 1.6	3.10** 0.74
A2. We have enough staff to handle the workload.	31 8.2	159 41.8	45 11.8	131 34.5	14 3.7	2.84** 1.10

Note: (c) = Item was reversely coded; Number mark with: \*\*\* 3.50 - 5.00 High level of positive attitude

\*\* 2.50 - 3.49 Moderate level of positive attitude

\* 1.00 - 2.49 Low level of positive attitude

} Ranking of means score

**Table 4.8:** (Continued) Comparison of mean and percentage for HSOPS dimensions composite score across respondents by cutting score. (n=380)

HSOPSC Dimensions	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean $\pm$ SD
	n (%)	n (%)	n (%)	n (%)	n (%)	
A5. (c) Staff in this unit work longer hours than is best for patient care.	59 15.5	131 34.5	71 18.7	103 27.1	16 4.2	2.70** 1.15
A7. (c) We use more agency/temporary staff than is best for patient care.	14 3.7	29 7.6	105 27.6	170 44.7	62 16.3	3.62*** 0.97
A14. (c) We work in "crisis mode" trying to do too much, too quickly.	36 9.5	160 42.1	81 21.3	93 24.5	10 2.6	2.69** 1.03
<b>10. Hospital management support for patient safety</b> (3 items)	2 0.5	15 3.9	205 53.9	145 38.2	13 3.4	3.40** 0.65
F1.Hospital management provides a work climate that promotes patient safety.	5 1.3	19 5.0	74 19.5	242 63.7	40 10.5	3.77*** 0.75

Note: (c) = Item was reversely coded; Number mark with: \*\*\* 3.50 - 5.00 High level of positive attitude

\*\* 2.50 - 3.49 Moderate level of positive attitude

\* 1.00 - 2.49 Low level of positive attitude

} Ranking of means score

**Table 4.8:** (Continued) Comparison of mean and percentage for HSOPSC dimensions composite score across respondents by cutting score (n=380).

HSOPSC Dimensions	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean $\pm$ SD
	n (%)	n (%)	n (%)	n (%)	n (%)	
F8. The actions of hospital management show that patient safety is a top priority.	6 1.6	15 3.9	78 20.5	218 57.4	63 16.6	3.83*** 0.80
F9. (c) Hospital management seems interested in patient safety only after an adverse event happens.	36 9.5	147 38.7	91 23.9	95 25.0	11 2.9	2.73** 1.03
<b>11. Teamwork across units</b> (4 items)	0 0	13 3.4	111 29.2	239 62.9	17 4.5	3.68*** 0.61
F4. There is good cooperation among hospital units that need to work together.	7 1.8	47 12.4	88 23.2	215 56.6	23 6.1	3.53*** 0.86
F10. Hospital units work well together to provide the best care for patients.	3 0.8	22 5.8	70 18.4	242 63.7	43 11.3	3.79*** 0.75

Note: (c) = Item was reversely coded; Number mark with: \*\*\* 3.50 - 5.00 High level of positive attitude

\*\* 2.50 - 3.49 Moderate level of positive attitude

\* 1.00 - 2.49 Low level of positive attitude

} Ranking of means score

**Table 4.8:** (Continued) Comparison of mean and percentage for HSOPSC dimensions composite score across respondents by cutting score (n=380).

HSOPSC Dimensions	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean $\pm$ SD
	n (%)	n (%)	n (%)	n (%)	n (%)	
F2. (c) Hospital units do not coordinate well with each other.	11 2.9	61 16.1	131 34.5	162 42.6	15 3.9	3.29** 0.88
F6. (c) It is often unpleasant to work with staff from other hospital units.	3 0.8	30 7.9	95 25	230 60.5	22 5.8	3.63*** 0.75
<b>12. Hospital handovers and transition</b> (4 items)	5 1.3	66 17.4	194 51.1	110 28.9	5 1.3	3.12** 0.75
F3. (c) Things “fall between the cracks” when transferring patients from one unit to another.	19 5.0	109 28.7	111 29.2	124 32.6	17 4.5	3.03** 1.00
F5. (c) .Important patient care information is often lost during shift changes.	8 2.1	85 22.4	90 23.7	163 42.9	34 8.9	3.34** 0.99

Note: (c) = Item was reversely coded; Number mark with: \*\*\* 3.50 - 5.00 High level of positive attitude

\*\* 2.50 - 3.49 Moderate level of positive attitude

\* 1.00 - 2.49 Low level of positive attitude

} Ranking of means score

**Table 4.8:** (Continued) Comparison of mean and percentage for HSOPSC dimensions composite score across respondents by cutting score (n=380).

HSOPSC Dimensions	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean $\pm$ SD
	n (%)	n (%)	n (%)	n (%)	n (%)	
F7. (c) Problems often occur in the exchange of information across hospital units.	7 1.8	137 36.1	94 24.7	136 35.8	6 1.6	2.99** 0.93
F11. (c) .Shift changes are problematic for patients in this hospital.	5 1.3	85 22.4	125 32.9	145 38.2	20 5.3	3.24** 0.90
Outcome Measurement (1 and 2 Dimensions)	0 0	13 3.4	245 64.5	117 30.8	5 1.3	2.73** 0.97
Safety Measurement (3 to 12 Dimensions)	5 1.3	85 22.4	125 32.9	145 38.2	20 5.3	3.49** 0.40
HSOPSC (12 Dimensions)	0 0	3 0.8	204 53.7	173 45.5	0 0	3.45** 0.51

Note: (c) = Item was reversely coded; Number mark with: \*\*\* 3.50 - 5.00 High level of positive attitude

\*\* 2.50 - 3.49 Moderate level of positive attitude

\* 1.00 - 2.49 Low level of positive attitude

} Ranking of means score



## APPENDIX E

### Administration & Time Schedule

(The period of time: 01/09/2011 – 30/04/2012)

Research Activities	Time Frame (Month)							
	1	2	3	4	5	6	7	8
1.Literature Reviews and finalized research proposal	→							
2.Tool development for data collecting		→						
3.Ethical consideration			→					
4.Data collection				→				
5.Data analysis						→		
6.Report writing							→	

## APPENDIX F

### Project Budget

Budget period: 01/09/2011 to 31/05/2012

No.	Activities	Unit	Price (Bath)	Unit (Number)	Total Budget (Bath)
1.	<b>Pre - testing</b>				
	Photocopying	Questionnaire	0.5/page	600 pages	300
	Paper-Printing	Page	5/page	50	250
	Coordinator Cost	Gift basket set	500/set	1 set	500
	<i>Pre-testing Process</i>			<b>Subtotal</b>	<b>1,050</b>
2.	<b>Data Collection</b>				
	Photocopying	Questionnaire	0.5/page	3,600 pages	1,800
	Paper - Printing	Page	5/page	100	500
	Research Assistants Cost	Person	500/person	6 persons	3,000
	Souvenir for respondent	Set	25/set	400 set	10,000
	Consultants	Person	5,000/person	1 person	5,000
	Transportation Cost	Trip/ Day	800/week	3 weeks	2,400
	<i>Data Collection Process</i>			<b>Subtotal</b>	<b>22,700</b>
3.	<b>Document + Printing</b>				
	Paper + Printing	Page	5/page	300	1,500
	Photocopying ( Exam + Final Submit)	Page	0.5/page	1,500	750
	Stationary	Set	500/set	3	1,500
	Binding Paper (Exam)	Set	150/set	6	900
	Binding Paper (Submit)	Set	200/set	6	1,200
	<i>Document + Printing Process</i>			<b>Subtotal</b>	<b>5,850</b>
				<b>Grand Total</b>	<b>29,600</b>

**CURRICULUM VITAE**

Name : Miss Nachaphun Sukhnim

Date of Birth : 22<sup>th</sup> September 1975

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Education Level

1) Bachelor of Nursing Science (2002)  
Boromarajonani College of Nursing,  
Srithunya Prabororomarajchanok Institute Ministry of  
Public Health, Thailand and affiliated to Mahidol  
University

2) Bachelor of Occupational Health and Safety (2005)  
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Work Experience (2002 – Present) Staff Nurse at Operating room  
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