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PERCEPTION OF NURSES REGARDING PATIENT SAFETY CULTURE IN OPERATING THEATRE, HOSPITAL UNIVERSITI SAINS MALAYSIA

by

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Dissertation submitted in partial fulfillment of the requirements for the degree of Bachelor of Health Sciences (Nursing)

April 2009

ACKNOWLEDGEMENT

Upon completion of my dissertation, I would like to firstly give thanks to God of His strength and guidance provided for me throughout the period of making my thesis success. May all thanks and glory be unto His name.

I gratefully acknowledge the thoughtful comments and supports of my supervisor, Miss Norazliah Hj Samsudin. She is the course coordinator of this research project too. My heartfelt appreciation goes to her for her constructive, meaningful and practical suggestions until completion of all my works, including dissertation writing.

I extend my sincere thanks to Dr. Sarimah Binti Abdullah and Dr. Muhammad Naeem Khan from Unit of Biostatistics and Research Methodology for assisting and guiding me in analysis and interpretation of data.

I would like to give thanks to Dr. Norhaniza Abdul Khairi, for her help in my translation process of questionnaire. I am grateful to Miss Noor Jasmani Hassan, for her participation in validation process of questionnaire.

My appreciation to Director of Hospital Universiti Sains Malaysia, Dr. Zaidun Kamari, Head of Anesthesiology Department, Dr. Mamarowi Omar, matron and sisters from operating theatre; especially Sister Norani Bte. Mohamed Nor, for their permission and support in conducting this study.

I am grateful to all the staff nurses from operating theatre, Hospital Universiti Sains Malaysia, especially Madam Roszunaida Enche Hamid, for their cooperation in helping me out in the data collection.

I would like to thank to all my classmates especially Miss Noor Azizah Binti Mohd Ali, for their support, advice and guidance to complete this study. I am deeply

indebted to many other people who have tendered their kind assistance during this study.

Last but not least, my special gratitude go to my dearest parents, Lee Mui Choon and Phang Wee Chiang, and my husband, Dr. Khoo Teng Lye who gave me their steadfast love, support and encouragement in helping me to bring this dissertation to fruition.

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ABSTRACT

The purpose of this study was to determine perception of nurses regarding patient safety culture, examined the association between nurses' working experience and patient safety culture, and compared the differences of patient safety culture between scrub nurses and GA nurses in operating theatre, Hospital Universiti Sains Malaysia (HUSM). Fifty-three nurses were participated in this study. Nurses were recruited by using non-probability purposive sampling. Data were obtained using a self-administered questionnaire which adapted from Agency for Healthcare Research and Quality (2004), the Hospital Survey on Patient Safety Culture. The instrument was validated by two experts from operating theatre, Hospital Universiti Sains Malaysia and one expert from School of Health Sciences, Universiti Sains Malaysia. The Cronbach's alpha coefficient was 0.71. The data were analyzed using descriptive statistic, Pearson Chi Square or Fisher Exact test, and Mann Whitney test. The results showed that the overall nurses' perception of patient safety culture were at the level need improvement. It included frequency of event reporting (mean = 3.30, *SD* = 1.02), patient safety grade (mean = 3.47, *SD* = 0.64), supervisor/manager expectations and actions promoting safety (mean = 3.41, *SD* = 0.91), communication openness (mean = 3.29, *SD* = 0.84) and staffing (mean = 3.04, *SD* = 1.11). There were 3 out of 11 dimensions in positive perception. There included number of events reported (mean = 4.51, *SD* = 0.64), organizational learning-continuous improvement (mean = 4.09, *SD* = 0.54), and teamwork within hospital units (mean = 4.01, *SD* = 0.71). In

addition, there were 2 dimensions that need to be strengthened. These were overall perceptions of safety (mean = 3.69, *SD* = 0.92), and feedback and communication about error (mean = 3.82, *SD* = 0.69). There was only one safety culture dimension that was in negative perception. This was nonpunitive response to error (mean = 2.72, *SD* = 1.02). Moreover, there were significant associations between nurses' working experience in safety culture dimensions and frequency of event reporting ($p = 0.021$) and communication openness ($p = 0.012$). And there were no significant differences of patient safety culture between scrub nurses and GA nurses ($p > 0.05$). In summary, this study enables identifying dimensions in need of improvement. Interventions to change the safety culture in operating theatre, HUSM are warranted. Years of experiences among nurses had little impact on safety culture dimensions. Thus, both scrub and GA nurses showed congruence in perception of patient safety culture.

PERSEPSI JURURAWAT TERHADAP BUDAYA KESELAMATAN PESAKIT DI DEWAN BEDAH, HOSPITAL UNIVERSITI SAINS MALAYSIA

ABSTRAK

Tujuan kajian ini adalah untuk mengenalpasti persepsi jururawat terhadap budaya keselamatan pesakit, menyelidik hubungkait antara pengalaman kerja jururawat dengan budaya keselamatan pesakit dan membandingkan perbezaan antara jururawat skrub dan jururawat bius dengan budaya keselamatan pesakit di dewan bedah, Hospital Universiti Sains Malaysia (HUSM). Lima puluh tiga jururawat telah menyertai dalam kajian ini. Kaedah persampelan bukan kebarangkalian bertujuan digunakan dalam pemilihan sampel. Data diperolehi dengan menggunakan satu soal selidik yang diubahsuai daripada *Agency for Healthcare Research and Quality (2004), the Hospital Survey on Patient Safety Culture*. Soal selidik ini telah dikesahkan oleh dua pakar dari dewan bedah, HUSM dan satu pakar lagi dari Pusat Pengajian Sains Kesihatan, Universiti Sains Malaysia. *Cronbach's alpha* untuk soal selidik ini adalah 0.71. Kesemua data yang diperolehi telah dianalisis dengan menggunakan statistik deskriptif, ujian *Pearson Chi Square* atau *Fisher Exact*, dan ujian *Mann Whitney*. Keseluruhan keputusan menunjukkan bahawa persepsi jururawat terhadap budaya keselamatan pesakit berada di tahap yang perlu diperbaiki. Ia termasuk dimensi kekerapan melapor (mean = 3.30, *SD* = 1.02), tahap keselamatan pesakit (mean = 3.47, *SD* = 0.64), espektasi and tindakan penyelia untuk mempromosikan keselamatan (mean = 3.41, *SD* = 0.91), keterbukaan komunikasi (mean = 3.29, *SD* = 0.84) dan pengurusan staf (mean = 3.04, *SD* = 1.11). terdapat 3 daripada 11 dimensi adalah berada di tahap persepsi positif. Ia termasuk bilangan

insiden yang dilaporkan (mean = 4.51, *SD* = 0.64), pembelajaran organisasi-pembaikan secara berterusan (mean = 4.09, *SD* = 0.54), dan kerjasama dalam unit hospital (mean = 4.01, *SD* = 0.71). Tambahan pula, terdapat 2 dimensi perlu dipertingkatkan. Iaitu persepsi keseluruhan tentang keselamatan (mean = 3.69, *SD* = 0.92) serta maklumbalas dan komunikasi tentang kesilapan (mean = 3.82, *SD* = 0.69). Hanya terdapat satu dimensi budaya keselamatan berada di tahap negative. Iaitu respons terhadap kesilapan tanpa hukuman (mean = 2.72, *SD* = 1.02). Selain itu, terdapat hubungkaitan yang signifikan antara pengalaman kerja dengan kekerapan melapor ($p = 0.021$) dan keterbukaan komunikasi ($p = 0.012$). Tiada perbezaan yang signifikan pada budaya keselamatan antara jururawat skrub dengan jururawat bius ($p > 0.05$). Kesimpulannya, kajian ini membenarkan pengenalpastian dimensi-dimensi budaya keselamatan pesakit yang perlu diperbaiki. Intervensi adalah penting untuk mengubah budaya keselamatan dalam dewan bedah, HUSM. Pengalaman hanya terdapat sedikit hubungkaitan dengan dimensi budaya keselamatan. Tambahan, kedua-dua jururawat skrub dan jururawat bius menunjukkan tiada perbezaan persepsi terhadap budaya keselamatan pesakit.

CHAPTER 1

INTRODUCTION

1.1 Background of The Study

Patient safety issues have been discussed worldwide in both medicine and nursing profession recently. Since the release of the 1999 Institute of Medicine (IOM) report *To Err is Human: Building a Safer Health System* which concluded that the level of patient safety in health care organizations was less than acceptable (Kohn, Corrigan & Donaldson, 2000). This shocking report estimates that 44,000 to 98,000 deaths occur annually as a result of medical errors, surgical mistakes and surgical complications. This report shocked the health care industry and consumers alike and has led to a number of regulatory, government, employer and provider efforts to monitor and ensure safety in the health care environment (Institute of Medicine, 2000). Since the Institute of Medicine's identification of safety culture as a key determinant of the ability of health care organizations to address and reduce risks to patients due to medical care (Institute of Medicine, 2001), initiatives to improve and measure safety culture have proliferated (McCarthy & Blumenthal, 2006).

Leo Tolstoy famously asserted that "Happy families are all happy in the same way, but unhappy families are unhappy in their separate, different ways." So too, perhaps, is true with patient safety culture. Not many model cultures exist yet, but variations of flawed culture abound. Each flawed culture may address medical errors differently, but all negatively impact patient safety. The "punitive" culture names, blames and shames the person who caused the error. It is a culture that believes failure lies within the individual; if people are careful enough, they will never make an error.

More recently, many are beginning to progress from a wholly "blame-free" culture to a more "just" culture, which balances impunity with accountability for actions that are blame-worthy, such as recklessly endangering patients. Mistakes should not be punished or people will continue to hide errors, making it impossible to fix flawed systems. In a just culture, workers share accountability to assure the system provides the safest care possible (Smetzer & Navarra, 2007). Recognition of the critical need to assess safety culture and the impact of innovative interventions aimed at improving it has led to the development of surveys designed to measure hospital worker perceptions of safety culture (Nieva & Sorra, 2003; Colla, Bracken, Kinney & Weeks, 2005; Flin, Burn, Mearns, Yule & Robertson, 2006; Singla, Kitch, Weissman & Campbell, 2006).

The Operating Theatre (OT) is the classic zone of conflicting goals between the individual practitioners, surgical teams and the institution (Flin et al., 2006). It is one of the most complex work environments in health care. Complexity is manifest in the patient and treatment protocol, as well as the high level of technology and coordination required to effectively manage rapidly changing conditions. The increased complexity in the operating theatre can lead to more opportunity for errors to occur; consequently, more emphasis is being placed on patient safety in this arena (Christian. Gustafson, Roth, Sheridan, Gandhi, Dwyer, Zinner & Dierks, 2006). Personnel, technology, patients and pharmacodynamics must be coordinated to yield specific patient outcome (Reavis, Sandidge & Bauer, 1998). Despite the stringent standards of the operating theatre, potential dangers can still exist with regard to patient safety. Particularly, infectious risk factors related to the operating theatre include: individual patient associated risks, the condition of the operating theatre

environment, ventilation systems, cleaning and sterilization practices, and habits and practices of operating theatre personnel (Pittet & Ducel, 1994).

Perioperative nurses play a critical role in ensuring a safe journey for patients undergoing surgery (Beyea, 2002). They have completed intensive education and training in all aspects of patient care, including preoperative assessment, intraoperative practice standards and postoperative evaluation of services (Meeker, Rothrock & Alexander, 1998). The relationship between the nurses and the patients is one of the cardinal relationships existing in the operating theatre (Giordano, 1997). Nurses are taught to be patient advocates during the perioperative experience (Marshall, 1994). This advocacy is seen through the ethic of caring, in which nurses take action to maintain patient autonomy, health and well-being when such are threatened by the general anesthesia experience (Fortner, 1994). Based on the Code of Professional Conduct for Nurses (1998) from Malaysian Nursing Board, the nurse acts to promote and protect the interest of the patient when he/she is incapable of communicating his/her needs and protecting him/herself. In an emergency situation where consent cannot be obtained, the nurse act in the best interest of the patient within her scope of training and competency.

A wise hospital executive knows that the way to get something done in patient care is to go to the nurses, not the doctors. It is the hospital executive's responsibility to be the leader for the assignment of necessary resources and allow education agendas for nurses to proactively and prospectively improve patient care on a daily basis. The hospital board's duty to provide a safe patient environment obligates it to approve the necessary expenditures for the structures and processes that support good action decisions for a safer health system (Mustard, 2002).

Even though there are some recommended practices and guidelines to follow, nurses, however, do not always apply these standards. Thus, injuries such as pooling of iodine solutions causing burns, foreign objects left in body cavities, electrosurgical tissue injuries and positioning sequelae continue to be threats to perioperative patients (Reavis, Sandidge and Bauer, 1998). Among the six domains of quality from a patient's view, safe is one of the domains. Hence, as a health care professional, what changes can we do to improve patient safety? This is because nowadays came to attention of patients and politicians through the media, as reframed as "health care causing preventable harm and death" (Wilson, 2004). Hence, patient safety culture should be evaluated especially in high risk setting such as operating theatre.

1.2 Problem Statements

In 2008, World Health Organization estimates that ten millions of patients worldwide suffer disabling injuries or death every year due to unsafe medical practices and care; and "*Every year, as many as 1,000 patients here die needlessly because of medical errors made in hospitals*" (Nathan, 2002). According to Medical Practice Division of Ministry of Health Malaysia, in the year 2000, the amount of compensation paid by the Malaysian government to medico-legal cases was RM219, 508 whereas in the year 2001 was RM430,502, whereas in 2002 was RM951, 889 (John Kassim, 2008). Furthermore, the former Health Minister said in 2006 government hospitals treated more than 40 million patients and that an impending 3 to 10 percent medical error rate in diagnosis and treatment was imminent (The Malaysian Bar, 2008). All these data show that there is a need to review back what is happening in our health care system. Especially in assessing and improving the patient safety culture whether in unit or hospital level.

The blaming culture in hospitals can probably never be totally eliminated because "To err is human" and there will always be the risk of fatal human errors from unthinking and uncaring behavior and the need for minimal punishment or retribution (Mustard, 2002). According to Gaba (2003), "production pressure" means that the overt or covert pressure to put production ahead of safety. It is a challenge to a culture of safety, especially in high risk setting such as operating theatre.

Moreover, a patient safety culture that recognizes the importance of communication and teamwork as vehicles to achieve coordination and integration also depends on the health care providers' perception, attitudes, knowledge and skills (Kaissi, Johnson & Kirschbaum, 2003).

Cultural change must target everyone in the organization; particular emphasis must be placed on nurses. They are the largest group of health care providers in the hospital, are generally closer to patients than other clinicians and spend the most time in the patient care departments. Hence, they are the most likely to recognize workflow, physical plant or safety problems and also identify possible solutions and work to implement them. A good place to start is by administering a safety culture assessment throughout the organization (Thompson, Navarra & Antonson, 2005). A cultural assessment may be one of the best ways to measure OT quality and identify areas for improvement. Many of the key metrics used to measure quality and safety, such as mortality rates and infection rates, do not provide a true indication of the organization's quality of care because they are influenced by the patient population through "Culture transcends these measures" (Makary, Sexton, Freischlag, Holzmueller, Millman, Rowen, & Pronovost, 2006). Therefore, researcher would like to determine the nurses' perception of patient safety culture in operating theatre, HUSM.

The conceptual framework for this study was based on the conceptualization of nurses' perceptions of patient safety culture which was adapted from Berends (1996), King (1981) and Agency for Healthcare Research and Quality (2004). This framework explained how nurses' perceptions give impact on eleven patient safety culture dimensions in operating theatre, HUSM. However, the relationship between nurses' working experience and patient safety culture in operating theatre, HUSM was examined through this study. Thus, the comparison of differences of patient safety culture mean dimensions scores between scrub nurses and GA nurses also was determined through the study.

1.3 Objectives of the Study

The objective of this study was to determine perception of nurses regarding patient safety culture in operating theatre, Hospital Universiti Sains Malaysia.

1.3.1 Specific Objectives

1. To identify perception of nurses regarding patient safety culture in operating theatre, Hospital Universiti Sains Malaysia.
2. To examine the association between nurses' working experience and patient safety culture in operating theatre, Hospital Universiti Sains Malaysia.
3. To compare the differences of patient safety culture between scrub nurses and GA nurses in operating theatre, Hospital Universiti Sains Malaysia.

1.4 Research Questions

1. What are the perception of nurses regarding patient safety culture in operating theatre, Hospital Universiti Sains Malaysia?
2. Is there any association between nurses' working experience and patient safety culture in operating theatre, Hospital Universiti Sains Malaysia?
3. Is there any difference of patient safety culture between scrub nurses and GA nurses in operating theatre, Hospital Universiti Sains Malaysia?

1.5 Hypothesis

H_{O1} There is no significant association between nurses' working experience and patient safety culture in operating theatre, Hospital Universiti Sains Malaysia.

H_{A1} There is a significant association between nurses' working experience and patient safety culture in operating theatre, Hospital Universiti Sains Malaysia.

H_{O2} There is no significant difference of patient safety culture between scrub nurses and GA nurses in operating theatre, Hospital Universiti Sains Malaysia.

H_{A2} There is a significant difference of patient safety culture between scrub nurses and GA nurses in operating theatre, Hospital Universiti Sains Malaysia.

1.6 Definition of Terms

- **Perioperative Nurses**

Perioperative nurses refer to nursing activities performed during the preoperative, intraoperative and postoperative phases of a patient's surgical intervention (Vane, Drost, Elder & Heib, 2005).

- **Scrub Nurse**

Scrub Nurse primarily involves technical skills, manual dexterity and in depth knowledge of the anatomic and mechanical aspects of a particular surgery (LeMone & Burke, 2000).

- **GA nurse**

The GA nurse relieves the surgeon of the responsibility for the client's general well-being, thus allowing the surgeon to focus on the technical aspects of the procedure. GA nurse evaluate the client preoperatively, administers the anesthesia and other required medications, transfuses blood or other blood products, infuses intravenous fluids, continuously monitors the client's physiologic status, alert the surgeon to developing problems and treats them as they may arise (LeMone & Burke, 2000).

- **Perception**

Perception is a process of human transaction with the environment (King, 1981).

- **Patient Safety**

The National Patient Safety Foundation defines patient safety as "the avoidance, prevention and amelioration of adverse outcomes or injuries stemming from the process of health care (McFadden, Stock & Gowen, 2006).

- **Patient Safety Culture**

Patient safety culture is defined as a product of social learning; ways of thinking and behaving that are shared and that work to meet the primary objective of patient safety (Schein, 1999).

- **Nurses' perceptions of patient safety culture in operating theatre, HUSM**

Nurses' perceptions of patient safety culture in operating theatre, HUSM in this study is refer to a process of perioperative nurses' transaction with the operating theatre, HUSM; which influence his or her beliefs and norms towards the eleven patient safety culture dimensions which including (1) supervisor / manager expectations and actions promoting safety; (2) organizational learning – continuous improvement; (3) teamwork within units; (4) communication openness; (5) feedback and communication about error; (6) nonpunitive response to error; (7) staffing; (8) overall perceptions of safety; (9) frequency of event reporting; (10) number of events reported and; (11) patient safety grade (King, 1981; Berends, 1996; Agency for Healthcare Research and Quality, 2004).

1.7 Significance of The Study

If the proposed study was not conducted, we might be failing to contribute significance to nursing education, nursing administration and nursing practice.

1. Nursing Education

This study was provided the data about the patient safety culture in operating theatre. The findings of the study would be used as an evidence to develop the structure of teaching and learning related to patient safety and helps to identify the training needs of staff especially in operating theatre, HUSM. This is very important in order to strengthen nurses' knowledge regarding patient safety in the future. Thus,

it helped to discover the lack of knowledge in certain patient safety culture dimensions.

2. Nursing Administration

The study was provided valuable information specific to the patient safety culture in operating theatre, HUSM. The result served as a baseline data to help the organization to create a safety culture at the hospital level and help the health care workers to realize the importance of the patient safety issues. Moreover, it could directly reduce the errors and incidents that might be happened. Hence, it was definitely will save extra expenses and the money can use for other purposes that valuable for patients and staffs as well as for quality improvement.

3. Nursing Practice

This patient safety culture study was significant to be conducted because patient safety research was a research for action. A common feature of most patient safety research was that it aims to help health care professionals and policy-makers understand the complex causes that lead to unsafe care and to come up with practical responses to reduce patient harm. Standard practice should be followed and standardize strictly in order to prevent any errors in operating theatre. This study added to monitor the nurses' practice in order to become a competent, safe nurse. It would be sure to reduce liability exposure to any medico-legal cases.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

With increasing concern over the safety of high-risk organizations, there are a number of relevant studies of safety culture in healthcare and in other industries. O'Toole established a preliminary safety culture study by surveying a large concrete producer and collecting injury data over 45 months and found that reduction in injuries can result from positive employee perceptions on management leadership (O'Toole 2002). Sexton and his research group at the University of Texas concluded that pilots treat effects of fatigue on performance more seriously than surgeons and anesthetists. Moreover, they pointed out that although hospital staff acknowledges the importance of reporting errors, the lack of such reporting is a serious problem existing in hospitals using the descriptive methods (Sexton, Thomas & Helmreich, 2000).

Perception and attitude towards patient safety are associated with the participation of clinical status, with clinicians generally perceiving a higher safety culture problem than non-clinicians and vary by ranking (supervisor, nonsupervisor, or senior manager), with senior managers reporting fewer problematic responses than other rankings. This raises the question that perhaps different areas of the hospital have varying understandings and culture related to patient safety. There is also a suggestion that experience may play a role in perception of safety, based on the difference in rankings and positions. No study has evaluated perception of safety based on experience, nor has any attempt been made to identify how a person's perception of the safety culture is associated with one's own personality. This might

prove useful since safety culture is perceived by individuals and is to some extent the product of personal beliefs, values and attitudes of safety (Singer et al. 2003).

Many similar studies using the same instrument, Hospital Survey on Patient Safety Culture in assessing the safety culture whether in unit or hospital level. The methodologies of all these studies are almost the same in which they took health care personnel as a sample such as nurses (Scher & Fitzpatrick, 2008; Castle, 2006; Sine & Northcutt, 2008; Moody, Pesut & Harrington, 2006; Edwards, Scott, Richardson, Espinoza, Sainfort, Rask & Jose, 2008; Handler; Castel, Studenski, Fridsma, Nace & Hanlon, 2006; Castle & Sonon, 2006; Hughes & Lapane, 2006).

2.1.1 Perception

Baggs, Schmitt, Muslin, Mitchell, Eldredge, Oakes & Huston (1999) found providers' perceptions of interdisciplinary collaboration to be significantly related to readmission and mortality. According to Nieva & Sorra (2003), assessing staff perceptions of safety culture is a first step to identify areas in need of improvement, and then, follow up assessments can show the effectiveness of changes made to address initial improvement needs. In the concept of nurses' perceptions related to patient safety culture, it is influenced by norms and beliefs of the nurses on how he or she transaction with the operating theatre environment.

2.1.2 Patient Safety Culture

Patient safety has largely centered on system issues at the micro level (Scherer & Fitzpatrick, 2008). The Presidential Commission on Patient Safety is the governing body of Patient Safety First. At the commission's initial meeting in 2002, members identified the following priorities for the initiative:

- Correct site and patient identification;
- Communication in the OT and among health care providers;