NURSING PERCEPTIONS OF PATIENT SAFETY AT HAMAD MEDICAL CORPORATION IN THE STATE OF QATAR

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DEDICATION

I dedicate this work

To whom I was nine months under her heart
To whom is the reason I am in this world
To whom never stopped praying
…..Mom I love you….

ACKNOWLEDGMENTS

This study would not have existed without the will of god, Allah, the giver of all good and perfect bounties. With his blessing and mercy, Allah granted me in order to see my dream through to completion. I hope that I am able to communicate and share my skills and knowledge for the benefit of all educators. All praise for his guidance and grace. Peace and blessing be upon our prophet Mohammed.

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PREFACE

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ABSTRACT

Moza A Latif AL-Ishaq

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IN THE STATE OF QATAR

The ability to improve the safety of patient care delivery is dependent on the safety culture, or the norms surrounding reactions following an error, the learning that takes place, and the proactive strategies in place to prevent future errors. While measurement of patient safety culture is now common in the United States (US) using instrument specifically developed for US healthcare organizations, no measurements of safety culture had been conducted at Hamad Medical Corporation in the State of Qatar, a Middle Eastern country; nor were valid or reliable instruments available. The purpose of this study was to assess registered nurses' perceptions of the safety culture in the units where they provide nursing care at Hamad Medical Corporation using a modified version of the Agency for Healthcare Research and Quality (AHRQ) patient safety culture an instrument (Hospital Survey of Patient Safety Culture). Eight hundred surveys were distributed to all randomly-selected nurses from eight targeted clinical services with a response rate of 57%. Survey results were compared with those from US hospitals using the original AHRQ survey. Ranking of subscales for this study in terms of strengths and areas needing improvement were almost identical to the ordering of US hospital results, with teamwork within units ranked highest and indicating a strength; and the subscale non-punitive response to error the lowest and indicating an area for improvement. Positive response rates in terms of safety culture for this study were generally lower on

most subscales compared to the US results and may reflect the intensity of patient safety improvement activity in the US over the last eight years in response to the Institute of Medicine's report on medical errors in 1999. Results from this study provide a baseline measurement for safety culture at Hamad Medical Corporation and beginning adaptation of an instrument that can be used in other Middle Eastern healthcare organizations in the future.

Patricia Ebright, RN, DNS, Chair

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CHAPTER 1

INTRODUCTION

Safety culture, an important concept in providing a safe environment for employees and patients, is the product of individual and group values, attitudes, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety programs (Institute of Medicine [IOM], 2000). Organizations with a positive safety culture are characterized by communication founded on mutual trust, by shared perceptions of the importance of safety, and by confidence in the efficacy of preventative measures (Health & Safety Commission [HSC], 1993). One of the benefits of a positive safety culture is the willingness of individuals to report errors. Learning through reporting about why and how errors occurred is essential for making improvements in patient safety.

Safety culture has been measured and studied in many industries. Cooper (2000); Zohar (1980) stated that it is an indicator of employees' values, beliefs, and norms about what is important in an organization and what the expected and appropriate attitudes and behaviors are for patient safety.

This study assessed nurses' perceptions of the safety culture in units at Hamad Medical Corporation (HMC) in the State of Qatar. HMC is the facility arm of the Ministry of Health in the state of Qatar. HMC is a premier non-profit healthcare provider in Doha, Qatar, and was established by the Emir's decree in 1979. The corporation is a network of three (3) hospitals, namely: Hamad General Hospital, Rumailah Hospital, and Women's Hospital. All three hospitals are managed by HMC.

The Corporation is also equipped with a Pediatric Emergency Center (PEC) for children. This chapter will offer an overview of safety culture, a statement of the problem and purpose of the study.

Overview of Safety Culture

Recognition of the role of safety culture in preventing accidents has led to a growing number of attributes used to assess and define safety culture in a variety of highly complex industries. Organizations with a positive safety culture are characterized by communication founded on mutual trust, shared perceptions of the importance of safety, and confidence in the efficacy of preventive measures (Carnino, 1989; Lee, MacDonald & Coote, 1993; Lucas, 1990).

Reason (2002) identified three vital ingredients for driving the safety engine, all of them within the purview of top managers and referred to as the three Cs: commitment, competence and cognizance. While top management is vital to the process of maintaining a safety culture, management staff may change. Reason (2002) believed that "a good safety culture is something that endures and provides the necessary driving force" for safety (p. 113).

The International Civil Aviation Organization ([ICAO], 1992) noted that a good safety culture is made up of senior management placing a strong emphasis on safety, being willing to accept criticism, open to opposing views, fostering a climate that encourages feedback, and emphasizing the importance of communicating relevant safety information. This feedback includes the occurrence of errors, and the details surrounding the error event. Senior management must also promote realistic and workable safety rules and ensure that staff are well educated and trained regarding consequences of unsafe acts.

Staff also has a role in forming the safety culture by understanding hazards within the workplace and working within the defined safety parameters of their work roles. An effective safety management system that employees can count on is a sign that the organization has a good safety culture, especially if employees are involved in improving and building that safety management system. Applying this to health care means that knowing the values, beliefs, rituals, symbols, behaviors and perceptions that nurses hold about safety in their workplaces should help management evaluate their safety culture programs, and predict the extent to which staff will participate in improving patient safety and quality of care (Cooper, 2000; IOM, 2000).

An organization's understanding of nurses' perceptions about safety culture is important because it helps organizations to find the factors that threaten patient safety, determine the willingness of the employees to improve safety and report errors (IOM, 2002; Reason, 2002). The more positive a safety culture the more willing employees are to report. Zohar (1980) and O'Toole, (2002) indicated that measuring safety culture will help managers understand the impact of safety culture on the occurrence of errors. It will help them to identify the relative contribution of causal factors to errors. All managers should understand the importance of encouraging and supporting employees about reporting errors (Helmreich, 1998; Reason, 2002).

In high risk industries such as nuclear power plants in Chernobyl and Three Mile Island, there has been an increasing recognition about the importance of safety culture, and the concept has been identified as an overriding factor influencing accidents and disasters (Perrow, 2004; Zhang, Wiegman, Thaden, Sharma, & Mitchel, 2002). For example, errors in operating procedures that contributed to accidents have been attributed

to evidence of poor safety culture, as was seen in nuclear accidents at Chernobyl, and at Three Mile Island, King's Cross underground fire in London and the Piper Alpha oil platform explosion in the North Sea (Cox & Flin, 1998).

Based on early safety literature, errors were most often related solely to individual workers and not to how safety was managed or to system breakdown (Cox & Flin, 1998; Reason, 2002; Zohar, 1980). Promoting a culture of reporting errors is applicable to patient care environment so that employees learn from each other to avoid future errors (IOM, 2000; Reason, 2002).

When addressing safety within one particular health care organization, measuring the existing safety culture may help enlighten management regarding issues that impede making progress in safety (IOM, 2000). At HMC current measurement of safety focuses on counting and classifying errors and incidents that occur, and reactions to those error incidents. As an alternative, a proactive approach would provide HMC's administration with a clearer picture of the culture of safety on individual nursing units, and would provide a baseline measure to guide strategies to improve on the attributes of safety culture related to improved patient safety (IOM, 2000).

Since there was no previous literature or current research studies at HMC that measured the organization's safety culture, the purpose of this study was to measure nurses' perceptions of the safety culture at the unit level. This study provides HMC with an empirical baseline measure of the safety culture and an important outcome measure by which future safety improvements can be evaluated.

Statement of the Problem

HMC, a multiple complex system industry, has not yet considered changing its focus to multiple system processes as an important strategy for improving safety (N. Almeer, Director of Nursing, personal communication, March, 2006). The culture surrounding management of errors is focused on the individual and not the system, and may not be supportive of employee reporting behaviors (Cox & Flin, 1998; IOM, 2000; Reason, 2002). A good safety system depends on having a culture that supports and encourages employees to report their errors and near misses. It is reasonable to test the usability of well-developed US measurement instruments for patient safety culture in organizations and other countries that are not as far along in the patient safety movement. This study not only provides a baseline empirical measure of the safety culture, but spearheads an increased awareness of hospital staff about patient safety and safety culture as important issues for health care at HMC and in the State of Qatar.

Introducing the concept of safety culture to HMC is a big challenge because it will require an effort from managers, other leadership and administrators to make health care safe even though the progression will move slowly. It will require the healthcare organization's leadership committee to increase focus on the quality of care, the safe delivery of services, and accept new practices, to improve the system even though changes to the system will only gradually spread throughout the hospital. It will also require HMC administrators to emphasize that errors occur because of the breakdown of multiple systems.

It is a challenge for any healthcare organization to implement new practices to improve the quality of the system, patient care, and/or safety. The first challenge relates

to complexity of healthcare organizations. These organizations tend to be more complex than other industries for several reasons. First, essential practices of healthcare workers are often invisible. Secondly, commitment requires major changes in individual behavior from the traditional blame toward a non-blame approach to errors, and a focus from bad people to bad systems. A third reason related to healthcare professionals' fear of losing others' confidence and trust, and their personal reputation (Leap & Berwick, 2005).

HMC is one of the largest healthcare facilities in the State of Qatar making an effort to improve patient safety. The Joint Commission International [JCI] provided consultation to HMC in 2002 and continues with consultation for improving patient safety. According to Leap and Berwick (2005) changing the culture, or even a few practices and policies, requires healthcare professionals and especially the top level administrators to share a common vision with their employees

Purpose

The purpose of this study was to assess nurses' perceptions of the safety culture in their units at Hamad Medical Corporation in the State of Qatar. This was an important first step toward proactive improvement in patient and staff safety where errors and incidents may often be hidden for fear of negative consequences.

Research Question

This study was directed by the following research question:

What are nurses' perceptions of the safety culture in their work areas at Hamad Medical Corporation in the State of Qatar?

Significance of the Study

It is important to understand the perceptions of nurses about the safety culture in which they work (IOM, 2000). Because such an understanding does not presently exist at HMC, the potential of enhancing and using a safety culture survey provided an empirical measure of the concept that may help to guide proactive strategies to decrease errors and incidents in the patient care and the staff's environment. Evaluating the safety culture, or the underlying values and norms in an organization related to safety, will provide a context for action and improvement for HMC (Cooper, 2000; Helmreich, 2000).

Assumptions

The following assumptions were made for the conduct of this proposed study:

1. The modified survey questionnaire is a valid and reliable instrument for assessing the perceptions of nurses towards patient safety culture.
2. Participants will respond honestly to the survey questionnaire.
3. Participants will have adequate English skills to understand the survey questionnaire.

Conceptual Definitions of Terms

Culture is the "values, beliefs, rituals, symbols and behaviors that are shared with others" (Merrit & Helmreich, 1996, p.1).

Human Factors are the interrelationships between humans, the tools they use, and the environment in which they live and work (IOM, 2000).

Human Errors are the failure of planned actions to achieve their desired ends without the intervention of some unforeseeable event (Reason, 2002).

Errors are the failure of a planned action to be completed as intended. Errors may also be the use of a wrong plan to achieve an aim (Reason, 2002).

Patient safety is the avoidance, prevention and amelioration of adverse outcomes or injuries stemming from the process of health care (IOM, 2000)

Safety culture "the safety culture of an organization is the product of individual and group values, attitudes, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety management and programs. Organizations with a positive safety culture are characterized by communications founded on mutual trust, by shared perceptions of the importance of safety, and by confidence in the efficacy of preventative measures'" (Health & Safety Commission [HSC], 1993).

Summary

This chapter has offered an overview of safety culture, statement and significance of the problem, assumptions, and conceptual definitions of terms that helped guide the study. The importance of safety culture to patient safety and the characteristics of effective safety culture were presented. While US hospitals have been measuring safety culture for several years to identify areas for improvement, no measurement of safety culture had been conducted in HMC, a Middle Eastern healthcare organization. In addition, no comparable instrument from the Middle Eastern was available for this measurement. This study was a first attempt to adapt a reliable and valid measure of safety culture to a Middle East country healthcare organization, and to measure patient safety culture at HMC. In the next chapter, a review of the literature on safety culture is presented.

CHAPTER 2

REVIEW OF THE RELATED LITERATURE

The literature review in this chapter is organized around five areas: 1) the history of safety culture as a concept; 2) analysis of the concept of safety culture with reported research on safety culture within high risk industries; 3) discussion of Bandura's Model of Reciprocal Determinism with empirical studies from different industries relating to the model; 4) measurement of safety culture in US healthcare institutions; and lastly, 5) status of research and safety culture related activities in the state of Qatar and the Middle East.

The History of Safety Culture

A safety culture is broadly described as a set of shared values, beliefs, norms, and attitudes that interact with an organization's structure and control systems to produce behavioral norms (Perrow, 2004; Reason, 2002; Zhang, Weigmann, Thaden, Sharma & Mitchell, 2002). It also represents the shared roles, and social and technical practices, that minimize the exposure of employees to dangerous conditions (Uttal, 1983; Turner, Pidgeon, Blockley & Toft, 1989).

The term of safety culture first appeared in 1987 in the International Nuclear Safety Advisory Group (INSAG) report as a result of the 1986 Chernobyl disaster ([INSAG, 1991). Cullen (1990) later used the term to describe the corporate atmosphere or culture in which safety is understood to exist.

The concept of safety culture appeared after several events such as Chernobyl, Piper Alpha, Kings Cross, Three Mile Island and Train Crash at Calpham Junction (Reason, 2002; Fleming & Lardner, 1999; Perrow, 2004). These accidents and errors

were interpreted as evidence of industry-wide poor safety cultures that occurred because safety systems had broken down (Zhang, Weigmann, Thaden, Sharma & Mitchell, 2002). Safety culture is currently proposed by patient safety leaders as a core element in healthcare organizations for improving patient safety (Hughes & Lapane, 2006). The following section provides theoretical approaches and definitions across multiple authors.

In high risk industries, there has been an increasing recognition about the importance of safety culture. Improvement in safety culture has been the focus and overriding priority after several high profile accidents and disasters (Lee, 1998). Accident investigations from several different industries resulted in identification of violations and errors in operating procedures that contributed to accidents and were seen as evidence of poor safety cultures.

The Concept of Safety Culture

Safety is a sub-component of corporate culture, alluding to individual performance and organizational features that influence health and safety (Cooper, 2000). In order to better understand the concept of safety culture it is important to define both terms. Hudson (2001) described safety with a very simple definition: "Just make sure people don't get hurt" (p.1). Rasmussen, Petersen and Goodstein (1994) found that "safety is increased primarily by understanding and reinforcing the mechanisms practitioners normally use to detect and bridge gaps" (p.13).

Culture has been defined as the "values, beliefs, rituals, symbols and behaviors that we share with others and that help define us as a group, especially in relation to other groups" (Merrit & Helmreich,1996, p.1). Hofsted (1990) indicated that culture is the collective programming of the mind that distinguishes the members of one group from

another. Thomas, Ward, Chorba and Kumiega (1990) wrote that culture is an essential aspect for understanding and changing individual behavior in any organization.

Safety Culture

As noted above, the concept of safety culture was first introduced by the International Atomic Energy Agency (IAEA, 1991) as a result of their first analysis into the nuclear reactor accident at Chernobyl (Zhang, Weigmann, Thaden, Sharma & Mitchel, 2002). Investigation into a number of recent disasters such as King Cross, the Piper Alpha Inquiry and the Train Crash at Clapham Junction in London, led to the conclusion that safety systems had broken down. Thus, safety culture has become an important and meaningful concept to those working in high risk industries where failure to make the correct decision can be catastrophic (Perrow, 2004)

A number of definitions of safety culture have been developed, some focused on worker behaviors or attitudes, and some related to worker behaviors and work outcomes. For example, Uttal (1983) defined it as "Shared values and beliefs that interact with an organization's structures and control systems to produce behavioral norms" (p.9). Turner, Pidgeon, Blockley and Toft (1989) defined safety culture as "the set of beliefs, norms, attitudes, roles, and social and technical practices that are concerned with minimizing the exposure of employees, managers, customers and members of the public to conditions considered dangerous or injuries" (p.17). IAEA (1991) defined safety culture as "...that assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, nuclear plant safety issues receive the attention warranted by their significance" (p.67). The Confederation of

British Industry (CBI) defined safety culture as “the ideas and beliefs that all members of the organization share about risk, accidents and ill health” ([CBI], 1991, p.26). The UK Health and Safety Commission (HSC) defined Safety Culture as “the product of individual and group values, attitudes, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization’s Health & Safety programmes” ([HSC], 1993, p.2). The UK HSC (1993) also commented that “the organizations with a positive safety culture are characterized by communications founded on mutual trust, by shared perceptions of the importance of safety, and by confidence in the efficacy of preventative measures”. Carnino (1989), Lee, MacDonald and Coote (1993), and Lucas (1990) have also proposed similar definitions to those above.

The definition from CBI, describe safety culture as the actual attitudes ad beliefs themselves. HSC UK definitions conceptualized safety culture as more of the products and results of peoples attitudes or beliefs or ideas. Given the above definitions it is reasonable that operationalizing safety culture would involve the combining measurement of shared values, attitudes, and beliefs as well as employees’ perceptions about safety related behaviors and programs.

Components of Safety Culture

The purpose of this section is to report and summarize current literature regarding safety culture components in different disciplines. Based on several studies different perspectives on safety culture components were noted across researchers that focused on combinations of organizational behaviors, processes or structures, and/or outcomes to represent safety culture. Studies were conducted to measure and identify safety culture components are presented in Table 1.

Table 1

The Components of Safety Culture from Different Resources and Studies

Resources	Components
Simonds & Shafari-Sahrai (1977)	1. Management involvement in safety effort 2. Workforce characteristics 3. Physical conditions
Zohar (1980)	1. Strong management commitment to safety 2. Emphasis on safety training 3. The existence of open communication links and frequent contacts between workers and management, 4. General environment control and good housekeeping 5. A stable workforce and older workers 6. Distinctive ways of promoting safety 7. Effect of safe conduct on social status 8. Status of safety committee
Cohen & Cleveland (1983)	1. A strong management commitment to safety 2. Contacts between workers and management on safety issues 3. Well-established safety training
Brown & Holmes (1986)	1. Management concern 2. Management activity 3. Risk perception
Bailey (1989)	1. Management commitment to safety 2. education and training
Roberts (1990), Roberts, Rousseau, & La Porte (1994) Roberts & Bea (2001)	1. Interpersonal responsibility 2. Person centeredness 3. Co-workers helpful and supportive of one another 4. Friendliness 5. Open sensitive personal relations 6. Creativity 7. Achievement of goals 8. Strong feelings of credibility 9. Strong feelings of interpersonal trust 10. Resiliency

Roperts (1990) & Roberts, Rasuseau, & La Porte (1994)	1. Commitment to safety 2. The necessary resources 3. Incentives 4. Rewards 5. The value of safety as the primary priority 6. Frequent and candid communication between workers
International Civil Aviation Organization ([ICAO], 1992)	1. Senior management placing a strong emphasis on safety 2. Staff having an understanding of hazards within the workplace 3. Senior management's willingness to accept criticism and an openness to opposing views 4. Senior managements fostering a climate that encourages feedback 5. Emphasizing the importance of communicating relevant safety information 6. The promotion of realistic and workable safety rules 7. Ensure staff are well educated and trained
Lee, MacDonald, and Coote (1993) agreed with Mearns et al. (1997)	1. Management commitment to safety 2. Safety as having priority over production 3. Provision of effective safety supervision 4. A culture of participative and humanistic management 5. Status given to safety measures 6. Use of effective and efficient rules and procedures 7. Low levels of risk taking behavior 8. Cultivation of shared perceptions of relative risks 9. Good organizational learning experiences 10. Maintenance and promotion of safe work
Dedobbeler & Beland (1998)	1. Management commitment 2. Worker involvement
Fleming (2000)	1. Management commitment and visibility 2. Communication 3. Productivity versus safety 4. Learning organization 5. Safety resources 6. participation, shared perceptions about safety 7. Trust 8. Industrial relations 9. Job satisfaction 10. Training
Geller (2000) Helmreich & Merrit (1998)	1. Acknowledgement of high risk and the error-prone nature of an organization's activities 2. A blame-free environment 3. Expectations of collaboration across ranks to seek solutions to vulnerabilities 4. Willingness on the part of the organization to direct resources to address safety concerns
Idaho National Engineering and Environmental Laboratory	1. Management commitment to safety 2. Job satisfaction 3. Training, equipment and physical environment 4. Organizational commitment

([INEEL], 2001)	5. Worker involvement 6. Co-worker support 7. Performance management 8. Personal accountability
O'Toole (2002)	1. Management commitment to safety 2. Education and knowledge 3. Safety supervisory process 4. Employee involvement and commitment 5. Drugs and alcohol 6. Emergency response and off-the-job safety
Thaden, et al. (2003)	1. Organizational commitment 2. Management involvement 3. Employee empowerment 4. Reward systems 5. Reporting system
Gordon & Kirwan (2004)	1. Management demonstration of safety 2. Planning and organizing for safety 3. Communication 4. Trust and responsibility for safety 5. Safety management system 6. Team integration 7. Responsibility for safety 8. Risk and management, 9. Training and competence

The previous studies suggest that there is a connection between management's approach to safety, the employees' perception of management, and accident/injury rates. It has been suggested that (perception of management's commitment and leadership with safety issues is a significant determinant in obtaining necessary employee commitment to safety (Bailey, 1989; Simonds & Shafari-Sahari, 1977; Cohen & Cleveland, 1983).

Across the cited studies and reviewed articles, the most common components of safety culture represented were: management commitment at all levels (12 out of the 16 articles), and communication and training (7 out of the 16). Other components cited frequently across studies were job satisfaction, co-worker support, organizational learning, reporting system, reward system and worker involvement.

The HSPSC was developed to measure safety culture at the hospital or unit level. The survey captures most of the components included in the literature through the

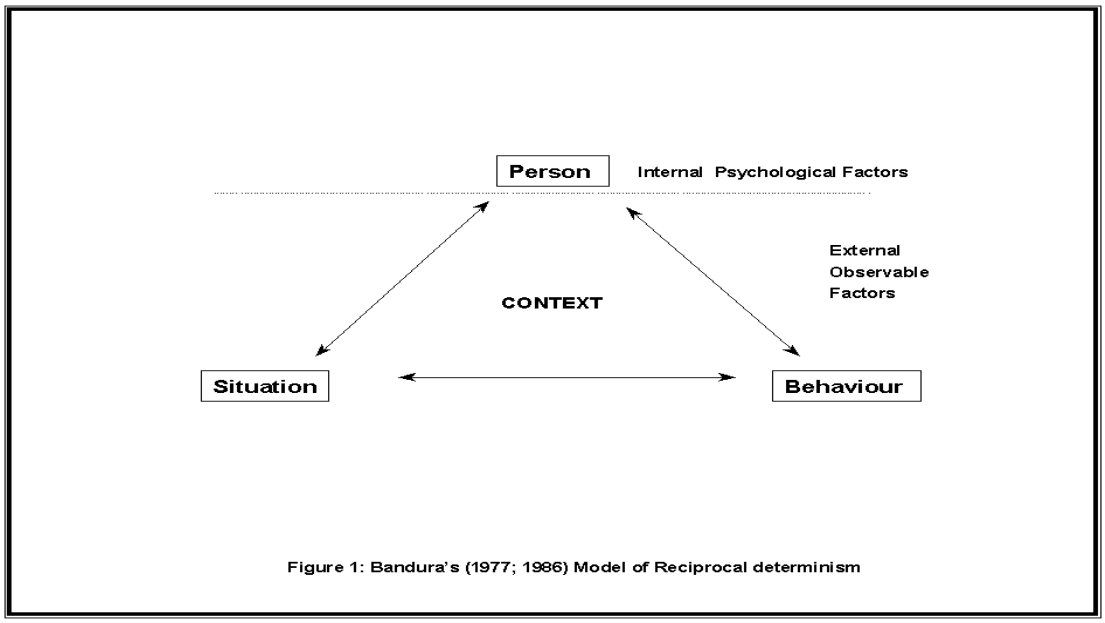
following dimensions: supervisor/manager expectations and actions promoting safety, organizational learning/continuous improvement; teamwork within units; communication openness feedback and communication about error; nonpunitive response to error; staffing; hospital management support for patient safety; teamwork across hospital units; hospital handoffs and transitions; overall perceptions of safety; frequency of event reporting; and patient safety grade.

Proposed Theoretical Framework

Cooper used Bandura's Model of Reciprocal Determinism (Bandura, 1977) to explain safety culture (Cooper, 2000).The model contains three elements including person (internal psychological factors), and behavior and situation (external observable factors) (Bandura, 1977) (Fig.1).The model of Reciprocal Determinism (RD) explains the interactions between the three elements and how they influence one another. The model also demonstrates that people are neither deterministically controlled by their environments nor entirely self-determining. Bandura proposed that behavior and personality are shaped by the interaction between cognitive factors and environmental factors.

Figure 1

Model of Reciprocal Determinism from Bandura (1977).

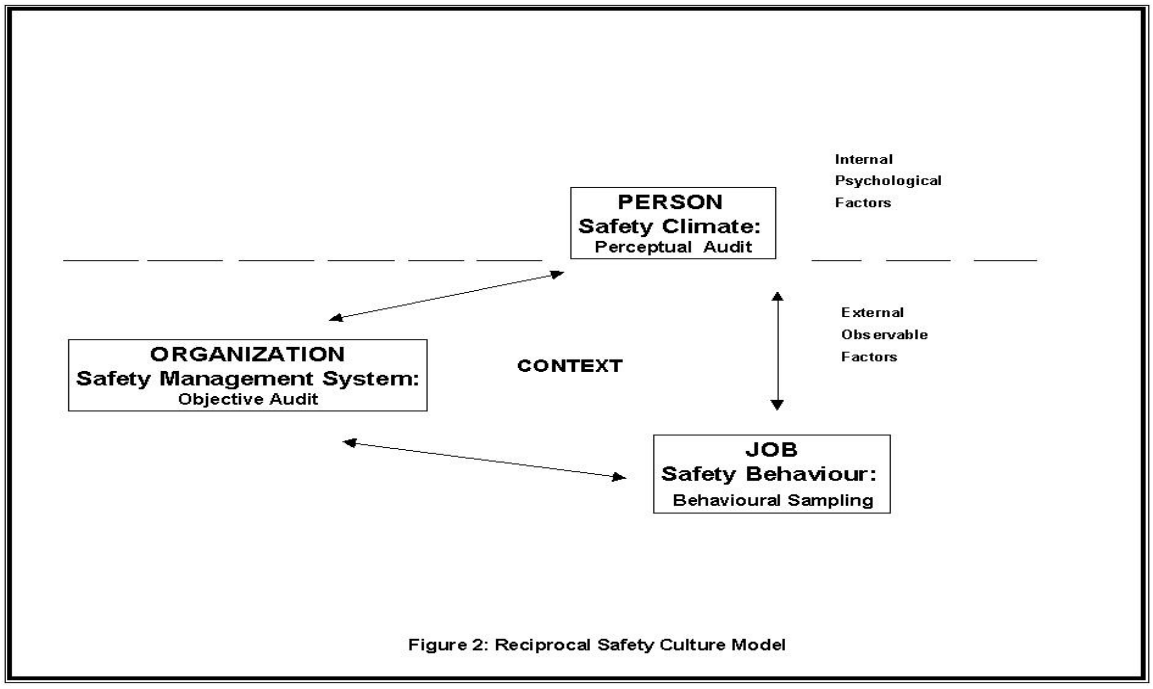


Cooper (2000) stated that Bandura's RD model recognizes the dynamic and interactive relationships between person, situation, and behavior. Cooper noted there are three major elements of safety culture consistent with Bandura's RD model (Bandura, 1977). *Person* represents the psychological components aligned with intrinsic cultural elements of values, beliefs and assumptions. *Behaviors and situations* align with extrinsic elements of norms, rituals, and symbols that make up the safety behaviors of workers and management.

Cooper (2000) developed the Reciprocal Safety Culture Model [RSCM] (e.g Cooper et al. 1994; Cooper, Philips, Sutherland, & Makin 1994; Cohen, 1977; Duff et al., 1993) as shown in Fig 2. The model is multi layered with person, job and organization being represented by three main measurable dimensions of safety climate (a substitute measure for safety culture), safety behavior, and safety management system.

Figure 2

Reciprocal Safety Culture Model from Cooper (2000).



Advantages of Bandura's model (1977) reside in the fact that organizations can readily monitor, measure and analyze psychological, behavioral and situational factors. For example, factors such as attitudes and perceptions are represented as the internal psychological factors in an organization and can be assessed via safety culture questionnaires. Ongoing safety related behavior can be assessed via observation checklists developed as a part of behavior safety initiatives. Organizational factors can be assessed via safety management system audits (Cooper, 2000). Cooper wrote that "the psychological, behavioral, and situational elements of Bandura's model precisely mirror those accident causation relationships found by a number of researchers" (p.6). As such, safety culture can be measured by the subjective, and observable and objective, features of Bandura's model. For the purpose of this proposed study, the psychological factors represented in Cooper's (2000) adaptation of Bandura's RD Model (1977) were measured through a safety culture survey to describe the attitudes and perceptions of nurses related to safety in their work units.

Measuring Safety Culture

The safety culture definitions and components presented above reflect two major types of safety culture elements: person (intrinsic elements of values, beliefs, assumptions or who and what we are, what we find important); and situation and behavior (extrinsic elements of behaviors, norms, rituals and symbols- (how we go about things around here). It is clear that the intrinsic elements represent more of inner personal and psychological factors, and extrinsic elements represent more of the behavioral factors. Factors in both may be represented differently across individuals, and multiple groups and subgroups, in the organization. The safety culture is therefore made up of a

collection of individual, group and subgroup cultures within organizations (Cooper, 2000; Reason, 2002 & Institute of medicine [IOM], 2000). Measures for each of these types of factors follow.

How to measure safety culture

Oppenheim (1992) noted that there are a variety of quantitative and qualitative data collection tools available that can be used to measure the psychological, behavioral and situational factors of safety culture. Included among these are psychological, behavioral, and situational factors.

Psychological Factors

Zohar (1980) measured psychological factors using a safety climate survey questionnaire. He proposed questions to measure person's beliefs, values, attitudes and perceptions about various *dimensions* of safety thought to be important to the development of safety culture such as management commitment. Cooper (2000) described Zohar's measure as a way to reveal practitioners' views of the strengths and weaknesses in safety management practices toward which to direct appropriate remedial actions. In addition, researchers have used Zohar's measure to examine the relationships between safety dimensions, and how each relates to outcome measures such as accident rates (Cooper, 2000**)**. Over the years, a number of questionnaires have been developed by various researchers such as Mearns, Flin, Fleming and Gordon (1997), and Lee (1998) in an attempt to identify the main factors that comprise safety climate as mentioned earlier. Safety climate measures have been widely researched and tend to be used as a substitute measure for safety culture.

Behavioral Factors

Cooper, Philips, Suthland, and Makin (1994) stated that behavioral factors of a safety culture can be examined through peer observations, self report measures, and/or outcome measures. Cooper (1994; 1997) from analyzing an organization's accident history over a two year period, found that there are small numbers of unsafe behaviors that have been implicated in the vast majority of the organization's accidents. The safe behaviors identified have been placed on observational checklists and trained observers monitored personnel against the checklist. The observations were translated into safety percentage scores to provide feedback to those being monitored. These types of behavioral measures can also be developed for self-monitoring purposes for different layers of management, to allow even managerial safety behaviors to be monitored.

Situational factors

Situational factors of a safety culture can be seen in the structure of the organization's policies, operating procedures, management systems, control systems, communication flows, and workflow (Thompson & Luthans, 1990); as well as factors such as noise, heat, light, and physical proximity associated with the immediate working environment (Cooper, 2000; Peponis, 1985). This wide range of safety related factors can be measured via audits of safety management systems (Cooper, 1997; Glendon & McKenna, 1995; Waring, 1996).

Based on a general review of the health and safety literature, the following techniques were identified to measure safety culture through direct observation, paper audit or survey. These techniques are in included the following sections.

Observation

Behavior is one of the three major dimensions of Coopers Reciprocal Safety Culture Model (Fig.2), and can be measured through observation. Some organizations have introduced behavior-based safety (BBS) methods in an effort to reduce work-related incidents and accidents. Behavior methods focus on the behaviors that lead to accidents rather than the accidents themselves, which are relatively infrequent and difficult to investigate objectively and rather than on attitudes which some believe are more difficult to change. And yet, Zohar (1980) believed that it is not necessary to measure behaviors as he assumed that attitudes measured through survey are enacted as behavior.

Cox and Cheyne (2000) incorporated behavioral indicators in their 'Safety Assessment Toolkit' along with employee interviews and attitude assessment. These researchers suggested that direct observation of employees is one way of identifying the number and nature of minor accidents and near miss occurrences. A behavioral checklist can be developed which lists those behaviors associated with preventing incidents and accidents. For example "wears eye protection when working with chemicals". Behavioral indicators can help to build a global picture of an organization's prevailing climate for safety (Cox & Cheyne, 2000). However, finding an empirical association between safety climate dimensions and measures of safety behavior remains elusive (Glendon & Stanton, 2000).

The UK Health and Safety Executive Safety Climate Measurement User Guide and Tool notes that observation can be direct or indirect. Indirect observations are used to collect data via reports and organizational records while direct observations are guided by checklists tailored to the operation. In addition to behavioral factors, Cooper, Philips,

Suthland, and Makin (1994) and Cooper (2000) noted that behavioral factors of safety culture can be examined through peer observations, self report measures and/or outcome measures. Cooper (1994; 1997) noted, after analyzing an organization's accident history for two years, small numbers of safety related behaviors were implicated in the vast majority of the organization's accidents. Cooper (2000) indicated that assessment documentation, standard operating procedures, permits to work, and group discussions were needed to understand safe behavior. The safe behaviors identified from these analyses were then placed on observational checklists against which trained observers regularly monitored personnel. The observations were then translated into 'safety percentage scores' to provide feedback to those being monitored.

Safety Audits

Audits are useful to measure whether an organization's policies and procedures are being followed and how they might be improved. Moreover, audit tools provide the organization with feedback which helps the organization to maintain, reinforce and develop its ability to manage and reduce risks. The auditing process involves: collecting information about the health and safety management system, and judging whether it is adequate.

Qualitative approaches may be used to identify those areas of the safety management system which affect the level of risk. These include analysis frameworks which assess the safety culture of an organization by measuring whether safety performance indicators are present or not (Kennedy & Kirwan, 1998).

Many organizations have safety systems which include self-auditing. For example, Health and Safety Executives Guide includes successful health and safety

Management (HSE, 2000) as key elements of the audit process. These elements are policy, organizing, planning and implementing, measuring, auditing and review (POPMAR). Items from the audit are scored and usually weighted to provide an assessment of risk (Kennedy & Kirwan, 1998). Fuller (1999) audited a UK water utility using the POPMAR criteria and found that in general, employees found the approach to be a realistic measure of the organization's health and safety operations.

Glendon and McKenna (1995) declared that safety culture in an organization can influence the effectiveness of a safety audit in a variety of ways such as the willingness of management to undertake a safety audit in the first place, provision of adequate resources devoted to the auditing process (for example auditor training and time), the involvement of both employee representatives and line managers in the audit, action on, findings from audits, and commitment by the organization to auditing over the long term.

Surveys and employees' perceptions

A survey questionnaire is one of the most popular methods for achieving an initial snapshot of safety culture. The goal is to understand the beliefs, assumptions and values which result from the questionnaire. Zohar (1980) was the first to measure what he termed a *climate for safety* in 400 subjects from four different types of organizations. He developed an eight dimensional model which included the importance of safety training; management attitudes towards safety; effects of safe conduct on promotion; level of risk at the work place; effects of required work pace on safety; status of safety officer; effects of safe conduct on social status; and status of the safety committee.

The questionnaire contained forty items to measure the organizational climate for safety. It was distributed to workers in a stratified sample of twenty factories. The purpose of the questionnaire was to measure workers' perceptions, attitudes, and values. It was not the intent to measure accident rates and incident frequency rates. Zohar found that management commitment to safety was the major factor affecting the success of safety programs. He recommended that a genuine change in management attitude and increased commitment be pre-requisites for any successful attempt at improving the safety level in industrial organizations (Zohar, 1980).

Since Zohar's initial work, a number of studies have been conducted. When Brown and Holmes (1986) used the same questionnaire on a sample of American production workers they found only three safety climate factors: management concern, management activity and risk perception. Dedobbeleer and Beland (1991) tried to validate the three safety climate factors of Brown and Holmes (1986) on American construction workers but found the two factors of management commitment and worker involvement more appropriate than the three factors cited by Dedobbeler and Beland (1991).

Coyle, Sleeman, and Adams (1995) administered Zohar's safety climate questionnaire to Australians in two different clerical and service organizations with a total sample of 880 (340 in the first organization, and 540 in the second). The researchers developed a survey questionnaire of 30-32 items based on a seven dimensional model which included maintenance and management, company policy, accountability, training and management attitudes, work environment, policy/procedures, and personal authority. They found that their survey for measurement of safety climate was not stable across the

two organizations. Varonen and Mattila (2000), however, used the same safety climate variable structures used by Coyle, Sleeman, and Adams (1995) and Zohar (1980) to measure safety climate and found the safety climate structure was relatively stable among Finnish workers in one organization.

Later studies have attempted to replicate Zohar's factor structure but with limited success, usually reducing it to two or three factors. Most recently Phillips, Cooper, Sutherland and Makin (1993) reduced Zohar's dimensions to two factors made up of management attitudes and actions together with perceived levels of risk, work pace, the status of the safety advisor and committee, the importance of safety training, and the effects of safe conduct on promotion.

Agency for Health Research and Quality Survey

Development of HSPSC was sponsored by the Quality Interagency Coordination Task Force (QuIC) and funded by the Agency for Healthcare Research and Quality (Sorra & Nieva, 2004). The tool can be used for assessing the safety culture of a hospital as a whole, or for specific units within hospitals. Moreover, the survey can be used to track changes in patient safety culture over time and to evaluate the impact of patient safety improvement interventions and outcomes. The purpose of conducting the pilot study was to test the survey's validity and reliability through completion of the survey. Sorra and Nieva (2004) distributed the survey to 4,983 hospital staff in 21 American hospitals in six different US states. From the 4,983 surveys distributed, 1,437 responses were received, for a 29% overall response rate. The average response rate per hospital was 37% and the average number of responses per hospital was 68.

The survey was administered to a nurse manager, risk manager, department clerk, dietician, food services employee, respiratory therapist, pharmacist, and nurses, residents, and physicians from each hospital. Participating hospitals included for-profit and non-profit, and Veterans Health Administration (VHA), teaching and non-teaching, ranging in size from small to large. The sizes were categorized as small (<300 beds), medium/large (300 – 500 beds), and large (>500 beds). Most respondents were female (81%), had direct contact with patients (84%), and worked an average of 10 years in hospitals, and seven years on their respective units. Types of settings represented by the respondents included intensive care units (18%), surgery (15%), medicine (nonsurgical) (12%), and other (14%).

The AHRQ pilot study used both exploratory and confirmatory factor analysis in data analysis. Sorra and Nieva (2004) conducted exploratory factor analysis (EFA) to explore the dimensionality of the survey data and confirmatory factor analysis (CFA) to determine how well the posited structure conformed to the data.

The EFA results confirmed 14 factors with eigenvalues greater than or equal to 1.0. The total variance explained by the 14 components or factors was 64.5%. The final CFA featured 12 dimensions, two outcome dimensions and 10 safety culture dimensions, with three or four items measuring each dimension for a total of 42 items.

Sorra and Nieva (2004) tested for construct validity for each safety culture dimension to identify whether the dimensions measured the same concept or were weakly related. The results showed correlations between the safety culture dimensions ranging from .23 (between Non-punitive Response to Error and Staffing or Frequency of Event Reporting) to .60 (between Hospital Management Support for Patient Safety and Overall

Perceptions of Safety). These intercorrelations indicated that none of the safety culture dimensions appeared to be the same construct.

Internal consistency reliabilities were assessed using Cronbach's alpha. All dimensions were shown to have acceptable levels of reliability. Reliability coefficients for the survey dimensions ranged from .63 to .84 (Sorra & Nieva, 2004). More detailed description of the survey and modifications designed for this study will be discussed in Chapter Three.

A modification of the survey (HSPSC) (Appendix A) was the survey used in this study. The investigator used the Sorra and Nieva (2004) safety culture survey because it provides a mechanism for healthcare organizations to assess and understand the ongoing issues about safety culture. It also emphasizes the importance of manager and administrator understanding of employees' perceptions about safety culture in a specific unit. The survey also measures important safety culture components identified in the literature.

This investigator assumed that using Sorra and Nieva's (2004) survey in a country other than the US and not as far along in the patient safety movement, would provide a starting point for assessing and comparing safety culture along the same dimensions.

Middle East and Safety Culture

The concept of safety culture is a high priority for many industries around the world including those in the Middle East. Recently, conferences about the importance of safety culture in high risk industries were conducted in the Middle East. Sultan Rashid Alkhater (personal communication, August, 2006), Head Of Operations, Ras Laffan Liquefied Natural Gas Company, Doha-Qatar stated that "the (value) of safety culture is to work on it and make it a person's daily high task. As a result, the 3rd Middle East Safety Management Congress 2005, took place in Dubai was very informative and played as vital for board directors and supervisors" (personal communication, August, 2006).

Those in attendance at the conference learned much about new approaches to patient safety including how to implement behavior-based safety practices to explore risk based decision making within the industrial safety domain, implementation of safety cultures within the organizations, implementation of safety strategies, and the value of safety cultures. (S. Alkhater, personal communication, August, 2006). Most of the conference speakers were from Europe. However, there were three speakers from Arab countries including Dr. Ahmed Salem from United Arab of Emirates, Khalfan Bin Mohammed Al-Esiry from Oman, and Ahmed Fakhroo from the Kingdom of Bahrain. Unfortunately, the Middle East depends currently on studies from different regions or countries such as the United States, United Kingdom and others to provide insight into the incidence and prevalence of errors and the nature of and importance of, safety culture for quality outcomes. In the Middle East, there have been no empirical studies conducted measuring employee perceptions of safety culture or measuring the effect of safety culture on safety-related outcomes (N. Almeer & S. Alkhateer, personal communication,

August, 2006). This study was a first step toward introducing the concept and measurement of safety culture in a healthcare organization in the Middle East.

CHAPTER 3

METHODOLOGY

The purpose of this study was to assess nurses' perceptions of the safety culture in their units at Hamad Medical Corporation (HMC) in the State of Qatar. This study was directed by the following research question: What are nurses' perceptions of safety culture in their work area at Hamad Medical Corporation in the State of Qatar? This chapter describes the study design, sample, variables, survey instrument and analysis.

Study Design

Using a non-experimental, cross sectional design, a survey was used to measure the dependent variable of registered nurses' (RNs) perceptions about safety culture in their respective units: Medical, Surgical, Intensive Care Units, Obstetric and Gynecology, Pediatrics, Accident and Emergency, Orthopedics, and Rehabilitation.

Setting

The settings for the study were eight nursing care services including Medical, Surgical, Intensive Care Units, Obstetric and Gynecology, Pediatrics, Accident and Emergency, Orthopedic, and Rehabilitation in three different hospitals at HMC, the facility arm of the Ministry of Health in the state of Qatar. The corporation is a network of three (3) hospitals: Hamad Medical Hospital, Rumailah Hospital and Women's Hospital.

Sample

Random sampling was used in order to obtain at least 400 subjects from the population of all registered nurses (RN) working on the targeted services at HMC.

Registered Nurses make up the largest component of the healthcare workers at HMC, with a total of 3000 representing approximately 65% of all HMC healthcare workers.

The educational level of RNs varies at HMC. These include RNs with three-year diploma, four-year baccalaureate, and master's degree preparations. The age of RNs ranges from 18-45 years and 85% are female. Additionally, the vast majority of RNs come from different countries including Qatar, Bahrain, India, South Africa, United States of America, Russia, Egypt, Somali, Sodan, Iran, Irag, Syria, Jordan, Palestine, Ireland, Holland, Afghanistan, Lebanon, Algeria, Morocco, Tunis, Nigeria, Philippine, Pakistan, and more.

The Executive Director of Nursing at HMC provided the researcher the sampling frame for the study. The sampling frame included all nurses currently employed on the targeted services. Random sampling, using a random numbers table was used to select nurses from each of the pre-selected services. The nurses were asked to participate voluntarily.

Instrument Design and Development

Survey Design

A survey design was used for this study. Gay (1996) stated that the survey is an efficient method to use in data collection in that "it requires less time, is less expensive, and permits collection of the data from a much larger sample" (1996, p. 287). Many researchers have used survey to measure the perceptions, attitudes, and values of workers about safety culture (Brown & Holmes, 1986; Coyle, Sleeman & Adams, 1995; Dedobbeleer & Beland, 1991).

AHRQ's Hospital Survey of Patient Safety Culture

The Hospital Survey of Patient Safety Culture (HSPSC) was modified for this study. The survey consists of 14 dimensions including 10 safety culture dimensions, and 4 outcome variables. Forty-two items are scored on five point Likert-type response scales. Three response cells indicate extent of agreement (strongly disagree/disagree, neither, or agree/strongly agree) after combining each of the two disagree and agree responses. Two response cells require ratings of frequency (never/rarely, sometimes, or most of the time/ always). The items representing the 14 dimensions are formatted throughout the survey within seven sections (A through G).

One closed-ended item requests the respondent to answer the following question "In the past 12 months, how many event reports have you filled out and submitted?" One open-ended item directs respondents as follows: "Please feel free to write any comments about patient safety, error, or event-reporting in your hospital". Six items request the following demographic information: "How long have you worked in this hospital?"; "How long have you worked in your current hospital work area/unit?"; "Typically, how many hours per week do you work in this hospital?"; "What is your staff position in this hospital?" "Mark ONE answer that best describes your staff position"; "In your staff position, do you typically have direct interaction or contact with patients?", and "How long have you worked in your current specialty or profession?"

HSPSC Survey dimensions. The HSPSC was designed to measure 14 different dimensions. These fourteen dimensions are divided into two types: ten safety culture dimensions, and four outcome variables. The four outcome variables and the corresponding items are described in Table 2.

Table 2
Four Outcomes Dimensions and the Corresponding Items.

Dimensions	Corresponding Items
Overall perceptions of safety	(A10): It is just by chance that more serious mistake don't happen around here. (A15): Patient safety is never sacrificed to get more work done. (A17): We have patient safety problems in this unit. (A18): Our procedures and systems are good at preventing errors from happening
Frequency of Events Reported	(D1): When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported? (D2): When a mistake is made, but has no potential to harm the patient, how often is this reported? (D3): When a mistake is made that could harm the patient, but does not, how often is this reported?
Number of Events Reported	G1): In the past 12 months, how many event reports have you filled out and submitted?
Overall Patient Safety Grade	(E1): Please give your work area/unit in this hospital an overall grade on patient safety.

The original HSPSC survey was developed to also measure 10 dimensions of culture pertaining to patient safety. Seven of the dimensions pertain to individual work unit-level aspects of safety culture and three dimensions are focused on hospital level aspects of patient safety culture.

Table 3 offers an explanation of the seven unit level dimensions and the corresponding items.

Table 3

Unit Level Dimensions and the Corresponding Items

Dimensions	Corresponding Items
Supervisor/Manager Expectations & Actions Promoting Patient Safety	(B1): My supervisor / manager says a good word when he/she sees a job done according to established patient safety procedures. (B2): My supervisor / manager seriously considers staff suggestions for improving patient safety (B3): Whenever pressure builds up, my supervisor / manager wants us to work faster, even if it means taking shortcuts. (B4): My supervisor/manager overlooks patient safety problems that happen over and over.
Organizational Learning—Continuous Improvement	(A6): We are actively doing things to improve patient safety. (A9): Mistakes have led to positive changes here. (A13): After we make changes to improve patient safety, we evaluate their effectiveness
Teamwork Within Units	(A1): People support one another in this unit (A3): When a lot of work needs to be done quickly, we work together as a team to get the work done (A4): In this unit, people treat each other with respect (A11): When one area in this unit gets really busy, others help out.
Communication Openness	(C2): Staff will freely speak up if they see something that may negatively affect patient care. (C4): Staff feel free to question the decisions or actions of those with more authority (C6): Staff are afraid to ask questions when something does not seem right
Feedback and Communication About Error	(C1): We are given feedback about changes put into place based on event reports (C3): We are informed about errors that happen in this unit (C5): In this unit, we discuss ways to prevent errors from happening again
Nonpunitive Response to Error	(A8): Staff feel like their mistakes are held against them (A12): When an event is reported, it feels like the person is being written up, not the problem (A16): Staff worry that mistakes they make are kept in their personnel file.

Staffing	(A2): We have enough staff to handle the workload (A5): Staff in this unit work longer hours than is best for patient care (A7): We use more agency/temporary staff than is best for patient care (A14): We work in "crisis mode" trying to do too much, too quickly

The hospital level aspects of safety culture are: hospital management support for patient safety measured through three items, team work across hospital units measured through four items, and hospital hand-offs and transitions measured through four items. Table 4 shows the three hospital level dimensions and the corresponding items.

Table 4

Hospital Level Dimensions and the Corresponding Items

Dimensions	Corresponding Items
Hospital Management Support for Patient Safety	(F1): Hospital management provides a work climate that promotes patient safety (F8): The actions of hospital management show that patient safety is a top priority (F9): Hospital management seems interested in patient safety only after an adverse event happens.
Teamwork Across Hospital Units	(F4): There is good cooperation among hospital units that need to work together (F10): Hospital units work well together to provide the best care for patients (F2): Hospital unites do not coordinate well with each other (F6): It is often unpleasant to work with staff from other hospital units
Hospital Handoffs & Transitions	(F3): Things "fall between the cracks" when transferring patients from one unit to another (F5): Important patient care information is often lost during shift changes (F7): Problems often occur in the exchange of information across hospital units. (F11): Shift changes are problematic for patients in this hospital

HSPSC survey format. The HSPSC tool is formatted into nine sections (A through I). The first seven sections (A through G) contain one or more items representing one or more of the 14 dimensions (10 safety culture dimensions and 4 outcome variables). There may be one or more dimensions represented in each of the survey sections. Table 5 contains the survey sections A through G and the dimensions represented in those sections. The last two sections (H and I) are for collection of demographic data and one open-ended question.

Table 5

AHRQ Survey Sections A through G and the Dimensions in Each Section

Section	Dimension
A. WorkArea	1. Overall perceptions of safety 2. Organizational Learning/ Continuous improvement 3. Team Within Units 4. Non-punitive Response to Error 5. Staffing
B. Your Supervisor/Manager	1. Supervisor/Manager Expectations & Actions Promoting Patient Safety
C. Communications	1. Communication Openness 2. Feedback and Communication About Error
D. Frequency of Events Reported	1. Frequency of Events Reported
E. Patient Safety Grade	1. Patient Safety Grade
F. Your Hospital	1. Hospital Management Support for Patient Safety 2. Teamwork Across Hospital Units 3. Hospital Handoffs & Transitions
G. Number of Events Reported	1. Number of Events Reported

The first section (A) is titled Your Work Area/Unit and contains the following five dimensions: overall perceptions of safety, organizational learning/ continuous improvement, teamwork within units, and staffing. The second section (B) is titled Your Supervisor/Manager and contains one dimension, Supervisor/Manager Expectations and Actions Promoting Safety.

The third section (C) is Communications and contains the following two dimensions: communication openness; and feedback and communication about error.

Section D, Frequency of Events Reported contains one dimension. Section E, the patient safety grade, obtains nurses' perceptions about overall patient safety. This section consists of one dimension.

Section F, titled Your Hospital, contains the following three dimensions: hospital management support for patient safety; teamwork across hospital units; and hospital handoffs and transitions. Section G is titled Number of Events Reported and contains one dimension only which is Number of Events. Section H contains items that elicit background information related to staff position in the hospital, time worked, and the method of interaction or contact with patients.

The last section in the survey, (I), has an open-ended question to allow respondents the opportunity to provide unstructured comments about patient safety, error, or events reporting in the institution; "Please feel free to write any comments about patient safety, error, or event reporting in your hospital."

HSPSC adapted and modified for this study

For this study, the HSPSC was modified for two purposes: 1) to assure transfer of accurate meaning and intent of survey items to the culture and language differences in the State of Qatar; and 2) to focus the measurement of nurses' perceptions of safety culture on their respective units, avoiding activities and behaviors beyond the scope of individual units. For this reason, sections E, F and G were completely removed from the original survey. To introduce the new concept of safety culture measurement to the HMC

organization, the graduate student nurse investigator, who is also an employee at HMC, was approved for measurement of only staff RNs for this study, using items focused only on unit level aspects of safety culture. In the original HSPSC, the Section E item asks the respondent for a "patient safety grade" for the focus of culture. Section F is related to hospital management support for patient safety and hospital hand-offs and transition and G is related to number of events reported. In addition, dimension items related to organizational learning/continuous improvement and teamwork across hospital units were eliminated.

The modified survey (M-HSPSC) (Appendix B) consists of seven dimensions with 34 items. The seven dimensions include two outcome variables including: overall perceptions of safety; and frequency of event reporting. It also has five dimensions of patient safety culture including the following: supervisor/manager expectations and actions promoting patient safety; teamwork within units; communications openness and feedback and communications about error (items for these two dimensions were combined and analysed as one dimension); nonpunitive response to error; and staffing.

Of the 34 items, 28 used a five-point Likert-type response scale, with 1 being "Strongly disagree" or "Never" to 5 being "Strongly agree" or "Always;" three items consisting of demographic questions; and three items as open-ended questions.

Section (A), the work area subscale, measures nurses' overall perceptions of safety through four original items (8, 12, 14 and 15), teamwork within units through four original items (1, 3, 4 and 9), non-punitive response error through three original items (7,

10, and 13) and staffing through original items 2, 5, 6, and 11. Items 6, 9, and 13 from the M-HSPSC were removed because these questions are related to organizational learning/continuous improvement issues. Items in sections B, C, and D have remained the same as in the original HSPSC survey.

Demographic Data Instrument

Section (E) for the purpose of this study was designed to obtain general demographic data about the nurses participating in the study in order to obtain sample descriptions. This section consists of three questions. Question one asks the nurses: "What is your primary unit in this hospital?" Question two asks: "How long have you worked as a nurse?" Question three asks: "How long have you worked in your current hospital unit?" (Appendix B).

At the end of the survey is section (F), called "Your Comments", which consists of three open-ended questions. Nurses were given the opportunity to provide their unstructured comments about patient safety. The questions are "In your opinion, indicate the most important or frequently occurring factor affecting patient safety in your unit (i.e., work area, work environment, supervisor, or communication)"; "Why do you think this is threatening patient safety", and "How would you improve it" (Appendix B).

Testing the Modified HSPSC (M-HSPSC)

The most important step after developing survey items and before distribution is to pilot test the items to find out if the participants can understand and read the statements as worded (Fowler, 2002). The revised HSPSC survey was reviewed by ten RNs from

HMC including RNs from different units (Appendix C). The panel members were chosen by the Executive Director of Nursing [EDON] through a convenience sample. The researcher e-mailed a letter of explanation and the adapted survey to the EDON. In this letter the researcher asked the nurses' to identify problems with understanding the items, issues related to the meaning and clarity of the questions, and clarity of the language. On the last page of the survey the panel members were asked to complete a questionnaire and provide information on how long it took them to answer the questions (Appendix D).

Using recommendations and suggestions from the panel of expert nurses, survey questions on the (M-HSPSC) were revised. In section (A), item 7 ("We use agency/temporary nurses in this unit more than is best for patient safety"), the word agency was deleted based on the suggestion of the expert panel, because the members stated that HMC uses temporary nurses only. Item 12, from the original survey, "When an event is reported, it feels like the person is being written up, not the problem", was changed to "When an OVA is reported, it feels like the person is being written up, not the problem". OVA means, Occurrence, Variance, and Accident report and is the term used at HMC for untoward patient events. OVA is any accident, error, or event that occurs to employees, patients' or visitors. The term was developed by HMC Quality Management Department at HMC. Item 14, "We work in 'crisis mode' trying to do too much, too quickly", was changed to read "We sometimes try to do too much, too quickly". The expert panel indicated that some of HMC nurses are not familiar with the phrase "crisis mode".

In section (B), items 3 and 4 were reworded based on the expert panel's suggestions. Item 3 "Whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means taking shortcuts" was changed to "Whenever we have too much work, my supervisor wants us to work faster, even if it threatens patient safety". Item 4 "My supervisor overlooks patient safety problems that happen over and over", was changed to "My supervisor ignores patient safety problems that happen over and over".

In section (C), item 1 "We are given feedback about changes put into place based on event reports" was changed to "We are given feedback about any changes resulting from OVA report". The expert panels commented that the phrase "put into place" is not very common at HMC.

In section (D), frequency of events, item 2 "When a mistake is made, but has no potential to harm the patient, how often is this reported?" was changed to "When a mistake is made which did not harm the patient, how often is this reported?"

In section (E), background information, five additional original unit choices were added to item 1 based on expert panel feedback. The units were: Obstetric and Gynecology, Pediatrics, Accident and Emergency, Rehabilitation, and Orthopedic. On the last page of the survey, the panel members were asked to estimate the time for completing the survey. The expert nurses stated that the time for completing this survey ranged between 10-15 minutes, consistent with the time reported for completion for the original HSPSC (Sorra & Nieva, 2004).

Data Collection and Procedure

Data Collection

The method used to send and return surveys may affect how participants will view the confidentiality of their responses and impact the overall survey response rate (Polit & Beck, 2004). These researchers recommend a paper-based data collection method to achieve maximum response rates.

A meeting was conducted with the Executive Director of Nursing (EDON) at HMC to obtain a list of all RN employees assigned to a group of pre-selected nursing units. The names on these lists constituted the study sampling frame. The researcher randomly selected 100 names from the nursing list of each unit (800 total) in order to obtain a targeted sample size of 400.

Procedure

Approval was sought from the EDON of the three hospitals to obtain permission to administer the survey for data collection (Appendix E).Approval was attained from the Institution Review Board (IRB) of Indiana University Purdue University Indianapolis (IUPUI) IRB approval was obtained. Each of the randomly-selected nurses from the pre-selected services in each of the three hospitals received a packet addressed to them on their units. About one week after the EDON's supporting letter was sent, the nurses received the packet. The packet contained the survey, a consent form, another copy of the EDON's support letter, and a stamped and return-addressed envelope for return of the M-HSPSC survey directly to the primary investigator.

The cover letter addressed the purpose of the study and the directions for completing the survey. An explanation regarding confidentiality in the management of the survey results was also provided (Appendix F). Participants were instructed to return the surveys in the sealed envelopes. To ensure confidentiality, the participants were asked not to provide their names on the completed survey. This was done to increase the likelihood that RNs would feel safe in reporting their perceptions about safety culture in their units. Approximately two weeks after initial distribution of the survey, the researcher sent a reminder letter to all participants to either thank those who returned the surveys or remind those who had not to please complete the survey.

Data Analysis

Upon completion of data collection, statistical analyses were completed using the Statistical Package for the Social Sciences (SPSS 14.0) computer program to determine and measure frequencies and central tendencies. Appropriate statistical tests were used to summarize and describe item interpretation and psychometric analyses of the modified instrument. Reliability analyses of the M-HSPSC was conducted and compared with the original HSPSC.

Analyzing the Survey Data

Descriptive statistic frequencies and percentages were used to analyze the survey items. The survey items were grouped according to the safety culture dimension each item was intended to measure. For each item, two lowest response categories were combined (Strongly Disagree/Disagree or Never/Rarely) and the two highest response categories were combined (Strongly agree/Agree or Most of the time/Always). The midpoint of the scales was reported as a separate category (Neither or Sometimes). The

categories were combined to increase the score of the positive response rate and to make the results easier to view in the report (Sorra & Nieva, 2004).

Descriptive statistics, frequencies, and percentages, were used to analyze all survey items as well as background information of all respondents as a whole (i.e., how long they have worked as a nurse and how long they have worked in their current unit).

Section (F), the open-ended comment section, was used to analyze nurses' comments about the most important and frequently occurring factor affecting patient safety in their units, why participants thought this was the most frequently occurring factor, and how to improve the problem. Codes were assigned to similar types of comments for each item and then the frequency of each comment type was tallied.

CHAPTER 4

RESULTS

The purpose of this descriptive study was to assess nurses' perception of the safety culture in their units at Hamad Medical Corporation (HMC) in the State of Qatar. This chapter presents demographic and survey results from this study.

Sample Demographics

The study participants consisted of registered nurses (RNs) working on Medical, Surgical, Intensive Care, Obstetric and Gynecology, Pediatrics, Accident and Emergency, Rehabilitation, and Orthopedic services at HMC in the State of Qatar. Eight hundred surveys (Modified Hospital Patient Safety Culture Survey - MHPSCS) were distributed through the hospital mail to all randomly-selected nurses from the targeted services in each of the three hospitals in order to obtain a sample size of 400. Two weeks later, of the 800 distributed surveys, 257 surveys were returned for a response rate of 32%. A reminder letter was sent to all nurses thanking those who had already responded and reminding others to please respond. Two weeks after the first reminder letter, 199 additional surveys were returned for a total response rate of 57% or, 456 completed surveys (see Table 6).

While entering the data into SPSS, all returned surveys were examined for missing or incomplete data. There were no missing data for any of the demographic or multiple choice items. All item response frequencies on the M-HPSCS are summarized in Appendix (G). Open-ended items were left blank in 65 of the 456 returned surveys.

Table 6 summarizes demographics of the sample. Regarding years of working as a nurse, the majority of the respondents (n= 349, 76 %) worked over five years. Only seven respondents (1%) had been working for less than one year. In relation to years of working as a nurse in the current unit, the majority of the respondents (n= 214, 47%) had worked there over five years. Only 39 respondents (8.6%) had been working in the current unit for less than one year.

Table 6

Study Demographics.

Surveys distributed (8 services)	Surveys returned	Percentage returned
800	456	57
RN years of experience	Frequency	%
less than one year	7	1.5
1-5 years	100	22
over 5 years	349	77
Total	456	100.0
RN years on current unit	Frequency	%
less than one year	39	8.6
1-5 years	203	45
over 5 years	214	47
Total	456	100.0

Positive Response Rate Calculations

The M-HPSCS survey items were grouped into dimensions of safety culture identified from the original AHRQ survey (Soora & Nieva, 2004). One frequency rate was calculated for the number of positive responses for each item. In addition, a dimension-level positive response frequency rate was calculated for each dimension. Tables 7 through 13 summarize individual item and dimension data.

Positive Response Rate for Each Dimension

The number of positive responses (strongly agree/agree or most of the time/always) and percent positive response rate were calculated for positively worded items for each dimension. For reverse worded items, where disagreement indicated a positive response (strongly disagree/disagree or never/rarely), the frequency of positive responses and percent were also calculated. A dimension-level percent positive response rate was then calculated by adding together percent positive response rates for each item in the dimension and dividing by the number of items in the dimension.

Overall Perception of Safety Dimension

Table 7 summarizes positive responses for items in the dimension Overall Perceptions of Safety. The dimension had four items, two positively worded (strongly agree/agree) (A10) and (A12), and two negatively worded (strongly disagree/disagree) (A9) and (A8). The percent positive response rate for this dimension was 63%.

Table 7

Overall Perceptions of Safety Dimension.

Items	Positive responses	Negative responses	Percent (%) positive response rate
	Freq	Freq	
A10: -positively worded "Patient safety is never sacrificed to get more work done'	267	189	59
A12: -positively worded "Our procedures and systems are good at preventing errors from happening"	397	59	87
A8: - reverse worded "It is just by chance that more serious mistakes don't happen around here"	260	196	43
A9: - reverse worded "We have patient safety problems in this unit"	161	295	65
Percent Positive Response Rate for Overall Perceptions of Safety Dimension			63

Frequency of Events Reporting Dimension

Table 8 summarizes positive responses for the dimension Frequency of Events Reporting. The dimension had three items. All items were positively worded (most of the time/always) (D1, D2, D3). The percent positive response rate for this dimension was 44%.

Table 8

Frequency of Events Reporting Dimension.

Items	Positive responses	Negative responses	Percent (%) positive response rate
	Freq	Freq	
D1: "When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported?"	128	328	28
D2: "When a mistake is made, which did not harm the patient, how often is this reported?"	157	299	34
D3: "When a mistake is made that could harm the patient, but does not, how often is this reported?"	327	129	71
Percent Positive Response Rate for Frequency of Events Reported Dimension			44

Supervisor Expectations and Actions Promoting Patient Safety Dimension

Table 9 summarizes positive responses for the dimension Supervisor Expectations and Actions Promoting Patient Safety. The dimension had four items, two items positively worded (strongly agree/agree) (B3, B4), and two negatively worded (strongly disagree/disagree) (B1, B2). The percent positive response rate for this dimension was 60%.

Table 9

Supervisor Expectations and Actions Promoting Patient Safety Dimension.

Items	Positive responses	Negative responses	Percent (%) positive response rate
	Freq	Freq	
B3 -positively worded "My Supervisor seriously considers staff suggestions for improving patient safety"	200	256	44
B4- positively worded "My supervisor says a good word when he/she sees a job done according to established patient safety procedures"	154	311	34
B1- reverse worded ""My supervisor ignores patient safety problems that happen over and over"	63	393	86
B2- reverse worded "Whenever we have work pressure, my supervisor wants us to work faster, even if it threatens patient safety"	102	354	78
Percent Positive Response Rate for Supervisor Expectations and Actions Promoting Patient Safety Dimension			60

Team Work within Units Dimension

Table 10 summarizes positive responses for the dimension Team Work Within Units. The dimension had four items. All items were positively worded (strongly agree/agree) (A1, A3, A6, A11). The percent positive response rate for this dimension was 74%.

Table 10

Team Work within Units Dimension.

Items	Positive responses	Negative responses	Percent (%) positive response rate
	Freq	Freq	
A1: "People support one another in this unit"	364	92	80
A3: "When a lot of work needs to be done quickly, we work together as a team to get the work done"	381	75	83
A6: "When this unit gets really busy, others help out"	280	176	61
A11: "In this unit people treat each other with respect"	336	120	74
Percent Positive Response Rate for Team Work Within Units Dimension			74

Communications Openness; Feedback and Communications about Errors Dimension

Table 11 summarizes positive responses for the dimension Communications Openness; Feedback and Communications About Error. The dimension had six items, five items positively worded (strongly agree/agree) (C1, C2, C3, C4, C5), and one negatively worded (strongly disagree/disagree) (C6). The percent positive response rate for this dimension was 50%.

Table 11

Communications Openness; Feedback and Communications about Error Dimension.

Items	Positive responses	Negative responses	Percent (%) positive response rate
	Freq	Freq	
C1: positively worded" We are given feedback about any changes resulting from OVA report"	207	249	45
C2: positively worded "Staff will freely speak up if they see something that may negatively affect patient care"	165	291	36
C3: positively worded "We are informed about errors that happen in this unit"	338	118	74
C4: positively worded "In this unit, we feel free to discus the decisions or actions taken of those with more authority"	152	304	33
C5: positively worded " In this unit, we discuss ways to prevent errors from happening again"	385	71	84
C6: reverse worded "Staff are afraid to ask questions when something does not seem right"	315	141	31
Percent Positive Response Rate for Communications Openness; Feedback and Communications about Error Dimension			50

Non-Punitive Response to Error Dimension

Table 12 summarizes positive responses for the dimension Non-Punitive Response to Error. The dimension had three items. All items were negatively worded (strongly disagree/disagree) (A13, A14, A15). The percent positive response rate for this dimension was 23%.

Table 12

Non-punitive Response to Error Dimension.

Items	Positive responses	Negative responses	Percent (%) positive response rate
	Freq	Freq	
A13: -reverse worded "Staff feel like their mistakes are held against them"	345	111	24
A14: -reverse worded "When an OVA* is reported, it feels like the person is being written up, not the problem"	302	154	34
A15: -reverse worded "Staff worry that mistakes they make are kept in their personnel file"	408	48	11
Percent Positive Response Rate for Non-Punitive Response to Error Dimension *OVA = occurrence, variance and accidents			23

Staffing Dimension

Table 13 summarizes positive responses for the dimension Staffing. The dimension had four items, one item positively worded (strongly agree/agree) (A2), and three negatively worded (strongly disagree/disagree) (A4, A5, and A7). The percent positive response rate for this dimension was 48%.

Table 13

Staffing Dimension.

Items	Positive responses	Negative responses	Percent (%) positive response rate
	Freq	Freq	
A2:- positive worded ”We have enough staff to handle the workload”	232	224	51
A4: -reverse worded “We use more temporary nurses in this unit than is best for patient safety”	131	325	71
A5: -reverse worded “Staff in this unit work longer hours than is best for patient safety”	245	211	46
A7: reverse worded “We sometimes try to do too much too quickly”	338	118	26
Percent Positive Response Rate for Staffing Dimension			48

Summary of nurses' responses on Open-Ended Questions

Of the 456 nurses who returned surveys, 391 responded to the open-ended questions. Some nurses chose more than one factor affecting patient safety and provided suggestions and comments, while other nurses circled one or more factors without providing any particular explanation. See Table 14 and 15 for open-ended item categories and frequencies.

Respondents were directed to answer each of the three open-ended survey questions. For Question 1, "in your opinion indicate the most frequent factor affecting patient safety?" the following seven factors were identified: communication, work environment, supervisor, shortage of staff, paper work, lack of education, and workload. Additional factors listed infrequently are contained in Table 14.

For Question 2 "Why do you think this (the identified factor in question 1) is threatening patient safety?" from two to six reasons were reported for each of the seven most frequent factors listed in question one. Direct response examples of reasons for each factor is contained in Table 14.

Table 14

Open-ended Data Reflecting Threats to Patient Safety.

Factor	Direct Quote Examples
Communication Between Healthcare Workers	"…because the higher authority will not consider the lower position opinions and suggestions in anything
Language barriers	"..some patient or housekeepers cannot understand or speak English so it is very difficult to explain some or any procedures to them…are we responsible for this?
Between patient and HCW	"…not all HCW's are listening to patients need especially doctors, they don't let patients to talk freely and they just want to finish their rounds"
Work Environment	"many nurses are getting harmed and injured due to work space in our unit"

Supervisor	"…oh in my opinion tat poor relationship between nurses and supervisors increases errors and mistakes and sure this has direct impact on patient safety
Shortage of staff	"..we will be forced to work an overtime and this puts patients and us at risk if any problems occurred"
Paper Work	"..no one wants to understand that too much paperwork buried us from providing a proper care, keeps us busy most of the day, and cannot educate patients as needed"
Lack of Education	"…in our unit, we have problems with low educated nurses because they cannot handle the responsibilities and all patients' tasks and in some cases surely they cannot understand what patients want"
Workload	"…I really want to say that too much can have negative influence on our health, mind, behavior, attitude, and competence, and of course we cannot do the work properly"

For open-ended Question 3"How would you improve it (factor)?" the number of suggestions for each factor ranged from one to three and are listed in Table 15.

Table 15

Open-ended Questions.

Question 1-Factors	Freq
In your opinion indicate the most frequent factor (for example: work environment, supervisor, OR communication) affecting patient safety in your unit?	
a. Communication	
- Between healthcare workers HCW	136
- language barriers	14
- Between Patient and HCW	10
Question 2	
Why do you think this is threatening patient safety?	
- Errors and mistake will increase	82
- The nurse will get confuse and angry	43
- The nurse will not give a good care for the patient	17
- The nurse will not handle the task properly	13
- Difficult in getting feedback from HCW	3
- Not getting enough information from patient	2
Question 1-Factors	
b. Work Environment	83

Question 2 - Why do you think this is threatening patient safety? - Distraction confuses nurses - Feel Fatigue - Increase anxiety and stress - work space limits nurses movement	 41 19 13 10
Question 1-Factor c. Supervisor Question 2 - Why do you think this is threatening patient safety? - Nurses will not report any errors or mistakes - Anxiety, and pressure between nurses will increase - Nurses will not respect each another	38 30 5 3
Question 1 d. Shortage of staff Question 2 - Why do you think this is threatening patient safety? - Increase errors and mistakes - Workload - The nurse will not provide a good patient care - The nurse will not have time to talk to patients - The nurse will not do the job properly	27 21 3 1 1 1
Question 1 e. Paper work Question 2 - Why do you think this is threatening patient safety? - Cannot monitor patient condition properly - Cannot provide a good patient care - Cannot educate patient - The nurse will be forced to work overtime	26 17 5 3 1
Question 1 F. education Question 2 - Why do you think this is threatening patient safety? - Low skills - Low knowledge - Cannot understand patients need	17 9 5 4

Question 1 g. Workload	15
Question 2	
- Do not have enough time to provide a good patient care	9
- Errors and mistakes will increase	6
Other factors	
- Visiting hours	8
- Crib bed for kids over 5 years	4
- Lack of experience	4
- Insufficient clinical equipment supply	4
- Lack of knowledge	3
- Patient room without good ventilation	1
- Lack of vital signs monitoring machine	1
Question-3	Freq
How would you improve it?	
Communication	
- Education and training	143
Work environment:	
- Redesign nurses units	53
- Provide more space	21
- Supplies and equipment should be available	9
Supervisor	
- Listen to nurses comments, problems and suggestions	31
- Training and education on communication	7
Shortage of staff:	
- Increase staff number	27
Paper work	
- Reduce documentation activities	17
- Increase the number of nurses	7
- Provide forms to check the abnormal patient condition and procedures	2
Education	
- Need more qualified and BS nurses	
Workload	
- Decrease paper work	14
- Increase nurses	
- Equalize the number of patient to each nurse	9
	3
	1

Positive Response Rate Comparison

Between HMC and 21 US Hospitals

The following two sections summarize dimension positive response rates and item level positive response rates with comparison to normative data from 21 US hospitals that measured patient safety culture using the AHRQ HPSCS (Sorra & Nieva, 2004). The US data was collected using the original scale for subsequent psychometric development.

For purposes of comparison, Table 16 contains the average positive response rates for each of the seven dimensions measured with the MHPSCS across HMC and the average positive response rates on the same seven dimensions from 21 US Hospitals. It should be noted that items for some of the dimensions may have been different in the survey modified for this study from the survey used for the 21 US hospitals.

Positive response rates at HMC are shown in order for the dimensions with the highest positive response rate to the lowest. *Teamwork Within Unit*, was the dimension with the highest positive response (74%). *Non-Punitive Response to Error* had the lowest positive response (23%). The dimensions with the highest and lowest positive response rates were the same for HMC and the average for 21 US Hospital.

Table 16

*Comparison of Positive Response Rates For Each Dimension at HMC to Average in 21 US Hospitals**

Dimension	Positive Response Rates (%) on MHPSCS	AHRQ HPSCS Average Positive Response Rates (%) from 21 US Hospitals
Teamwork Within Units	74	78
Overall Perceptions of Patient Safety	63	63
Supervisor Expectations and Actions Promoting Patient Safety	60	74
Communication Openness, Feedback and Communication About Error	50	62
Staffing	48	55
Frequency of Events Reported	44	59
Nonpunitive Response to Error	23	43

*Number of items in each dimension and wording of some items differed on the two surveys.

Item Level Results

The item level results in Table 17 show the positive response rates for each of the 28 survey items used in this study compared to the same, or similar, items in the AHRQ HPSCS. The survey items are grouped by the patient safety culture dimension they are intended to measure. The survey item with the highest positive response rate was "Our procedures and systems are good at preventing errors from happening" (87%). The survey item with the lowest positive response rate was "Staff worry that mistakes they make are kept in their personnel file" (10%).

Table 17

Comparison of Item-level Positive Response Rates for HMC to Average in 21 US Hospitals.

Survey Items * Indicates modified item on HMC survey	Item Positive Response Rate (%)	AHRQ Item Average Positive Response Rate (%) from 21 US hospitals
1-Teamwork Within Units		
A1: People support one another in this unit	80	83
A3: When a lot of work needs to be done quickly, we work together as a team to get the work done	83	85
A6: When this unit gets really busy, others help out	61	67
A11: In this unit people treat each other with respect	73	76
2-Overall perceptions of safety		
A8: It is just by chance that more serious mistakes don't happen around here	43	60
A9: We have patient safety problems in this unit	64	62
A10: Patient safety is never sacrificed to get more work done	58	63
A12: Our procedures and systems are good at preventing errors from happening	87	68

3-Supervisor Expectations and Actions Promoting Patient Safety		
B1: My supervisor ignores patient safety problems that happen over and over *	86	76
B2: Whenever we have work pressure, my supervisor wants us to work faster, even if it threatens patient safety *	77	74
B3: My Supervisor seriously considers staff suggestions for improving patient safety	44	75
B4: My supervisor says a good word when he/she sees a job done according to stablished patient safety procedures	33	69
4-Communications openness; feedback and communications about error		
C1: We are given feedback about any changes resulting from OVA report *	45	52
C2: Staff will freely speak up if they see something that may negatively affect patient care	36	75
C3: We are informed about errors that happen in this unit	74	64
C4: In this unit, we feel free to discus the decisions or actions taken of those with more authority	33	46
C5: In this unit, we discuss ways to prevent errors from happening again	84	69
C6: Staff are afraid to ask questions when something does not seem right	31	62
5- Staffing		
A2: We have enough staff to handle the workload	51	54
A4: We use more temporary nurses in this unit than is best for patient safety *	71	64
A5: Staff in this unit work longer hours than is best for patient safety*	46	52
A7: We sometimes try to do too much too quickly *	26	48

6- Frequency of events reported		
D1: When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported?	28	50
D2: When a mistake is made, which did not harm the patient, how often is this reported? *****	34	54
D3: When a mistake is made that could harm the patient, but does not, how often is this reported?	71	72
7- Non-Punitive Response		
A13: Staff feel like their mistakes are held against them	24	50
A14: When an OVA is reported, it feels like the person is being written up, not the problem *****	33	43
A15: Staff worry that mistakes they make are kept in their personnel file	10	35

Reliability Analysis

Internal consistency reliabilities were examined for the Modified Hospital Patient Safety Culture Survey (MHPSCS). Since items were worded in both positive and negative directions, negatively worded items first were reverse coded so that a higher score would indicate a more positive response in all cases.

Polit and Beck (2004) recommends a minimum Cronbach alpha of 0.70. Developers of the AHRQ survey reported that the HPSCS had acceptable internal consistency, with Cronbach alpha coefficients for each of the 12 dimensions (42 items total) ranging from 0.63 to 0.84. In this study using the modified survey, Cronbach alpha coefficients for the 7 dimensions (28 items total) ranged from 0.39-0.64. The Cronbach alpha coefficient for the total survey used in this study was 0.74.

CHAPTER 5

DISCUSSION

The purpose of this study was to assess nurses' perception of the safety culture in their units at Hamad Medical Corporation (HMC) in the State of Qatar. The study measured patient safety culture using a modified version of the Agency for Healthcare Research and Quality (AHRQ) survey developed in the United States. Survey subscales measured nurses' perceptions of overall safety, frequency of event reporting, supervisor expectations and actions promoting patient safety, teamwork within units, communication openness, feedback communication about error, non-punitive response to error, and staffing. The major study research question was "What are nurses' perceptions of the safety culture in their work areas at Hamad Medical Corporation in the State of Qatar?".

Study Methods

Returned Surveys

Eight hundred surveys were distributed to nurses from the pre-selected units of Medical, Surgical, Intensive Care, Obstetric and Gynecology, Pediatrics, Accident and Emergency, Rehabilitation, and Orthopedic services at HMC. The response rate was 57%. Sorra and Nieva (2004) stated that an overall response rate of 50% or more should be the minimal for acceptable safety culture analysis. The overall response rate for returned surveys may have been positively influenced by the following study procedures: participant anonymity on surveys was adequately assured, and a follow up-reminder letter sent to all selected nurses from the preselected services encouraged return of the survey. Initial response rate of 32% rose to 57% after the reminder letter. Although noted by the

researcher but not reported in the results section, the range of number of surveys returned per service area varied widely. One possible explanation for lower returns from some units may be a reflection of nurses' perceptions of safety culture in their respective work areas, with those not reporting being less positive about the safety culture. Given the variation in return from different units, and that the low number of returned surveys from some units would not allow for statistical comparison, comparative analyses of data between units were not performed and was not the focus of this study. Those nurses who returned surveys were very experienced, with 76.5% responding that they had greater than 5 years experience. This suggests that nurses with more experience may have felt more comfortable in participating and reporting on patient safety issues than nurses with less experience.

There were no missing data for the survey multiple-choice items. On the other hand, some open-ended questions were left blank. This could have been related to the additional time it took to complete handwriting or the potential threat to anonymity by having to write answers on the survey form.

AHRQ's Recommended Guidelines For Interpreting Patient Safety Culture Survey Results

The AHRQ survey, modified for the purpose of this study, was designed to measure patient safety culture by assessing hospital staff perceptions about management of patient safety issues, response to medical errors, and event reporting. The HSPSC survey measured four overall patient safety-related outcome variables: overall perceptions of safety, frequency of events reported, number of events reported, and overall patient safety grade. HSPSC had 10 safety culture dimensions: supervisor

expectations and actions promoting patient safety, organizational learning-continuous improvment, teamwork within units, communication openess, feedback and communications about error, staffing, hospital management support for patient safety, and hospital handoffs and transition, teamwork cross hospital unit. In this study, seven dimensions of safety culture and two outcome variables were measured including overall perceptions of safety and frequency of event reporting. For the purpose of this study and as explained in chapter three the following six dimensions (two outcome variables and four safety culture dimensions) were not measured: number of events reported, patient safety grade, organizational learning/continuous improvement, and hospital management support for patient safety, teamwork across hospital unit, and hospital handoffs and transitions.

AHRQ (Sorra & Nieva, 2004) defined patient safety culture areas of strengths as those survey dimensions where the overall mean positive response rate to items in the dimension was 75% or more indicating that respondents answered “Strongly Agree/Agree” or “Most of the time/Always”, or when 75% or more of respondents disagreed (strongly disagree/disagree) with negatively worded items. Individual survey items within dimensions can also be considered areas of strength where the item positive response rate was 75% or greater. In this study the teamwork dimension was the only dimension meeting the AHRQ suggested criteria for dimension areas of strength.

AHRQ (Sorra & Nieva, 2004) defined patient safety areas needing improvement as those survey dimensions where for the overall item mean, about 50% or more respondents answered negatively (strongly disagree/disagree) or “Neither” to positively worded items, or 50% or more agreed (strongly agree/agree) with negatively worded

items. The reader should note that dimensions or individual items with positive response rates between 50%-75% do not fit AHRQ's criteria for either area of strength or area needing improvement. AHRQ recommended that these dimensions and items be evaluated by individual organizations with respect to other dimension or item scores to decide what actions needed to be taken. The following dimensions met AHRQ's definition of areas needing improvement: non-punitive response to error (23%), frequency of events reported (44%), staffing (48%), and communication openness, feedback and communication about error (50%).

The following sections discuss areas of patient safety culture strengths and areas for improvement identified from findings in this study. The researcher compares HMC study findings to findings in 21 US hospitals using the original AHRQ survey.

Areas of Strength

Teamwork Within Unit Dimension

Findings from this study were consistent with responses from US hospitals using the AHRQ survey, finding that the teamwork dimension had the highest positive response rate. The average teamwork dimension positive response rate of US hospitals was 78% and the teamwork dimension positive response rate in this study was 74%, just below the 75% cutoff for AHRQ's definition of area of strength. The individual teamwork items receiving the highest positive response rates and indicative of strengths in patient safety culture were the following: "when a lot of work needs to be done, we work together to gather as a team to get the work done" (83% agreed), and "people support one another in this unit" (80% agreed). All other teamwork dimension items were below 75%.

Interestingly, the ordering of item positive response rates was identical for US hospitals and HMC study results for this dimension. For both, the item with the lowest positive response rate related to "getting help from outside the unit when it was very busy" (in US hospitals 67% agreed and at HMC 61% agreed). It may be culturally universal that persons working closely together, like in one specific unit or department, may rate teamwork items focused on themselves more highly than the item related to help from those outside their specific unit.

This finding is relevant and consistent with researchers that report teamwork and familiarity with co-workers as a relatively important issue among workers (Rudman, Bailey, Garrett, Peden, Thomas, & Brown, 2006), and that knowing what to expect from colleagues is very important to maintaining safety in work. For example, aviation researchers found that staff who had flown together for several days made fewer errors than teams who did not work together for very long and teamwork is widely reported as an essential factor in sustaining and increasing safety (Baker, Gustafson, Beaubien, Salas, & Barach, 2005; Meterko, Mohr, & Young, 2004; Thomas, Sexton, & Helmreich, 2003; Wheelan, Burchill & Tilin, 2003; Kaissi, Johnson & Kirschbaum, 2003; Rafferty, Ball & Aiken, 2001; Mickan & Rodger, 2000). Overall, research on healthcare teams suggests that effective teamwork contributes to reducing errors and mistakes, higher levels of job staff satisfaction, higher quality of care, an increase in patient safety, greater patient satisfaction with care, increased productivity, and decreased stress levels (Rudman, Bailey, Garrett, Peden, Thomas & Brown, 2006; Kalisch, Curley & Stefanov, 2005).

While teamwork is a very important factor for maintaining an effective patient safety culture, teamwork is not sufficient. Other factors represented by the remaining

survey dimensions are necessary. The following sections discuss areas for improvement as indicated by findings in this study on the remaining dimensions.

Areas For Improvement

Non-Punitive Response to Error Dimension

The overall positive response rate for this study on the Non-Punitive Response to Error Dimension was 23%, much lower than the positive response rate (43%) for US hospitals, although an area for improvement in US hospitals as well. As in this study, results from the AHRQ studies indicated that most US hospitals (2004) reported Non-Punitive Response to Error as the lowest dimension. The individual items for this dimension receiving the lowest positive response rates and indicative of specific areas for improvement in patient safety culture were the following: "Staff worry that mistakes they make are kept in their personnel file" (89% agreed, negative response), "Staff feel like their mistakes are held against them" (76% agreed, negative response), and "When an OVA is reported, it feels like the person is being written up, not the problem" (66% agreed, negative response).

Findings from this study indicate that nurses do not feel free to report errors or issues related to patient safety. This may be due to many reasons such as fear of punishment, blame, and potential for shame which are reasons documented in the literature related to error reporting (Hughes & Lapane, 2006; Kapp, 2003; Lawton & Parker, 2002; Wagner, Capezuti & Ouslander, 2006).

Frequency of Events Reported Dimension

The overall percent positive response rate for the Frequency of Events Reported Dimension in this study was low (44%), much lower than the positive response rate of 59% for US hospitals, although an area for improvement in US hospitals as well**.** All individual items in this study for this dimension were lower than AHRQ's recommended rate of 75%. The ordering of the item positive response rates was identical for both US hospitals and the HMC study for this dimension. Two individual items received low positive response rates and indicated areas for improvement. The first item represented a near-miss situation and was worded "When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported". This item received a positive response rate of 28%. The second item represented an actual error event and was worded "When a mistake is made, which did not harm the patient, how often is this reported", and received a response rate of 34% (or high percentage of negative responses).

For both US hospital and HMC surveys, one item received a high positive response rate related to "when a mistake is made that could harm the patient, but does not, how often is this reported?" The positive response rate to the third item in this dimension was higher. In US hospitals 72% reported most of the time/always positive responses and at HMC 71% reported most of the time/always. This was apparently due to the fact that harm to the patient was possible but had not yet occurred and therefore was still preventable.

Results of this study indicate that nurses were not reporting when a mistake was made but was caught or corrected, or when the mistake did not harm the patient.

Apparently staff did not feel the need to report when an outcome was already clear. However, learning from near misses can be very important to increasing patient safety. The IOM (2004) defined near misses as "any event that could have had adverse consequences but did not, and was indistinguishable from fully-fledged adverse events in all but outcome." (IOM, 2000, p. 294). Thus, reporting should include those situations where an error was "caught".

The findings for this dimension may be due to factors similar to those that influenced responses to items on the previous dimension, *Non-Punitive Response Dimension*. Nurses not reporting errors may be due to fear of punishment, and losing their jobs. Again, results of this study and related literature suggest that HMC leaders need to implement strategies that support and encourage nursing staff to report errors or any near misses for purposes of learning about how errors occur, and for improving the quality of care and patient safety (Cohen, 2000; Hughes & Lappan, 2006; Kaap, 2003; Wagner, Capezuti, & Ouslander, 2006).

Staffing Dimension

The overall percent positive response rate of the Staffing dimension was 48%, only slightly less than the US hospital mean of 50%, and yet indicating this as a safety culture area for improvement. The items for this dimension receiving low positive response rates and indicative of specific areas for improvement were the following: "We sometimes try to do too much too quickly" (74% agreed, negative response), "Staff in this unit work longer hours than is best for patient safety" (53% agreed, negative response), and "We have enough staff to handle the workload" (51% agreed). Again, the ordering of the item positive response rates for HMC on this dimension were the same as

US hospitals. For both, one item received a fairly high positive response rate, “We use more temporary nurses in this unit than is best for patient safety” (US hospitals 64% disagreed, a positive response, and HMC 71% disagreed, a positive response).

Findings from this study indicate that staffing and workload factors seem to have been a negative issue for the majority of respondents and warrants further evaluation for their contribution to patient safety culture**.** This finding is relevant and consistent with other researchers who found that staffing and workload has an impact on patients’ health conditions (Aiken, Clarke, Sloane, Sochalski & Silber, 2002; Needleman, Buerhaus, Mattke, Stewart & Zelevinsky, 2002; Needleman & Buerhaus, 2003; Rogers, Hwang, Scott, Aiken & Dinges, 2004)**.** Results of this study and related literature suggest that HMC leaders need to pay attention to the impact of staffing numbers and workload on the quality of patient outcomes.

Communication Openness, Feedback and Communication about Error Dimension

The overall dimension positive response rate for Communication Openness, Feedback and Communication about Error was 50%, lower than the positive response rate mean (62%) for US hospitals, and therefore a patient safety area for improvement. Although the positive response rate for the individual item “In this unit, we discuss ways to prevent errors from happening again” was 84% at HMC and 69% in US hospitals, and a specific area of strength, other items representing this dimension were low including: “Staff are afraid to ask questions when something does not seem right” (66% agreed, negative response), “In this unit, we feel free to discuss the decisions or actions taken of those with more authority” (67% disagreed, negative response),“Staff will freely speak up if they see something that may negatively affect patient care” (64% disagreed,

negative response), and “we are given feedback about any changes resulting from OVA report” (55% disagreed, negative response). Results on the last four items indicate that the communication aspect of the safety culture in HMC needs improvement. The item in this dimension that fell in the gap between areas of strength (75% or greater) and areas needing improvement (less than 50%) was “We are informed about errors that happen in this unit” (74% agreed).

Study findings indicate that nursing staff is not able to speak up freely to discuss safety issues, or raise concerns related to misakes or errors that may affect patient safety. One item, “In this unit, we discuss ways to prevent errors from happening again” had a very positive response rate in both US hospitals (69% agreed) and HMC (84% agreed); and another item approached strength “We are informed about errors that happen in this unit” (US hospitals 64% agreed, and HMC 74% agreed). However, lack of clarity in both items about who does the discussing, for example, whether it is supervisor directed toward staff versus staff speaking up and participating, is unclear and different from the other items. Also, many nurses indicated in the open-ended questions that communication in general was weak among healthcare workers in their unit.

Researchers in other high risk industries report that lack of comunication leads to unsafe worker behaviors including errors, policy and procedure violations, and not reporting events or any problems that may affect patient health conditions (Hoffman, 1998; Zohar, 1982). Better communication between workers is needed to increase the quality of work and the effectiveness of patient safety cultures.

Based on the overall positive response rate, two dimensions fell in the gap between area of strength and area needing improvement. These two dimensions,

Supervisor Expectations and Actions Promoting Patient Safety, and Overall Perceptions of Patient Safety are discussed below.

Supervisor Expectations and Actions Promoting Patient Safety Dimension

The overall positive response rate mean of the dimension Supervisor Expectations and Actions Promoting Patient safety dimension was lower than the cut-off for area of strength (60%), indicating this may be an area needing improvement, despite being higher than the AHRQ definition of areas needing improvement. This response rate was also lower than the average positive response rate of AHRQ's US hospital score of 74%. Some individual items in this dimension receiving positive response rates and indicative of strengths in safety culture were the following: "My supervisor ignores patient safety problems that happen over and over" (US hospitals 76% disagreed, positive response, and HMC 86% disagreed, positive response); "Whenever we have work pressure, my supervisor wants us to work faster, even if it threatens patient safety" (US hospitals 74% disagreed, positive response, and HMC 77% disagreed, positive response).

However, individual items with low positive response rates and indicative of areas for improvement in safety culture were the following: " My supervisor says a good word when he/she sees a job done according to established patient safety procedures" (only 33% agreed, negative response); and "My Supervisor seriously considers staff suggestions for improving patient safety" (only 44% agreed, negative response).

Study findings indicate that nursing staff had negative attitudes toward their supervisors' behaviors in the two items reflecting positive feedback to staff for good safety practices, and using staff suggestions for safety improvement. This may be related to other dimensions where supervisor feedback regarding positive behaviors was

infrequent, and their focus was primarily on individual responsibility for error situations was the norm.

This finding is relevant since research strongly suggests that supervisor communication is critical for creating, developing, and maintaining an effective safety culture (O'Toole, 2002; Flin, Mearns, O'Connor & Bryden, 2000). In more effective patient safety cultures, supervisors had more supportive styles of leadership, intiated discussions about safety, and provided positive feedback on safety issues (Hoffman, Morgeson & Gerras, 2003; Hoffman & Morgeson, 1999). In addition, research shows that where supervisors have ongoing communication with nursing staff about issues related to patient safety nurses speak up freely to share their thoughts and ideas, and nurses have reduced anxiety and fear about reporting mistakes and errors (Zohar, 2002a; 2003).

Findings from this study support that HMC supervisors are concerned and pay attention to patient safety issues. To improve on the effectiveness of a safety culture, however, findings from this study also suggest that HMC leaders may want to consider implementing strategies to teach and facilitate supervisor behaviors that encourage nursing staff to report information about safety, and to contribute and participate in safety initiatives.

Overall Perceptions of Patient Safety Dimension.

The overall positive response rate mean in this study for the Overall Perceptions of Patient Safety dimension was 63%, indicating this may be an area needing improvement, although higher than the AHRQ criteria for areas needing improvement (50% or below). The individual items for this dimension fell in the gap between areas of strength and areas needing improvement. Interestingly, for both US hospitals and HMC,

the item with the highest positive response rate and indicative of strengths in safety culture was the following “Our procedures and systems are good at preventing errors from happening” (US hospitals 68% agreed, and HMC 87% agreed,). This could be related to nurses’ beliefs that some system processes at HMC are supportive of safe patient care**.**

However, individual items receiving the lowest positive response rates for this dimension and indicating areas for improvement in safety culture for both US hospitals and HMC were the following: “it is just by chance that more serious mistakes don’t happen around here”(US hospitals 60% disagreed, low positive response, and HMC 43% disagreed, low positive response); “ patient safety is never sacrificed to get more work done”(US hospitals 63% agreed, low positive response, and HMC 58% agreed, low positive response); and “we have patient safety problems in this unit” (US hospitals 62% disagreed, low positive response, and HMC 65% disagreed, low positive response).

Summary

The results of this study suggest that HMC has areas for improvement with regard to nurses’ perception of safety culture on multiple units. In addition, AHRQ’s survey as modified for this study may serve as a beginning measure of safety culture in Qatar and Middle Eastern countries given the consistency and similarity in ordering of items within dimensions and mean scores on dimensions for this study compared to US hospital results. Differences in this study’s results on the modified AHRQ survey may reflect progress in the US in some areas due to the new focus on patient safety since the IOM report on medical error in 2000.

Limitations of the Study

Findings and interpretation from this study should be considered in light of the following limitations:

1. RN participants were from one healthcare organization and prevents generalizability to other organizations or disciplines.
2. Not all subscales on the AHRQ survey were adapted and used in this study which limits description of safety culture to only those aspects measured by subscales.
3. No analysis was conducted on differences in those participants who returned surveys and those who did not return surveys. Culture of safety on some units where returned rate was low may have influenced participants' decision.
4. This was the first use of the modified AHRQ survey and may have affected responses. Further survey development is indicated by reliability scores on some dimensions. However, Pallant (2007) stated that cronbach alpha values are dependent on the number of items in the scale. When there are a small number of items in the scale (fewer than 10), cronbach alpha values can be quite small. All seven dimensions in the modified survey contained less than six items.

Implications for Future Research

To date, little research on nursing or other healthcare worker perceptions about patient safety culture has been conducted in Middle Eastern countries. Even though the results of this study provide new insight into nursing staff perceptions about safety

culture on their respective units in one Middle Eastern country healthcare organization, additional studies are needed. The following are recommendations for future study:

1) further psychometric testing and modification of the modified AHRQ survey used in this study for Middle Eastern culture and language differences;

2) use of all AHRQ survey subscales to measure all aspects of safety culture including perceptions of organizational behaviors surrounding safety; and

3) data from larger sample sizes to provide opportunities for statistical testing of differences across individual units, departments, facilities, and organizations.

APPENDIX A

INSTRUCTIONS

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

An "event" is defined as any type of error, mistake, incident, accident, or deviation, regardless of whether or not it results in patient harm.

"Patient safety" is defined as the avoidance and prevention of patient injuries or advers events resulting from the processes of health care delivery.

SECTION A: Your Work Area/Unit

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

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

○	a.	Many different hospital units/No specific unit

○ b. Medicine (non-surgical)	○ g. Intensive care unit (any type)	○ l. Radiology
○ c. Surgery	○ h. Psychiatry/mental health	○ m. Anesthesiology
○ d. Obstetrics	○ i. Rehabilitation	○ n. Other, please specify:
○ e. Pediatrics	○ j. Pharmacy	
○ f. Emergency department	○ k. Laboratory	

Please indicate your agreement or disagreement with the following statements about your work area/unit. Mark your answer by filling in the circle.

Think about your hospital work area/unit…	**Strongly Disagree ▼**	**Disagree ▼**	**Neither ▼**	**Agree ▼**	**Strongly Agree ▼**
1. People support one another in this unit.....	①	②	③	④	⑤
2. We have enough staff to handle the	①	②	③	④	⑤

workload.....					
3. When a lot of work needs to be done quickly, we work together as a team to get the work done.....	①	②	③	④	⑤
4. In this unit, people treat each other with respect	①	②	③	④	⑤
5. Staff in this unit work longer hours than is best for patient care	①	②	③	④	⑤
6. We are actively doing things to improve patient safety	①	②	③	④	⑤
7. We use more agency/temporary staff than is best for patient care	①	②	③	④	⑤
8. Staff feel like their mistakes are held against them	①	②	③	④	⑤
9. Mistakes have led to positive changes here.....	①	②	③	④	⑤
10. It is just by chance that more serious mistakes don't happen around here.....	①	②	③	④	⑤
11. When one area in this unit gets really busy, others help out	①	②	③	④	⑤
12. When an event is reported, it feels like the person is being written up, not the problem	①	②	③	④	⑤

SECTION A: Your Work Area/Unit (continued)

Think about your hospital work area/unit…	**Strongly Disagree ▼**	**Disagree ▼**	**Neither ▼**	**Agree ▼**	**Strongly Agree ▼**
13. After we make changes to improve patient safety, we evaluate their effectiveness.....	①	②	③	④	⑤
14. We work in "crisis mode" trying to do too much, too quickly.....	①	②	③	④	⑤
15. Patient safety is never sacrificed to get more work done.....	①	②	③	④	⑤
16. Staff worry that mistakes they make are kept in their personnel file.....	①	②	③	④	⑤
17. We have patient safety problems in this unit.....	①	②	③	④	⑤

18. Our procedures and systems are good at preventing errors from happening.....	①	②	③	④	⑤

SECTION B: Your Supervisor/Manager

Please indicate your agreement or disagreement with the following statements about your immediate supervisor/manager or person to whom you directly report. Mark your answer by filling in the circle.

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

SECTION C: Communications

How often do the following things happen in your work area/unit? Mark your answer by filling in the circle.

Think about your hospital work area/unit…	Never ▼	Rarely ▼	Some-times ▼	Most of the time ▼	Always ▼
1. We are given feedback about changes put into place based on event reports	①	②	③	④	⑤
2. Staff will freely speak up if they see something that may negatively affect patient care	①	②	③	④	⑤
3. We are informed about errors that happen in this unit.....	①	②	③	④	⑤
4. Staff feel free to question the decisions or actions of those with more authority.....	①	②	③	④	⑤
5. In this unit, we discuss ways to prevent errors from happening again	①	②	③	④	⑤

6. Staff are afraid to ask questions when something does not seem right.....	①	②	③	④	⑤

SECTION D: Frequency of Events Reported

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

Mark your answer by filling in the circle.

	Never ▼	Rarely ▼	Some-times ▼	Most of the time ▼	Always ▼
1. When a mistake is made, but is *caught and corrected before affecting the patient*, how often is this reported?	①	②	③	④	⑤
2. When a mistake is made, but has *no potential to harm the patient*, how often is this reported?	①	②	③	④	⑤
3. When a mistake is made that *could harm the patient*, but does not, how often is this reported?.....	①	②	③	④	⑤

SECTION E: Patient Safety Grade

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

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

SECTION F: Your Hospital

Please indicate your agreement or disagreement with the following statements about your hospital. Mark your answer by filling in the circle.

Think about your hospital…	Strongly Disagree ▼	Disagree ▼	Neither ▼	Agree ▼	Strongly Agree ▼
1. Hospital management provides a work climate that promotes patient safety.....	①	②	③	④	⑤
2. Hospital units do not coordinate well with each other	①	②	③	④	⑤
3. Things "fall between the cracks" when transferring patients from one unit to another.....	①	②	③	④	⑤
4. There is good cooperation among hospital units that need to work together.....	①	②	③	④	⑤

5. Important patient care information is often lost during shift changes	①	②	③	④	⑤
6. It is often unpleasant to work with staff from other hospital units	①	②	③	④	⑤
7. Problems often occur in the exchange of information across hospital units	①	②	③	④	⑤
8. The actions of hospital management show that patient safety is a top priority.....	①	②	③	④	⑤
9. Hospital management seems interested in patient safety only after an adverse event happens	①	②	③	④	⑤
10. Hospital units work well together to provide the best care for patients	①	②	③	④	⑤
11. Shift changes are problematic for patients in this hospital.....	①	②	③	④	⑤

SECTION G: Number of Events Reported

In the past 12 months, how many event reports have you filled out and submitted? Mark ONE answer.

- ○ a. No event reports
- ○ b. 1 to 2 event reports
- ○ c. 3 to 5 event reports
- ○ d. 6 to 10 event reports
- ○ e. 11 to 20 event reports
- ○ f. 21 event reports or more

SECTION H: Background Information

This information will help in the analysis of the survey results. Mark ONE answer by filling in the circle.

1. How long have you worked in this hospital?
   - ○ a. Less than 1 year
   - ○ b. 1 to 5 years
   - ○ c. 6 to 10 years
   - ○ d. 11 to 15 years
   - ○ e. 16 to 20 years
   - ○ f. 21 years or more
2. How long have you worked in your current hospital work area/unit?
   - ○ a. Less than 1 year
   - ○ b. 1 to 5 years
   - ○ c. 6 to 10 years
   - ○ d. 11 to 15 years
   - ○ e. 16 to 20 years
   - ○ f. 21 years or more
3. Typically, how many hours per week do you work in this hospital?
   - ○ a. Less than 20 hours per week
   - ○ b. 20 to 39 hours per week
   - ○ c. 40 to 59 hours per week
   - ○ d. 60 to 79 hours per week
   - ○ e. 80 to 99 hours per week
   - ○ f. 100 hours per week or more
4. What is your staff position in this hospital? Mark ONE answer that best describes your staff position.

- ○ a. Registered Nurse
- ○ b. Physician Assistant/Nurse Practitioner
- ○ c. LVN/LPN
- ○ d. Patient Care Assistant/Hospital Aide/Care Partner
- ○ e. Attending/Staff Physician
- ○ f. Resident Physician/Physician in Training
- ○ g. Pharmacist
- ○ h. Dietician
- ○ i. Unit Assistant/Clerk/Secretary
- ○ j. Respiratory Therapist
- ○ k. Physical, Occupational, or Speech Therapist
- ○ l. Technician (e.g., EKG, Lab, Radiology)
- ○ m. Administration/Management
- ○ n. Other, please specify:

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

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

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

- ○ a. Less than 1 year
- ○ b. 1 to 5 years
- ○ c. 6 to 10 years
- ○ d. 11 to 15 years
- ○ e. 16 to 20 years
- ○ f. 21 years or more

SECTION I: Your Comments

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

THANK YOU FOR COMPLETING THIS SURVEY.

APPENDIX B

NURSES' PERCEPTIONS ON UNIT PATIENT SAFETY AT HAMAD MEDICAL CORPORATION (HMC)

This survey asks for your opinions about patient safety issues in your unit at HAMAD MEDICAL CORPORATION and will take about 10 to 15 minutes to complete.

SECTION A: WorkArea

For each statement below, please indicate your agreement or disagreement by filling in the circle.

Think about your hospital work area/unit…	Strongly Disagree ▼	Disagree ▼	Neither ▼	Agree ▼	Strongly Agree ▼
1. People support one another in this unit.....	①	②	③	④	⑤
2. We have enough staff to handle the workload……	①	②	③	④	⑤
3. When a lot of work needs to be done quickly, we work together as a team to get the work done……..	①	②	③	④	⑤
4. In this unit, people treat each other with respect……	①	②	③	④	⑤
5. Staff in this unit work longer hours than is best for patient……..	①	②	③	④	⑤
6. We use more agency/temporary staff than is best for patient care	①	②	③	④	⑤
7. Staff feel like their mistakes are held against them.....	①	②	③	④	⑤
8. It is just by chance that more serious mistakes don't happen around here	①	②	③	④	⑤
9. When one area in this unit gets really busy, others help out.....	①	②	③	④	⑤
10.When an OVA is reported, it feels like the person is being written up, not the problem	①	②	③	④	⑤

11. We sometimes try to do too much, too quickly.....	①	②	③	④	⑤
12. Patient safety is never sacrificed to get more work done.....	①	②	③	④	⑤
13. Staff worry that mistakes they make are kept in their personnel file.....	①	②	③	④	⑤
14. We have patient safety problems in this unit.....	①	②	③	④	⑤
15. Our procedures and systems are good at preventing errors from happening	①	②	③	④	⑤

SECTION B: Your Supervisor

Please indicate your agreement or disagreement with the following statements about your immediate supervisor/manager or person to whom you directly report. Mark your answer by filling in the circle.

	Strongly Disagree ▼	Disagree ▼	Neither ▼	Agree ▼	Strongly Agree ▼
1. My supervisor ignores patient safety problems that happen over and over……	①	②	③	④	⑤
2. Whenever we have work pressure, my supervisor wants us to work faster, even if it threatens patient safety……..	①	②	③	④	⑤
3. My Supervisor seriously considers staff suggestions for improving patient safety.....	①	②	③	④	⑤
4. My supervisor says a good word when he/she sees a job done according to established patient safety procedures...……	①	②	③	④	⑤

SECTION C: Communications

How often do the following things happen in your work area/unit? Mark your answer by filling in the circle. Think about your hospital WorkArea/Unit

	Never ▼	Rarely ▼	Some-times ▼	Most of the time ▼	Always ▼
1. We are given feedback about any changes resulting from OVA report……	①	②	③	④	⑤
2. Staff will freely speak up if they see something that may negatively affect patient care……..	①	②	③	④	⑤
3. We are informed about errors that happen in this unit...	①	②	③	④	⑤
4. In this unit, we feel free to discus the decisions or actions taken of those with more authority…….	①	②	③	④	⑤
5. In this unit, we discuss ways to prevent errors from happening again…… ……..	①	②	③	④	⑤
6. Staff are afraid to ask questions when something does not seem right…… …….	①	②	③	④	⑤

SECTION D: Frequency of Events Reported

In your hospital work area/unit, when the following mistakes happen, *how often are they reported?* Mark your answer by filling in the circle.

	Never ▼	Rarely ▼	Some-times ▼	Most of the time ▼	Always ▼
1. When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported?	①	②	③	④	⑤
2. When a mistake is made which did not harm the patient, how often is this reported.....	①	②	③	④	⑤
3. When a mistake is made that could harm the patient, but does	①	②	③	④	⑤

not, how often is this reported?					

SECTION E: Background Information

This information will help in the analysis of the survey results. Mark ONE answer by filling in the circle.

1-What is your primary unit in this hospital? Mark ONE answer by filling in the circle.

○	a.	Medical
○	b.	Surgical
○	c.	ICU
○	d.	Obs/Gyne
○	e.	Pediatric
○	f.	A/E
○	g.	Rehabilitation
○	h.	Orthopedics

2-How long have you worked as a nurse?

○ a. Less than 1 year
○ b. 1 to 5 years
○ c. Over 5 years

3-How long have you worked in your current hospital unit?

○ a. Less than 1 year
○ b. 1 to 5 years
○ c. Over 5 years

SECTION F: Your Comments

Please feel free to respond to the questions below regarding patient safety

1. In your opinion indicate the most frequent factor (for example: work environment, supervisor, OR communication) affecting patient safety in your unit?

---

2. Why do you think this is threatening patient safety?

---

3. How would you improve it?

THANK YOU FOR COMPLETING THIS SURVEY.

APPENDIX C

Dear nurse,

You are being invited to take part in an expert panel to evaluate the clarity of items on a survey to be used in a later study. I am a student at Indiana University School of Nursing in Indianapolis, Indiana. You were selected by the Director of Nursing at Hamad Medical Corporation.

The purpose of your completing this survey is to obtain your feedback regarding how clear the questions are.

I would like you to provide your feedback on all survey items regarding: 1) the clarity of the statements and language, and 2) estimate the time needed for you to complete the instrument survey. Please use the space in the margins for comments.

Please follow these instructions:

1- Download the attachment.
2- Save it in your computer.
3- Open the file on Microsoft Word.
4- Please read the directions at the top of the survey.
5- After completion, save the file again.
6- Once you have completed the survey, please send it directly to me via e-mail: malishaq@iupui.edu

Again, thank you for helping me to evaluate this survey, which I hope will prove useful in a future study to measure safety culture. Your insight as a practitioner is deeply appreciated.

Thanks,
Sincerely,

Moza A.Latif Hassan Abdulla Al-ishaq
Ph.D candidate

APPENDIX D

NURSES PERSEPTIONS ON UNIT PATIENT SAFETY CULTURE

SECTION A

For each statement below, please rate the item for clarity.

1- clear 2-Not clear

- **For all ratings of 2 please explain in the column to the right**
- **Other wording suggestions are welcome**

Think about your hospital work area/unit…	Please write your comments here
1. People support one another in this unit..... **Clarity:** 1 2	
2. We have enough staff to handle the workload..... **Clarity:** 1 2	
3. When a lot of work needs to be done quickly, we work together as a team to get the work done..... **Clarity:** 1 2	
4. In this unit, people treat each other with respect..... **Clarity:** 1 2	
5. Staff in this unit work longer hours than is best for patient care..... **Clarity:** 1 2	
7. We use more agency/temporary staff than is best for patient care..... **Clarity:** 1 2	
8. Staff feel like their mistakes are held against them... **Clarity:** 1 2	
9. It is just by chance that more serious mistakes don't happen around here..... **Clarity:** 1 2	

10. When one area in this unit gets really busy, others help out.....

Clarity: 1 2

11. When an event is reported, it feels like the person is being written up, not the problem.....

Clarity: 1 2

SECTION A: (continued)

For each statement below, please rate the item for is the clarity.

1- Clear 2-Not

- **For all ratings of 2 or above please explain in the column to the right**
- **Other wording suggestions are welcome**

Think about your hospital work area/unit… Please write your comments here

12. We work in "crisis mode" trying to do too much, too quickly.....

Clarity: 1 2

13. Patient safety is never sacrificed to get more work done.....

Clarity: 1 2

14. Staff worry that mistakes they make are kept in their personnel file .....

Clarity: 1 2

15. We have patient safety problems in this unit…….

Clarity: 1 2

16. Our procedures and systems are good at preventing errors from happening.....

Clarity: 1 2

SECTION B

For each statement below, please rate the item for how clear it is.

1- Very clear 5-Not clear at all

- **For all ratings of 3 or above please explain in the column to the right**
- **Other wording suggestions are welcome**

Please write your comments here

1. My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures .....

Clarity: 1 2

2. My supervisor/manager seriously considers staff suggestions for improving patient safety ...

Clarity: 1 2

3. Whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means taking shortcuts .....

Clarity: 1 2

4. My supervisor/manager overlooks patient safety problems that happen over and over .....

Clarity: 1 2

SECTION C

For each statement below, please rate the item for clarity.

1- Clear 2-Not clear

- **For all ratings of 2 please explain in the column to the right**
- **Other wording suggestions are welcome**

Think about your hospital work area/unit…	Please write your comments here
1. We are given feedback about changes put into place based on event reports ..... **Clarity:** 1 2	
2. Staff will freely speak up if they see something that may negatively affect patient care ..... **Clarity:** 1 2	
3. We are informed about errors that happen in this unit..... **Clarity:** 1 2	
4. Staff feel free to question the decisions or actions of those with more authority..... **Clarity:** 1 2	
5. In this unit, we discuss ways to prevent errors from happening again.....	
6. Staff are afraid to ask questions when	

something does not seem right.....

Clarity: 1 2

SECTION D:

For each statement below, please rate the item for clarity.

1- clear 2-Not clear

- **For all ratings of 2 please explain in the column to the right**
- **Other wording suggestions are welcome**

Please write your comments here

1. When a mistake is made, but is *caught and corrected before affecting the patient*, how often is this reported?

Clarity: 1 2

2. When a mistake is made, but has *no potential to harm the patient*, how often is this reported?.....

Clarity: 1 2

3. When a mistake is made that *could harm the patient*, but does not, how often is this reported?.....

Clarity: 1 2

For each statement below, please rate the item for clarity.

1- clear 2-Not clear

- **For all ratings of 2 please explain in the column to the right**
- **Other wording suggestions are welcome**

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

○	○	○	○	○
1	**2**	**3**	**4**	**5**
Excellent	Very Good	Acceptable	Poor	Failing

Clarity: 1 2

Please write your comments here: ----------

SECTION F:

This information will help in the analysis of the survey results. Mark ONE answer by filling in the circle.

1-What is your primary unit in this hospital? Mark ONE answer by filling in the circle.

○ a. Medical
○ b Surgical
.
○ c. ICU

Please write your comments here

_____

2-How long have you worked <u>as a nurse</u>?

○ a. Less than 1 year
○ b 1 to 5 years
.
○ c. Over 5 years

Please write your comments here

_____

3-How long have you worked in your current hospital <u>unit</u>?

○ a. Less than 1 year
○ b 1 to 5 years
.
○ c. Over 5 years

Please write your comments here

_____

SECTION G: Your Comments

Please write your comments on the below lines:

4. In your opinion indicate the most frequent factor (for example: work environment, supervisor, OR communication) effecting patient safety in your unit?

---

5. Why do you think this is the most frequent factor?

---

6. How would you improve it?

For Expert Panel

How much time do you think it would take you to complete this survey?

……

……

THANK YOU FOR COMPLETING THIS SURVEY.

APPENDIX E

) MEDICAL CORPORATION

مؤسسة حمد الطبية

Ref : NA/0606/06
Date: 30 May 2006

Dear Ms. Alishaq:

We have received your e-mail requesting to conduct a study on safety culture at HMC to measure the nurses' perceptions about the safety culture in the unit.

We are pleased to inform you that you have our permission to conduct this research by distributing survey questionnaires randomly.

We wish you all the success on your study. If you need further assistance, do not hesitate to contact us.

Best regards,

DR. NABILA AL MEER
Executive Director of Nursing
Hamad Medical Corporation
P. O. Box 3050 – Doha, Qatar
Tel. No. (0974) 4393200 / 4393401
Fax No. (0974) 4393971
E-mail: nalmeer@hmc.org.qa

cc:

APPENDIX F

Nursing Perceptions of Patient safety at
Hamad Medical Corporation
In the State of Qatar

Dear Nurses,

I am a Ph. D students at Indiana University Purdue University Indianapolis, working on my Ph.D thesis entitled "Nursing Perceptions of Patient safety". The purpose of this study is to assess nurses' perception of the safety culture in their units at Hamad Medical Corporation in the State of Qatar.

I am inviting you to participate in a study to assess your perception of the safety culture n your unit. Participation in this study will require completing a survey and open-ended questions that will take 15-20 minutes of your time. There are no known risks associated with participation n this study. I would like to inform you that your participation in this study will be voluntarily and you may withdraw at any time without penalty by contacting me. Your participation will contribute to existing research and will build upon current theory in nursing assessment about safety culture in their unit. I will hold your survey in absolute confidence.

If you are willing to participate in this study, please complete the survey and open-ended questions and return it to me on the provided address on the returned envelope. If you have any question about the survey please contact me by e-mail: malishaq@iupui.edu. If you have questions about your rights as a participant in this research, or if you feel you have been placed at risk, you can contact the Institutional Review Board at Indiana University Purdue University Indianapolis at (317) 274-8289 or resnew@iupui.edu.

Thank you for considering my request

Sincerely,

Moza Alishaq, Primary Investigator
School of Nursing
Infection Control Department
Doha-Qatar
malishaq@iupui.edu

Dr. Patricia Ebright, Faculty Sponsor
School of Nursing
Adult Health Nursing
NU 412
IUPUI
prebrigh@iupui.edu

APPENDIX G

Nurses Responses for All Likert Items from (A-D).

Items	Nurses response									
	Strongly Disagree		Disagree		Neither		Disagree		Strongly Disagree	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
A1	7	1.5	67	14.7	18	3.9	250	54.8	114	25.0
A2	46	10.1	155	34.0	23	5.0	186	40.0	46	10.1
A3	13	2.9	21	4.6	41	9.0	258	56.6	123	27.0
A4	96	21.1	229	5o.2	41	9.0	74	16.2	16	3.5
A5	50	11.0	161	35.3	66	14.5	132	28.9	47	10.3
A6	32	7.0	65	14.3	79	17.3	232	50.9	48	10.5
A7	9	2.0	109	23.9	75	16.4	198	43.4	65	14.3
A8	87	19.1	109	23.9	45	9.9	186	40.8	29	6.4
A9	83	18.2	212	46.5	30	6.6	97	21.3	34	7.5
A10	26	5-7	110	24.1	53	11.6	202	44.3	65	14.3
A11	35	7.7	49	10.7	36	7.9	247	54.2	89	19.5
A12	4	0.9	31	6.8	24	5.3	302	66.2	95	20.8
A13	18	3.9	93	20.4	83	18.2	214	46.9	48	10.5
A14	25	5.5	129	28.3	77	16.9	174	38.2	5`	11.2
A15	14	3.1	34	7.5	39	8.6	249	54.6	120	26.3
B1	188	41.2	205	45.0	24	5.3	28	6.1	11	2.4
B2	148	32.5	206	45.2	40	8.8	34	7.5	28	6.1
B3	177	38.8	29	6.4	50	11.0	169	37.1	31	6.8
B4	211	46.3	35	7.7	56	12.3	121	26.5	33	7.2
Items	Never		Rarely		Sometimes		Most o the time		Always	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
C1	35	7.7	79	17.3	135	29.6	116	25.4	91	20.0
C2	22	4.8	38	8.3	231	50.7	84	18.4	81	17.8
C3	19	4.2	27	5.9	72	15.8	133	29.2	205	45.0
C4	44	9.6	188	41.2	72	15.8	100	21.9	52	11.4
C5	13	2.9	13	2.9	45	9.9	197	43.2	188	41.2
C6	76	16.7	65	14.3	90	19.7	42	9.2	183	40.1
Items	Strongly disagree		Disagree		Neither		Agree		Strongly agree	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
D1	179	39.3	61	13.4	88	19.3	58	12.7	70	15.4
D2	176	38.6	50	11.0	73	16.0	61	13.4	96	21.1
D3	36	7.9	36	7.9	57	12.5	108	23.7	219	48.0

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CURRICULUM VITAE

Moza A Latif Al-Ishaq

Education

2004-2008	Ph.D. in Nursing Science, Specialization Patient Safety and Human Error, Indiana University IUPUI, Indianapolis, Indiana, USA
2001-2002	Masters of Science in Health Science, University of Arkansas, Fayetteville, Arkansas, USA
1993-1997	Bachelor in Nursing, University of Qatar, Doha, Qatar

Training Experience

1999	Internship in Community Health & Wellness John Center, Fayetteville, Arkansas, USA
1999	Lifestyles in Northwest, Fayetteville, Arkansas, USA
1998	Communicable Diseases & its Prevention and Control Conducted by the Ministry of Health, Doha, Qatar
1998	Nursing Process, General Nursing Orientation, Preceptor Training Program, Doha, Qatar
1998	Diabetes Mellitus Complication & Self-Care Conducted by Qatar Diabetic Association, Doha, Qatar
1997	Hospital Infection and Its Control Conducted by Ministry of Health, Kuwait
1996	Course in Quality Management and Assurance Conducted by Nursing Department, Doha, Qatar
1994	Charting & Clinical Documentation, Nursing Department, Doha, Qatar
1994	Basic Life Support, Nursing Department, Doha, Qatar
1994	Medication Administration. Nursing Department, Doha, Qatar

Professional Experience

2002-2003	Senior Infection Control Coordinator Hamad Medical Corporation, Doha, Qatar
1997-1999	Infection Control Nurse Hamad Medical Corporation, Doha, Qatar
1996-1997	Rotation to all Hospital units, Hamad Medical Corporation, Doha, Qatar
1995-1996	Rotation to all Intensive Care units Hamad Medical Corporation, Doha, Qatar
May-Oct 1995	Nursing Developee Assigned to All surgical Units, Doha, Qatar
Feb-April 1995	Nursing Developee assigned to all Medial Unit including Endoscopy & Dialysis, Doha, Qatar

Honors, Awards, Fellowships

2006	A Certificate of Participation in Infection Control Course, National Center of Continuing Education, USA
2006	A Certificate of Participation in Infection Control Course, National Center of Continuing Education, USA
2003-2004	Award from the National Dean's List of Honoring America's Outstanding College Students for High Standard of Academic Excellence, Community Leadership and Positive Performance, USA
2003	A Certificate award of Achievement from the Middle East Primary Health Conference, The First Arabic Conference for presenting a Research study: The Prevalence of Urinary tract Infection among Elderly Patient's at Rummailah Hospital, Doha, Qatar
Nov 2002	A Certificate of Completion Preoperative Measure to Prevent Surgical Site Infection, Conducted by Infection Control Today online workshop, USA
Jan 2002	Award incentive from the Ambassador of the Embassy of the State of Qatar (Washington, D.C. USA) for the recognition of Outstanding Academic Achievement and for completing the Masters Degree before the time limits, USA
Feb 2002	Award of Bronzed Plaque from the Department of Quality Management and Infection control for achieving Excellence with honorary in Masters Degree, Doha, Qatar

April 2002	A Certificate of Appreciation from Qatar International Trauma & emergency Medicine Conference, Doha, Qatar
March 2002	A Certificate of Appreciation from Qatar National Cancer Society for participating as a volunteer, Doha, Qatar
2000	A Certificate of Achievement from Spring International Language Center for Student Council Representative, Fayetteville, Arkansas, USA
July 1999	A Certificate of Completion of Hand Hygiene and Hand Health course conducted by Infection Control Today Online workshop, USA
March 1999	A Certificate of Achievement in an Intensive Course for Communicable Diseases with Excellence, Doha, Qatar
Aug 1998	A Certificate award from Qatar Diabetic Association as being an active volunteer in Public Health Committee, Doha, Qatar
May 1998	Award Incentive for Third place award of Complication of Diabetes Mellitus Poster Competition on Nursing Day, at Hamad Medical Corporation, Doha, Qatar
1997	First place award on Hospital Infection and Its Control course Conducted by Ministry of Health, Kuwait

Conferences Attended

2008	35th Annual Education Conference and International Meeting of the Association for Professional in Infection Control & Epidemiology, (June 15-19, 2008), Denver, Colorado, USA
March 2008	Infection Control Campaign for Needle Exposure Symposium (March, 2008). At Hamad General Hospital, Doha-Qatar
Feb 2008	Surgical Site Infection in Women's Hospital Symposium (Feb, 2008), at Hayyat Regency, Doha, Qatar
2007	Midwest Nursing Research Society (2007), Minneapolis, Minnesota, USA
2006	33rd Annual Educational Conference and International Meeting of the Association for Professional in Infection Control & Epidemiology (June 11-15, 2006), Tampa, Florida, USA
2005	Midwest Nursing Research Society (2005), Cincinnati, Ohio, USA
2004	Midwest Nursing Research Society (2004), Saint Louis, Missouri, USA
2002	First Middle East Infection Control Congress (2002), State of Kuwait

2002	The first Arab Conference of Primary Health Care (2002), Manama, Kingdom of Bahrain
2002	Qatar National Cancer Society (March 28-31, 2002), Doha, Qatar
Oct 2002	The 1st Infection Control Week (Oct, 2002) at hamad Medical Corporation, Doha, Qatar
Sept 2002	Patient Safety Congress, Arab Health (2002), Dubai, United Arab of Emirates
April 2002	Qatar International Trauma and Emergency Medicine Conference and Doha Naurotrauma Symposium (April 13-16, 2002), Doha, Qatar
1997-1999	Celebrate International Nursing Day (May, 1997, 1998, 1999) at Hamad Medical Corporation, Doha, Qatar

Presentations

2008	Introduction about Muslim's holy/fasting month of Ramadan, presented at Indiana State University, Terre Haute, Indiana, USA
2004	Culture and stereotypes, the role of husband and wife in the marriage customs of Islam (2004), presented at Indiana State University, Terre Haute, USA
2004	Women's right in Islam (2004), presented at College of education, Indiana University Purdue University Indianapolis, Indiana, USA
2003	Promotion of Hand Hygiene (May 12, 2003), presented on International Nurses Day, at Women's Hospital Auditorium, Doha, Qatar
2003	Outbreak of Scabies (March, 2003), presented at Rummailah Hospital, Doha, Qatar
2002	Infection Control and CSSD Decontamination and Sterilization of Surgical instruments (Nov, 2002), presented at Women's Hospital, Doha, Qatar
2002	Hand Hygiene Compliance a Study conducted at Hamad Medical Corporation (Oct, 2002), presented on Infection control Week, presented at Hamad Medical Corporation, Doha, Qatar
2002	The Importance of Infection Control in Healthcare Organization (Oct, 2002) presented at the First Middle East Infection Control Congress, State of Kuwait
2002	Infection Control in Primary Health Centers (Sept, 2002), presented at Out Patient Department Annex Auditorium, Doha, Qatar
2002	Infection Control Education for Patient Care Assistant (Sept, 2002), presented at Rumaillah Hospital, Doha-Qatar

2002	Ventilator Associated Pneumonia (Aug, 2002), presented at Hamad General Hospital, Doha, Qatar
2002	The Role of Infection Control and Catering (Aug, 2002), presented at Hamad General Hospital, Doha, Qatar
2002	Preventive measures of Urinary tract Infection (April, 2002), presented at Hamad Medical Corporation, Doha, Qatar
2002	Hospital Acquired Infections Rate at Hamad Medical Corporation (June, 2002), presented as a report of Annual Meeting of Infection Control Committee, Doha, Qatar
Dec 2001	UTI poster in health Science as a part of fulfillment of Masters Degree, Fayetteville, Arkansas, USA
Apr 2001	How to Deal with Muslim's Patient's Brochure (2001), submitted to Johns Center, as a part of fulfillment of Masters Degree Internship, Fayetteville, Arkansas, USA
Mar 2001	Personal Hygiene Poster presented at Lifestyle in Northwest Arkansas (2001), Fayetteville, Arkansas, USA
2001	How to Manage Stress, presented at the University of Arkansas in health Science as a part of fulfillment of Masters Degree, Fayetteville, Arkansas, USA
2000	Religious Beliefs: How They Affect Our Environment Attitudes (Dec, 2000), research study presented at the University of Arkansas in Health Science as a part of fulfillment of Masters Degree, Fayetteville, Arkansas, USA
2000	Children and Lead Contamination: The Impact on Public Health (April, 2000), presented at the University of Arkansas in Health Science as a part of fulfillment of Masters Degree, Fayetteville, Arkansas, USA
2000	Knowing what about HBV? presented at the University of Arkansas in Health Science as a part of fulfillment of Masters Degree, Fayetteville, Arkansas, USA
1999	Staff Exposure: Prevention and Control Criteria (1999), presented at Hamad Medical Corporation, Doha, Qatar
1999	Possible Prevention from HIV (1999), at Hamad Medical Corporation, Doha, Qatar
1999	Burns patient and MRSA (1999), presented at Rummaila Hospital, Doha, Qatar
1999	Patient Isolation Measure (1999), presented at Hamad Medical Corporation, Doha, Qatar
1999	Infection Control and Housekeeping Seminar (1999), presented at Hamad General Hospital, Doha, Qatar

1998	Blood Stream Infection (1998), presented at Hamad Medical Corporation, Doha, Qatar
1998, 1999	How to Understand Hepatitis A, B, C, D, presented at Hamad Medical Corporation, Doha, Qatar
1998	Outbreak of MRSA (1998), presented at Hamad General Hospital, Doha, Qatar
1998	Catheter Associated Urinary Tract Infection (1998), presented at Hamad General Hospital, Doha, Qatar

Professional Membership

2003-2007	Member in Muslim Students Association, ISU, USA
2002	Infection Control Committee Secretary, Doha, Qatar
2002	Member in the Middle East Infection Control Congress, Middle East
2002	Member in Waste Management Disposal Committee, Doha, Qatar
2002	Member in Central Sterilization Service Standard Policy and Planning, Doha, Qatar
1995-1998	Member in Quality Management Standard Policy, Doha, Qatar
1997-1999	A Member in Infection Control Committee representing Nursing, Doha, Qatar
1995-1997	Member in the Sub-Committee of Quality Assurance, Doha, Qatar

Peer Reviewer

June 2008	"Cost-benefit analysis of a search and destroy policy for methicillin-resistant Staphylococcus Aureus" for the Journal of Advanced Nursing, USA
Jan 2007	Hand Hygiene compliance: exploring the notion of attitude within a competency framework, Journal of Advanced Nursing, USA
Jan 2007	Incidence and factors affecting hand skin problems among nurses: a survey in a district general hospital, Journal of Advanced Nursing, USA
Jan 2007	The influence that anxiety has on consumer satisfaction with emergency department care, Journal of Advanced Nursing, USA
Jan 2006	A qualitative exploration of pre-treatment preparation and management of interferon-based therapy for hepatitis C virus infection, Journal of Advanced Nursing, USA

Publications

Alishaaq, M. (2007). Measurement of safety culture in healthcare facilities in the State of Qatar, proceeding of Innovation of Technology: Pioneering Pathways to Health, Midwest Nursing Research Conference 2007, pp, 132.

Alishaq, M., Ebright, P.R., Wendy, K., Moody, R.C. (2006). Mindful attention to complexity: implications for teaching and learning. In Annual Review of Nursing Education: Innovations in Curriculum, Teaching, And Student And Faculty Development edited by M. H. Oermann., & Katheleen, T. H , Vol.4, chapter 18;339-359, New York; Springer.

Alishaq, M. (2005). Nurses' Experience and Medication Administration Errors At A Hospital in the Middle East. Manuscript submitted for publication. Approved study by Indiana University Purdue University Indianapolis, Indiana, USA.

Alishaq, M. (Jul, 2005). The effectiveness of nursing student's calculation competency in medication Administration: A Reviewed of the Literature Related to Medication calculation skills. unpublished manuscript, Indiana University Purdue University Indianapolis, Indiana, USA.

Alishaq, M., Elhafie, S.S., & Gracia, L. (2004). Investigation of an outbreak of multidrug-resistant Acinetobacter baumannii in trauma intensive care unit. Journal of Hosp Infect. 2004 Feb; 56 (2):101-5.

Alishaq, M. (2004). Learning skills and the effect of decision-making in nursing practice A review of the literature related to the difference between novices and experts. unpublished manuscript, Indiana University Purdue University Indianapolis, Indiana, USA.

Alishaq, M. (2004). The relationship between nurses' experience and errors in medication administration. unpublished manuscript, Indiana University Purdue University Indianapolis, Indiana, USA.

Alishq, M. (2003). Nursing Medication Errors in Medication Administration: A Review of a literature related to Causes and Types of errors. Unpublished manuscript. Indiana University Purdue University Indianapolis, Indiana, USA

Alishaq, M. (March, 2003). An outbreak of Scabies, Rumaillah Hospital, Infection Control Outbreak Hospital Report, Doha, Qatar.

Alishaq, M. (2002). Semi-Annual Report of Hospital Acquired Infection, Hamad Medical Corporation, Infection Control Hospital Annual Report Unit, Doha, Qatar.

Alishaq, M. (2002). Health watch: Hand hygien. Hamad Medical Corporation HMC Bulletin, 2, 3, Doha-Qatar.

Alishaq, M. (2002). The prevalence of Catheter Associated Urinary tract infection among Elderly Patient in Rummailah Hospital, in the State of Qatar, Proceeding of the First Arab conference; Primary Health care, Manama, Kingdom of Bahrain.

Alishaq, M., Moye, T., & Ramey, M. (2000). Religious beliefs: how they affect our environmental attitudes. Unpublished manuscript, Fayetteville, Arkansas, USA.

Alishaq, M. (2000). Children and Lead contamination: The impact on public health, Fayetteville, Arkansas, USA.

Alishaq, M. (2002). Semi-Annual Report of Hospital Acquired Infection, Hamad Medical Corporation, State of Qatar, Infection Control Hospital Annual Report Unit, Doha, Qatar.

Alishaq, M. (1997). An outbreak of MRSA, Hamad General Hospital, Infection Control Hospital Outbreak Report, Doha, Qatar.

Alishaq, M. (1996). Hospital Acquired Infection at Hamad Medical Corporation, Infection Control Annual Report, Doha, Qatar.