ATTITUDE OF SAFETY CULTURE AMONG INTENSIVE CARE NURSES IN PRIVATE TERTIARY HOSPITAL

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THE THEMATIC PAPER SUBMITTED IN PARTIAL FULLFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE (INDUSTRIAL HYGIENE AND SAFETY) FACULTY OF GRADUATE STUDIES MAHIDOL UNIVERSITY 2015

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ABSTRACT

This cross sectional study aims to determine the attitudes on safety culture level of ICU nurses at a private tertiary care hospital, and to assess the relationship between socio-demographic factors, including gender, age, education level and work experience, work characteristics factors, including job position, working hours per week, number patient care in one shift and the management of organizations factors including the leader informing about safety policy, and participation in safety training. It also aimed to study the attitude of six safety culture dimensions including teamwork climate, safety climate, stress recognition, working condition, job satisfaction and perception of management among 262 ICU nurses at three selected private tertiary care hospitals located in Bangkok, Chonburi and Phuket province. The researcher examined the SAQ-ICU version developed by the University of Texas and then modified in Thai as a tool for assessment and using Cronbach's alpha to confirm internal consistency. The scale was 0.92. The ANOVA test is used to determine the different mean score between independent variables on the dependent variable in a regression analysis. The questionnaire was returned with response rate 75 percent.

The result finding showed the overall mean score of the attitudes on safety culture ranged from 2.63 to 4.36 with a mean score of 3.67 ± 0.29. Most of attitudes on safety culture dimensions were perceived at a high level, except stress recognition dimension was perceived at a moderate level. The socio-demographic factors, including gender, age, education level, and work experience did not influence the attitudes on safety culture among ICU nurses. A Significant relationship was observed between the number of patients cared for and level of attitude of safety culture. The nurses who provided patient care less than 3 cases per shift had the highest attitude mean score of teamwork climate, and safety climate than other groups and the level of attitude decreased when more patients were cared for ($p<0.05$). The nurses who participated in safety training class more had higher attitudes on safety culture of all dimensions and there is significant difference in attitude mean score of teamwork climate, job satisfaction and perception of management between groups ($p<0.05$). However, this study result found no significant difference in attitude mean score between job positions, working hours per week and the number who received information about safety policy from the leader with level of safety culture dimensions.

KEY WORDS : INTENSIVE CARE NURSE/ ATTITUDE OF SAFETY CULTURE / JOB STATUS / WORKING EXPERIENCE /SAFETY TRAINING

104 pages

ทัศนคติวัฒนธรรมความปลอดภัยของพยาบาลหอผู้ป่วยหนักโรงพยาบาลเอกชนระดับตติยภูมิ

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บทคัดย่อ

การศึกษาครั้งนี้ เป็นการศึกษาแบบภาคตัดขวางศึกษาระดับทัศนคติของวัฒนธรรมความปลอดภัยของพยาบาลหอผู้ป่วยหนักในโรงพยาบาลเอกชนเพื่อประเมินความสัมพันธ์ระหว่างปัจจัยส่วนบุคคล ได้แก่ เพศ, อายุ, ระดับการศึกษาและประสบการณ์ทำงาน ปัจจัยลักษณะงาน ได้แก่ ตำแหน่งงาน, จำนวนชั่วโมงทำงานต่อสัปดาห์, จำนวนผู้ป่วยที่ดูแลในแต่ละเวร และปัจจัยการบริหารจัดการองค์กร ได้แก่ การได้รับการสื่อสารเกี่ยวกับนโยบายความปลอดภัยจากผู้บริหาร, การได้รับอบรมด้านความปลอดภัย ต่อระดับวัฒนธรรมความปลอดภัย 6 ด้าน ได้แก่ การทำงานเป็นทีม, บรรยากาศด้านความปลอดภัย, การตระหนักรู้ความเครียด, บรรยากาศในการทำงาน, ความพึงพอใจในงาน และ การรับรู้ระบบบริหารจัดการของพยาบาลหอผู้ป่วยหนักในโรงพยาบาลเอกชนระดับตติยภูมิจำนวน 3 โรงซึ่งตั้งอยู่ในจังหวัดกรุงเทพมหานคร, ชลบุรีและภูเก็ตจำนวน 197 ราย เครื่องมือที่ใช้ในการศึกษาSAQ-ICU version ของ University of Texas ซึ่งผู้วิจัยแปลเป็นภาษาไทย ทดสอบความตรงตามเนื้อหาและค่าความเชื่อมั่น Cronbach's alpha 0.92 และเปรียบเทียบค่าเฉลี่ยทัศนคติวัฒนธรรมความปลอดภัย ระหว่างกลุ่มประชากรโดยสถิติการวิเคราะห์ความแปรปรวนแบบทางเดียวโดยการศึกษาครั้งนี้ได้แบบสอบถามตอบกลับ 75 เปอร์เซ็นต์

ผลการศึกษาพบว่า ทัศนคติวัฒนธรรมความปลอดภัยโดยรวมมีค่าอยู่ระหว่าง 2.63 ถึง 4.36 เฉลี่ย 3.67$\pm$0.29 ระดับทัศนคติวัฒนธรรมความปลอดภัยทั้ง 6 ด้านอยู่ในระดับสูง ยกเว้นการตระหนักรู้ความเครียดอยู่ในระดับปานกลาง ปัจจัยส่วนบุคคล ได้แก่ เพศ, อายุ, ระดับการศึกษา และประสบการณ์ทำงานไม่มีอิทธิพลต่อระดับทัศนคติวัฒนธรรมความปลอดภัย ปัจจัยลักษณะงานได้แก่ จำนวนผู้ป่วยที่ดูแลต่อเวรมีผลต่อระดับทัศนคติวัฒนธรรมความปลอดภัยพบว่าพยาบาลที่ดูแลผู้ป่วยน้อยกว่า 3 คนต่อเวร มีระดับทัศนคติวัฒนธรรมความปลอดภัยด้านการทำงานเป็นทีมและบรรยากาศความปลอดภัยมากกว่าพยาบาลกลุ่มอื่น นอกจากนี้พบว่าระดับทัศนคติวัฒธรรมความปลอดภัยลดลงเมื่อดูแลผู้ป่วยจำนวนมากขึ้น(p<0.05) ปัจจัยการบริหารจัดการองค์กร พบว่าจำนวนครั้งการอบรมด้านความปลอดภัยมีผลต่อระดับทัศนคติวัฒนธรรมความปลอดภัยทั้ง 6 ด้านในระดับสูง และระดับทัศนคติวัฒนธรรมความปลอดภัยด้านการทำงานเป็นทีม ความพึงพอใจต่องาน การรับรู้ระบบบริหารจัดการมีความแตกต่างอย่างมีนัยสำคัญ (p<0.05) อย่างไรก็ตามผลการศึกษาครั้งนี้พบว่าไม่มีความแตกต่างอย่างมีนัยสำคัญ ระหว่าง ตำแหน่งงาน จำนวนชั่วโมงทำงานต่อสัปดาห์ และการได้รับการสื่อสารเกี่ยวกับนโยบายความปลอดภัยจากผู้บริหารกับระดับทัศนคติวัฒนธรรมความปลอดภัย

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LIST OF ABBREVIATIONS

ACC	Access to Care and Continuity of Care
AHRQ	Agency for Healthcare Research and Quality
AOP	Assessment of Patients
ASC	Anesthesia and Surgical Care
BLS	The Bureau of Labor Statistics
CDC	Center for Disease Control and Prevention
CCU	Cardiac Care Unit
COP	Care of Patient
CQI	Continuous Quality Improvement
CSS	Culture of Safety Survey
FMS	Facility Management and Safety
GLD	Governance, Leadership, and Direction
HIV	Human Immunodeficiency Virus
HSOPS	Hospital Survey on Patient Safety Culture
HTSSCS	Hospital Transfusion Service Safety Culture Survey
ICU	Intensive Care Unit
IOM	Institute of Medicine
IPSG	International Patient Safety Goals
ISMP	Institute for Safe Medication Practices
JCI	Joint Commission International
MCI	Management of Communication and Information
MMU	Medication Management and Use
MSI	Modified Stanford Instrument
MSSA	Medication Safety Self-Assessment
OR	Operating Room
OSHA	Occupational Safety and Health Administration

LIST OF ABBREVIATIONS (cont.)

PCI	Prevention and control of Infection
PFE	Patient and Family Education
PFR	Patient and Family Rights
PSCHO	Patient Safety Culture in Healthcare Organizations Survey
QA	Quality Assurance
QPS	Quality Improvement and Patient Safety
RM	Risk Management
SAQ	Safety Attitude Questionnaire
SHMS	Safety and Health Management System
SLOAPS	Strategies for Leadership: An Organizational Approach to Patient Safety
SQE	Staff Qualification and Education
TQM	Total Quality Management
VHA PSCQ	Veterans Administration Patient Safety Culture Questionnaire

CHAPTER I
INTRODUCTION

1.1 Statement and significance of the problem

Healthcare industry is a high hazard industry because the service is done to the person. The Quality of Health Care in America Committee of the Institute of Medicine (IOM)(2) reported adverse event in hospitals in the United State. At least 44,000 people and almost 98,000 people, die in hospitals each year as a result of medical errors that could have been prevented such incidences over the deaths from car accidents, breast cancer or Human immunodeficiency virus. Varies et al.,(3) reported adverse event during hospitalization occur nearly one out of 10 patients. An adverse event was identified in many process of care such as operation procedure, intravenous administration, delay or miss diagnosis, when classified by location adverse event occur often in operating room, intensive care unit, emergency room or patient care unit. More than haft of incidence no or minor disability, where as 7.4% of event were fatal dead and 43.5% of the event having preventable element (2,3,4,14). According to the Center for Disease Control and Prevention (19), estimated each year nearly two million patients get an infection in hospitals, and 90,000 of these patients die. Most of pathogens found in hospital environment can cross contamination from environment to medical device or from one patient to another by healthcare workers hands. Joint commission recommended as a result of infection related dead arising, health care organization should implemented risk reduction strategies; include hand hygiene is part of strategy to reduce infections in hospital settings besides orientation and training process, equipment cleaning, provide waterless hand rubs, and supervise.

Considering about occupational risk in healthcare facility, the Bureau of Labor Statistics (BLS)(31) were reviewed the data of workers' compensation insures, and published journals and reported that in 2011, hospitals in The United States had 253,700 work-related illnesses and injuries or 6.8 work-related injuries and illness for every 100 full-time employees and approximately twice the rate for a whole private

industry. From those statistic, note of the fact that injuries or illness resulting in day away from work is higher in hospital than in construction and manufacturing, two traditional high risk industries and now, improvements in workplace safety in both industries have exceeded in hospitals. Workers in hospitals exposed to unique risk that are uncommon in other industries, such as injuries related to lifting, reposition, and transfer patients, overexertion, exposure to contagious disease, hazardous chemical, sharp devices contaminated with blood borne pathogens and violence. The most of the type injuries and illness resulting in day away from work are sprains and strains, which account for 54 percent follow by bruises, soreness, fractures, multiple trauma and cuts and punctures, other events that might have serious consequences such as exposure to tuberculosis or other communicable disease. Workplace fatalities in hospital are rare, but still occur. During 2003-2011, hospital reported 263 work-related fatalities on average 24 cases per year comparison with average of 5,302 work-related fatalities overall per year. A causes of 263 fatalities in hospital involved 96 transportation incidents, 76 were caused by violence; homicide and self-inflicted, 37 due to falls and 37 were exposure to hazardous substances. In terms of occupation related injuries, registered nurse and nursing aids that might increase number of work-related injuries. Nursing aids got injuries than other occupation. Recent hospital employment is growing, that might increase number of worker-related injuries (32).

In Thailand, the workmen's compensation fund reported summary of work-related illnesses and injuries from 2009-2013 in hospitals had more than 8,120 work-related illnesses on average 1,353 cases per year or 11 work-related injuries and illness for every 1,000 employees. In terms of occupation related injuries, 84 percent of injuries occur in registered nurse, on average 157 cases per year (43, 44, 45, 46, 47).

The particularly culture of healthcare or patient safety encourage caregivers feel an ethical duty "do not harm" to patients, some caregivers put their own safety and health risk to help a patient. Without appropriated personal protective equipment for caregivers, and increase seriousness on patient safety can causing increase risks for caregivers. About one of third of hospital worker injuries resulting in day away from work occur as a result of interaction with patients. The Joint Commission Center for transforming healthcare, mention that a successful safety program cannot do only worker safety or patient safety because the cause of worker

injury are often the same causes of injury to patients. From evidence mention that worker-well-being affects patient safety and recommend healthcare organizations should be concerned with safety for both patients and workers and identify injury risk factors and put on safety interventions that can be taken save costs and improve service to the patients (31, 32,49).

Worker injuries and day away from work can affect patient safety. The risk of adverse event is associated with worker fatigue, stress and injury. In 2011, Join commission (23) reported the incidence of “alarm fatigue” medical or nursing staff are ignore the warning signs of a medical device by adjusting the beep sound on or off equipment that mainly used in the intensive care unit, such as a respirator, electrocardiogram and infusion pump of intravenous fluid therapy. When a patient enters a crisis, nurses do not know the patient got delay treatment; as a result, patients stay in the hospital longer, disability and death. The connection between work load and safety is confirmed by research that in hospital where higher patient to nurse ratio, risk of error and hazards are high as well (28).

The goal of reduce the risk of harm and hazards for healthcare worker is cannot separate linked with the goals of improved patient safety and quality of care. When separate worker health and safety issues from cause of patient injury are often fail to find root causes that are common to both. For those reason, successful healthcare organization in reducing work-related illnesses and injuries are enhance on organization wide culture of safety without judge who is impact. The Institute of Medicine (IOM) mentions that a safer environment for patients would also be a safer environment for workers.

Healthcare provider attitudes about safety cultures and related factors are important component of an organization’s safety culture. In healthcare organization that certified as accredited hospitals had a systems operating in hazardous conditions that have fewer and fair to share of adverse events. Porn Boonmee (20) describe safety culture of nurse who work in accredited hospitals participate in the conference on patient safety culture the result showed that overall scores of nurses perception on safety culture were in a high level, the incidence of mistake practices were always reported. The perceptions of nurses for safety culture regarding team work was perceived as being the higher mean scores among study subjects follow by open

communication and feedback about error, while perception of non-punitive response to error are perceived as the lowest mean score among study subjects.

Enhance and sustain safety culture in healthcare workplace can help to increase benefits to organizations, workers and patients. The benefits include lower rate of injuries-illness, improve staff engagement, reduce turnover rate, reduce hospital related infection in workers and patients, and increase the quality of patient care and improving efficiency of operational.

The researcher is interested to study the safety culture of the nurses who works in intensive care unit at accredited hospital. Nurses working in intensive care unit had a unique work conditions for example; requires careful assessment and monitoring of patient progress in order to watch for sudden or critical changes in a patient's medical condition that might require emergency intervention. Most patients in a critical care unit are physically unstable and require respiratory and heart monitoring as well as treatment adjustments. Intensive care unit nurses are responsible for managing medication doses and ventilator support, work long hours and deal with life-and-death situations, and assisting medical doctor in situations requiring resuscitation and other emergency procedures. The health and safety risk of intensive care nurses include exposed to infectious disease due to direct contact with patients, injured by sharp objects that contaminated with blood borne pathogens, burn of faulty electric equipment, suffer from musculoskeletal problems resulting from the handling of lager patients, and suffer from stresses and burnout caused by shift and night work, and by other psychological and organizational factors. From the baseline data, found work-related illnesses and injuries in intensive care unit happens often when compared to other units and more than haft cause of injuries can preventable. Safety is a condition of being resulting from human behavior and designing of the physical environmental to reduce the hazard, and reducing the chance of accidents. Organization factors such as safety climate, morale, staffing levels and management support are influence to staff behaviors. In hospitals that already have complied with Joint Commission standards might be well organized of workplace and employee safety but work-related illness and injuries still occur. Healthcare provider attitudes about safety cultures and related factors are important component of an organization's safety culture. In healthcare organization that certified as accredited hospitals had a

systems operating in hazardous conditions that have fewer and fair to share of adverse events. From literature review found lot of study were demonstrated of safety culture in hospital but most of study are focused of patient safety but worker safety in hospital are rare. So, the researcher interest to study the factors related to attitude of safety culture among nurses in intensive care unit, because attitude of safety culture is represented of thoughts, or beliefs of which determine nurse expressed safety behavior and use the data to improve the safety culture of the organization.

1.2 Research questions

1.2.1 What are the factors related to attitude of safety culture?

1.2.2 What is the level of attitude of safety culture among intensive care unit nurse?

1.3 Objectives

1.3.1 To determine the relationship between socio-demographic factors, including gender, age, education level and work experience and attitude of safety culture of ICU nurses at a private tertiary care hospital.

1.3.2 To determine the relationship between job characteristics factors including job position, number of patient care in one shift, and working hour per week and attitude of safety culture of ICU nurses at a private tertiary care hospital.

1.3.3 To determine the relationship between the organization safety management factors including the leader informing about safety policy and safety culture training and attitude of safety culture of ICU nurses at a private tertiary care hospital.

1.3.4 To determine the attitude of six safety culture dimensions including team work climate, safety climate, stress recognition, working condition, job satisfaction and perception of management of ICU nurses at a private tertiary care hospital.

1.4 Study hypotheses

1.4.1 The personal socio-demographic factors are related to attitude of safety culture.

1.4.2 The job characteristics factors are related to attitude of safety culture.

1.4.3 The organization safety management factors are related to attitude of safety culture.

1.4.4 The attitude of safety culture among intensive care nurse unit in private tertiary hospital is different.

1.5 Scope of study

This study focused the attitude of safety culture among intensive care unit nurses. The accessible population of this study was 266 ICU nurses from three selected hospitals located in Bangkok, Chonburi and Phuket province. Private hospitals were selected as the tertiary care hospitals and certified hospital standard by Joint Commission International. This study included all nurses who working in ICUs during a 2 month period from December 2014 to January 2015.

1.6 Variables

1.6.1 Independent variable

1.6.1.1 Personal socio-demographics

- Gender
- Age
- Educational level
- Work experience in selected hospital
- Work experience in selected intensive care unit

1.6.1.2 Job characteristics

- Job position
- Number of patient care in one shift

- Working hour per week

1.6.1.3 The organization safety management

- The leader informing about safety policy
- Participated in safety training

1.6.2 Dependent variable

Six dimensions of safety culture

- Teamwork climate
- Safety climate
- Stress recognition
- Job satisfaction
- Working condition
- Perception of management

1.7 Outcomes and benefits

1.7.1 Results of the study could be used to define the level of safety culture perception of each hospital and use to promote positive safety attitude of ICU nurses.

1.7.2 It might be the useful information for hospital leader using the result of the study for planning, developing the safety policies and activities to enhance safety culture in the organization, including elimination of the incidence of work related injuries and illness and adverse medical services.

1.8 Operational definitions

Attitude

A relatively enduring organization of beliefs, feelings, and behavioral tendencies towards socially significant objects, groups, events or symbols

Safety Culture

The ways in which safety is managed in the workplace, and often reflects the attitudes, beliefs, perceptions and values that employees share in relation to safety.

Attitude of safety culture is composed of six dimensions which are

Teamwork climate

Define as perceptions of the kinds of behaviors, practices, and procedures that are supported within a team. The teamwork climate question items such as

- It easy for personnel in this ICU to ask questions when there is something that they do not understand.
- Disagreements in this ICU are resolved appropriately.
- The physicians and nurse here work together as a well-coordinated team.

Safety climate

Describe a proactive organization commitment to safety. The safety climate question items such as

- The safety culture in this ICU makes it easy to learn from the errors of others.
- I know the proper channels to direct questions regarding safety in this ICU.
- I am encouraged by my colleagues to report any patient safety concerns I may have.

Stress recognition

Describes an acknowledgement of how performance is influence by stressor. The stress recognition safety attitude questions such as

- When my workload becomes excessive, my performance is impaired.
- Fatigue impairs my performance during emergency situations e.g. emergency resuscitation.
- I am less effective at work when fatigued.

Working conditions

Describe a working time, income, physical conditions, mental demand in the workplace and work life balance. The working conditions safety attitude questions such as

- All the necessary information for diagnostic and therapeutic decisions is routinely available to me.
- This hospital dose a good job of training new personnel.
- This hospital constructively deals with problem physicians and employees.

Job satisfaction

Define as individual aspects of jobs, or a pleasurable, or positive emotional state resulting from the appraisal of one's job or job experience. The safety attitude questions such as

- I like my job.
- This hospital is a good place to work.
- I am proud to work in this hospital.

Perception of management

Describe of the acknowledgement of the administration commitment to safety, enterprise safety management that coordinates the efforts of people to accomplish goals and objectives using available resources efficiently and effectively. The safety attitude questions such as

- Hospital administration supports my daily efforts.
- I am provided with adequate, timely information about events in the hospital that might affect my work.
- The level of staffing in this ICU is sufficient to handle the number of patients.

Personal socio-demographics

Work experience in the current workplace is number of work years in selected hospital

Work experience in the current intensive care unit is number of work years in selected intensive care unit

Job characteristics

Job position is defined as jobs or position that have a specific set of expectation such as manager, head of department, incharge nurse and member nurse.

Number patient care in one shift is the maximum number of patients that the nurse takes care of and treated in one shift or 8 hours.

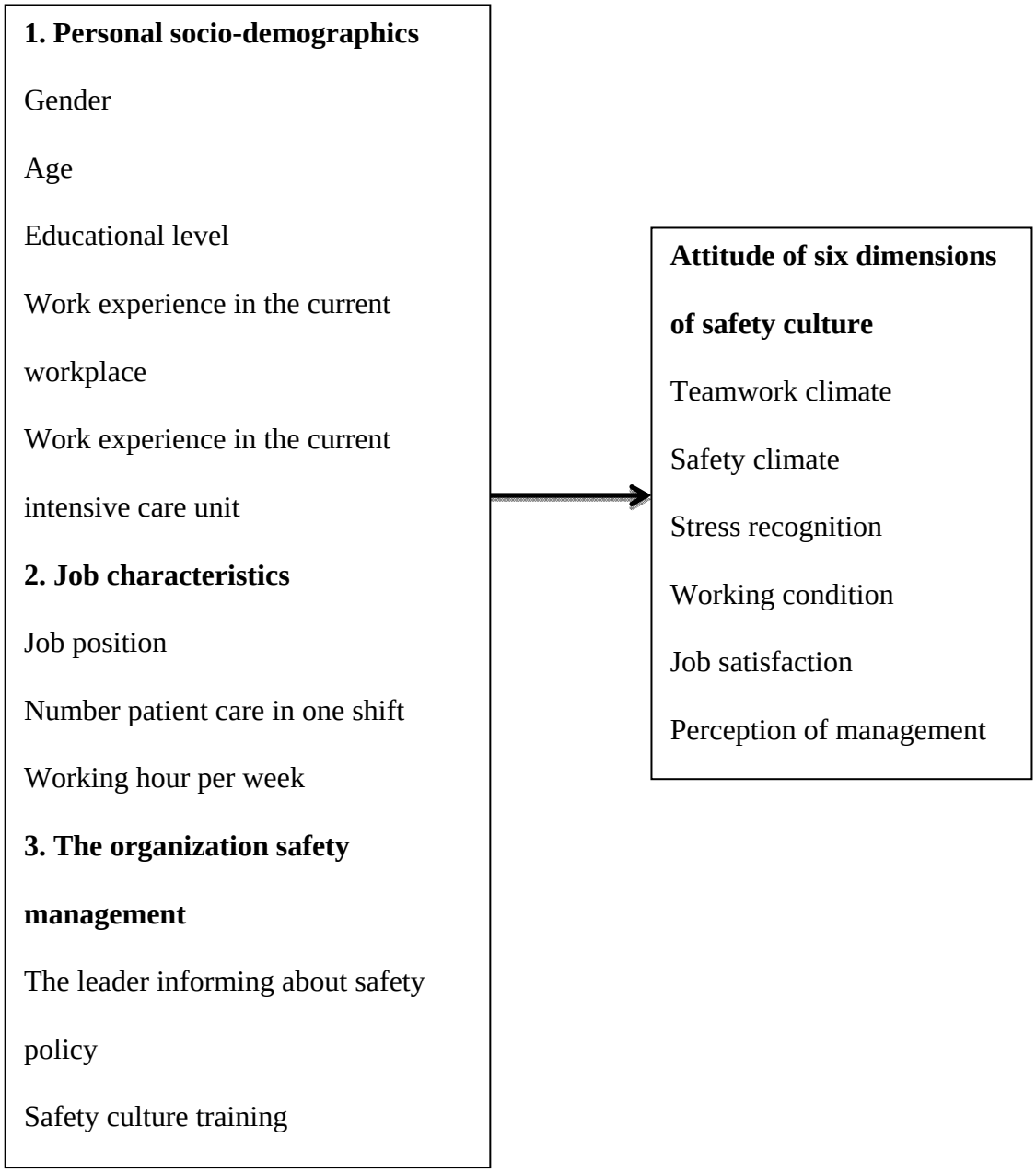
Working hour per week is defined as total hours work in one week or 7 days.

The organization safety management

The leader informing about safety policy is the safety policy provided in statement writing. The leader and management levels are communicate safety policy to all levels of employees and units.

Safety culture training is training on safety in hospitals including incidence reporting system, risk management, patient safety goal, infection control, occupational health and safety and disaster preparedness.

1.9 The research framework



CHAPTER II
LITERATURE REVIEW

The literature review of the related studies was presented in the following orders:

2.1 Definition, composition, and attitude assessment

2.2 Dimensions of safety culture

2.3 Safety culture in hospital

2.4 Safety standard in healthcare system

2.5 Working condition in intensive care unit

2.6 Literature reviews

2.1 Definition, composition, and attitude assessment (10)

2.1.1 Definition of attitude

Attitude plays an important role in psycho-sociology and communication due to its influence on human behavior. There are various definitions of attitude as defined by researchers. Roger et al., suggested that attitude is an index indicating a person's thoughts and feelings toward surrounding environment as well as potential responses in different situations. Attitude has its foundation on one's belief and may affect the perspective behavior; hence it may be an indicator of person responses to stimulus. It also serves as a determinant of one's likes or dislikes through the form of interpersonal communication. This would then influence that person's behavior as responds to any message received. The Oxford Advanced Learner's Dictionary of Current English has given the definition of attitude as a platform of one's thoughts or feelings toward person or another person's behaviors. It also reflects that own person's expression toward other people, serving as the expression of one's thoughts and feelings toward things.

According to definitions provided above, it can be summarized that attitude is feelings, thoughts, or beliefs of which determine one's expressed behavior. This behavior is the product of an internal communication determining likes and dislikes of a person in respond to different situations. Attitude maybe managed and affected by that particular person's experiences and previous exposures. Attitude of a person may be evaluated via his or her opinion and behavior expressed both informally and informally.

2.1.2 Composition of attitude

Gibson, Ivancevich, Donnelly, Van Hoek et al., 2004(10) stated that attitude is an integrated part of a person's characteristics, and are consisting of three components including affective, cognitive, and behavioral parts. Each of these components interacts with the others interchangeably, and causing changes simultaneously among the three components.

2.1.2.1 Affection

This component represents feelings within the attitude. Affection is an inherited part received from parents, mentors, and friends.

2.1.2.2 Cognition

Cognition illustrates the knowledgeable part of attitude. It includes a person's acceptance, opinion, and personal belief, which mostly represent thinking processes, reasoning, and logical interpretation of that particular person. An immensely important trait of cognition is one's trust in its own interpretation, which would further manifest into one's impression toward matters or people.

2.1.2.3 Behavior

This component represents the intention of a person to exhibit certain actions toward person or matters. For instance, a person may tentatively to be friendly, warm-welcome, aggressive, or fiercely competitive.

2.1.3 Type of attitude

The expression of attitude can be categorized into 3 types as follows;

2.1.3.1 Positive Attitude

This represents optimistic perspective toward environment which is mostly accepted gracefully. For instance, students may appreciate and favor advertising because it allows them to express their creativity.

2.1.3.2 Negative Attitude

This expresses the un-satisfaction toward certain subjects, and tends to view them pessimistically. An example is that a person may view the pet owner as a cruel person since they have hold captive of the animals.

2.1.3.3 Neutral Attitude

The neutral attitude occurs when one does not have either positive or negative feelings toward a matter. This may happen when the person does not have any previous experiences or knowledge regarding to that subjects; hence having neutral opinion.

2.1.4 The Formulation of Attitude

Different types of attitudes can be established and modified due to several factors. The priority of these factors does not come in any particular order. The importance of each factor is mainly determined by the characteristics and references of each event. The formulation of attitude consists of the following:

2.1.4.1 Historical setting represents the biographical history of each individual person including birth place, where he or she has been raised, financial condition, and social status. These factors determine the characteristics of a person, which in turn, establishes a person's attitude. Two main influential components of these setting include social environment and personality process.

2.1.4.2 Social environment

This component captures the interaction among individuals through the received of information, containment of different social structure, and personal experience obtained through the pasts.

2.1.4.3 Personality process

This is the fundamental process employed in the formulation of attitude. A person incorporates his or her previous experiences obtained from the

interaction with people and both physical and social environment into his characteristics or personalities. This personality therefore develops further into attitude.

2.1.5 The Measurement of Attitude

Since attitude is belief and feeling toward any stimulus, measuring attitude means measuring knowledge and belief of a person toward its response toward stimulus or measuring the mental characteristics of that person. Although these characteristics maybe changing over time, they can be determined using the following principals.

2.1.5.1 Basic Assumptions

In order to measure attitude, some basic assumptions have to be formed.

1) Attitude is constant over a period of time. Although attitude may change with time, it will at least constant and stable for a short period of time. This allows the attitude to be properly measured.

2) Attitude can only be measured indirectly. Since attitude is not measurable or directly observable, it can only be evaluate indirectly through a person behavior and expression.

3) Attitude is expressed as thoughts and feelings. These elements will form different agreement/disagreement as well as the degree of the expressed feelings. Thus, to measure attitude, both the direction and level of the measured attitude are also necessary attributes that require to be determined.

2.1.5.2 The components measured; there are 3 components that need to be measured including the subject, the stimulus, and the respond.

2.1.5.3 A stimulus that is normally employed in order to ticker the attitude of the person is attitude statement. This tool is stimulus expressing the characteristic of a subject. Once the person is tested with the attitude statement, the subject will express attitude continuum or attitude along with its scale.

2.1.5.4 Measuring attitude is a process the determine direction and scale of the attitude. The conclusion would be drawn from the

information obtained from the person's responds, thoughts and opinions toward any given stimulus.

2.1.5.6 The validity of attitude measurement needs to be considered. The validity represents the precision or the appropriateness of the measurement toward the real attitude of the person.

2.1.6 Construction of attitude statement

Attitude measure comprised of statement or question aiming at stimulating a person to express opinion or emotion. Hence, the validity and reliability of the measured attitude depends substantially on the quality of the attitude statement and question asked. When constructing attitude statements, certain principals should be considered as the following.

1) The statement should base on current situation in order to evaluate the person's current attitude.

2) Avoid asking facts of the situation since it may induce answer regarding to the facts not a person's attitude.

3) The statement should generate responses that allow both the direction and scale of the attitude to be measured.

4) The statement has to be clear and concise to avoid misinterpretation.

5) Each statement should aim at obtaining only one opinion or attitude at a time.

6) The statement has to be neutral and not convincing the subject toward certain direction of the responses. The subject should have to ease to express its positive or negative attitude.

7) Avoid statement that opinion cannot be expressed and irrelevant questions.

Besides a proper construction and introduction of attitude statement, another crucial part in measuring attitude is the measuring methodology itself. The tool or the methodology employed has to be appropriately chosen in order to capture and extract the person's attitude precisely and reliably. The following are some commonly used methodologies.

Likert Method:

The Likert methodology bases its foundation on an assumption that subject's intelligence is normally distributed where the variance and be used as the measure of attitude intensity. When the attitude statement is introduced to a person, the subject may express favorable, unfavorable, or uncertain attitude toward the statement, and this expression is measured by Likert method.

1) Methodology Setup

I. Construct the attitude statements such that all targeted characteristics are included, and emphasize both positive and negative perception of the statement.

II. Setup the scale for each response, and separate them into 5 levels including strongly agree, agree, uncertain, disagree, and strongly disagree.

III. Ask the participants to express their responses accordingly to the 5 scales constructed.

2) Scoring

As for the scoring process, the arbitrary weighting method is applied. This method associates the weight 5 to 1 with each measuring scale including strongly agree, agree, uncertain or neutral, disagree, and strongly disagree, respectively. These weights are reverse in the case that the statement measuring negative response (e.g. scale 5 for strongly agree, scale 4 for agree, scale 3 for uncertain, scale 2 for disagree, and scale 1 for strongly disagree, accordingly). The total score represents the appreciative or positive attitude one has toward the given stimulus, and vice versa.

Osgood Method:

This methodology determines the perception or perspective of a person having on any stimulus using sematic difference scale. Osgood method does not implement direct scale measure of attitude; instead, it employs a statement expressing the attributes of the stimulus, and allows the participant to conclude the overall image or concept of that situation. Subsequently, these responses are analyzed and interpret into attitude of that particular subject. The terms used in sematic scales are categorized into 3 groups as follows.

1) Evaluation factor: This factor represents the value of the stimulus. Some of the commonly used terms include good-bad, true-false, and clever-ignorance.

2) Potential factor: This factor illustrates the influence of the stimulus. Examples of terms categorized in these groups are heavy-light, big-small, and strong-weak.

3) Activity factor: This factor indicates the attributes of the stimulus. Some of the terms included are fast-slow and swift-dull.

3.1) Methodology Setup

I. Determine the design stimulus to be examined, and clearly describe all the related attributes of that stimulus.

II. The terms used in describing the attributes should:

a) Be commonly known and clearly comprehended

b) Allow the subject to express both directions of attitude toward them. The terms should not yield only one-sided absolute attitude.

III. Determine another opposite term that expresses concisely the opposite attitude of the term.

IV. Ask participants to respond in 7 scales as indicated below;

Teacher

strict	+3	+2	+1	0	-1	-2	-3	flexible
strong	+3	+2	+1	0	-1	-2	-3	weak
active	+3	+2	+1	0	-1	-2	-3	passive
kind	+3	+2	+1	0	-1	-2	-3	cruel
energetic	+3	+2	+1	0	-1	-2	-3	lazy

Figure 2.1 an example of a sematic differential scale

For each pair of adjectives place across at the scale between them which reflects the extent to which the participant believes that the adjectives describes teacher.

3.2) Scoring

In order to score the participants' expression, arbitrary weight is assigned for each scale of response. The weight array of +3 to -3 is applied to the scale of response as shown in figure 2-1. The weight of +3 is assigned to the greatest positive attitude, whereas the weight of -3 is associated with the most negative attitude.

In summary, Likert methodology is a suitable approach in evaluating attitudes due to its accuracy in determining the expression as well as the simplicity in its implementation. The expression is classified into scales. On the contrary, the Osgood measure only determines the collective attitude the subjects have toward the stimulus, and cannot separate the results into levels.

2.2 Safety Attitude Dimensions (33, 34, 35, 36)

2.2.1 Safety culture definition

Following the substantial losses occurred during Chernobyl disaster; the term safety culture was established. An International Atomic Energy Agency (1), which is an international entity overseeing the nuclear generation and found that one of the reasons causing the tragic losses was the deficiency in safety awareness. This incident has triggered the large research interests regarding safety awareness of workforce leading to the introduction of safety culture afterward.

Safety culture has been defined by UK Health and Safety Commission as the product of attitude, perspective, and behavioral standard of the member within the society in which it can affect the commitment, style, and proficiency of the operation regarding to the safety issues of the organization. Entity with positive safety culture would exhibit mutual interest in and communicate bases on the safety procedures and hazard prevention of the organization.

For the past decade, many international studies regarding to safety culture have been published. Different results and findings were generated depending on the

methodology employed. These methodologies may be classified into 3 categories as presented below.

1) Psychological approach: This approach focuses on the knowledge and perception of employees toward safety management. Moreover, the attitude and behavior of the employees according to risk and safety are also incorporated.

2) Engineering approach: The methodology aims at evaluating system management, safety management, safety policy, safety protocol, and quality assurance of which the overall safety of the organization was affected.

3) Organizational culture theory: This methodology relies on human-sociological approach in determining the attitude and responses toward risk and safety.

2.2.2 Layers of Organization Culture (7)

Onion model is a model representing 3 layers of organization, which can be classified as follows;

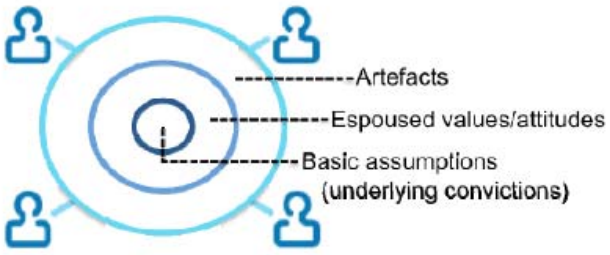


Figure 2.2 Onion model

1) The first layer: Artefacts

These are visual and observable details regarding to safety management including posters and message promoting safety awareness, safety protocol, safety audit, protection wares and policies.

2) The second layer: Espoused values

This exhibits the core value over safety of the organization. In general, these vision and perspective are set by the high level management of the organization.

This perspective includes vision, collaboration, behavior, management, work plan, and safety standard.

3) The Third layer: Basic assumption

This exhibits personal perception and opinion that affect safety behavior of the organization. This part is the most complex in term of understanding and practical implementation.

Hence, safety culture is the product of values and beliefs regarding to safety that interact with corporate structure and the management, and create behavior norm for safety matters.

2.2.3 Dimension of safety culture (33, 34, 35, 36)

1) Teamwork climate

Teamwork defines as two or more individuals with specified roles interactive toward a shared and common goal. Elements of effective teamwork include 1) team leadership who initiate team problem solving, clarify team member rules, and assist in conflict resolution 2) Mutual performance monitoring defines as team members are able to monitor one another's performance, identify mistakes and lapses in other team member actions, provide feedback to fellow team members to facilitate self-correction 3) Backup behavior defines as team members anticipate and respond to one another's needs, recognize workload distribution problem, shift work responsibilities to underutilized members 4) Adaptability defines as the team adjusts strategies based on new information such as identify cues that change has occurred and develop plan to deal with changes. 5) Team orientation defines as team members prioritize team goals above individual goals, increased task involvement, information sharing, and participatory goal setting. 6) Coordinating mechanism defines as anticipate and predict each other's needs, an organizing knowledge of the task of the team and how members will interact to achieve their goal. 7) Closed-loop communication for example follow up with team members to ensure message received and 8) Mutual trust are shared belief that team members will perform their roles.

2) Safety climate

A safety climate is a component of cooperative commitment of care and concern, and all employees have positive perceptions about organization safety condition. The term of climate refer to the characteristic of attitudes and behaviors of employees. Safety climate influences the outcomes of all the organization safety improvement activities. In the same organization there are differences departments and services, each service there are different rules and procedures, the risk associated with type of work will importance on compliance and safety practices that applied to their jobs on daily basis. The core elements of safety climate are management commitment, management actions, personal commitment to safety, perceived risk levels, effect of the required work pace, beliefs about accident causation, effect of job-induced stress, effectiveness of safety communications within organizations, effectiveness of emergency procedures, safety training and effective safety people and safety committee. In summary safety climate is constructed by the interaction between the people, type of works and practices, the risk associated their jobs, position and responsibility in the organization.

3) Stress recognition

The National Institute for Occupational Safety and Health (NIOSH) defines occupational stress as the harmful physical and emotional response that occur when the job requirements are not match the capabilities, resources, or need of the worker. Worker factors or stressors include task demand such as work overload, organization factors such as poor interpersonal relations, unfair management practices, economic factors, conflict between work and family roles, training and career path or promotion, and poor organization climate such as lack of management commitment, conflicting. Common stressors in healthcare setting include inadequate staffing, shift work, time pressure, long work hours, sleep deprivation, exposure to infectious and hazardous substance, work related violence and dealing with seriously ill patients. The potential adverse health effects of occupational stress include psychological such as depression, and job dissatisfaction, behavioral such as sleep problems, and absence from work, physical such as headache, high blood pressure and stomach problem. Hospital should be actions to reduce job stress that can reduce the adverse effect of

workers and quality of patient care. The most effective strategies for reduce occupational stress should be involve both of organization changes such as appropriateness of workload, clearly scope of job and responsibilities, improve communication, clearly career path and promotion, provide appropriate resources and stress management or stress recognition such as coping strategies training, time management, interpersonal skills, cognitive-behavioral technique.

4) Job satisfaction

Define as individual aspects of jobs, or a pleasurable, or positive emotional state resulting from the appraisal of one's job or job experience. In recent study describes job satisfaction are two major factors include worker personality traits or disposition and workplace factors. The link between job satisfaction and safety climate related to organization support their work, if workers perceived that their organizations are supportive resources, good working conditions, they are more likely to recognize that the organization values worker safety as well as their well-being and work life balance. When the basic needs are met, the workers will show job satisfaction, display good performance and loyalty to organizations.

5) Working conditions

Working conditions are cover a working time, income, physical conditions, mental demand in the workplace and work life balance. The working conditions are components of organization climate, minimum wages and maternity protection. Organizational climate is defined as employees' shared perceptions about the norms, including decision making and collaboration. Maternity protection defines protective measures for pregnant women and women who recently gave birth include reduce the risk of health, hazards at work and unsafe work conditions, paid maternity leave, paid breaks to breastfeed infants, employment protection against discrimination, and a guaranteed right to return to the same position after maternity leave. Working condition influences work performance. The common working conditions influence to health and safety hazard in hospital include quality of light, levels of noise, medical equipment hazard, chemical hazard, overexertion, infectious substance and violence. These conditions can affect safety and health in hospital, if inappropriate or excessive;

these factors can strongly influence how a task is performed and affect productivity and may be associated with patient safety outcomes.

6) Perception of management

One of the most success factors of enhance safety culture in the organization is management commitment. The totality commitment of leadership, senior management, line management that affect to workers motivation and make sustainable safety culture is an empower the people, win people heart and minds and providing the necessary resources to implement improvement strategies. The strategies to promote commitment of safety such as develop and actively transmit a cooperate safety vision, establish and apply safety methods in working process, design and conduct safety control measure, encourage staff involvement in safety planning and implementation of safety improvement strategies, be a role model, and provide time and financial resources to implement safety actions.

2.3 Safety Culture in Hospital (8, 11)

There are 3 required factors for the hospitals to become highly reliable organization.

1) Organization leaders focus on achieving the corporate promises, and support the implementation that is required in reaching the target.

2) Sufficient resources for achieving the goal.

3) Simultaneous operational improvement.

Research studies related safety culture in hospital as well as the factors affecting this culture has mainly been focusing either on the error prevention and the relationship between safety culture and the outcome. The mostly evaluated outcomes are of employee and patient. For example, staff outcome are the relationship between safety culture and turnover rate, employee satisfaction, and accidental rate. As for the patient outcome, research mainly investigated the results on patient satisfaction, side-effect from treatment, infection, and death rate.

The safety culture is different depending on the core value, belief, structure, and policy that particular hospital. Some hospitals may achieve high patient outcome but low employee outcome. Differences also occur within the same hospital; i.e. the effect and outcome of safety culture are different among departments where intensive care department has higher awareness of safety culture comparing to the internal medicine department. Also, physicists exhibit greater safety awareness than nurses. Since the type of works and activities within the hospital involves interaction between patients and healthcare personals directly or indirectly, the safety management of both the parties should be implemented together to achieved favorable result such that employees have good satisfaction toward the job done and patients are satisfied with the services and recover from the illness without side-effect. The relationships among factors and outcomes are analyzed and the model of healthcare working conditions on organizational and safety was proposed in Figure 2.3.

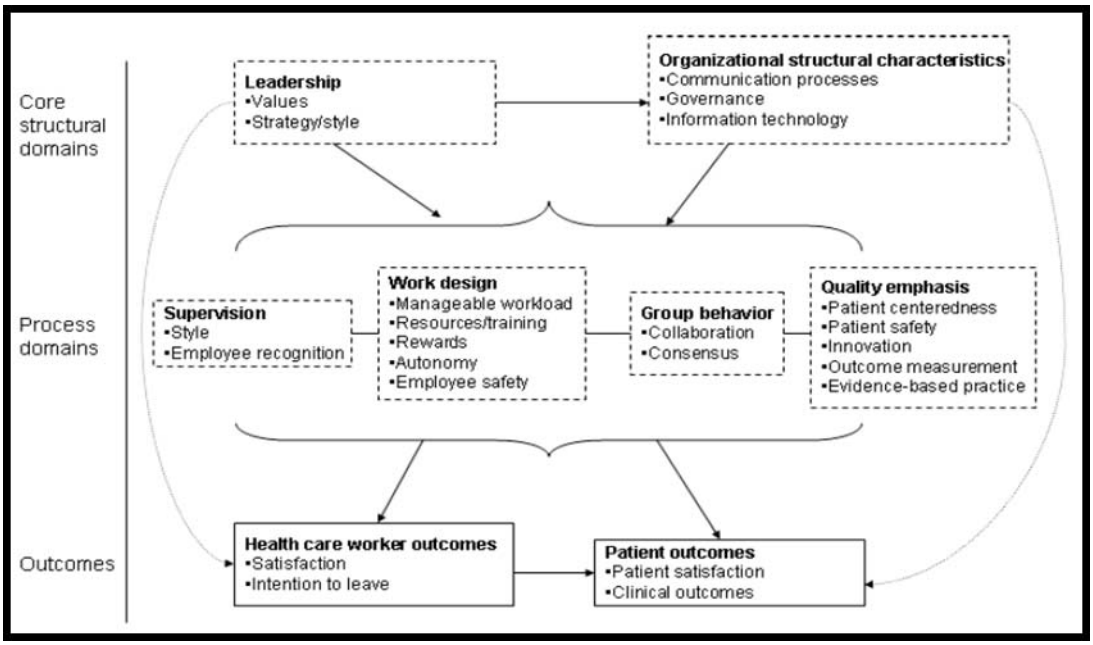


Figure 2.3 An Integrative model of health care working conditions on organizational climate and safety (8)

Dotted line represents domain of organization climate, solid line represents outcome, bold letter represents core domain and thin letter represents subcontracts or

element. The dotted arrows connecting core structural domains represent direct effects on outcomes, which are mediated by the process domains.

This conceptual model reveals that all the components are inter-related directly or indirectly. In example, the strategic decisions made by the top management would have direct effect on the work process of the staffs. Communication, governance, and information technology of the firm would also directly affect patient outcomes. Moreover, the elements in process domain such as supervision, work design, collaboration, and quality control affect the outcomes as shown in Table 2-1.

Table 2.1 Examples of Safety promotion and its impact on patient, staff and organization (8)

Activity	**Strategy**	**Impact on patient**	**Impact on staff**	**Impact on the organization**
1. Prevention of needle injury	- Use safety needle - Avoid using sharp equipment with freehand. - Wear double gloves when perform surgery	-Reduce the risk of blood borne transmission	-Reduce the risk of blood borne transmission	- Reduce sick leave - Reduce medical costs - Reduce insurance costs - Increased safety culture
2. Prevention of infection	- Immunization - Hand washing - Wear personal protective equipment	- Reduce the spread of germs from staff to patients	- Reduce the spread of germs from patient to staffs	-Reduce sick leave - Decrease infection rate - Reduced compensation - Increase practices compliance

Table 2.1 Examples of Safety promotion and its impact on patient staff and organization (cont.)

Activity	Strategy	Impact on patient	Impact on staff	Impact on the organization
3. Safe patient transportation	- Use patient lifts equipment - Support patients by physical therapist team	- Meet Patient satisfaction - Patients recover faster - Reduce the incidence of falling down	- Meet staff satisfaction - Reduce injury to muscles, bones and joints.	- Reduce medical cost - Meet Patient satisfaction - Increase future service in patients - Recommend the hospital's service to others by patients
4. Promote safety culture, improve work environment and teamwork	- Patients and staff engage in safety activities - Executives walk round and engage in social participation - Schedule morning meeting	- Reduce Adverse events - Increase satisfaction	- Increase awareness of ethical and safety - Reduce fatigue from work	- Patients receive good service - Receive good result in medical care - Staff perform better practices - Reduce litigation - Reduce staff turnover

Safety culture is rather complex and can be varied from organization to organization. Hence, unique methodology is necessary for the evaluation of safety culture in each industry. In the case of hospital and healthcare services, the safety culture is established with special emphasize on patient safety. Several tools are available for hospital safety culture; however, the appropriateness of these measures depends mainly on the goal and scope of the studies. Some examples of the safety culture questionnaire are demonstrated in Table 2-2.

Table 2.2 Example of questionnaire regarding to safety culture in hospitals (8)

Questionnaire	Scope
1. Hospital Survey on Patient Safety Culture (HSOPS), Agency for Healthcare Research and Quality (AHRQ)	Patient safety culture assessment Study the promoting patient safety, organizational management, learning, quality development of teamwork, open communications, management on patient safety and no punishment practices for wrong doing staff .
2. Safety Attitudes Questionnaire-SAQ, Sexton The University of Texas Center of Excellence for Patient Safety Research and Practice.	Assess safety culture by measuring 6 dimensions of safety culture. Namely, team work climate, safety climate, job satisfaction, perception of management, stress recognition and working condition
3. Modified Stanford Instrument (MSI) Patient Safety Culture Survey	Tools to measure safety culture or safety climate.
4. Strategies for Leadership: An Organizational Approach to Patient Safety (SLOAPS)	Assess the organization direction, organization policy, human resource management, communication and working climate.

Table 2.2 Example of questionnaire regarding to safety culture in hospitals (cont.)

Questionnaire	Scope
5. Institute for Safe Medication Practices (ISMP):Medication Safety Self-Assessment (MSSA)	Assess the leadership organization direction, organization policy, human resource management, communication and working climate.
6. Culture of Safety Survey (CSS)	Assess the leadership and organization direction regarding to the creation an environment of non-punishment, promote staff error report and communicate information to relevant person.
7. Hospital Transfusion Service Safety Culture Survey (HTSSCS)	Evaluate the implementation, communication and policy direction and practices.
8. Veterans Administration Patient Safety Culture Questionnaire (VHA PSCQ)	Evaluate the implementation, communication and human resource management and practices.
9. Patient Safety Culture in Healthcare Organizations Survey (PSCHO)	Assessment of the executive management regarding to staff engagement, resource, overall enterprise safety climate, perception of safety in the workplace, security support and process of learning from error.

Due to the availability of different psychological questionnaires for the safety culture study, Colla et al.,(2005)(12) has published a review of the uses and the comparisons among the existing questionnaires. This provides beneficial insights for measure selection when safety culture questionnaire is required. The literature has observed that all of the collected questionnaires employed Likert's scales as the rating tool. Moreover, most of the constructed questionnaires measure personal attitude in 5 areas including leadership direction, managerial policy, human resources, communication, and reporting system. A few questionnaires were incorporated with

comparison of different organization; Safety Attitudes Questionnaire (SAQ) and Safety Climate Survey (SCS). These surveys compare safety procedure of hospital with commercial airline. Whereas, Patient Safety Culture in Healthcare Organizations Survey (PSCHO) compares safety climate between healthcare service and shipping industry. Among these methodologies, only Safety attitude questionnaire (SAQ) provides the platform to analyze the relationship safety management and patient treatment outcome such as number of accidents, length of stay, prescription error, infection, intravenous line infection, and patient death rate. The results of Safety attitude questionnaire (SAQ) can be used to analyze the perception of safety culture between internal departments, international agencies or between organizations. The test results show the relationship between perceived safety culture management and patient outcome. Questionnaires have reliability and Coefficient Cronbach's alpha was 0.68 to 0.81.

2.4 Safety standard in healthcare system (13)

Caregivers and patients are exposure many harm and hazards in hospital. Strategies to improve safety for both patients and workers can do by organization management system, many of those methods are education, training, auditing and continuous improvement. Some hospitals are using hospital quality standard such as Total Quality Management (TQM), Joint Commission International (JCI) as a tools for improvement workplace safety in hospital. The key principles of the standard are guide the design of work process and quality management to assess the organization's performance and find opportunities to reduce the risk of hazards and promote safety culture in the organization. The administration must be done by making the performance monitoring system to measure improvement, promote safety awareness and attitude to employees, if they are aware of and comply with safety, it will affect the quality, patient safety and also occupational safety. Almost successful system include six elements of OSHA’s safety and health management system (SHMS)(42) are management leadership, employee participation, hazard identification and assessment, hazard prevention and control, education and training, and program

evaluation and improvement. The Institute of Medicine (IOM) report that leaders and supervisors committed to promote a safety culture at all levels of the organization and empowers employees to be helpful and observant of potential problems that need to be addressed. Tomas et al., (2005)(15) reported when hospitals are implementing executive walk rounds by hospital executives visit patient care areas to discuss patient safety issues with providers. The executive may ask providers to discuss specific events or general processes that could put patients at risk for harm, they ask for suggestions to improve safety, and verbalize their commitment to improving safety. The result of study shown safety climate score of nurses who participate executive walk rounds have a positive effect on the safety climate attitudes of nurses who participate in the walk rounds sessions.

Safety is a condition of being resulting from human behavior and designing of the physical environmental to reduce the hazard, and reducing the chance of accidents. Organization factors such as safety climate, morale, staffing levels and management support are influence to staff behaviors. The organization should be measure the perception of safety culture in the organization to assess how staffs are perceived to management system and use the data to improve the safety culture of the organization (17). The safety in healthcare system and service involves with good practice bases on appropriate professional standard and regulation. Major legislations involving healthcare provider and clients (patients) are License Act B.E. 2556 (A.D. 2013), Nursing Act B.E. 2555 (A.D.2012), Occupational Safety, Health and Environment ACT B.E. 2554 (A.D. 2011)**,** Ministerial Regulation Set Standard in Administration and Management of Safety, Occupational Health, and Work Environment B.E.2549 (2006) etc. The main focuses of these related legislation includes the regulation that healthcare providers are required to have sufficient appropriate healthcare personals equipped with standard licenses, safe and approved infrastructure, sufficient amount of standardized medical tools, and scheduled auditing by related government agencies and also voluntary mandate and quality assurance are encouraged. Hospitals and healthcare providers may acquire other quality audit from standardized private agencies, which is aimed to provide the followings.

Benefit to client/patient: The chance of mis-treatment and side effects to patients are reduced. This also improves overall treatment outcome and elevates awareness of patient rights as well as human rights.

Benefit to healthcare personnel: Benefits to healthcare workforce are lower risk of infection from work, reduced conflict and misunderstanding between workers and workers, and improved working environment, long-term development of professional skills.

Benefit to organization: Implementing these quality assurance help the organization to remain competitive as well as develop sustainable long term growth.

Hospital embedded with healthcare safety also required to apply quality improvement framework. This system assures that the operation of the hospital follows the established guideline according to the healthcare service standard. The main contents of these standards concern about providing professional and sincere services to patients. It also dedicates additional focuses on personnel collaboration as well as the integration of risk management (RM), quality assurance (QA), and continual quality improvement (CQI) together.

Thus, healthcare provider with healthcare safety indicates the entity with appropriate design that promotes quality value and safety culture through the integration of risk management, operational management, and high professional standard service. It also suggests that the entity should implement safe working environment, continuous improvement in operational management, long term quality development, and transparent auditing process.

In other industries, usually follow OSHA standard to building a safety and health management system. In this study, special emphasize is placed of healthcare safety standards issued by Joint Commission International(JCI)(13).These standards are divided to 2 section are “Patient Center Standards” and “Health Care Organization Management Standards” to make it easier to understand(42).The comparison of the OSHA and JCI standards are specify as follow.

Table 2.3 The six core elements of safety and health management system from OSHA and Joint Commission (42)

Safety and health management system	Joint commission requirement
Safety and health management system, OSHA directive No. CSP-03-01-003, Chapter III Requirements for star, merit, resident contractor, construction industry, and federal agency worksites	The relevant to safety and health management system are indicated in Section II: Health Care Organization Management Standards include Governance, Leadership, and Direction (GLD), Staff Qualification and Education (SQE), Facility Management and Safety (FMS), Prevention and Control of Infection (PCI), Management of Communication and Information (MCI), and Quality Improvement and Patient Safety (QPS)
Management Leadership - Manage establishes safety policy and statement of commitment to safety and health, and communicates to employees - Management provide adequate resource - management integrates safety and health into organization planning - Management set up line of communication with employees, and employees can access to top management - Management conducts an annual evaluation of the safety and health management system to maintain the effectiveness of the safety system and knowledge	**Governance, Leadership, and Direction (GLD)** This standard targets at encouraging healthcare organization to provide high quality healthcare services to the community with clearly written work plan. Collaboration among high level management and other operational managers is essential which are consistent with the mission statement, have to be approved by leading management team and passed on to operational managers for effective implementation. The subsequent practices have to be consistent with the existing legislations and regulations. Sufficient resources dedication including human resources and financial resources are required. And the leaders establish priority for performance improvement.

Table 2.3 The six core elements of safety and health management system from OSHA and Joint Commission (42) (cont.)

Safety and health management system	Joint commission requirement
Worksite analysis - A hazard analyses of routine jobs, task is conducted. - A hazard analysis of any changes such as new process, materials, equipment, and facilities is conduct. - A pre-use analysis is conducted when new equipment, chemicals, facilities or procedure changes and hazard analysis performed are documented.	**Facility Management and Safety (FMS)** - The hospital develops and maintains a written program describing the process to manage risk to patients, families, and staff - The standard concern mainly with the hospital identifies safety and security risk associated with the environment of care that could affect patient, staff. - The hospital conducts a hazard vulnerability analysis to identify potential emergencies that could affect demand of hospital service. - The hospital has availability and appropriate setup of necessary safety and supportive facilities for patient, family and employee. **Quality Improvement and Patient Safety (QPS)** - The hospital is complete implementation of risk management and quality improvement systems. With proper establishment, these systems will effectively reduce the risk of patient and employee from both clinical and physical environments. It also requires continuous monitoring using appropriate indicators. Improvement will be achieved through processes of risk identification and progressive risk mitigation using the carefully collected and analyzed information. This information can be applied for operational improvement to reduce resource requirement and increase safety.

Table 2.3 The six core elements of safety and health management system from OSHA and Joint Commission (42) (cont.)

Safety and health management system	Joint commission requirement
Employee involvement - Employees are trained for the jobs - Employees receive feedback of performance - All employees, new hires are informed about safety and health management system	**Staff Qualification and Education (SQE)** Precise qualification requirement of human resources for each department should be clearly stated, and the qualified personnel should be recruited accordingly to fill in these positions. The hospital orients staff on the following: hospital wide and unit policies, specific job duties, including infection prevention and control, fall reduction activities.
Hazard prevention and control - Types of hazards employees are exposed to, and determining strategy of hazard prevention and control - The organization complies with any hazard control program required by OSHA standard such as PPE, respiratory protection, process safety management, or blood borne pathogens	**Prevention and Control of Infection (PCI)** - The hospital establishes active monitoring and preventive systems for infection control in hospitals. This includes detection of potential infection risk, and reduces the risk of infection and dispersion among healthcare personnel, patient, and family. The employed procedures depend on the geographical characteristics, patient characteristics, and medical treatment applied. Infection control system has to be tailored to suit the readiness of the healthcare organization, and should be integrated into the organizational structure.

Table 2.3 The six core elements of safety and health management system from OSHA and Joint Commission (42) (cont.)

Safety and health management system	Joint commission requirement
Safety and health training - Training is provided; all employees are knowledgeable of the hazards in the work place and safe work procedure. - New employee orientation of hazards at worksite, protective measure, emergency plan - Training is provided for all employees regarding their responsibilities for each type of emergency - Employees understand how to use personal protective equipment	**Facility Management and Safety (FMS)** - The hospital uses a hazard vulnerability analysis to identify potential emergencies and defining imitation activities to reduce the risk of potential damage **Staff Qualification and Education (SQE)** - The hospital orients staff on the following: hospital wide and unit policies, specific job duties, including infection prevention and control, fall reduction activities. **Facility Management and Safety (FMS)** - Disaster preparedness: Organization should implement emergency plan in case of adverse events such as epidemic and natural disasters. - Hazardous material: Proper storage and transfer of hazardous material such as radioactive substances and risky material have to be managed by healthcare organization. This also includes hazardous waste management to ensure that these wastes are appropriately treated. **Prevention and Control of Infection (PCI)** - The hospital establish standard precautions including the use of personal protective equipment, to reduce the risk of infection

Table 2.3 The six core elements of safety and health management system from OSHA and Joint Commission (42) (cont.)

Safety and health management system	Joint commission requirement
Annual evaluation - A system and written procedures are in place to guide an annual evaluation of the safety and health management system. - The evaluation covers all elements of the safety and health management system and identifies the strengths, weaknesses and opportunity for improvement.	**Governance, Leadership, and Direction (GLD)** - The leaders establish priority for performance improvement. **Facility Management and Safety (FMS)** - The hospital develops and maintains a written program describing the process to manage risk to patients, families, and staff. - The hospital has a process to review and to update the program when changes in the hospital's environment occur or at a minimum on annual basis.

2.5 Working condition in intensive care unit (37,38,39,40)

Intensive care unit is a unique department in healthcare organization. It provides critical medication for necessary patients. Several hospitals have different medical units separated according to the type of medications, and the critical medication unit is as well separated. Intensive care unit normally includes complex medical equipment for life saving purpose such as mechanical ventilator, electrocardiogram monitor, gastric tube, suction, drain, catheter, and other medication for tranquillizing, suspending pain, and anti-infection. Increase in patient attendant is associated with lower death rate; an appropriate ratio of patient to medical staff should be 2:1. This ratio is different from those found in normal care unit, which is about 4:1 to 5:1. In the case of severe patient the ratio may become 1:1 depending on the severity of the patient. In intensive care unit need to work as multidisciplinary team include intensives, emergency medicine, physical therapist, pharmacist, nutritionist

and other, effective communication between provider team make continuity of care that reflect to patient better outcomes. Although the occupational hazards in intensive care unit, the health and safety risk include exposed to infectious disease due to direct contact with patients, injured by sharp objects, burn of faulty electric equipment, suffer from musculoskeletal problems resulting from handling of larger patients, and suffer from stress and burnout caused by shift and night work, and by other psychological Roger A E et al.,(2008)(37,38,39) reported nurses who work more than 12.5 hours do more opportunities for mistakes, and incident rate in the unit is increased. The nurses who worked more than 40 hours in a week, was associated increase opportunity of making an error. Otherwise critical care nurses who worked 12 hours or more had 1.87 percent risk of sleep on their drive home from work. According to the report of National Institute of Occupational Safety and Health(41)noted working more than 40 hours for week can have health adverse effect such as increased musculoskeletal injuries(40), cardiovascular disease, hypertension, and higher risk of injury. In additional working condition, organization management factors, ineffective communication, and lack of occupation safety support have been implicated as cause of error.

2.6 Literature reviews

Vries et al.,(2007)(3) investigated the adverse incident in hospitals and studied the occurrence and cause of these events. Using the method employed by Embrace, Cochrane, and Medline, the study found out that adverse incident accounted for 9.2 percent of which 43.5 percent were preventable. Moreover, 56.3 percent of these adverse events were first time occurrence with only limited effects to patient, whereas 7.4 resulted as severe cases causing death event. From these severe cases, 39.6 percent occurred in operation and 15.1 percent were detected in medication error.

Shaw et al.,(2005)(4) studied accident and near miss accident that were reported into the National Healthcare System to determine certain factors of accident occurred in England. These factors include demographical information such as sex and age, number of accident, date and time, location, and results. The study found that 41

percent of total accidents were resulted from falling and slipping, 9 percent from medication error, 8 percent from improper uses of medical equipment, and 7 percent from mis-treatment. As for the location of the incidents, highest frequency was observed in general ward, which is accounting for 66 percent of all incident. Subsequently, incidents occurred in operating room, outpatient ward, emergency room, and intensive care unit are accounted for 6.1, 4.8, 4.5, and 3 percent, respectively.

Hala et al.,(2011)(6) has measured the attitude toward safety culture of healthcare staffs in intensive care unit using SAQ. The SAQ was developed by Texas University, and measured 6 different dimensions of safety culture including team work climate, safety climate, job satisfaction, perception of management, stress recognition, and work condition. The study classified the results based on different department in healthcare organization, and found that department with the highest safety culture attitude is intensive care department followed by cardiac care department, and general ward. The lowest safety culture score was observed in perception of management dimension. Furthermore, when comparing technical nurse and specialist nurse, higher safety culture scores was observed from technical nurse.

Isitri et al.,(2007)(9) study the safety attitude of healthcare personnel working in outpatient ward of 409 medical schools in Texas, USA. The study period ranges from February to March in 2003 using SAQ. Results indicated different attitude toward safety in various work functions. Higher attitude scores in team work climate, job satisfaction, perception of management, and work condition, were detected in managerial positions. Interestingly, safety attitude scores in all dimensions were relatively low in the case of physicists.

A thorough literature review of studies employing psychological questionnaires was prepared by Colla et al.,(2005)(12). The characteristics as well as the suitability of each type of questionnaire were determined. In this review, all of the included studies implemented Likert’s scales as the attitude measurement. Most of these studies determined attitude toward 5 dimensions including managerial direction, operating policy, human resource management, communication, and error reporting. Two types of questionnaires allowed for comparison between organizations. Safety Attitudes Questionnaire-SAQ and Safety Climate Survey-SCS compared healthcare

organization with commercial airline, whereas Patient Safety Culture in Healthcare Organizations Survey-PSCHO compared healthcare with shipping business. However, only SAQ allowed comparison between safety climate and outcomes. The introduced outcomes were number of accidents, length of stay, mis-prescription, infection from aspirator, intravenous line infection, and patient death rate.

Nuckols et al.,(2007)(14) focused on adverse events occurred in medical schools and local hospitals by randomly sampling the incident from medical records. The rate and characteristic of the event was determined. The findings suggested that 9 percent of the patient faced at least 1 adverse accident with the rate of 17 times over 1000 days of stay. Most frequent accident was medical error (29 percent) followed by operational error (15 percent) and patient falling (14 percent). Out of these events, 59 percent of them were preventable. Among the preventable incidents, 43 percent associated with nurses, 16 percent associated with physicists, and 19 percent related to other staffs.

The effect of executive walks round in medical ward on nurse's safety attitude was investigated by Thomas et al.,(2005)(15). In the study, high level management visited the ward 3 times in every 4 weeks. During these visits, nurses were given chances to discuss and query about patient safety. The study indicated that nurse participating with the discussion exhibited positive attitude over safety culture comparing to nurse that did not participate. (81.01 scores versus 74.88, p=0.025)

Lee WC et al.,(2010)(16) Safety culture of medical staffs from 200 hospitals in Taiwan was evaluated. The research applied Safety attitude questionnaires to measure attitude of healthcare staffs. Positive attitude toward safety culture was observed in 48.9 percent of total staffs. Positive attitude to team work, perception of management, job satisfaction, safety climate, work condition were 45.20, 42.10, 37.20, 37.20, and 31.80, respectively. It was also found that difference of attitude was varied across organizations.

Sexton et al.,(2006)(17) investigated safety attitude of healthcare staffs from 203 healthcare organizations across 3 countries including USA, UK, and New Zealand. Employing attitude questionnaire, the study found different safety attitudes within the same organization and across organizations. The results also indicated correlation among team work, job satisfaction and perception of management. Other

significant correlations were detected between work condition and stress recognition and among stress recognition, perception of management, and work condition.

Singer et al.,(2003)(18) studies patient safety culture in 15 hospitals under the California Patient Safety Consortium. The samples included management, healthcare personnel, and general staffs. The obtained results indicated different patient safety culture awareness in different working positions. Within the same organization, the differences also associated with the job functions as well as working department.

Porn Boonme (2011)(20) investigated safety culture awareness and development from nurses attending academic conference. The results revealed that, in general, the participants had been working in hospital for more than 21 years with 6 to 10 years in current department. The average working hour was 40 to 59 hours a week, and 73.30 of the nurses were specialists. Also, 72.20 percent were servicing patients. From the samples, 96.70 percent works in accredited healthcare organization, and 76.70 exhibited high safety culture awareness. The frequency of report of mistake resulting in death of patient was 81.10. The patient with sufficient safety level under the department was 61.10 percent. High level of improving perception toward patient safety was observed among the samples.

Safety culture in operating room of Songklanagarind hospital was investigated by Aree Kaeothawee(2010)(24) using questionnaire to measure the attitude. The study suggested that overall attitude toward safety culture was moderate. As classified by job functions, physicist, nurse, and other staffs all exhibited moderate awareness to safety culture with the lowest score in work environment. In the case of nurse, the lowest attitude score was observed in perception of management. From further analysis of the results, the author detected different levels of attitude toward various dimensions of attitude. The difference of nurse and physicist attitudes was largest in safety climate, perception of management, and job satisfaction.

Safety culture awareness in Thai nurse was also elucidated by Ramoul N et al.,(2011)(25). The results indicated that overall perception on patient safety culture was relatively high. The awareness toward organizational safety and incident reporting were moderate. Finally, the safety culture awareness between nurse and managerial nurse were indifferent.

Ramanujam R et al.,(2007)(26)study the factors influencing nurse perception of hospital unit safety climate including nurse qualification, job position such as registered nurse, practical or vocational nurses, job employment such as full time or part time and experience years of working in hospital. The study result shown years of working in hospital had significantly positive relationship on safety perception on hospital unit (p<0.052). There were no significant relationships between degree of qualification, job position and type of job employment on perception of safety.

The perception of the safety climate of nursing working in teaching hospital was investigated by Rigobello MC et al.,(2012)(27) using Safety attitudes questionnaire(SAQ)-short form 2006 to measure the safety perception. The study suggested that there were difference safety culture result of each domain. As classified by gender, there was no significantly different level of safety culture between male or female. In case of job functions nurse manager had positive safety culture level than practical nurses and nursing assistants. And the nurses who had been working more than 21 years had better perception of safety climate than nurses who had less working years of experience.

Yinghui Wu et al.,(2013)(28) They used the Hospital survey on patient safety culture questionnaires(HSOPS) to determine the impact of nurse working hours on patient safety culture across national survey. The result presented nurses who working more than 60 hours per week had significantly lower score of patient safety perception and also mean score of teamwork within unit. Patient safety culture level was low and the number of incidents reported was increase when nurses working long period. Among the safety culture sub-domains shown long working hours had impacts on staffing and teamwork within units in study population.

Tomas-Hawkins , Flynn L.,(2013)(29) study nurse staffing and workload, dialysis environment and safety culture in outpatient hemodialysis facilities by using Hospital patient safety survey of the Agency for Healthcare Research and Quality's (AHRQ) to investigated the safety culture. The study result found higher nurse workloads was related to negative rating of work environment also increase of odds ratio of negative level of overall safety in the unit. Finding from this study indicate

that staffing, nurse workload and a work environment are important for a positive safety culture in units.

From literature Jones K, Skinner AM et al.,(2013)(30) they evaluated the impact of a year-long term training program on perception of safety culture in 24 hospitals. The result showed the respondents who receiving team training had significantly positive safety culture score higher than static group and team training can improve and result in transformation change in safety culture among staff in the organization when the work environment supports.

Rogers A E.(2008)(37) study about the effects of fatigue and sleepiness on nurse performance, the result shown that the nurse who work longer than 12 hours or work more than 70 hours per week are get risk of health problem such as cardiovascular disease, hypertension and higher risk of injury. And the nurse who not enough hours of sleep are gets risk of accident if they drive home when they are drowsy. Administrator should properly manage of working schedule and encourages nurse to work long hours take adequate sleep.

Scott L, Rogers A, Hwang WT, et al.(2006)(38) study effects of critical care nurse work hours on vigilance of critical care nurses in the United States. The study result found the respondents worked longer than schedule and for overtime. Longer work hour increase the risk of error. Finding from this study indicate that should be limiting nurse work hours to no more than 12 hours to ensure that patient are safe, and also nurses.

Dembe A E, Erickson J B, Delbos R G, Banks S M.(2005)(39) they study the impact of overtime and long work hours on occupational injuries and illness. The result presented the nurse who working in jobs with overtime had 61% higher rate when compare to jobs without overtime. Working 60 hours per week or higher was associated with 23% increased hazard rate and injury rate are associated to the number of hours per day and per week. The study recommended strategies to prevent work injuries should be changes in work schedule, and promote health protecting programs for worker who work overtime and extended hours.

CHAPTER III
MATERIALS AND METHODS

3.1 Study design

A cross sectional study design was applied. It aims to determine the attitudes on safety culture level of intensive care unit nurses at private tertiary hospitals located in Bangkok, Chonburi and Phuket province. A Thai version of Safety attitude questionnaires (SAQ) was distributed across three private tertiary hospitals. Research, Faculty of Public Health, Mahidol University, with the certified code ID. MUPH 2014-208.

3.2 Population and Sample

The accessible population of this study was 262 ICU nurses from three selected hospitals located in Bangkok, Chonburi and Phuket province. Private hospitals were selected as the tertiary care hospitals and certified hospital standard by Joint Commission International. The Safety attitude questionnaires ICU version was performed in ten ICUs were medical/ surgery intensive care unit, neurology intensive care unit, medical cardiac unit, and surgical cardiac care unit.

This study included all nurses who working in ICUs during a 2 month period from December 2014 to January 2015. The nurses who take vacation, training leave, maternal leave, and sick leave during study period were excluded from sample size.

3.3 Tool and Instrument for data collection

3.3.1 The Safety attitude questionnaires ICU version

The original Safety attitude questionnaires ICU version form is a questionnaire with 64 items comprising six dimensions. The dimensions are team work climate, safety climate, stress recognition, working conditions, job satisfaction, and perception of management. Team work climate referred to the perception of collaboration between staffs. Safety climate describe a proactive organization commitment to safety. Stress recognition describes an acknowledgement of how performance is influence by stressor. Working conditions means that perceiving the quality of work environment, staffing, equipment, and logistic support. Job satisfaction means that a positively about the work experience. Finally perception of management is considered as approval of managerial action. Respondents answer on a 5 point Likert's scale as 1= disagree strongly, 2= disagree slightly, 3= neutral, 4= agree slightly, and 5=agree strongly.

3.2.1 Adaption of the Safety attitude questionnaires into Thai

The researcher obtained permission to translate and use the Safety attitude questionnaires-ICU version form in Thai by approved letter from The University of Texas at Houston – Memorial Hermann Center for Healthcare Quality and Safety Houston, Texas, USA. The researcher developed and modified the wording of questions to Thai. Additional ten socio-demographic, job characteristics and training participation questions was added into the form. The Safety attitude questionnaires-ICU Thai version divided into three parts;

3.2.1.1 Part I: The questionnaire for general characteristics

This questionnaire to assess the individual socio-demographic factors including sex, age, work experience in the current workplace, work experience in the current ICU, educational level, job position, working hour per week, number patient care in one shift, number the leader communicate about safety policy, and number safety training class that responder attended.

3.2.1.2 Part II: The questionnaire of six dimensions of safety culture

There is 64 Safety attitudes questionnaires for six safety culture dimensions including teamwork climate 19 Items, safety climate 15 items, stress recognition 11 items, job satisfaction 5 items, working conditions 8 items and perception of management 6 items. Items 12, 26, 41, 60, 61, 62, and 64 are negatively worded. Respondents answer on a 5 point Likert's scale as 1= disagree strongly, 2= disagree slightly, 3= neutral, 4= agree slightly, and 5= agree strongly. The safety attitude items are described as Table 3.1.

Table 3.1 Example of safety attitude question by dimensions (48)

Safety attitude dimension	Example of questionnaire	Is item reverse scored?
Teamwork climate	- It easy for personnel in this ICU to ask questions when there is something that they do not understand.	No
	- Nurse input is well received in this ICU.	No
	- Disagreements in this ICU are resolved appropriately.	No
	- The physicians and nurse here work together as a well-coordinated team.	No
	- I am frequency unable to express disagreement with staff physicians in this ICU.	Yes
	- Communication breakdowns which lead to delays in delivery of care are common.	Yes
	- Communication breakdowns which negatively affect patient care are common.	Yes
Safety climate	- The safety culture in this ICU makes it easy to learn from the errors of others.	No
	- I know the proper channels to direct questions regarding safety in this ICU.	No
	- I am encouraged by my colleagues to report any patient safety concerns I may have.	No

Table 3.1 Example of safety attitude question by dimensions (48) (cont.)

Safety attitude dimension	**Example of questionnaire**	**Is item reverse scored?**
Safety climate	- Personnel frequently disregard rules or guidelines e.g. hand-washing, sterile field that are established for this clinical areas.	Yes
	- I received appropriate feedback about my performance.	No
	- I may hesitate to use a reporting system for medical incidents because I am concerned about being identified.	Yes
	- I would feel safe being treated here as a patient.	No
	- In this ICU, it is difficult to discuss error.	Yes
	- Medication errors are handled appropriately in this ICU.	No
Stress recognition	- When my workload becomes excessive, my performance is impaired.	No
	- Fatigue impairs my performance during emergency situations e.g. emergency resuscitation.	No
	- I am more likely to make errors in tense or hostile situations.	No
	- I am less effective at work when fatigued.	No
	- During emergency situation e.g. emergency resuscitation, my performance is not affected by working with inexperienced or less capable personnel	Yes
Job satisfaction	- I like my job.	No
	- This hospital is a good place to work.	No
	- I am proud to work in this hospital.	No
	- Working in this hospital is like being part of a large family.	No
	- Moral in this ICU is high.	No
Working conditions	- All the necessary information for diagnostic and therapeutic decisions is routinely available to me.	No
	- This hospital constructively deals with problem physicians and employees.	No
	- Trainees in my discipline are adequately supervised.	No
	- This hospital dose a good job of training new personnel.	No

Table 3.1 Example of safety attitude question by dimensions (48) (cont.)

Safety attitude dimension	**Example of questionnaire**	**Is item reverse scored?**
Perception of management	- Hospital management does not knowingly compromise the safety of patients.	No
	- Hospital administration supports my daily efforts.	No
	- I am provided with adequate, timely information about events in the hospital that might affect my work.	No
	- The level of staffing in this ICU is sufficient to handle the number of patients.	No
	- A confidential reporting system that documents medical incidents is helpful for improvising patient safety.	No

3.2.1.3 Part III: The questionnaire of comment to improve safety in unit.

The question was asked about top five recommendations for improving safety in ICU that respondent working at.

3.2.2 Reliability and Validity

To establish content validity the Safety attitude questionnaires was adapted in Thai following modified principles adapted which involved a forward-backward translation technique, refinement process by three experts who had linguistic skills, knowledge of terminology, and clinical work experience in hospital. To established validity of SAQ ICU Thai version, the 30 respondents of the pilot study were asked to complete the questionnaire and using Cronbach's alpha to confirmed internal consistency. In the present study, the Cronbach's alpha coefficient of the scale was 0.92.

3.4 Procedure and data collection

This study was approved by Research, Faculty of Public Health, Mahidol University, with the certified code ID. MUPH 2014-208 and approved permission to

collect research data by each hospital director before the beginning of conducting research.

3.4.1 Step 1 Preparation phase

The researcher obtained permission to translate and use the Safety attitude questionnaires -ICU version form in Thai developed and modified the wording of questions to Thai. This step aims to develop Safety attitude questionnaires - ICU Thai version which compatible with job characteristic and Thai cultural. To establish content validity the Safety attitude questionnaires was adapted in Thai following modified principles adapted which involved a forward-backward translation technique, refinement process by three experts who had linguistic skills, knowledge of terminology, and clinical work experience in hospital. To established validity of Safety attitude questionnaires ICU Thai version, the 30 respondents of the pilot study were asked to complete the questionnaire and using Cronbach's alpha to confirmed internal consistency.

3.4.2 Step 2 Operation phase: using self-administration questionnaire

3.4.2.1 The researcher obtained permission to collect research data from each hospital director after permission letter was approved a Head of department was informed by the researcher and ensures uniformity in the data collection by following the study guidelines.

3.4.2.2 Informed consent was informed. Participants were informed about study objectives and benefits of the study. The participants were informed that participation was voluntary and anonymous, that all answer would be treated with confidentiality were supported through the following: no individual responses would be available to local management and no publication of their work areas, reporting results in form of aggregates and destroying the data in proper ways after the analysis is completed. Participants were given 4 weeks to answer the questionnaire. Each respondent completed the questionnaire at work unit, and the returned the questionnaire to the head of department. All questionnaires were sealed envelope and the returned to the researcher within February 2015.

3.5 Data Analysis

3.5.1 After completing the data collection, data were coded. Analysis data was done using statistical analysis form SPSS version 17 to utilize for data entry, statistical analysis and presentation of the results.

3.5.2 The descriptive statistic as well as frequency, mean, percentage, min, max and standard deviation were used to describe the respondent's socio-demographic, job characteristics and training participation in safety training factors.

3.5.3 Assessment of six dimensions of safety culture presented by minimum, maximum, mean percentage of positive attitude toward each Safety attitude questionnaires dimensions and uses standard deviations for quantitative variables.

Criteria considered a measure of the average SAQ score (6,20)

i. Mean average score 1.00-1.79 defined as very low attitude or disagree strongly

ii. Mean average score 1.80-2.59 defined as low attitude or disagree slightly

iii. Mean average score 2.60-3.39 defined as moderate attitude or neutral

iv. Mean average score 3.40-4.19 defined as high attitude or agree slightly

v. Mean average score 4.20-5.00 defined as very high attitude or agree strongly

3.5.4 The t- test were used to determine the different mean score between personal socio-demographic factors on the six dimensions of safety culture with statistical significance defined as $p < 0.05$.

3.5.5 The ANOVA test were used to determine the different mean score between independent variables have on the six dimensions of safety culture in a regression analysis with statistical significance defined as $p < 0.05$.

CHAPTER IV
RESULTS

This cross sectional study aims to determine the attitudes on safety culture level and each of the six safety attitudes of intensive care nurses in private tertiary hospital and to describe safety culture levels distribute by socio- demographics, work experience, job characteristics and participation in safety. And also benchmark safety culture levels across three selected hospitals. The selected hospitals were certified hospital standard by Joint commission international and located in Bangkok, Chonburi and Phuket province.

During the study period data were collected from 262 ICU nurses from three selected private hospitals. The ICU-SAQ Thai versions were returned 197 questionnaires, with response rate 75 percent. Data were excluded and missing including one training leave, three maternal leave, sixteen consent forms was not completed, and forty nine ICU nurses denied to joint in the study. The overall response rate was ranging from 61 percent to 91 percent. The ICU-SAQ Thai version from Bangkok hospital Phuket (BPK) were returned 41 of 45 questionnaires, with highest response rate 91 percent follow by Bangkok hospital (BGH) were returned 120 of 162 questionnaires, with response rate 75 percent, and Bangkok hospital Pattaya (BPH) were returned 36 of 59 questionnaires, with response rate 61 percent.

The results of this study are presented in this chapter divided in to seven parts as;

4.1 Socio demographic characteristics

4.2 Attitude of safety culture among ICU nurses

4.3 Six safety culture dimensions distributed by personal socio demographics, job characteristics and organization safety management

4.4 Attitude of safety culture dimensions scores across hospital setting

4.5 Attitude of safety culture dimensions scores across units

4.6 Relationship among six dimensions of safety culture

4.7 Top five recommendations for improving safety culture in hospital

4.1 Socio demographic characteristics

The Socio demographic characteristics of the respondents including sex, age, work experience, job characteristics, job position, responsibility and participation in safety activity were describe in Table 4-1.

Most of respondents were female 93.9 percent, male 6.1 percent, common age between 25 to 34 years (64%). Considering the years of work experience in the current workplace were varies that experience less than 2 years was 28.6%, 2 - 5 years was 28.4%, 6 - 10 years was 17.3% and more than 10 years was 25.5%. When considering of work experience in the current units found that 33.5% of respondents had work experience 2 - 5 years follow by less than 2 years was 28.9%, 6 - 10 years was 15.7% and more than 10 years was 21.8%. Educational level, 93.9% were graduated with Bachelor's and Master's degree was 6.7%. According to job position, responsibility and working hour per week, the result shown 74.2% of respondents was member nurse, incharge nurse was 19.9% and head of department was 5.9%, their work 50 - 59 hours per week was 35.6%, work 40 - 49 hours per week was 33.0% and more than 60 hours per week was 28.4%. The responsibility for take care of patients in one shift shown 69.4% had 2 cases follow by one case was 10.4% and three cases was 10.4% and more than 3 cases were 9.8%. The respondents were informed about safety policy from leadership one time in past 12 months was 29.9%, 2 - 3 times were 42.8%, more than 3 times was 23.2% and never informed was 4.1%. The respondents were participate in safety training 2 - 3 times was 46.4% follow by one time was 40.7%, more than 3 times was 11.9%, and never participate in safety training was 1.0%.

Table 4.1 Socio demographic characteristics of the respondents

Socio demographic characteristics	BGH n (%)	BPH n (%)	BPK n (%)	Total n (%)
Gender				
Male	10 (8.0)	2 (6.0)	0 (0)	12 (6.0)
Female	110(92.0)	34 (94.0)	41 (100)	185(94.0)
Age (years)				
20 - 24	15 (12.5)	8 (22.2)	8 (19.5)	31 (15.7)
25 - 34	80 (66.7)	24 (66.7)	22 (53.7)	126(64.0)
≥ 35	25 (20.8)	4 (11.1)	11 (26.8)	40 (20.3)
Work experience in the current workplace (years) (n=196)				
< 2	35 (29.2)	9 (25.7)	12 (23.9)	56 (28.6)
2 - 5	30 (25.0)	12 (34.3)	14 (34.1)	56 (28.6)
6 - 10	17 (14.2)	10 (28.6)	7 (17.1)	34 (17.3)
> 10	38 (31.7)	4 (11.4)	8 (19.5)	50 (25.5)
Work experience in the current unit (years)				
< 2	36 (30.0)	10 (27.8)	11 (26.8)	57 (28.9)
2 - 5	35 (29.2)	16 (44.4)	15 (36.6)	66 (33.5)
6 - 10	15 (12.5)	8 (22.2)	8 (19.5)	31 (15.7)
> 10	34 (38.3)	2 (5.6)	7 (17.1)	43 (21.8)
Educational level (n=195)				
Bachelor's degree	109(91.6)	35 (97.2)	38 (95.0)	182(93.9)
Master's degree	10 (8.4)	1 (2.8)	2 (5.0)	13 (6.7)
Job position (n=186)				
Head of department/ deputy	7 (6.1)	2 (5.9)	2 (5.3)	11 (5.9)
Incharge nurse	26 (22.8)	7 (20.6)	4 (10.5)	37 (19.9)
Member nurse	81 (71.1)	25 (73.5)	32 (84.2)	138(74.2)

Table 4.1 Socio demographic characteristics of the respondents (cont.)

Socio demographic characteristics	BGH n (%)	BPH n (%)	BPK n (%)	Total n (%)
Working hour per week (hours) (n=194)				
< 40	4 (3.3)	1 (2.8)	1 (2.5)	6 (3.1)
40 - 49	40 (33.9)	15 (41.7)	9 (22.5)	64 (33.0)
50 - 59	40 (33.3)	11 (30.6)	18 (45.0)	69 (35.6)
≥ 60	34 (28.8)	9 (25.0)	12 (30.0)	55 (28.4)
Number patient care in one shift (cases) (n=193)				
1	6 (5.1)	7 (19.4)	7 (17.9)	20 (10.4)
2	91 (77.1)	18 (50.0)	25 (64.1)	134(69.4)
3	10 (8.5)	8 (22.2)	2 (5.1)	20 (10.4)
4	3 (2.5)	0 (0)	0 (0)	3 (1.6)
> 5	3 (2.5)	2 (5.6)	5 (12.8)	10 (5.1)
The leader informing about safety policy in past 12 months (times) (n=194)				
Never	5 (4.2)	1 (2.9)	2 (5.0)	8 (4.1)
1 time	34 (28.6)	6 (17.1)	18 (45.0)	58 (29.9)
2-3 times	49 (41.2)	18 (51.4)	16 (40.0)	83 (42.8)
> 3 times	31 (26.1)	10 (28.6)	4 (10.0)	45(23.2)
Participation in safety training in past 12 months (times) (n=194)				
Never	1 (0.8)	0 (0)	1 (2.5)	2 (1.0)
1 time	53 (44.9)	8 (22.2)	18 (45.0)	79 (40.7)
2-3 times	51 (43.2)	26 (72.2)	13 (32.5)	90 (46.4)
> 3 times	13 (11.0)	2 (5.6)	8 (20.0)	23 (11.9)

Abbreviations: BGH, Bangkok hospital; BPH, Bangkok hospital Pattaya; BPK, Bangkok hospital Phuket

4.2 Attitude of safety culture among ICU nurses

To assessed the attitudes on safety culture among ICU nurses. The researcher used ICU-Safety Attitude Questionnaire Thai version to collect the data. Each of the six dimensions was scored by the 5 point Likert's scale. Negative questionnaires were reverse scored and the higher score represent positive attitude. Data of each dimension were summarized and divided by the number of questionnaires in the scale then create a score scale that ranged from 1 to 5. Criteria considered a measure of the average Safety Attitude Questionnaire score describe as mean average score 1.00-1.79 defined as very low perception level or disagree strongly, mean average score 1.80-2.59 defined as low perception level or disagree slightly, mean average score 2.60-3.39 defined as moderate perception level or neutral, mean average score 3.40-4.19 defined as high perception level or agree slightly and mean average score 4.20-5.00 defined as very high perception level or agree strongly. The result of six dimensions of safety culture presented by minimum, maximum and means percentage of positive attitude of each SAQ dimensions were described in Table 4-2.

The overall mean score of attitude of safety culture of ICU nurses ranged from 2.63 to 4.36 with a mean of high perception 3.67 $\pm$ 0.29. Most of the attitudes on safety culture dimensions were perceived at a high perception level (3.30 to 3.95) except stress recognition dimension was perceived at a moderate perception level, 3.30 $\pm$ 0.50. Regarding, working condition was perceived at a highest mean score was 3.95 $\pm$ 0.43, follow by job satisfaction was 3.95 $\pm$ 0.50, teamwork climate dimension was 3.86 $\pm$ 0.39, safety climate was 3.72 $\pm$ 0.40, and perception of management was 3.57 $\pm$ 0.49.

Table 4.2 Six dimensions of safety culture among ICU nurses

Safety culture dimensions	**Respondents (n=197)**			
	$\overline{X} \pm$ **SD**	**Min**	**Max**	**Attitude level**
Teamwork climate	3.86 $\pm$ 0.39	2.68	4.89	high
Safety climate	3.72 $\pm$ 0.40	1.73	4.87	high
Stress recognition	3.30 $\pm$ 0.50	2.00	4.82	moderate

Table 4.2 Six dimensions of safety culture among ICU nurses (cont.)

Safety culture dimensions	Respondents (n=197)			
	$\overline{X} \pm SD$	Min	Max	Attitude level
Job satisfaction	3.95 ± 0.50	2.80	5.00	high
Working condition	3.95 ± 0.43	2.75	5.00	high
Perception of management	3.57 ± 0.49	2.33	4.83	high
Overall safety culture dimensions	3.67 ± 0.29	2.63	4.36	high

4.3 Six safety culture dimensions distributed by personal socio demographics, job characteristics and organization safety management

4.3.1 Six safety culture dimensions distributed by socio demographics

Table 4-3 presented the nurses' safety culture dimensions describe by socio demographics include gender, age and educational level. The result shown male have overall mean score more than female, 3.76 ± 0.32 and 3.66 ± 0.29 and also all six dimensions of safety culture. Nurse's age 25 - 34 years had a highest overall mean score of attitudes level was 3.69 ± 0.26 follow by age ≥ 35 years (3.64 ± 0.33), and age 20 - 24 years (3.60 ± 0.33). The nurses who graduated Master's degree had safety culture attitude more than who gradated Bachelor's degree (3.71 ± 0.31 and 3.66 ± 0.29) but the difference level of attitudes of six safety culture dimensions that distribute by gender, age and educational did not significant.

Table 4.3 Six safety culture dimensions distributed by Socio demographic characteristics

Socio demographic	Teamwork climate	Safety climate	Stress recognition	Job satisfaction	Working condition	Perception of management	Overall mean
				Mean (SD)			
Gender							
Male	3.99	3.86	3.30	3.97	4.06	3.58	3.76
	(0.42)	(0.41)	(0.48)	(0.68)	(0.38)	(0.63)	(0.32)
Female	3.85	3.72	3.30	3.95	3.94	3.57	3.66
	(0.39)	(0.40)	(0.51)	(0.5)	(0.43)	(0.48)	(0.29)
t-test	1.205	1.251	-0.048	0.130	0.924	0.102	1.162
***p* -value**	0.230	0.213	0.961	0.896	0.375	0.919	0.247
Age (years)							
20 - 24	3.76	3.60	3.29	3.88	3.97	3.58	3.60
	(0.41)	(0.44)	(0.47)	(0.53)	(0.44)	(0.51)	(0.33)
25 - 34	3.88	3.77	3.32	3.95	3.97	3.58	3.69
	(0.38)	(0.36)	(0.49)	(0.49)	(0.41)	(0.46)	(0.26)
≥ 35	3.88	3.66	3.25	3.98	3.88	3.52	3.64
	(0.42)	(0.47)	(0.56)	(0.52)	(0.46)	(0.56)	(0.33)
F-test	1.177	2.804	0.282	0.337	0.699	0.247	1.319
***p* -value**	0.311	0.063	0.755	0.714	0.498	0.781	0.270
Education level (degree)							
Bachelor	3.86	3.72	3.30	3.94	3.94	3.56	3.66
	(0.39)	(0.39)	(0.50)	(0.49)	(0.43)	(0.49)	(0.29)
Master	3.90	3.77	3.24	3.98	4.13	3.57	3.71
	(0.41)	(0.48)	(0.53)	(0.69)	(0.39)	(0.45)	(0.31)
t-test	-0.421	-0.454	0.417	-0.279	-1.535	-0.189	-0.560
***p* -value**	0.674	0.651	0.677	0.781	0.126	0.850	0.576

The researcher used t- test to test for difference mean score of gender and education level, used ANOVA to test the difference mean score of age on attitude of safety culture dimensions.

* $p < 0.05$

4.3.2 Six safety culture dimensions distributed by work experience in the current workplace and units

Regarding to safety culture dimensions distributed by work experience described in Table 4-4.

4.3.2.1 In terms of work experience in the current workplace relationship to the attitudes of safety culture. The study result indicated nurses who had work experience more than 10 years perceived positive attitude of safety culture (3.71 $\pm$ 0.32) than other groups while nurses who work experience 2-5 years had perceived attitude of safety culture lower than other groups. The difference mean score of teamwork climate, safety climate, job satisfaction, working condition and overall mean score between works experiences in present hospital groups did not statistically significant.

i. Overall mean score of attitude of safety culture divided by work experience in the current workplace shown nurses who had experience more than 10 years had attitude score (3.71 $\pm$ 0.32) more than experience 6-10 years (3.70 $\pm$ 0.23), < 2 years (3.65 $\pm$ 0.31), and 2-5 years (3.64 $\pm$ 0.27).

ii. Teamwork climate was perceived at a highest mean score in nurses who had work experience more than 10 years (3.96 $\pm$ 0.40) follow by 6-10 years (3.89 $\pm$ 0.37), < 2 years (3.83 $\pm$ 0.42), and 2-5 years (3.79 $\pm$ 0.37).

iii. Safety climate was perceived at a highest mean score in nurses who had work experience more than 10 years (3.79 $\pm$ 0.50) follow by 6-10 years (3.76 $\pm$ 0.31), < 2 years (3.67 $\pm$ 0.42), and 2-5 years (3.67 $\pm$ 0.35).

iv. Stress recognition was perceived at a highest mean score in nurses who had work experience 2 - 5 years (3.40 $\pm$ 0.44) follow by < 2 years had moderate mean score was 3.33 $\pm$ 0.50, then 6-10 years (3.25 $\pm$ 0.08), and > 10 years (3.24 $\pm$ 0.56).

v. Job satisfaction was perceived at a highest mean score in nurses who had work experience 6-10 years (4.04 $\pm$ 0.46) follow by > 10 years (4.03 $\pm$ 0.51), < 2 years (3.94 $\pm$ 0.52), and 2 - 5 years (3.82 $\pm$ 0.49).

vi. Working condition was perceived at a highest mean score in nurses who had work experience 2-5 years (3.97 $\pm$ 0.39) follow by > 10 years (3.96 $\pm$ 0.46), 6-10 years (3.93 $\pm$ 0.40), and < 2 years (3.3 $\pm$ 0.44).

vii. Perception of management was perceived at a highest mean score in nurses who had work experience 6-10 years (3.71 ± 0.47) follow by < 2 years (3.59 ± 0.45), > 10 years (3.52 ± 0.59), and 2-5 14 years (3.51 ± 0.43).

4.3.2.2 In terms of work experience in the current unit was associated to the attitudes of safety culture. The study result indicated nurses who had work experience 2-5 years had a high positive attitude of safety culture mean score than other groups. The difference mean score of six safety culture dimensions and overall mean score between works experiences in the current unit did not statistically significant.

i. Overall mean score of attitude of safety culture divided by work experience in the current unit shown nurses who had experience 2-5 years had a highest attitude safety culture score was 3.68 ± 0.28 follow by experience 6-10 years (3.67 ± 0.23), > 10 years (3.67 ± 0.33), and < 2 years (3.64 ± 0.30).

ii. Teamwork climate was perceived at a highest mean score in nurses who had work experience more than 10 years (3.90 ± 0.39) follow by 2-5 years (3.86 ± 0.38), 6-10 years (3.85 ± 0.38), and <2 years (3.84 ± 0.42).

iii. Safety climate was perceived at a highest mean score in nurses who had work experience 6-10 years (3.77 ± 0.31) follow by 2-5 years (3.73 ± 0.38), > 10 years (3.71 ± 0.49), and < 2 years (3.67 ± 0.41).

iv. Stress recognition was perceived at a highest mean score of in nurses who had work experience 2-5 years (3.36 ± 0.45) follow by < 2 years (3.31 ± 0.49), > 10 years (3.26 ± 0.60), and 6-10 years (3.22 ± 0.50).

v. Job satisfaction was perceived at a highest mean score in nurses who had work experience 6-10 months (4.03 ± 0.49) follow by 6 months > 10 years (4.00 ± 0.50), < 2 years (3.93 ± 0.51), and 2-5 years (3.89 ± 0.52).

vi. Working condition was perceived at a highest mean score in nurses who had work experience 2-5 years (3.98 ± 0.39) follow by > 10 years (3.95 ± 0.43), < 2 years (3.93 ± 0.47), and 6-10 years (3.92 ± 0.44).

vii. Perception of management was perceived at a highest mean score in nurses who had work experience 6-10 years (3.63 ± 0.51) follow by 2-5 years (3.60 ± 0.46), < 2 years (3.57 ± 0.45), and who had work experience more than 10 years had the lowest mean score in this dimension was 3.48 ± 0.56.

Table 4.4 Six safety culture dimensions distributed by work experience

Work experience	Teamwork climate	Safety climate	Stress recognition	Job satisfaction	Working condition	Perception of management	Overall mean
				Mean (SD)			
Work experience in the current workplace (years)							
< 2	3.83	3.67	3.30	3.94	3.36	3.59	3.65
	(0.42)	(0.42)	(0.50)	(0.52)	(0.44)	(0.45)	(0.31)
2 -5	3.79	3.67	3.40	3.82	3.97	3.51	3.64
	(0.37)	(0.35)	(0.44)	(0.49)	(0.39)	(0.43)	(0.27)
6 - 10	3.89	3.76	3.25	4.04	3.93	3.71	3.70
	(0.37)	(0.31)	(0.08)	(0.46)	(0.40)	(0.47)	(0.23)
> 10	3.96	3.79	3.24	4.03	3.96	3.52	3.71
	(0.40)	(0.50)	(0.56)	(0.51)	(0.46)	(0.59)	(0.32)
F-test	1.781	1.056	1.163	2.164	0.060	1.320	0.696
***p* -value**	0.152	0.369	0.325	0.094	0.981	0.269	0.555
Work experience in the current unit (years)							
< 2	3.84	3.67	3.31	3.93	3.93	3.57	3.65
	(0.42)	(0.41)	(0.49)	(0.51)	(0.47)	(0.45)	(0.30)
2 - 5	3.86	3.73	3.36	3.89	3.98	3.60	3.68
	(0.38)	(0.38)	(0.45)	(0.52)	(0.39)	(0.46)	(0.28)
6 - 10	3.85	3.77	3.22	4.03	3.92	3.63	3.67
	(0.38)	(0.31)	(0.50)	(0.49)	(0.44)	(0.51)	(0.23)
> 10	3.90	3.71	3.26	4.00	3.95	3.48	3.67
	(0.39)	(0.49)	(0.60)	(0.50)	(0.43)	(0.56)	(0.33)
F-test	0.176	0.353	0.615	0.692	0.229	0.778	0.131
***p*-value**	0.913	0.787	0.606	0.558	0.876	0.508	0.942

The researcher used ANOVA to test the difference attitude of safety culture mean score of work experience on safety culture dimensions.

* $p < 0.05$

4.3.3 Six safety culture dimensions distributed by job characteristics

Regarding to safety culture dimensions distributed by job characteristics include job position, responsibility and work load described in Table 4-5.

4.3.3.1 Considering of job characteristics relationship to attitude of safety culture. The study result shown that head of department/ deputy had a high attitude mean score in all six safety culture dimensions. They had a highest mean score of perception of management (3.67 ± 0.33) when compare to other positions.

Incharge nurse had a highest mean score of attitude level of overall mean score (3.72 ± 0.32), job satisfaction (4.06 ± 0.53), teamwork climate (3.93 ± 0.47), overall mean score when compare with head of department and member nurse.

Member nurse had a highest mean score of attitude level of working condition (3.96 ± 0.41), and stress recognition (3.32 ± 0.48) when compare with head of department or incharge nurse whereas had the lowest attitude mean score of perception of management (3.54 ± 0.46).

However, the difference of attitude mean score of six safety culture dimensions between job positions did not statistically significant.

4.3.3.2 The impact of working hour per week to attitude of safety culture indicated nurse who working less than 30 hours per week had a positive attitude of stress recognition (3.59 ± 0.06), working condition (4.19 ± 0.27), perception of management (3.75 ± 0.35) and strong agree of job satisfaction dimension than other groups but had lowest score of safety climate (3.53 ± 0.38), and teamwork climate (3.39 ± 0.26) than other. The nurse who working 40-49 hours had a highest score of overall mean score (3.73 ±0.29), teamwork climate (3.95 ± 0.37) , and safety climate (3.77±0.73) than other. Regarding to the nurse who working 30-39 hours they had a highest attitude mean score of job satisfaction (4.05 ± 0.66), teamwork climate (3.83 ± 0.52) and safety climate (3.73 ± 0.66) in the other hand they had a lowest positive attitude score of stress recognition (3.20 ± 0.42), working condition (3.84 ± 0.73) and perception of management (3.42 ± 0.42) than others while nurse working more than 60 hours had a lowest attitude of safety culture mean score of job satisfaction. Nurse who works 50 - 59 hours perceived the attitude mean score of six safety culture dimension in a high level divide as job satisfaction (3.92 ± 0.43), working condition (3.91 ± 0.36), teamwork climate (3.79 ±0.36), safety climate (3.69 ±0.44), perception of management (3.57 ± 0.44) and had the attitude of safety culture

in a moderate level of stress recognition (3.43 ± 0.48). The difference mean score of six safety culture dimensions between working hour per week did not statistically significant.

4.3.3.3 When considering the relationship of number of patient care per one shift to safety culture perception. The result shown as follow;

i. Overall mean score of attitude of safety culture divided by the number patients cared for per one shift shown nurses who provided patient care three cases per shift perceived at a highest attitude mean score of safety culture perception scores was 3.76 ± 0.21 when compare to provided patients care more than 5 cases per shift (3.70 ± 0.33), two cases (3.67 ± 0.28), 1 case (3.67 ± 0.29), 5 cases (3.54 ± 0.28), and 4 cases (3.19 ± 0.52). The difference positive attitude mean score of overall mean score of six safety culture dimensions between number of patients cared for per one shift was statistically significant (p=0.047).

ii. Teamwork climate was perceived at a highest mean score in nurses who provide patient care three cases per shift (4.02 ± 0.35) follow by provided patient care more than five cases (4.00 ± 0.50), one cases (3.87 ± 0.38), two cases (3.86 ± 0.38), five cases (3.66 ± 0.43), and the last one was the nurse who provided patient care 4 cases per shift perceived 3.12 ± 0.40. The difference mean score of team work climate dimensions between numbers patient care in one shift was statistically significant (p=0.004).

iii. Safety climate was perceived at a highest mean score in nurses who provided patient care more than five cases per shift (3.82 ± 0.39) follow by provided patient care three cases (3.77 ± 0.40), two cases (3.74 ± 0.37), one case (3.68 ± 0.42), five cases (3.60 ± 0.45), and the last one was the nurse who provided patient care 4 cases per shift perceived of team work climate in negative mean score or slightly disagree was 2.93 ± 1.07. The difference mean score of safety climate dimensions between number patient care in one shift was statistically significant (p=0.019).

iv. Stress recognition was perceived at a highest mean score in nurses who provided patient care five cases per shift (3.35± 0.28) follow by provided patient care two cases (3.33 ± 0.52), two cases (3.33 ± 0.52), more than five cases (3.28+0.28), three cases (3.33± 0.58), four cases (3.21 ± 0.38), and the last one was

the nurse who provided patient care one case per shift perceived the stress recognition 3.19 ± 0.44. The difference mean score of stress recognition dimensions between numbers of patient care in one shift was not statistically significant.

v. Job satisfaction was perceived at a highest mean score in nurses who provided patient care three cases per shift (4.15+0.49), follow by provided patient care one case (0.46± 0.44), four cases (4.00± 0.53), two cases (3.92+0.51), more than five cases (3.33+0.52), and the nurse who provided patient care 5 cases per shift perceived the stress recognition 3.77± 0.63. The difference mean score of job satisfaction dimension between numbers of patient care in one shift did not statistically significant.

vi. Working condition was perceived at a highest mean score in nurses who provided patient care one case per shift (4.03±0.28), follow by provided patient care three cases (4.01± 0.32), two cases (3.96± 0.44), more than five cases (3.82±0.62), five cases (3.79±0.32), and the nurse who provided patient care four cases per shift perceived the stress recognition (3.71± 0.66). The difference mean score of working dimension between numbers of patient care in one shift did not statistically significant.

vii. Perception of management was perceived as a highest mean score in nurse who provided patient care one case per shift (3.68 ± 0.37), follow by the nurse who provided patient care three case per shift (3.66 ± 0.45), two cases (3.57 ± 0.51), more than five cases (3.50 ± 0.50), five cases (3.28 ± 0.50), and four cases (3.22 ± 0.25). The differences mean score of perception of management dimension between number patient cares in one shift did not statistically significant.

Table 4.5 Six safety culture dimensions distributed by job position and responsibility

Job characteristic	Teamwork climate	Safety climate	Stress recognition	Job satisfaction	Working condition	Perception of management	Overall mean
				Mean (SD)			
Job position							
Head of department	3.81 (0.30)	3.59 (0.31)	3.31 (0.54)	3.87 (0.46)	3.88 (0.37)	3.67 (0.57)	3.63 (0.33)
Incharge nurse	3.93 (0.47)	3.83 (0.48)	3.23 (0.54)	4.06 (0.53)	3.96 (0.49)	3.62 (0.60)	3.72 (0.32)
Member nurse	3.84 (0.38)	3.69 (0.39)	3.32 (0.48)	3.91 (0.51)	3.96 (0.41)	3.54 (0.46)	3.65 (0.28)
F-test	0.917	2.111	0.512	1.306	0.205	0.737	0.959
***p*-value**	0.402	0.124	0.600	0.273	0.815	0.480	0.385
Working hour per week (hours)							
< 30	3.39 (0.26)	3.53 (0.38)	3.59 (0.06)	4.30 (0.42)	4.19 (0.27)	3.75 (0.35)	3.61 (0.07)
30 - 39	3.83 (0.52)	3.73 (0.66)	3.20 (0.42)	4.05 (0.66)	3.84 (0.37)	3.42 (0.42)	3.64 (0.29)
40 - 49	3.95 (0.37)	3.77 (0.37)	3.34 (0.53)	4.04 (0.51)	3.99 (0.49)	3.63 (0.51)	3.73 (0.29)
50 - 59	3.79 (0.36)	3.69 (0.44)	3.31 (0.48)	3.92 (0.43)	3.91 (0.36)	3.57 (0.44)	3.64 (0.28)
≥ 60	3.87 (0.44)	3.71 (0.42)	3.25 (0.51)	3.88 (0.57)	3.96 (0.44)	3.52 (0.53)	3.65 (0.29)
F-test	2.100	0.432	0.421	1.202	0.456	0.533	1.068
***p*-value**	0.082	0.785	0.793	0.311	0.768	0.711	0.374

Table 4.5 Six safety culture dimensions distributed by job position and responsibility (cont.)

Job characteristic	Teamwork climate	Safety climate	Stress recognition	Job satisfaction	Working condition	Perception of management	Overall mean
				Mean (SD)			
Number of patient care in one shift (cases)							
1	3.87	3.68	3.19	4.06	4.03	3.68	3.67
	(0.38)	(0.42)	(0.44)	(0.44)	(0.28)	(0.37)	(0.29)
2	3.86	3.74	3.33	3.92	3.96	3.57	3.67
	(0.38)	(0.37)	(0.52)	(0.51)	(0.44)	(0.51)	(0.28)
3	4.02	3.77	3.28	4.15	4.01	3.66	3.76
	(0.35)	(0.40)	(0.58)	(0.49)	(0.32)	(0.45)	(0.21)
4	3.12	2.93	3.21	4.00	3.71	3.22	3.19
	(0.40)	(1.07)	(0.38)	(0.53)	(0.69)	(0.25)	(0.52)
5	3.66	3.60	3.35	3.77	3.79	3.28	3.54
	(0.43)	(0.45)	(0.28)	(0.63)	(0.32)	(0.50)	(0.28)
> 5	4.00	3.82	3.28	3.88	3.82	3.50	3.70
	(0.50)	(0.39)	(0.38)	(0.52)	(0.62)	(0.50)	(0.33)
F-test	3.546	2.774	0.313	1.085	0.756	1.111	2.292
***p*-value**	0.004*	0.019*	0.905	0.370	0.582	0.356	0.047*

The researcher used ANOVA to test the difference attitude of safety culture mean score of job position and responsibility on safety culture dimensions.

* $p < 0.05$

4.3.3.4 When considering the relationship of participation in safety activity to the attitudes of safety culture. The result shown overall attitude mean score of safety at a high level score and found that the nurse who was informed of safety policy from leader many times, the attitudes on safety culture mean score will be greater. However the difference mean score of overall attitude of safety culture between numbers of participate in safety activity did not statistically significant.

i. Teamwork climate attitude of safety culture mean score shown the nurse who participate or informed of safety policy from leader perceived

attitude of safety culture in a high level that divided as follow; the nurse who was informed of safety policy from leader more than 3 times in past 12 month had a highest overall mean score of teamwork climate (3.99 ± 0.46), follow by was informed 2-3 times (3.86 ± 0.38), one time (3.70±0.32), and never notified about safety policy (3.69 ± 0.49).

ii. Safety climate attitude of safety culture mean score shown the nurse who participated or informed of safety policy from leader more than 3 times perceived at a highest safety climate dimension (3.83 ± 0.47) than other follow by was informed 2-3 times (3.71±0.39), one time (3.69±0.34), and never be notified (3.47±0.41).

iii. Stress recognition was perceived at a highest attitude of safety culture mean score in the nurse who never notified safety policy from leader (3.45±0.46), follow by was informed more 3 times (3.30±0.53), one times (3.29±0.47), and 2-3 times (3.29±0.51).

iv. Job satisfaction was perceived at a highest attitude of safety culture mean score in the nurse who was informed of safety policy more than 3 times (4.07±0.57), follow by was informed 2-3 times (3.94±0.49), one time (3.93±0.41), and never notified (3.5 ± 0.62).

v. Working condition was perceived at a highest attitude of safety culture mean score in the nurse who was informed of safety policy more than 3 times (3.97 ± 0.53), follow by was informed 2-3 times (3.94±0.39), one time (3.93±0.38), and never notified (3.71 ± 0.39).

vi. Perception of management was perceived at a highest attitude of safety culture mean score in the nurse who had notified of safety policy more than 3 times (3.66 ± 0.49), follow by had notified one time (3.56 ± 0.47), 2-3 times (3.55 ± 0.49) and had never notified (3.25 ± 0.47).

4.3.3.5 Considering the relationship of participation in safety training to attitude of safety culture. The result shown overall mean score of safety perception of the nurse who participated in safety training many times, the safety culture perception mean score will be greater and the difference mean score of overall safety culture perception between numbers of participation in safety training was statistically significant ($p<0.05$).

i. Overall mean score of attitude of safety culture shown the nurse who participated in safety training perceived attitude of safety culture in a high level that divided as follow; the nurse who participated in safety training more than 3 times in past 12 month had highest overall mean score of safety culture (3.99 ± 0.47), follow by participated in safety training 2- 3 times (3.91 ± 0.38), one time (3.77 ± 0.35), and never participated in safety training (3.71 ± 0.40). The difference mean score of overall safety culture perception between the nurse who participated in safety training more than 3 times, and one time was statistically significant. (p=0.019)

ii. Teamwork climate shown the nurse who participated in safety training more than 3 times perceived at a highest teamwork climate dimension (3.83 ± 0.46) than others follow by participated in safety training 2-3 times (3.74 ± 0.43), one time (3.67±0.35), and never participated in safety training (3.40 ± 0.75). The differences mean score of teamwork climate perception between groups was statistically significant (p=0.039).

iii. Safety climate shown the nurse who participated in safety training more than three times perceived at a highest safety climate dimension (3.83 ± 0.46) than others follow by participated in safety training 2-3 times (3.74 ± 0.43), one time (3.67 ± 0.35), and never participated in safety training (3.40 ± 0.75). The difference mean score of safety climate perception between groups was not statistically significant.

iv. Stress recognition was perceived at a highest attitude of safety culture mean score in the nurse who participated in safety training more than three times (3.40± 0.54) follow by participated in safety training one time (3.30 ± 0.48), 2-3 times (3.28 ± 0.52), and never participated in safety training (3.27±0.51). The difference mean score of stress recognition perception between groups did not statistically significant.

v. Job satisfaction was perceived at a highest mean score in the nurse who participated in safety training more than three times (4.08 ± 0.66) follow by participated in safety training 2-3 times (4.02 ± 0.47), one time (3.83 ± 0.45) and never participated in safety training (3.80±0.28). The difference mean score of job satisfaction perception between the nurse who participated in safety training more than 3 times, 2-3 times and one time was statistically significant. (p=0.040)

vi. Working condition was perceived at a highest mean score in the nurse who participated in safety training more than 3 times perceived highest working condition dimension (4.12 ± 0.48) follow by participated in safety training 2 to 3 times (3.95±0.44), one time (3.89 ± 0.37) and never participated in safety training (3.56 ± 0.08). The difference mean score of working condition perception between groups did not statistically significant.

vii. Perception of management was perceived at a highest mean score in the nurse who participated in safety training more than three times (3.84 ± 0.44) than other follow by participated in safety training 2 to 3 times (3.57 ± 0.49), one time (3.50 ± 0.48) and never participated in safety training (3.33 ± 0.00). The differences mean score of perception of management between the nurse who participated in safety training more 3 time, 2 to 3 times and 1 time was statistically significant (p=0.029).

Table 4.6 Six safety culture dimensions distributed by participation in safety activity

Safety activity	Teamwork climate	Safety climate	Stress recognition	Job satisfaction	Working condition	Perception of management	Overall mean
				Mean (SD)			
Informed about safety policy from leader in past 12 months (times)							
Never	3.69 (0.49)	3.47 (0.41)	3.45 (0.46)	3.55 (0.62)	3.71 (0.39)	3.25 (0.47)	3.49 (0.38)
1	3.79 (0.32)	3.69 (0.34)	3.29 (0.47)	3.93 (0.41)	3.93 (0.38)	3.56 (0.47)	3.63 (0.24)
2-3	3.86 (0.38)	3.71 (0.39)	3.29 (0.51)	3.94 (0.49)	3.94 (0.39)	3.55 (0.49)	3.66 (0.27)
> 3	3.99 (0.46)	3.83 (0.47)	3.30 (0.53)	4.07 (0.57)	3.97 (0.53)	3.66 (0.49)	3.75 (0.33)
F-test	2.618	2.339	0.256	2.635	0.925	1.669	2.366
***p*-value**	0.052	0.075	0.875	0.051	0.430	0.175	0.072

Table 4.6 Six safety culture dimensions distributed by participation in safety activity (cont.)

Safety activity	Teamwork climate	Safety climate	Stress recognition	Job satisfaction	Working condition	Perception of management	Overall mean
				Mean (SD)			
Participation in safety training in past 12 months (times)							
Never	3.71 (0.40)	3.40 (0.75)	3.27 (0.51)	3.80 (0.28)	3.56 (0.08)	3.33 (0.00)	3.46 (0.27)
1	3.77 (0.35)	3.67 (0.35)	3.30 (0.48)	3.83 (0.45)	3.89 (0.37)	3.50 (0.48)	3.60 (0.25)
2-3	3.91 (0.38)	3.74 (0.43)	3.27 (0.51)	4.02 (0.47)	3.95 (0.44)	3.57 (0.49)	3.69 (0.03)
> 3	3.99 (0.47)	3.83 (0.46)	3.40 (0.54)	4.08 (0.66)	4.12 (0.48)	3.84 (0.44)	3.80 (0.35)
F-test	2.844	1.411	0.323	2.833	2.338	3.069	3.390
***p*-value**	0.039*	0.241	0.809	0.040*	0.075	0.029*	0.019*

The researcher used ANOVA to test the difference mean score of participation in safety activity on safety culture dimensions.

* $p < 0.05$

4.4 Attitude of safety culture dimensions scores across hospital setting

Across the hospital setting mean score of safety culture was varies. Considering the mean score of each dimension and presented by ranking the result shown in Table 4-7.

Overall mean score was perceived at a highest score of BGH (3.69±0.29) follow by BPH (3.63 ± 0.27) and BPK (3.60 ± 0.25). The result presented by dimension as follows; teamwork climate was perceived at a highest score in BPH (3.88 ± 0.37) then BGH (3.88 ± 0.40) and BPK (3.78 ± 0.36). Safety climate was perceived at a highest score in BGH (3.76 ± 0.41) then BPH (3.68 ± 0.43) and BPK (3.62 ± 0.33). Stress recognition was perceived at a highest score in BGH (3.34 ±

0.56) then BPK (3.31 ± 0.39) and BPH (3.14 ± 0.34). Job satisfaction was perceived at a highest score in BPH (4.06 ± 0.46) follow by BGH (3.96 ± 0.52) and BPK (3.79 ± 0.44). Working condition was perceived at a highest score in BGH (4.00 ± 0.44) then BPK (3.93 ± 0.36) and BPH (3.80 ± 0.39) while the difference mean score of working condition perception between BGH and BPH was statistically significant (p=0.041). Perception of management was perceived at a highest score in BPH (3.60 ± 0.50) follow by BGH (3.58 ± 0.50) and BPK (3.50 ± 0.43).

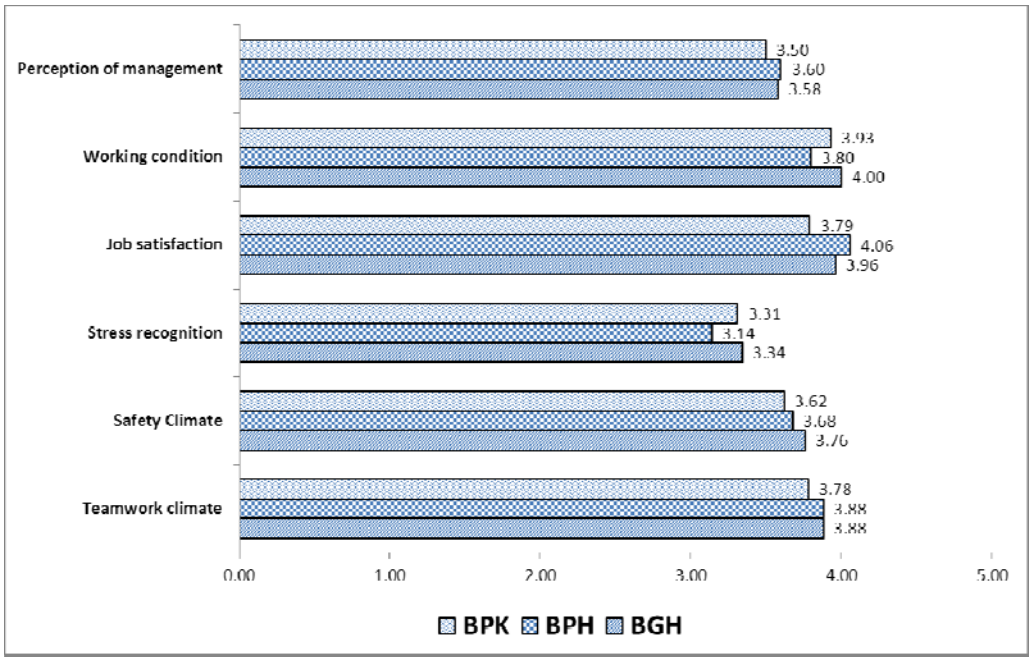


Figure 4.1 Six dimensions of safety culture scores across hospital setting

Table 4.7 Six dimensions of safety culture scores across hospital setting

Hospital	Teamwork climate	Safety climate	Stress recognition	Job satisfaction	Working condition	Perception of management	Overall mean
BGH (n=120)							
Mean	3.88 [2]	3.76 [1]	3.34 [1]	3.96 [2]	4.00* [1]	3.58 [2]	3.69 [1]
Min	2.68	1.73	2.00	2.80	2.75	2.33	2.63
Max	4.79	4.87	4.82	5.00	5.00	4.83	4.36
SD	0.40	0.41	0.56	0.52	0.44	0.50	0.29

Table 4.7 Six dimensions of safety culture scores across hospital setting

Hospital	Teamwork climate	Safety climate	Stress recognition	Job satisfaction	Working condition	Perception of management	Overall mean
BPH (n=36)							
Mean	3.88 [1]	3.68 [2]	3.14 [3]	4.06 [1]	3.80* [3]	3.60 [1]	3.63 [2]
Min	2.84	2.20	2.55	3.00	3.00	2.50	2.84
Max	4.53	4.47	3.91	4.80	4.63	4.83	4.09
SD	0.37	0.43	0.34	0.46	0.39	0.50	0.27
BPK (n=41)							
Mean	3.78 [3]	3.62 [3]	3.31 [2]	3.79 [3]	3.93 [2]	3.50 [3]	3.60 [3]
Min	3.00	2.87	2.27	3.00	3.13	2.50	2.97
Max	4.89	4.40	4.45	5.00	4.88	4.33	4.27
SD	0.36	0.33	0.39	0.44	0.36	0.43	0.25
F-test	1.041	1.800	2.221	3.005	3.245	0.502	2.057
***p*-value**	0.355	0.168	0.111	0.052	0.041*	0.606	0.13

Abbreviations: BGH, Bangkok hospital; BPH, Bangkok hospital Pattaya; BPK, Bangkok hospital Phuket.

1, 2, 3 ranking by mean score of attitude of safety culture dimension

The researcher used ANOVA to test the difference mean score on attitude of safety culture dimensions between hospitals.

* $p < 0.05$

4.5 Attitude of safety culture dimensions scores across units

Across the intensive care units mean score of attitude of safety culture was varies. Considering the mean score of each dimension and presented by ranking the result shown in Table 4-8.

Overall mean score of attitude of safety culture was perceived at a highest mean score of CCU Med/Surg of BGH (3.74$\pm$0.28) follow by CCU Med/Surg of BPH (3.71 $\pm$ 0.25) and CCU Med/Surg of BPK (3.67 $\pm$ 0.24). The result presented by dimension as follows;

Teamwork climate was perceived at a highest mean score in CCU Med/Surg of BPK (3.95 ± 0.38) then CCU Med/Surg of BGH (3.95 ± 0.39) and CCU Med/Surg of BPH (3.93 ± 0.31).

Safety climate attitude was perceived at a highest mean score in CCU Med/Surg of BGH (3.82 ± 0.42) then CCU Med/Surg of BPH (3.77 ± 0.37) and ICU Med/Surg of BGH (3.73 ± 0.40).

Stress recognition attitude was perceived at a highest mean score in CCU Med/Surg of BPK (3.34 ± 0.56) then ICU Med/Surg BGH (3.38 ± 0.57) and ICU Med/Surg BPK (3.24 ± 0.37).

Job satisfaction was perceived at a highest mean score in CCU Med/Surg of BPH (4.13 ± 0.52) follow by ICU Med/Surg of BPH (4.03 ± 0.44) and CCU Med/Surg of BGH (4.10 ± 0.47) and differences mean score of attitude of job satisfaction between units was statistically significant (p=0.047).

Working condition was perceived at a highest mean score in CCU Med/Surg of BGH (4.06 ± 0.37) then CCU Med/Surg of BPK (4.03 ± 0.34) and ICU Med/Surg of BPGH (3.97 ± 0.47).

Perception of management was perceived at a highest mean score in CCU Med/Surg of BPH (3.77 ± 0.49) follow by CCU Med/Surg of BPK (3.71 ± 0.25) and CCU Med/Surg of BPH (3.67 ± 0.24).

Table 4.8 Six safety culture dimensions scores across units

Hospital/ unit	Teamwork climate	Safety climate	Stress recognition	Job satisfaction	Working condition	Perception of management	Overall mean
				Mean Score (SD)			
BGH							
ICU Med/	3.85 [5]	3.73 [3]	3.38 [2]	3.90 [5]	3.97 [3]	3.56 [4]	3.67 [4]
Surg	(0.41)	(0.40)	(0.57)	(0.53)	(0.47)	(0.50)	(0.30)
CCU	3.95 [2]	3.82 [1]	3.24 [4]	4.10 [3]	4.06 [1]	3.62 [3]	3.74 [1]
Med/Surg	(0.39)	(0.42)	(0.52)	(0.47)	(0.37)	(0.48)	(0.28)

Table 4.8 Six safety culture dimensions scores across units (cont.)

Hospital/ unit	Teamwork climate	Safety climate	Stress recognition	Job satisfaction	Working condition	Perception of management	Overall mean
			Mean Score (SD)				
BPH							
ICU Med/ Surg	3.85 [4] (0.40)	3.64 [5] (0.46)	3.17 [5] (0.35)	4.03 [2] (0.44)	3.85 [5] (0.38)	3.52 [5] (0.49)	3.61 [5] (0.29)
CCU Med/Surg	3.93 [3] (0.31)	3.77 [2] (0.37)	3.09 [6] (0.32)	4.13 [1] (0.52)	3.69 [6] (0.41)	3.77 [1] (0.49)	3.67 [3] (0.24)
BPK							
ICU Med/ Surg	3.69 [6] (0.32)	3.61 [6] (0.36)	3.24 [3] (0.37)	3.74 [6] (0.43)	3.87 [4] (0.36)	3.43 [6] (0.40)	3.54 [6] (0.24)
CCU Med/Surg	3.95 [1] (0.38)	3.65 [4] (0.30)	3.44 [1] (0.42)	3.90 [4] (0.46)	4.03 [2] (0.34)	3.64 [2] (0.47)	3.71 [2] (0.25)
F-test	1.660	1.207	1.651	2.294	1.994	1.087	1.865
***p*-value**	0.146	0.307	0.148	0.047*	0.081	0.369	0.102

Abbreviations: BGH, Bangkok hospital; BPH, Bangkok hospital Pattaya; BPK, Bangkok hospital Phuket.

1, 2, 3 ranking by mean score of safety culture dimension

The researcher used ANOVA to test the difference mean score on attitude of safety culture dimensions between units.

* $p < 0.05$

4.6 Relationship among six safety culture dimensions

The six safety culture dimension correlations were studied by the degree of linear relationship between pairs of two safety dimensions. Pearson's correlation coefficient was shown in Table 4-9.

Pearson's correlations indicated significant strong positive relationships between teamwork climate with safety climate, job satisfaction, working condition and perception of management scale correlation coefficients ranged from 0.378 to 0.803 ($P<0.01$) while teamwork climate(-0.171, $p<0.05$), safety climate (-0.187, $p<0.01$) correlated negatively with stress recognition.

Table 4.9 Relationship among six safety culture dimension

Dimensions	Teamwork climate	Safety climate	Stress recognition	Job satisfaction	Working condition	Perception of management	Overall
Teamwork climate	1						
Safety climate	.803*	1					
Stress recognition	-.171*	-.187*	1				
Job satisfaction	.679*	.521*	-.058	1			
Working condition	.574*	.490*	.095	.536*	1		
Perception of management	.378*	.355*	.083	.603*	.508*	1	
Overall	.868*	.808*	.186*	.750*	.748*	.618*	1

*. Correlation is significant at the 0.05 level.

4.7 Top five recommendations for improving safety culture in hospital

When complete the questionnaire the respondents were asked to recommend for improving safety culture in their hospital. From 167 respondents they suggested 105 recommendations that summarized to top five recommendations were shown as follow

1) Executive management should be providing appropriate staffing.

2) Executive management should be support and enhance safety culture in organization by setting safety policies, executive walk round and monitoring compliance of policies.

3) Enhance teamwork climate in work place, support multidisciplinary team working and physician should be involved in working team.

4) Should be encouraged to report the errors. Do not penalties when report the errors and should learn to prevent recurrence of errors.

5) Enhance effective communication in hospital.

CHAPTER V
DISCUSSION

The research questions of this study were “What are the factors related to attitude of safety culture?” And “What is the level of attitude on safety culture among intensive care unit nurse?” The objectives of this study are to determine the relationship between socio-demographic factors, including gender, age, educational level and work experience and attitude of safety culture of ICU nurses at a private tertiary care hospital, the relationship between job characteristics factors including job position, number patient care in one shift, and working hour per week and attitude of safety culture of ICU nurses at a private tertiary care hospital, the relationship between the organization safety management factors including the leader informing about safety policy and safety training and attitude of safety culture of ICU nurses at a private tertiary care hospital. It also aimed to study the attitude of six safety culture dimensions including team work climate, safety climate, stress recognition, working condition, job satisfaction and perception of management of ICU nurses at private tertiary care hospitals located in Bangkok, Chonburi and Phuket province. This study presents the psychometric properties and cross hospital setting characteristics of the SAQ dimensions. The researcher examined the SAQ as a tool for assessment attitude of safety culture among ICU nurses, study impact of personal socio-demographic factors, job characteristics factors and organization safety management factors to level of positive attitude of safety culture and benchmarking performance assessment of safety attitude among ten ICUs. The result of this study was discussed as follows.

5.1 Discussion of study results.

5.1.1 Personal socio-demographic factors

Personal socio-demographic factors such as gender, age, educational level and work experience did not related to attitude of safety culture of ICU nurses at private tertiary care hospitals. It could be conclusion that personal socio-demographic factors did not relation to the attitude of safety culture. As from literatures reviewed the formulation of attitude indicated that the biographical history of each individual person factors such as place of birth, child development, age, social status determine the characteristics of a person, which in turn, establishes a person's attitude. However the study result presented the nurse who graduated Master's degree had attitude of safety culture mean score than Bachelor's degree. Although result study from Hala A et al. (2007)(6) indicated that nurse's perception for safety culture had relationship with educational level.

5.1.2 Job position factors

The incharge nurse had a highest attitude of teamwork climate, safety climate, job satisfaction and head of department had the lowest score. Maybe, because the incharge nurses work with the member nurse and team closely than head of department. In the other hand head of department had a positive of stress recognition score that represented more recognition of the effects of stress on the ability of a nurse to provide safe care than incharge nurse and member nurse. It is support by Singer et al.,(2003)(18) study shown the obtained results indicated different patient safety culture awareness in different working positions. Within the same organization, the differences also associated with the job functions as well as working department. However, this study result found no significant finding difference mean score between job positions with level of safety culture dimensions.

5.1.3 Work experience factors

There were difference of attitude of safety culture mean score level among work experience in the current workplace. The result presented safety culture dimensions mean score level increased when more year of work experience. Similar

results of Hala A et al. (2007)(6), Ramanujam et al. (2007)(26) and Maraya C et al. (2012)(27) were found the nurse professional who had been working for more years had attitude of safety climate domain than other groups. However, it is disagreement in this study that represented the nurse who had been working for less than 6 months showed grater score of teamwork climate, safety climate, job satisfaction, working condition, and perception of management than those who had been working for a long time. However, this study result found no significant finding difference mean score between work experiences in the current unit with level of attitude of safety culture.

5.1.4 Working hour per week factors

The working hour per week related to attitude of safety culture in many ways the result presented the nurse who working more than 60 hours per week had the lowest score of job satisfaction and had the lower score of perception of management than those working 40 to 49 hours, nurses working between 40 to 49 hours per week had the highest positive score of teamwork climate and safety climate, working less than 30 hours had the highest score of stress recognition, job satisfaction, working condition and perception of management because of they were young staff, in the first 90 days of work they are on training periods and also under senior supervision who take care of them and teaching them closely. On the job training and preceptor concept was conduct to train the young staff to be sure that they are follow the hospital policies and can perform optimally work effectively. In addition when working makes more hours, the mean score of safety culture was decrease. It agree with the study of Yinghui Wu et al.,(2013)(28). They used the Hospital survey on patient safety culture questionnaires (HSOPS) to determined the impact of nurse working hours on patient safety culture across national survey. The result presented nurses who working more than 60 hours per week had significantly lower score of patient safety perception and also mean score of teamwork within unit and also the study result from Rogers A E.(2008)(37) that study about the effects of fatigue and sleepiness on nurse performance, the result shown that the nurse who work longer than 12 hours or work more than 70 hours per week are get risk of health problem such as cardiovascular disease, hypertension and higher risk of injury. And the nurse who not enough hours of sleep are gets risk of accident if they drive home when they are drowsy.

Administrator should properly manage of working schedule and encourages nurse to work long hours take adequate sleep, however in this study found no significant finding difference mean score between working hours per week with level of safety culture dimensions.

5.1.5 Numbers of patient care factors

From the study result found significant difference of attitude of safety culture mean score between number patients cared. The result presented nurses who provided patient care less than 3 cases per one shift had the highest of attitude mean score of teamwork climate, and safety climate. And the level of attitude of safety culture decreased when more patients were cared for (p=0.047). It support by Thomas, Flynn L., (2013)(29) study that found a high nurse workloads was related to negative rating of work environment also increased of odds ratio of negative level of overall safety in the unit.

5.1.6 Organization management factors

5.1.6.1 The Leader informing about safety policy factors

Considered of the leader informing about safety policy result presented overall attitude of safety culture mean score was a high level and found that the nurse who was informed of safety policy from leader many times, the attitude of safety culture mean score will be greater. Safety policy communicated by the leader and executive commitment of safety in hospital were reflected attitude of safety culture. It support by study result of the effect of executive walks round in medical ward on nurse's safety attitude was investigated by Thomas et al. (2005)(15). In the study shown, the high management level visited the ward 3 times in every 4 weeks. During these visits, nurses were given chances to discuss and query about patient safety. The study indicated that nurse participating with the discussion exhibited positive attitude over safety culture comparing to nurse that did not participate. However, in this study the difference mean score of overall attitude of safety culture between numbers of leader informs about safety policy did not statistically significant.

5.1.6.2 Participation in safety training factors

From literature of Jones K, Skinner AM et al., (2013)(30) they evaluated the impact of a year-long term training program on perception of safety culture in 24 hospitals. The result showed the respondents who receiving team training had the significantly positive safety culture score higher than static group and team training can improve and result in transformation change in safety culture among staff in the organization when the work environment supports. Similar result, this study nurses who more class participated in safety training had the higher safety culture of all dimensions (p=0.019) also teamwork climate (p=0.039), job satisfaction (p=0.019) and perception of management (p=0.029). It could be show that an effective safety training program can help establish teamwork within unit, promote proper safety procedures that reflect on their job satisfaction and perception of management.

5.1.7 Safety culture among ICU nurses across hospital setting and units

The overall mean score of six dimensions of attitude of safety culture of ICU nurses ranged from 2.63 to 4.36. Most of the attitudes on safety culture dimensions were perceived at a high attitude level except stress recognition dimension was perceived at a moderate level. Regarding ranking of each dimensions presented working condition was perceived at the highest attitude of safety culture mean score, follow by job satisfaction, teamwork climate dimension, safety climate, and perception of management and stress recognition dimension perceived at the lowest influencing dimensions of safety culture among ICU nurses. There were difference attitude of safety culture mean score between hospital setting and units even in same hospital. The nurses who are employed in CCU had attitude of safety culture mean score than ICU and reflected a significant difference mean score of job satisfaction dimension compared to other unit settings (p=0.047). The finding could concluded that difference of patient characteristic, difference of working environment and unit may affected to safety attitude. It similar to the study of Singer et al. (2003)(18) studies patient safety culture in 15 hospitals under the California Patient Safety Consortium. The obtained results indicated different safety culture awareness in different unit and also associated with the job functions as well as working department.

5.1.8 The six safety culture dimension correlations

The six safety culture dimension correlations were studied by the degree of linear relationship between pairs of two safety dimensions. Pearson's correlations indicated significant strong positive relationships between teamwork climate with safety climate, job satisfaction, working condition and perception of management ($p<0.05$) It could be concluded that when working with a great team, good collaboration solution, cooperative commitment of care and concern could promote attitude of job satisfaction, working condition and perception of management, while stress recognition correlated negatively with teamwork climate, safety climate and job satisfaction ($p<0.05$). It could be concluded that when the nurses lacked awareness of the stress, and cannot coping stress well that causes of attitudes of teamwork climate, safety climate were decrease and reflected to job dissatisfaction also.

5.2 Limitation of this study

Number of nurses in each hospital are quite difference, this would be effect to the result of analysis.

CHAPTER VI
CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

6.1.1 The Safety attitude questioners ICU version is the survey questionnaire available to assess ICU personnel related attitudes of safety culture. Overall attitude toward safety culture among ICU nurses was a high level (3.67±0.29). Working condition was perceived at a highest attitude of safety culture dimension (3.67±0.29) and stress recognition was perceived at a lowest attitude of safety culture (3.30±0.50). Some respondents had a low attitude of safety culture and there were notice difference mean scores of attitude among respondents. The results showed that the levels of attitude between hospitals were different. This corresponds to an article in the organization with a different context with different attitude of safety culture.

6.1.2 Organization with good management system, such as the manpower ratio is adequate, can promote safety attitude, help workers work effectively, and reduce fatigue from work and better of work life balance. The study result represented the nurse who provided patient care less than 3 cases in one shift had a positive attitude of safety than other.

6.1.3 Organization with good training, personnel have been trained, working as a teamwork, management support, have sufficient resources may have a better attitude of safety culture. Another key point found the nurse professional who had been working for more years had a higher mean score of the attitude on safety culture than new staffs. If the organization has support curative safety culture continues may be causing a culture of safety and sustainability. Safety training had a positive effect on teamwork climate, job satisfaction, perception of management and overall attitude mean score of safety culture of nurse who participated in safety training. Safety training may need to be conduct more frequently in order to influence on nurses safety attitude.

6.2 Recommendations

6.2.1 Recommendation of methodology

The construct validity of the questionnaire such as confirmatory factor analysis should be conduct to ensure that the Safety attitude questionnaires-ICU Thai version fitted the study model and can detected the factor that affected to the subject groups.

6.2.2 The recommendation from the study

1) The result of this study could be useful for executive management to setting policy for the management and promotion of ecological cultural safety in the organization and also providing resources in order to function properly.

2) Executive management could be use safety culture perception analysis result of their hospital to determine safety culture dimension that affected on safety culture and setting the program or activity to promote and improve safety culture in their organization.

3) Executive management level should be conduct stress management program to help staff identify the things that cause them the most stress in their work and lives that may cause of make an error. Promote work life balance of personnel to perform optimally work.

4) Executive management level should be enhance effective communication in hospital, encouraged staff to report the errors and do not penalties when report the errors and should learn to prevent recurrence of errors.

5) The result of this study can be used to benchmarking level of safety culture of ICU nurse and knowledge sharing between hospitals to development safety policy to enhance and sustain safety culture in organization.

6.2.3 The recommendation for further study

1) Further study should be study in relationship between attitude of safety culture with the results of work and occupation health.

2) Further study should be conduct assessment of attitude of safety culture of all personnel.

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APPENDICES

APPENDIX A
DOCUMENTARY PROOF OF ETHICAL CLEARANCE

บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล

ขอมอบประกาศนียบัตรนี้ เพื่อแสดงว่า

นางสาวอริศรา สุวรรณฤทธิ์

ได้เข้าอบรมเรื่อง จริยธรรมการวิจัยในคน

วันศุกร์ที่ ๑๙ มีนาคม พ.ศ. ๒๕๕๓

ณ อาคารบัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล ศาลายา

ขอให้นำความรู้และประสบการณ์ที่ได้รับไปใช้เป็นหลักในการปฏิบัติเพื่อให้เกิดประโยชน์สูงสุด

รองศาสตราจารย์ ทพญ. ยารยา พงษ์หาญยุทธ
รองคณบดีบัณฑิตวิทยาลัยฝ่ายวิจัย

ศาสตราจารย์ นพ. บรรจง มโหสถวิชัย
คณบดีบัณฑิตวิทยาลัย

เอกสารรับรองโครงการวิจัย
โดยคณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์
คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล

เอกสารรับรองเลขที่	MUPH 2014-208
ชื่อโครงการ :	วัฒนธรรมความปลอดภัยของพยาบาลหญ้ป่วยหนักในโรงพยาบาลเอกชนระดับตติยภูมิ
รหัสโครงการ :	139/2557
ชื่อหัวหน้าโครงการ :	นางสาวอริสรา สุวรรณฤทธิ์
หน่วยงานที่สังกัด :	หลักสูตร วิทยาศาสตรมหาบัณฑิต สาขาวิชาสุขศาสตร์อุตสาหกรรมและความปลอดภัย คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล
เอกสารที่รับรอง :	1. แบบเสนอโครงการวิจัย 2. เอกสารชี้แจงผู้เข้าร่วมการวิจัย 3. หนังสือยินยอมให้ทำการวิจัย 4. แบบการเก็บรวบรวมข้อมูล/โปรแกรมหรือกิจกรรม
วันที่รับรอง :	4 พฤศจิกายน 2557
วันที่หมดอายุ :	3 พฤศจิกายน 2558

ขอรับรองว่าโครงการดังกล่าวข้างต้นได้ผ่านการพิจารณาเห็นชอบโดยสอดคล้องกับคำประกาศเฮลซิงกิจาก คณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์ คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล

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APPENDIX B
INFORMATION SHEET

เอกสารชี้แจงผู้เข้าร่วมการวิจัย

1. ชื่อโครงการ

วัฒนธรรมความปลอดภัยของพยาบาลหอผู้ป่วยหนักในโรงพยาบาลเอกชนระดับตติยภูมิ

2. สถานที่ที่ทำการวิจัย

หอผู้ป่วยหนักศัลยกรรมทั่วไป หอผู้ป่วยหนักศัลยกรรมสมอง หอผู้ป่วยหนักอายุรกรรม หอผู้ป่วยหนักโรคหัวใจ และหอผู้ป่วยหนักศัลยกรรมหัวใจและหลอดเลือด ศูนย์การแพทย์โรงพยาบาลกรุงเทพ โรงพยาบาลกรุงเทพพัทยาและโรงพยาบาลกรุงเทพภูเก็ต

3. นักศึกษาและอาจารย์ที่ปรึกษาหลัก และที่อยู่ที่ติดต่อได้

ประวัติหัวหน้าโครงการ

ชื่อผู้วิจัย	นางสาวอริศรา สุวรรณฤทธิ์
ที่อยู่ (ในเวลาราชการ)	ศูนย์การแพทย์โรงพยาบาลกรุงเทพ เลขที่ 2 ซอยศูนย์วิจัย 7 ถนนเพชรบุรีตัดใหม่ เขตห้วยขวาง กรุงเทพมหานคร 10310 โทรศัพท์ 02 7551420
ที่อยู่ (นอกเวลาราชการ)	629 ซอยพัฒนาการ 29 เขตสวนหลวง กรุงเทพมหานคร 10250 โทรศัพท์ 087 680 1253
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ประวัติอาจารย์ผู้ควบคุมวิทยานิพนธ์

ชื่อ – นามสกุล(ภาษาไทย)	รองศาสตราจารย์สรา อาภรณ์
(ภาษาอังกฤษ)	Sara Arphorn, Assoc.Prof.
ตำแหน่ง	อาจารย์ประจำภาควิชาอาชีวอนามัยและความปลอดภัย คณะสาธารณสุขศาสตร์ มหาลัยวิทยามหิดล
คุณวุฒิ	Dr. Biol. Hum
ที่อยู่	ภาควิชาอาชีวอนามัยและความปลอดภัย คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล โทรศัพท์ 0-2644-4069 ต่อ 113 โทรสาร 0-2354-8561

4. บทนำและเหตุผลในการศึกษาวิจัยของโครงการวิจัยนี้

ภายหลังเกิดภัยพิบัติเชอร์โนบิล ซึ่งเป็นอุบัติเหตุโรงไฟฟ้าพลังงานนิวเคลียร์ระเบิดทำให้มีผู้เสียชีวิตจำนวนมาก มีการตรวจสอบโดยสำนักงานพลังงานปรมาณูระหว่างประเทศ พบว่าสาเหตุหนึ่งของการเกิดอุบัติเหตุเกิดจากพนักงานขาดความตระหนักเกี่ยวกับความปลอดภัย เหตุการณ์ครั้งนั้นถือเป็นจุดเปลี่ยนของวงการอุตสาหกรรมความเสี่ยงสูงทำให้ผู้ประกอบการ เล็งเห็นปัญหาเรื่องความปลอดภัยมากขึ้นและเป็นที่มาของการสร้างวัฒนธรรมความปลอดภัยในที่ทำงานและองค์กร สำหรับอุตสาหกรรมบริการสุขภาพเริ่มมีการกล่าวถึงเรื่องความปลอดภัยของระบบสาธารณสุขและสถานรักษาพยาบาลในปี 1999 โดยสถาบันการแพทย์แห่งสหรัฐอเมริกาตีพิมพ์ข้อมูลเกี่ยวกับเหตุการณ์ไม่พึงประสงค์จากการรักษาพยาบาล พบว่าผู้ป่วยกว่า 1 แสนรายเสียชีวิตจากการรักษาพยาบาลที่ผิดพลาดมากกว่าการเสียชีวิตจากอุบัติเหตุทางรถยนต์ มะเร็งเต้านม และโรคภูมิคุ้มกันบกพร่อง เหตุการณ์ไม่พึงประสงค์นี้เกิด 1 ครั้งต่อผู้ป่วย 10 คน ในกระบวนการรักษาต่าง ๆ และส่งผลกระทบต่อผู้ป่วยในระดับความรุนแรงที่แตกต่างกันไป จากการวิเคราะห์พบว่า เหตุการณ์ไม่พึงประสงค์นั้น สามารถป้องกันได้ถึงร้อยละ 43.5 เห็นได้ว่า อุตสาหกรรมบริการสุขภาพจึงเป็นอุตสาหกรรมที่มีความเสี่ยงสูง เนื่องจากเป็นบริการที่กระทำต่อตัวบุคคล การรักษาพยาบาลที่ผิดพลาด จึงส่งผลกระทบโดยตรงต่อร่างกาย สถาบันการแพทย์แห่งสหรัฐอเมริกาจึงแนะนำให้องค์กรบริการด้านสุขภาพควรดำเนินงานด้านความปลอดภัยและสร้างวัฒนธรรมความปลอดภัยผู้ป่วยในองค์กร ซึ่งเป็นจุดเริ่มต้นของการสร้างวัฒนธรรมความปลอดภัยในโรงพยาบาล

สำหรับประเทศไทย กระทรวงสาธารณสุข ให้ความสำคัญต่อคุณภาพบริการและการรักษามากขึ้น และเพื่อให้สอดคล้องกับนโยบายรัฐบาลเรื่อง การส่งเสริมให้ไทยเป็นศูนย์กลางบริการทางการแพทย์ตั้งแต่ พ.ศ.2547 ตลอดจนเตรียมความพร้อมเข้าร่วมประชาคมเศรษฐกิจอาเซียน รัฐบาลโดยกระทรวงสาธารณสุขจึงสนับสนุนให้ประเทศไทยมีระบบการรักษษพยาบาลที่ได้คุณภาพ โดยให้สถาบันรับรองคุณภาพสถานพยาบาล (สรพ.) ขับเคลื่อนให้โรงพยาบาลในประทเศไทยมีการประกันคุณภาพการรักษษตามมาตรฐานความปลอดภัย โดยหลักการสำคัญของมาตรฐานคือ การออกแบบระบบงานที่เหมาะสม หาโอกาสพัฒนา ลดความเสี่ยง ผู้ป่วยปลอดภัย เจ้าหน้าที่ปลอดภัยเป็นเป้าหมายสำคัญ โดยการบริหารจัดการระบบดังกล่าวต้องกระทำโดยการจัดทำมาตรฐานการปฏิบัติงาน ติดตาม วัดผล ปรับปรุงแก้ไขระบบ ควบคู่ไปกับการสร้างความตระหนัก ทัศนคติความปลอดภัยแก่ผู้ปฏิบัติงาน ดังนั้นการรับรองคุณภาพสถานบริการจึงเป็นเครื่องมือหนึ่งที่ช่วยสร้างวัฒนธรรมความปลอดภัย การสร้างวัฒนธรรมความปลอดภัยเริ่มได้ตั้งแต่ระดับผู้ปฏิบัติงานในหน่วยงานที่มีวัฒนธรรมความปลอดภัยที่เข้มแข็ง บุคลากรทุกคนจะรู้สึกว่าเป็นภาระหน้าที่ของตนที่ต้องช่วยกันรับผิดชอบ หาสาเหตุที่นำไปสู่ความไม่ปลอดภัย และแก้ไข หน่วยงานเหล่านี้จึงพบอุบัติเหตุน้อย อัตราเกิดความสูญเสียต่ำ ลาออกน้อย ไม่มีการขาดงาน และมีผลผลิตสูง ในระดับองค์กรผู้นำและผู้บริหารที่สนับสนุนนโยบายความปลอดภัยในทุกระดับงานจะเป็นแรงขับเคลื่อนสำคัญให้เกิดทัศนคติความปลอดภัยด้านบวก ส่งผลให้องค์กรนั้นประสบความสำเร็จ และกลายเป็นวัฒนธรรมความปลอดภัยขององค์กรในที่สุด อย่างไรก็ตามองค์กรที่มีวัฒนธรรมความปลอดภัย ยังคงมีความเสี่ยงของการเกิดอุบัติเหตุร้ายแรง โดยลักษณะการเกิด สาเหตุ จะแตกต่างกันตามนโยบาย วิธีการปฏิบัติ ทัศนคติ ขององค์กรนั้น ๆ การวัดการรับรู้วัฒนธรรมความปลอดภัยของคนในองค์กร เพื่อประเมินว่าบุคลากรมีการรับรู้ต่อเป้าหมายและระบบบริหารจัดการที่ได้วางไว้มากน้อยเพียงใด เพื่อนำข้อมูลที่ได้มาใช้พัฒนาความปลอดภัยขององค์กรในด้านต่างๆ จึงมีความสำคัญ ผู้วิจัยจึงมีความสนใจที่จะศึกษาวัฒนธรรมความปลอดภัยในโรงพยาบาลโดยมุ่งเน้นไปที่พยาบาลหอผู้ป่วยหนัก จากฐานข้อมูลพบว่าถึงแม้หอผู้ป่วยหนักจะเกิดเหตุการณ์ไม่พึงประสงค์ไม่

บ่อยครั้งเมื่อเปรียบเทียบกับหอผู้ป่วยทั่วไป แต่มักจะมีความรุนแรงของผลกระทบสูง ทั้งความผิดพลาดต่อผู้ป่วยและอุบัติเหตุที่เกิดขึ้นกับพยาบาลเอง เนื่องจากพยาบาลประจำหอผู้ป่วยนักเป็นบุคลากรหลักที่ต้องดูแลผู้ป่วยอาการหนักตลอดเวลา 8-16 ชั่วโมง ทำกิจกรรมการพยาบาลแบบองค์รวมทำให้ต้องบริหารจัดการงานหลายอย่างในระยะเวลาจำกัด ลักษณะงานต้องมีความตื่นตัว ตอบสนองต่ออาการผู้ป่วยเร็ว มีอุปกรณ์เครื่องมือแพทย์ และยาที่ต้องบริหารจัดการจำนวนมาก คอยประสานงานกับแพทย์ ส่งต่อข้อมูลแก่ทีมสุขภาพที่เกี่ยวข้อง รวมทั้งสื่อสารให้ข้อมูลกับญาติผู้ป่วยที่มีภาวะทางอารมณ์ไม่ปกติ เช่น เศร้าโศก เสียใจ โกรธ ถือว่าเป็นบุคลากรที่ต้องใช้ศักยภาพทั้งทางความรู้ ร่างกาย อารมณ์ มีโอกาสเกิดความเครียดและเหนื่อยล้าจากการทำงานมาก หากบุคลากรกลุ่มนี้ขาดความตระหนักเรื่องความปลอดภัย ละเลยการทำงานตามกระบวนการจึงมีโอกาสเกิดความผิดพลาดและส่งผลให้ผู้ป่วยที่อยู่ในความดูแล หรือผู้ร่วมงานได้รับผลกระทบที่รุนแรงได้

5. วัตถุประสงค์ของโครงการ

5.1 วัตถุประสงค์ทั่วไป

1. เพื่อศึกษาการรับรู้วัฒนธรรมความปลอดภัยและปัจจัยที่เกี่ยวข้องของพยาบาลหอผู้ป่วยหนักในโรงพยาบาลเอกชนระดับตติยภูมิ

5.2 วัตถุประสงค์เฉพาะ

1. เพื่อศึกษาปัจจัยส่วนบุคคล ได้แก่ เพศ อายุ วุฒิการศึกษา และประสบการณ์ทำงานในโรงพยาบาล ที่มีความสัมพันธ์ต่อการรับรู้วัฒนธรรมความปลอดภัย
2. เพื่อศึกษาปัจจัยลักษณะงาน ได้แก่ ประเภทหอผู้ป่วยหนัก บทบาทหน้าที่ความรับผิดชอบในเวร จำนวนผู้ป่วยที่ดูแลในแต่ละเวร และชั่วโมงการทำงานต่อสัปดาห์ ที่มีความสัมพันธ์ต่อการรับรู้วัฒนธรรมความปลอดภัย
3. เพื่อศึกษาปัจจัยการบริหารจัดการองค์กร ได้แก่ นโยบายความปลอดภัยขององค์กร และการอบรมด้านความปลอดภัยที่มีความสัมพันธ์ต่อการรับรู้วัฒนธรรมความปลอดภัย
4. เพื่อศึกษาการรับรู้ต่อวัฒนธรรมความปลอดภัย 6 ด้าน ได้แก่ การทำงานเป็นทีม บรรยากาศความปลอดภัย ความพึงพอใจต่องาน การรับรู้ระบบบริหารจัดการ การตระหนักรู้ต่อความเครียด และสภาพการทำงาน ของพยาบาลหอผู้ป่วยหนัก โรงพยาบาลเอกชน 3 แห่ง

6. เหตุผลที่เชิญชวนให้ท่านเข้าร่วมโครงการวิจัยนี้

การสร้างความปลอดภัยในโรงพยาบาล คือกระบวนการจัดการที่มุ่งลดอัตราความผิดพลาดและเพื่อป้องกันการเกิดความผิดพลาด การสร้างความตระหนัก การยอมรับและนำไปปฏิบัติในงานประจำของบุคลากรทุกระดับในองค์กรอย่างสม่ำเสมอและต่อเนื่อง เพื่อให้เกิดระบบบริการทางสุขภาพที่ปลอดภัยมากขึ้น ไม่เกิดอุบัติเหตุซ้ำ ลดค่าใช้จ่ายที่ต้องสูญเสียจากการเกิดอุบัติการณ์และอุบัติเหตุทั้งในทางตรงและทางอ้อม

ท่านเป็นพยาบาลประจำการในหอผู้ป่วยนัก เป็นบุคลากรหลักที่ต้องดูแลผู้ป่วยอาการหนักตลอดเลา 8-16 ชั่วโมง ทำกิจกรรมการพยาบาลแบบองค์รวม ต้องบริหารจัดการงานหลายอย่างในระยะเวลาจำกัด ถือว่าท่านเป็นบุคลากรที่ต้องใช้ศักยภาพทั้งทางความรู้ ร่างกาย มีโอกาสเกิดความเครียดและหนื่อยล้าจากการทำงานได้ หากท่าน/เพื่อนร่วมงานของท่าน ขาดความตระหนักรู้ต่อความปลอดภัย อาจก่อให้เกิดอุบัติเหตุต่อผู้ป่วย เพื่อนร่วมงานและ

ตนเองได้ การประเมินการรับรู้วัฒนธรรมความปลอดภัยจะช่วยสะท้อนให้ท่านทราบเกี่ยวกับการรับรู้ต่อวัฒนธรรมความปลอดภัยและปัจจัยที่สัมพันธ์ต่อการรับรู้วัฒนธรรมความปลอดภัยในหน่วยงานของท่าน หัวหน้างานสามารถนำข้อมูลดังกล่าวไปใช้ในการปรับปรุงพัฒนากระบวนการทำงานให้ดีขึ้น สนับสนุนทรัพยากรในการทำงานอย่างเพียงพอ เกิดการทำงานเป็นทีมช่วยเหลือซึ่งกันและกัน ทำให้ผลงานของทีมมีประสิทธิภาพมากขึ้น บรรยากาศการทำงานเป็นไปด้วยดี อุบัติเหตุลดลง และความเครียดลดลงด้วย

ด้วยเหตุผลที่สำคัญนี้จึงขอเชิญท่านเข้าร่วมโครงการวิจัย ซึ่งข้อมูลที่ได้จากการศึกษาจะเป็นประโยชน์ต่อท่านเอง เพื่อนร่วมงานและองค์กรของท่าน โดยผู้วิจัยจะส่งมอบผลการประเมินการรับรู้วัฒนธรรมความปลอดภัยแก่หัวหน้างานเมื่อเสร็จสิ้นโครงการวิจัยแล้ว

7. กิจกรรมการวิจัยที่จะเกี่ยวข้องกับท่าน เมื่อท่านสมัครใจเข้าร่วมโครงการวิจัย จะมีดังต่อไปนี้

ผู้วิจัยอธิบายวัตถุประสงค์ของโครงการวิจัยและรายละเอียดของแบบสอบถาม การปกปิดข้อมูลและรักษาความลับของผู้ร่วมการวิจัย เป็นเวลา 10-15 นาที จากนั้นให้ผู้เข้าร่วมการวิจัยลงลายมือชื่อในหนังสือแสดงความยินยอมเข้าร่วมแล้วจึงให้ท่านตอบแบบสอบถาม เรื่อง “แบบสำรวจการรับรู้ต่อวัฒนธรรมความปลอดภัยของพยาบาลวิชาชีพประจำการหอผู้ป่วยหนัก” ซึ่งประกอบด้วยคำถาม 3 ส่วน จำนวน 75 ข้อ ดังนี้ 1. แบบสอบถามเกี่ยวกับข้อมูลทั่วไป จำนวน 10 ข้อ 2. แบบสอบถามการรับรู้ต่อวัฒนธรรมความปลอดภัยสำหรับพยาบาลปฏิบัติงานในหอผู้ป่วยหนัก จำนวน 64 ข้อ และ 3. แบบแสดงความคิดเห็นเพิ่มเติมเพื่อพัฒนาความปลอดภัยในโรงพยาบาล จำนวน 1 ข้อ โดยใช้เวลาตอบแบบสอบถามประมาณ 20 นาที ผู้วิจัยจะเก็บแบบสอบถามกลับคืนภายใน 1 สัปดาห์หลังชี้แจงโครงการ โดยเก็บแบบสอบถามคืนจากท่านโดยตรง หรือท่านจะส่งคืนไว้ที่หัวหน้างานของท่าน ซึ่งผู้วิจัยได้ประสานงานในการเก็บแบบสอบถามคืนไว้แล้ว

8. ระยะเวลาที่ท่านจะเข้ามาเกี่ยวข้องกับกิจกรรมของโครงการวิจัยนี้ (ทดลอง/รวบรวมข้อมูล)

ผู้วิจัยอธิบายวัตถุประสงค์ของโครงการวิจัยและรายละเอียดของแบบสอบถาม การปกปิดข้อมูลและรักษาความลับของผู้ตอบ ใช้เวลา 10-15 นาที และให้ท่านใช้เวลาในการตอบแบบสอบถาม 20 นาที ผู้วิจัยจะเก็บแบบสอบถามกลับคืนภายใน 1 สัปดาห์หลังชี้แจงโครงการ

9. ประโยชน์ที่คาดว่าจะเกิดขึ้นทั้งต่อท่าน และต่อผู้อื่น

ตัวท่าน

ประโยชน์ของโครงการนี้ที่คาดว่าจะเกิดขึ้นต่อผู้เข้าร่วมการวิจัยในการให้ข้อมูล คือ การสะท้อนผู้เข้าร่วมการวิจัยให้ข้อมูลทราบว่าการรับรู้วัฒนธรรมความปลอดภัยภาพรวมของหอผู้ป่วยหนักที่ท่านทำงานอยู่ รวมถึงปัจจัยที่สัมพันธ์ต่อการรับรู้วัฒนธรรมความปลอดภัยดังกล่าว หัวหน้างานสามารถนำข้อมูลดังกล่าวไปใช้ปรับปรุงกระบวนการทำงานให้มีประสิทธิภาพมากขึ้น สนับสนุนทรัพยากรในการทำงานอย่างเพียงพอ เพิ่มการทำงานเป็นทีม ช่วยให้บรรยากาศในที่ทำงานดีขึ้นความเครียดลดลง อุบัติเหตุลดลง โดยผู้วิจัยจะส่งมอบผลการประเมินการรับรู้วัฒนธรรมความปลอดภัยแก่หัวหน้างานเมื่อเสร็จสิ้นโครงการวิจัยแล้ว

ผู้อื่นหรือสังคมโดยทั่วไป

1. ผู้ป่วยปลอดภัย ได้รับการรักษาพยาบาลถูกต้องตามมาตรฐาน หากแม้พยาบาลมีภาระงานมากในเวลาจำกัด พยาบาลจะไม่ละเลยต่อความปลอดภัย ปฏิบัติงานตามขั้นตอน ส่งผลให้ผู้ป่วยหายจากโรคและไม่มีภาวะแทรกซ้อนจากการพยาบาลผิดพลาด

2. เพื่อนร่วมงาน หัวหน้าหน่วยงาน นำข้อมูลมาช่วยกันค้นหาทางแก้ไข เพื่อสร้างบรรยากาศความปลอดภัยในที่ทำงาน เช่น ช่วยเหลือซึ่งกันและกันมากขึ้น พัฒนาทำงานเป็นทีม สื่อสาร พูดคุยกันมากขึ้น แลกเปลี่ยนเรียนรู้ทั้งข้อดี ข้อเสีย จะช่วยให้การทำงานในหน่วยงานเป็นไปด้วยความราบรื่น ช่วยกันทำงาน ภาระงานลดลง และทำงานมีประสิทธิภาพมากขึ้น

3. องค์กร ผู้บริหารโรงพยาบาล นำข้อมูลที่ได้มาวิเคราะห์ วางแผนปรับปรุงพัฒนา ปรับระดับทัศนคติด้านบวกให้สูงขึ้น พยาบาลหอผู้ป่วยหนักปฏิบัติงานด้วยความระมัดระวัง เกิดอุบัติเหตุลดลง ผู้ป่วยได้รับการพยาบาลที่ถูกต้องตามขั้นตอน ลดความผิดพลาดของการเกิดอุบัติการณ์ไม่พึงประสงค์ในการให้บริการผู้ป่วย ช่วยลดค่าใช้จ่ายในการจัดการความเสี่ยง ลดข้อฟ้องร้องทางการแพทย์ เป็นต้น

10. ความเสี่ยง หรือ ความไม่สบายใด ๆ ที่คาดว่าจะเกิดขึ้นกับท่าน และมาตรการหรือวิธีการในการป้องกัน หรือลดความเสี่ยงหรือความไม่สบายใดๆ ที่อาจเกิดขึ้นในระหว่างการเข้าร่วมโครงการ

ข้อมูลและคำตอบทั้งหมดจะถูกปกปิดเป็นความลับ และจะนำมาใช้ในการวิเคราะห์ผลการศึกษาครั้งนี้ โดยออกมาเป็นภาพรวมของการวิจัยเท่านั้น จึงไม่มีผลกระทบใดๆ ต่อท่าน เนื่องจากไม่สามารถนำมาสืบค้นเจาะจงหาผู้ตอบได้ ท่านมีสิทธิ์จะไม่ตอบคำถามข้อใดข้อหนึ่ง หากท่านไม่สบายใจหรืออึดอัดที่จะตอบคำถามนั้น หรือไม่ตอบแบบสอบถามทั้งหมดเลยก็ได้ โดยไม่มีผลกระทบต่อการปฏิบัติงานใดๆ ของท่าน ทั้งนี้หากท่านไม่สามารถให้ข้อมูลดังกล่าวได้ ท่านสามารถปฏิเสธในการให้ข้อมูลได้ โดยไม่มีผลใด ๆ ต่อท่านในการให้ข้อมูล

11. การดูแลรักษาความลับของข้อมูลต่าง ๆ ของท่าน

ขั้นตอนการเก็บรักษาข้อมูล การดำเนินการวิจัยและการนำเสนอรายงานผลการวิจัย ผู้วิจัยจะไม่ทำให้เกิดผลกระทบใด ๆ ต่อตัวท่าน ข้อมูลที่ท่านให้มาจะเป็นความลับ ไม่ระบุชื่อและประวัติส่วนตัวและไม่นำไปเผยแพร่ต่อสาธารณชน ข้อมูลต่าง ๆ ที่ท่านให้มาจะถูกเก็บไว้ในรูปของข้อมูลอิเล็กโทรนิกส์ ทางคอมพิวเตอร์และเอกสาร ซึ่งจะเก็บไว้กับทางผู้วิจัยตามที่อยู่ และประธานและกรรมการควบคุมสารนิพนธ์ ที่ภาควิชาสุขศาสตร์อุตสาหกรรมและความปลอดภัย คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล ผู้ที่สามารถเข้าถึงข้อมูลของท่านได้ได้แก่ ผู้วิจัย ประธานและกรรมการควบคุมสารนิพนธ์ ซึ่งข้อมูลที่สามารถเข้าถึงนั้นจะเป็นข้อมูลภาพรวมและสรุปผลทางวิชาการเท่านั้น ส่วนอื่น ๆที่ไม่เกี่ยวข้องกับงานวิจัยจะไม่เปิดเผยแต่อย่างใด ข้อมูล ที่ท่านให้มาจะเก็บไว้หลังจากสรุปผลและเสนองานทางวิชาการซึ่งเป็นในรูปแบบสารนิพนธ์เรียบร้อยแล้ว 3 เดือน การทำลายเอกสารเอกสารจะถูกทำลายด้วยเครื่องทำลายเอกสาร ส่วนข้อมูลอิเล็กทรอนิกส์จะทำลายโดยการลบข้อมูลอิเล็กทรอนิกส์ทางคอมพิวเตอร์

12. สิทธิการถอนตัวออกจากโครงการวิจัย

ท่านมีสิทธิที่จะถอนตัวจากการเข้าร่วมโครงการวิจัยได้ทุกเมื่อ โดยไม่มีผลกระทบการทำงานของท่าน

13. กรณีที่มีเหตุจำเป็น หรือฉุกเฉิน ที่เกี่ยวข้องกับโครงการวิจัยสามารถติดต่อผู้รับผิดชอบโครงการได้โดยสะดวกที่

ชื่อ นางสาวอริศรา สุวรรณฤทธิ์

ที่อยู่ (ในเวลาราชการ) ศูนย์การแพทย์โรงพยาบาลกรุงเทพ เลขที่ 2 ซอยศูนย์วิจัย 7 ถนนเพชรบุรีตัดใหม่ เขตห้วยขวาง กรุงเทพมหานคร 10310 โทรศัพท์ 02 7551420, 087 680 1253

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โครงการวิจัยนี้ได้ผ่านการรับรองจากคณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์ ของคณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล ซึ่งมีสำนักงานอยู่ที่ อาคารสาธารณสุขวิศิษฏ์ ชั้น 4 420/1 ถนนราชวิถี เขตราชเทวี กรุงเทพฯ 10400 โทรศัพท์ 0-2354-8543-9 ต่อ 1127 , 7404 โทรสาร 0-2640-9854

APPENDIX C
INFORMED CONSENT FORM

หนังสือยินยอมตนให้ทำการวิจัย

โครงการวิจัยเรื่อง วัฒนธรรมความปลอดภัยของพยาบาลหอผู้ป่วยหนักในโรงพยาบาลเอกชนระดับตติยภูมิ

วันที่ให้คำยินยอม วันที่ ..... เดือน ..... พ.ศ.....

ข้าพเจ้า (นาย/นาง/นางสาว) ..... ขอทำหนังสือไว้ต่อ

หัวหน้าโครงการเพื่อเป็นหลักฐานแสดงว่า

ข้อ 1. ก่อนลงนามในใบยินยอมตนให้ทำการวิจัยนี้ ข้าพเจ้าได้รับการอธิบายจากผู้วิจัยให้ทราบถึงวัตถุประสงค์ของการวิจัย กิจกรรมการวิจัย ความเสี่ยง รวมทั้งประโยชน์ที่อาจเกิดขึ้นจากการวิจัย อย่างละเอียด และมีความเข้าใจดีแล้ว

ข้อ 2. ผู้วิจัยรับรองว่าจะตอบคำถามต่าง ๆ ที่ข้าพเจ้าสงสัยด้วยความเต็มใจ ไม่ปิดบัง ซ่อนเร้นจนข้าพเจ้าพอใจ

ข้อ 3. ข้าพเจ้าร่วมโครงการวิจัยนี้โดยสมัครใจ และข้าพเจ้ามีสิทธิที่จะบอกเลิกการเข้าร่วมในโครงการวิจัยนี้เมื่อใดก็ได้ และการบอกเลิกการเข้าร่วมวิจัยนี้จะไม่มีผลกระทบต่อหน้าที่การทำงานของข้าพเจ้า

ข้อ 4. ผู้วิจัยรับรองว่า จะเก็บข้อมูลเฉพาะเกี่ยวกับตัวข้าพเจ้าเป็นความลับ และจะเปิดเผยได้เฉพาะในรูปที่เป็นสรุปผลการวิจัย การเปิดเผยข้อมูลเกี่ยวกับตัวข้าพเจ้าต่อหน่วยงานต่าง ๆ ที่เกี่ยวข้อง กระทำได้เฉพาะกรณีจำเป็นด้วยเหตุผลทางวิชาการเท่านั้น

ข้อ 5 ผู้วิจัยรับรองว่า หากมีข้อมูลเพิ่มเติมที่ส่งผลกระทบต่อการวิจัย ข้าพเจ้าจะได้รับการแจ้งให้ทราบทันทีโดยไม่ปิดบัง ซ่อนเร้น

ข้าพเจ้าได้อ่านข้อความข้างต้นแล้วมีความเข้าใจดีทุกประการ และได้ลงนามในใบยินยอมนี้ด้วยความเต็มใจ

ลงชื่อ ..... ผู้เข้าร่วมวิจัย
(.....)

ลงชื่อ ..... ผู้วิจัย

(นางสาวอริศรา สุวรรณฤทธิ์)

APPRNDIX D
DATA COLLECTION FORM

รหัส ☐☐☐

แบบสอบถามการรับรู้ต่อวัฒนธรรมความปลอดภัยของพยาบาลวิชาชีพประจำการหอผู้ป่วยหนัก

คำแนะนำในการตอบแบบสอบถาม

1. ตอบคำถามโดยการใส่เครื่องหมายถูกในข้อที่ท่านเลือกเพียงข้อเดียวเท่านั้น
2. กรุณาตอบแบบสอบถามให้ครบทุกข้อ

<u>ส่วนที่ 1</u> ข้อมูลส่วนบุคคล

คำชี้แจง โปรดทำเครื่องหมายถูก ✓ ลงใน ☐ ตรงตามความเป็นจริง

1. เพศ

☐ ชาย ☐ หญิง

2. อายุ

☐ ต่ำกว่า 20 ปี ☐ มากกว่า 20 ปี ถึง 24 ปี ☐ มากกว่า 24 ปี ถึง 34 ปี
☐ มากกว่า 34 ปี ถึง 44 ปี ☐ มากกว่า 44 ปี ถึง 54 ปี ☐ ตั้งแต่ 54 ปีขึ้นไป

3. อายุงานในโรงพยาบาลนี้

☐ น้อยกว่า 6 เดือน ☐ มากกว่า 6 เดือน ถึง 2 ปี ☐ มากกว่า 2 ปี ถึง 5 ปี
☐ มากกว่า 5 ปี ถึง 9 ปี ☐ มากกว่า 9 ปี ถึง 14 ปี ☐ มากกว่า 14 ปี ถึง 19 ปี
☐ มากกว่า 19 ปี ถึง 24 ปี ☐ มากกว่า 24 ปี

4. อายุงานในแผนกปัจจุบัน

☐ น้อยกว่า 6 เดือน ☐ มากกว่า 6 เดือน ถึง 2 ปี ☐ มากกว่า 2 ปี ถึง 5 ปี
☐ มากกว่า 5 ปี ถึง 9 ปี ☐ มากกว่า 9 ปี ถึง 14 ปี ☐ มากกว่า 14 ปี ถึง 19 ปี
☐ มากกว่า 19 ปี ถึง 24 ปี ☐ มากกว่า 24 ปี

5. ระดับการศึกษาสูงสุดของท่าน

☐ ปริญญาตรี ☐ ปริญญาโท ☐ ปริญญาเอก

6. ระดับงานของท่าน

☐ พยาบาลหัวหน้าแผนก / รองหัวหน้าแผนก ☐ พยาบาลหัวหน้าเวร
☐ พยาบาลผู้ดูแลผู้ป่วย ☐ พยาบาลบริหารจัดการยา

7. ใน 1 สัปดาห์ ท่านทำงานประมาณกี่ชั่วโมง

☐ น้อยกว่า 30 ชั่วโมง ☐ 30 – 39 ชั่วโมง ☐ 40 – 49 ชั่วโมง

☐ 50 – 59 ชั่วโมง ☐ 60 ชั่วโมง หรือ มากกว่า

8. ใน 1 เวร หรือ 8 ชั่วโมงการทำงาน ท่านดูแลผู้ป่วยสูงสุดจำนวนกี่ราย

☐ 1 ราย ☐ 2 ราย ☐ 3 ราย

☐ 4 ราย ☐ 5 ราย ☐ มากกว่า 5 ราย

9. ในช่วง 12 เดือนที่ผ่านมา ท่านได้รับการสื่อสารเกี่ยวกับนโยบายความปลอดภัยขององค์กรโดยผู้บริหารกี่ครั้ง

☐ 0 ครั้ง ☐ 1 ครั้ง ☐ 2 – 3 ครั้ง

☐ 4 – 5 ครั้ง ☐ มากกว่า 5 ครั้ง

10. ในช่วง 12 เดือนที่ผ่านมา ท่านมีโอกาสอบรมเกี่ยวกับความปลอดภัยในโรงพยาบาลกี่ครั้ง

☐ 0 ครั้ง ☐ 1 ครั้ง ☐ 2 – 3 ครั้ง

☐ 4 – 5 ครั้ง ☐ มากกว่า 5 ครั้ง

<u>ส่วนที่ 2</u> แบบสอบถามการรับรู้ต่อวัฒนธรรมความปลอดภัย กรุณาใส่เครื่องหมายถูก ✓ ในช่องคะแนนที่ตรงกับความคิดเห็นของท่านมากที่สุด โดย

คะแนน 1 คือ ไม่เห็นด้วยอย่างยิ่ง

คะแนน 2 คือ ไม่เห็นด้วย

คะแนน 3 คือ เฉย ๆ

คะแนน 4 คือ เห็นด้วย

คะแนน 5 คือ เห็นด้วยอย่างยิ่ง

ข้อ	คำถาม	ระดับความคิดเห็นของท่าน				
		5	4	3	2	1
1.	หอผู้ป่วยหนักแห่งนี้มีภาระงานมาก					
2.	ข้าพเจ้าขอบงานที่ข้าพเจ้าทำ					
3.	พยาบาลที่ปฏิบัติงานในหอผู้ป่วยหนักแห่งนี้ได้รับข้อมูลที่จำเป็นและเพียงพอในการทำงาน					
4.	ข้าพเจ้ารู้สึกปลอดภัย หากข้าพเจ้าต้องเข้ารับการรักษาที่โรงพยาบาลนี้					
5.	เมื่อเกิดความผิดพลาดจากการบริหารยาในหอผู้ป่วยหนักแห่งนี้ จะมีการจัดการเหมาะสม					
6.	โรงพยาบาลมีการอบรมที่ดีสำหรับบุคลากรที่ปฏิบัติงานใหม่					
7.	ข้าพเจ้าได้รับข้อมูลที่จำเป็นเพียงพอเกี่ยวกับการวินิจฉัยโรค และการรักษาผู้ป่วย					
8.	การทำงานในโรงพยาบาลแห่งนี้เปรียบเสมือนเป็นส่วนหนึ่งของครอบครัวใหญ่					
9.	ผู้บริหารโรงพยาบาลปฏิบัติงานดี					
10.	ผู้บริหารโรงพยาบาลสนับสนุนการทำงานประจำวันของข้าพเจ้า					
11.	ข้าพเจ้าได้รับข้อเสนอแนะที่ดีเกี่ยวกับสมรรถนะในการปฏิบัติงานของข้าพเจ้า					
12.	ในหอผู้ป่วยหนักแห่งนี้ การปรึกษาหารือเกี่ยวกับความผิดพลาดเป็นเรื่องที่ทำได้ยาก					

ข้อ	คำถาม	ระดับความคิดเห็นของท่าน				
		5	4	3	2	1
13.	การส่งเวร อาการผู้ป่วยเมื่อเปลี่ยนเวร เปลี่ยนผู้ดูแลเป็นสิ่งสำคัญต่อความปลอดภัยผู้ป่วย					
14.	การส่งเวร เกี่ยวกับอาการผู้ป่วยอย่างละเอียดเป็นเรื่องปกติของหอผู้ป่วยหนักแห่งนี้					
15.	โรงพยาบาลนี้เป็นโรงพยาบาลที่ทำงานที่ดี					
16.	เมื่อข้าพเจ้าถูกรบกวนระหว่างการทำงาน ก็จะไม่กระทบต่อความปลอดภัยผู้ป่วยที่ข้าพเจ้าดูแล					
17.	เพื่อนร่วมงานของข้าพเจ้าทุกคนมีความรับผิดชอบต่อความปลอดภัยผู้ป่วย					
18.	การบริการจัดการโรงพยาบาลจะไม่ยอมรับต่อสิ่งที่กระทบต่อความปลอดภัยผู้ป่วย					
19.	จำนวนพยาบาลของหอผู้ป่วยหนักแห่งนี้เพียงพอกับจำนวนผู้ป่วยที่ต้องดูแล					
20.	กระบวนการตัดสินใจในหอผู้ป่วยหนักแห่งนี้มาจากความคิดเห็นของบุคลากรที่เกี่ยวข้อง					
21.	โรงพยาบาลส่งเสริมการทำงานเป็นทีมและความร่วมมือระหว่างบุคลากร					
22.	ข้าพเจ้าส่งเสริมให้เพื่อนร่วมงานรายงานเกี่ยวกับความปลอดภัยผู้ป่วย เมื่อข้าพเจ้าอาจจะทำผิด					
23.	วัฒนธรรมความปลอดภัยในหอผู้ป่วยหนักแห่งนี้ทำได้ง่ายโดยการเรียนรู้จากความผิดพลาดที่เกิดขึ้นในหน่วยงานอื่น					
24.	โรงพยาบาลมีการจัดการกับบุคลากรที่ประพฤติตนไม่เหมาะสมในทางที่ดี ช่วยให้เกิดการพัฒนา					
25.	เครื่องมือแพทย์ในหอผู้ป่วยหนักแห่งนี้มีเพียงพอ เหมาะสม					
26.	ที่หอผู้ป่วยหนักแห่งนี้ การพูดคุยถึงปัญหาจากการทำงานเป็นเรื่องที่กระทำได้ยาก					
27.	เมื่อภาระงานของข้าพเจ้ามาก ทให้ผลงานของข้าพเจ้าลดลง					
28.	ข้าพเจ้าได้รับข้อมูลเกี่ยวกับเหตุการณ์ต่าง ๆ ในโรงพยาบาลอย่างเพียงพอและทันเวลา					
29.	ข้าพเจ้าเคยพบบุคลากรอื่นปฏิบัติงานผิดพลาดซึ่งอาจทำให้ผู้ป่วยได้รับอันตราย					
30.	ข้าพเจ้าทราบช่องทางในการสอบถามเกี่ยวกับความปลอดภัยของผู้ป่วยในหอผู้ป่วยหนักแห่งนี้					
31.	ข้าพเจ้าภูมิใจที่ได้ทำงานในโรงพยาบาลนี้					
32.	ปัญหาความขัดแย้งในหอผู้ป่วยหนักแห่งนี้ได้รับการจัดการแก้ไขอย่างเหมาะสม					
33.	เมื่อเหนื่อยล้าข้าพเจ้าจะทำงานมีประสิทธิภาพลดลง					
34.	ข้าพเจ้ามีแนวโน้มที่จะทำงานผิดพลาดเมื่อพบเหตุการณ์ตึงเครียด					
35.	ความเครียดจากปัญหาส่วนตัวมีผลกระทบต่อผลงานของข้าพเจ้า					
36.	ข้าพเจ้าได้รับความช่วยเหลือ สนับสนุนจากเพื่อนร่วมงานในการดูแลผู้ป่วย					
37.	หอผู้ป่วยหนักแห่งนี้เปิดโอกาสให้บุคลากรซักถามเมื่อมีปัญหาที่ไม่เข้าใจ					
38.	การรบกวนความต่อเนื่องในการดูแลผู้ป่วย เช่น ช่วงเปลี่ยนเวร อาจเกิดความ					

ข้อ	คำถาม	ระดับความคิดเห็นของท่าน				
		5	4	3	2	1
	ผิดพลาดในกระบวนการพยาบาลและผู้ป่วยเกิดอันตรายได้					
39.	ระหว่างเหตุการณ์ฉุกเฉิน ข้าพเจ้าทราบว่าสมาชิกในทีมใคร มีหน้าที่ใดบ้าง					
40.	แพทย์และพยาบาลทำงานร่วมกันเป็นทีมอย่างดี					
41.	บ่อยครั้งที่ข้าพเจ้าไม่สามารถแสดงความคิดเห็นที่แตกต่างกับแพทย์ในหอผู้ป่วยหนักแห่งนี้					
42.	การมีภาระงานจำนวนมากช่วยกระตุ้นให้ข้าพเจ้าทำงานดีขึ้น					
43.	บุคลากรที่มีประสิทธิภาพจะสามารถแยกแยะเรื่องงานและเรื่องส่วนตัวได้					
44.	หอผู้ป่วยหนักแห่งนี้มีขวัญและกำลังใจสูง					
45.	บุคลากรที่เข้ารับการฝึกอบรมภายใต้ความรับผิดชอบของข้าพเจ้าได้รับการสอนงานติดตามอย่างเหมาะสม					
46.	ข้าพเจ้ารู้ชื่อ นามสกุลของเพื่อนร่วมงานที่ทำงานเวรสุดท้ายด้วยกัน					
47.	ข้าพเจ้าเคยทำงานผิดพลาดที่ส่งผลให้ผู้ป่วยเสี่ยงต่ออันตราย					
48.	แพทย์ประจำหอผู้ป่วยหนักแห่งนี้ทำงานได้ดี					
49.	ความเหนื่อยล้าทำให้สมรรถนะการทำงานในภาวะฉุกเฉิน ของข้าพเจ้าลดลง เช่น การช่วยฟื้นคืนชีพ ภาวะชัก					
50.	ความเหนื่อยล้าทำให้ข้าพเจ้าทำงานประจำ เช่น การทบทวนยา การตรวจสอบเครื่องช่วยหายใจ การรับคำสั่งการรักษามีประสิทธิภาพลดลง					
51.	ข้าพเจ้าทราบช่องทางในการรายงานความผิดพลาดของหน่วยงาน เมื่อมีความจำเป็นต้องรายงาน					
52.	ความปลอดภัยผู้ป่ยได้รับการสนับสนุนให้มีความสำคัญแรกในหอผู้ป่วยหนักแห่งนี้					
53.	ความสัมพันธ์ระหว่างบุคลากรในหน่วยงานนี้เป็นลักษณะเพื่อนร่วมงานมากกว่าการทำงานแบบชั้นอาวุโส					
54.	ในการเปลี่ยนเวรมีการสื่อสารที่ดีในประเด็นสำคัญๆ					
55.	การใช้แนวทางปฏิบัติทางคลินิกและหลักฐานเชิงประจักษ์อย่างแพร่หลายในหอผู้ป่วยหนักแห่งนี้					
56.	ไม่มีการลงโทษเมื่อบุคลากรรายงานความผิดพลาด					
57.	หอผู้ป่วยหนักแห่งนี้การรายงานความผิดพลาดเป็นเหมือนการได้รับรางวัล					
58.	หอผู้ป่วยหนักแห่งนี้นำข้อมูลเก่ยวกับเหตุการณ์ผิดพลาดมาใช้พัฒนาการทำงานเพื่อทำให้ผู้ป่วยปลอดภัยมากขึ้น					
59.	การทำงานกับบุคลากรที่ประสบการณ์ทำงาน้อยระหว่างเหตุการณ์ฉุกเฉิน เช่น การช่วยฟื้นคืนชีวิต ไม่มีผลกระทบกับการทำงานของข้าพเข้า					
60.	บุคลากรในหอผู้ป่วยหนักแห่งนี้ไม่ค่อยปฏิบัติตามนโยบายที่กำหนด เช่น การล้างมือ, แนวทางการดูแลผู้ป่วย, เทคนิคปราศจากเชื้อ					
61.	เป็นเรื่องปกติของโรงพยาบาลนี้ที่การสื่อสารขาดประสิทธิภาพนำไปสู่การดูแล					

ข้อ	คำถาม	ระดับความคิดเห็นของท่าน				
		5	4	3	2	1
	ผู้ป่วยล่าช้า					
62.	เป็นเรื่องปกติของโรงพยาบาลนี้ที่การสื่อสารขาดประสิทธุภาพให้เกิดผลกระทบด้านลบกับผู้ป่วย					
63.	ระบบการรักษาความลับของการรายงานความผิดพลาดที่เกี่ยวข้องกับการรักษาพยาบาล ช่วยให้เกิดการพัฒนาความปลอดภัยผู้ป่วย					
64.	ข้าพเจ้าลังเลที่จะรายงานความผิดพลาดเนื่องจากกังวลว่าจะถูกเปิดเผยว่าเป็นผู้รายงาน					

<u>ส่วนที่ 3</u> กรุณาแสดงความคิดเห็นเพิ่มเติม เพื่อพัฒนาความปลอดภัยในโรงพยาบาลของท่าน

1. _____
2. _____
3. _____
4. _____
5. _____

BIOGRAPHY

NAME	Miss Arisara Suwanarit
DATE OF BIRTH	21 March 1978
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INSTITUATION ATTENDED	Mahidol University, 1996-2000: Bachelor of Nursing Science (Medicine Ramathibodi Hospital) Mahidol University, 2009-2015: Master of Science (Public Health) Major in Industrial Hygiene and Safety
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