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Assessment of Patient Safety Culture in Makassed Hospital; A tool for improving patient safety

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Thesis Approval

Assessment of Patient Safety Culture in Makassed Hospital;

A tool for improving patient safety

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Declaration

I certify that this thesis submitted for the degree of master, is the result of my own research, except where otherwise acknowledge, and that this thesis- or any part of the same material – has not been submitted for a higher degree to any other university or institution.

Signature: …………………..

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Date: 15/5/2011

Dedication

To the four pillars of my life: God, my husband, and my parents. Without you, my life would fall apart.

I might not know where the life's road will take me, but walking with You, God, through this journey has given me strength.

To my dear husband "Dr.Inad" from whom I learned that ambition has no limits, without your love, encouragement and understanding I would not be able to make it.

To my parents who instilled in me the inspiration to set high goals and the confidence to achieve them.

To my dear son, daughters, sisters and brothers.

And to my family and friends who have been proud and supportive of my work and who have shared the many uncertainties, challenges and sacrifices for completing this thesis

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Abstract

The study was held at Makassed Islamic Charitable hospital during March – May 2010.

The purpose of the study was to assess the patient safety culture among health professionals at Makassed Islamic Charitable Hospital in Jerusalem.

A sample of 300 health care professionals was selected using proportional stratified random sampling method. 251 completed surveys were returned back making a response rate of (83.7%). The Hospital Survey of Patient Safety Culture (HSOPSC), a self–administered structural questionnaire was used. The survey consists of 14 dimensions including 10 safety culture dimensions, and 4 outcome variables. This survey was developed by Agency of Healthcare Research and Quality (AHRQ). Data were analyzed using SPSS version 16.0.

The study results showed the strength areas at the unit/department level which were teamwork within unit and organizational learning –continuous improvement and the areas of potential improvement were staffing and non-punitive response for errors.

At the hospital level the hospital handoffs and transition was considered as an area for potential; improvement. The professional staff perception and grading of the safety level in their working area were satisfactory but the frequency of event reporting and the number of event report was considered a potential area for improvement. there were statistically significant differences in patient safety perception among nurses and physicians related to eight patient safety dimensions; supervisors/managers expectations & actions promoting patient safety, organizational learning-continuous improvement , hospital management support for patient safety feedback & communication about error, frequency of events reported , staffing ,handoffs and transitions and patient safety grade. There was a consensus upon the other dimensions among the health professional with no significant differences in their perceptions toward teamwork within units, overall perceptions of safety, communication

openness, teamwork across hospital, units non-punitive response to errors and number of events reported.

The results of this study emphasizes that more comprehensive reporting on adverse events should be developed, in a blame-free manner. Leaders must focus on building a "just" culture. A just culture is one that supports the discussion of errors so that lessons can be learned from them. Leaders can facilitate a culture of trust that encourages communication across clinical disciplines about such issues as the causes of medical errors and non-punitive approaches to reporting. Effective reporting system will attribute in monitoring and controlling patient safety, and also will provide data on the effectiveness of implemented measures for the purpose of learning and continuous improvement.

The study results recommend reviewing the hospital staffing and its adequacy to the workload and type of services provided in the hospital .It is also recommended to have a standardized approach for handoffs and transition during patient transferring.

It is also important to have an active Patient Safety Committee that meets regularly. An effective committee must be comprehensive leadership-level action committee that reviews all safety issues across the organization.

ملخص الدراسة

أجريت هذه الدراسة بين شهر آذار وشهر أيار من العام 2010 ، حيث تم اختيار عينه طبقية مكونه من 300 طبيب وممرض ومهن طبية مساندة و تم استخدام استبيان تم تطويره لهذا الغرض عام 2005 من قبل "وكالة أبحاث وجودة الرعاية الصحية " في أمريكا .

إن الهدف من هذه الدراسة هي تقييم ثقافة سلامة المريض بين العاملين في المجال الصحي من أطباء وممرضين, فنيين في مستشفى المقاصد الخيرية الإسلامية في القدس.

بلغت نسبة الاستجابة 83.7% وتم استخدام برنامج الإحصائي للعلوم الاجتماعية SPSS وبرنامج خاص لتحليل هذا النوع من المعطيات Microsoft Excel Data Tool .

أظهرت النتائج عناصر القوة وكذلك العناصر التي بحاجة إلى تحسين وتطوير في ثقافة سلامة المرضى بين العاملين على مستوى الأقسام ومستوى المستشفى.

على مستوى الأقسام، فقد كانت العناصر التالية عناصر قوة وهي العمل بروح الفريق في القسم والتعليم المؤسسي للتحسين المستمر وكان العنصرين المتعلقين بالتوظيف وبعدم الرد العقابي عند حدوث الأخطاء عنصران بحاجة إلى تحسين.

أما على مستوى المستشفى فقد كان الاتصال وتسليم المرضى بين مقدمي الرعاية الصحية، و عدد المرات التي يتم التبليغ فيها عن حدوث أخطاء عناصر ضعف و بحاجة إلى تحسين.

أظهرت الدراسة وجود تشابه في الإجابات بالنسبة لتصور العاملين للعناصر الخاصة '' العمل بروح الفريق في القسم ،النظرة الإجمالية لسلامة المريض في الأقسام ،الانفتاح في الاتصال ، الرد غير العقابي على الأخطاء وعدد الأخطاء الطبية التي يتم التبليغ عنها .كذلك كان هنالك اختلاف ذو دلالة إحصائية بين الأطباء والتمريض في نظرتهم نحو دور المدراء والمشرفين في تعزيز ودعم سلامة المريض ،والتعليم المؤسسي للتحسين المستمر ،دعم الإدارة للاتصال والملاحظات حول الأخطاء وتكرارية التبليغ عن الأخطاء والتوظيف والاتصال ونقل المعلومات عن تسليم المرضى بين مقدمي الخدمة .

خلصت هذه الدراسة إلى عدة توصيات منها ضرورة وجود نظام للتبليغ عن الأخطاء الطبية داخل المؤسسة , بهدف جمع المعلومات وتحليلها واستخلاص العبر منها لتحسين نظام الرعاية الصحية , وهذا النظام بحاجة إلى دعم الإدارة وبيئة مبنية على العدالة التي تدعم المناقشة والحديث عن الأخطاء الطبية في جو منفتح ،تؤكد فيه الإدارة أن الهدف من نظام التبليغ عن الأخطاء هو التعليم المستمر لغاية التحسين والتطوير للنظام الصحي وليس معاقبة الأفراد على الأخطاء .

توصي هذه الدراسة أيضا على مراجعة سياسات التوظيف والتأكد من ملائمتها لحجم العمل في المستشفى وتعزيز روح عمل الفريق بين الأقسام لتحسين الاتصال الفعال بين مقدمي الرعاية الصحية لضمان سلامة المريض .

توصي هذه الدراسة أيضا بتبني منهجيه موحدة لتسليم المرضى ومعلوماتهم الطبية بين الأقسام أو بين المناوبات لتقليل الأخطاء التي قد تنتج عن عملية نقل المريض أو نقل معلوماته, وتوصي هذه الدراسة أيضا على ضرورة وجود لجنه فعالة على مستوى الإدارة العليا للمستشفى تعنى بكل القضايا ذات العلاقة بسلامة المريض لمتابعة الأوليات وتوفير المصادر الضرورية لعملها بصورة فعالة .

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List of Abbreviations

AHRQ   Agency for Healthcare Research and Quality

CT   Computed Tomography

DRG   Diagnostic Related Groups

EC   European Commission

EJH   East Jerusalem Hospitals

HSC   Health and Safety Commission

HSOPSC   Hospital Survey OF Patient Safety Culture

I.O.M   Institute of Medicine

ICCs   Intra Class Correlations

ICU   Intensive Care Unit

ISO   International Standardization Organization

JACHO   Joint Accreditation For Healthcare Organizations

JCI   Joint Commission International

KSA   Knowledge ,skills and attitudes

MCFA   Multi Confirmatory Factor Analysis

MoH   Ministry Of Health

MRI   Magnetic Resonance Imaging

NGC   National Guidelines clearing house

NHS   National Health System

NPSG   National Patient Safety Goals

PSI   Patient Safety Indicators

QUIC   Quality Interagency Coordination Task Force

SPSS   Statistical Package for the Social Sciences.

UN   United Nations

US   United states

USA   United States of America

WHO   World Health Organization

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Chapter One

Overview

1.1 Introduction

When entering a health care facility, whether it be an ambulatory surgery center, a hospital, a long term care facility, or a rehabilitation center, a patient hopes, if not expects, to receive an appropriate care in a safe environment.

Everyday people entrust their health to the care provided in a health care organization. In return, these facilities have an obligation to provide the safest care, treatment and service possible. It is this dedication that should compel healthcare organizations to continuously improve their services and processes to provide even better and safer care in response to the changing needs of their population served and the changing environment of the healthcare industry.

Many view quality health care as the overarching umbrella under which patient safety resides. The Institute of Medicine (IOM) in America considers patient safety "indistinguishable from the delivery of quality health care". IOM indentify the components of quality care for the 21st century: quality care is safe, effective, and patient- centered, timely efficient and equitable. Thus safety is the foundation upon which all other aspects of quality care are built *(http://www.ARHQ.org/qual/sixerror.htm)*.

Patient safety was defined by the (IOM) as "the prevention of harm to patients". Emphases is placed on the system of care delivery that (1) prevents errors; (2) learns from the errors that do occur; and (3) is built on a culture of safety that involves health care professionals, organization, and patient(Kohn et al., 2000).

The Agency for Healthcare Research and quality (AHRQ, 2003) expanded upon the definition of prevention of harm "freedom from accidental or preventable injuries produced by medical care".

Since the (IOM) report "To Err Is Human", many health care organizations have focused on reducing medical errors and enhancing the safety of patients. Despite this focus, the number of medical errors occurring in USA has not appreciably changed, and little progress in patient safety worldwide was achieved *(http://www.ARHQ.org/qual/sixerror.htm)*.

The primary reason for the lack of progress is that organizations are not addressing the roots of the safety problems. Organizations must commit to designing reliable process that prevent or mitigate the effects of human error and establish a culture where team work thrives people talk about mistakes, and everyone is committed to learning and improvement, then patient safety become a property or characteristic of the organization and, by the definition, the organization starts to reduce errors (Madden et al., 2008).

Despite the improvement in clinical training and guidelines, information technology, process redesign, and industry regulations, one of key root causes of safety related problems remains the culture of the organization.

Before organizational culture can he transformed, it must first be understood and confronted. The starting point for changes is a safety culture assessment, that helps us to understand and measure the staff's perspective on safety culture in our organization, and how that culture affects the provision of safe patient care. Once opportunities for improvement are identified, strategies for change can be developed and implemented.

1.2 Problem Statement

The following phrases summarize the problem issues in patient safety:

Patient safety emerged as a major health policy issue in late 1999 with the release of the Institute of Medicine's (IOM) report "To Err Is Human". The IOM report concluded that preventable medical errors are the fifth-leading cause of deaths in the US and cause as many as 98,000 deaths each year and increasing the total national costs of health between $17 Billion and $29 Billion. IOM called on all parties to make improving patient safety a national health policy priority (Spath, 2000).

The World Health Organization (WHO, 2002) estimates show that in developed countries as many as one in 10 patients is harmed while receiving hospital care. The harm can be caused by a range of errors or adverse events. In developing countries, the probability of patients being harmed in hospitals is higher than industrialized nations. The risk of health care-associated infection is much as 20 times higher than in developed countries.
(http://www.who.int/features/factfiles/patient_safety/en/index.html)

We are all aware that the costs of health care are rising, in part because of the costs associated with medical errors, thus we must invest in making our organizations safe for patients and providers and in making them economically sustainable (Youngber, 2004).

Safety is one of nine critical dimensions, efficiency, appropriateness, availability, timeliness, effectiveness, continuity, safety and respect and caring that define the performance of organizations (Kohn et al., 2000).

The patient safety is critical in improving quality and considered as the first domain of quality, refers to "freedom from accidental injury". The second domain refers to the provision of services in a manner that is consistent with current medical knowledge and best practice. The third domain exemplifies the ability to meet customer- specific values and preferences and customization of care (Spath, 2000).

3

Lack of safe, reliable systems of care is the problem that all health care providers face in crossing the chasm from the care we currently provide to the care we could provide. Solving this problem requires changing the culture of health care from one in which errors are viewed as the result of individual failure to one in which errors are viewed as opportunities to improve the system (IOM, 2004, p23).

In the national health conference in May 2010, it was declared that there is no data or information related to the patient safety status in Palestine, and there is a necessity to have this information available. Improving quality of care and patient safety is a national strategic goal in the Palestinian National Health Strategy 2011-2013.

Makassed Islamic Hospital strategic vision is to improve the quality of care provided and patient safety, to achieve that, the hospital is seeking to acquire the accreditation of (JACHO) which is based on improving patient safety and continuously assessing patient safety culture. There are no data available about patient safety culture among the health professionals in the hospital. This assessment aims to investigate health professionals 'patient safety culture, to raise their awareness for patient safety issues, and to investigate the areas of strength to promote, and areas of potential improvements.

1.3 Justification of the study

Creating a safe environment for patient and staff has become a high priority for health care organizations and since the year 2004, East Jerusalem Hospitals (EJH) has been seeking to improve the quality of health care services. At that time the hospitals applied a quality management system based on the requirements of the international standards of ISO9001:2000; specifies requirements for a quality management system which meets customer requirements and enhances customer satisfaction. ISO 9001:2000 is based on a systematic, process approach and strives to control and improve organizational results. Most of the Makassed hospital units have been ISO9001:2000 certified including four medical departments, support services administration departments and laboratories.

Today, EJH are working on acquiring the Joint Commission International (JCI) accreditation and implementing the international standards of JCI[1]. This accreditation focuses on improving the quality and safety of patient care. It recognizes that in health care we do not reach perfection but aim to continuously improve the health care.

Attention given to Patient safety plays an important role in reducing medical errors and malpractices. Medical malpractice and malpractice insurance continue to be issues of great concern to physicians, consumers, legislators, and others. Most of the discussion about the rising cost of malpractice insurance (also called "professional liability insurance") has centered on limiting the damage awards in malpractice suits.

Law suits in Israeli courts due to malpractice have been a serious issue for EJH. This situation is exacerbated with the political factor, where, in malpractice cases EJH are fiercely sued by Israeli courts. The malpractices claims and insurance poses a significant financial burden on the hospital budgets and threaten the financial sustainability of the main sources of tertiary health care institutions on the long run. Patient safety measures can minimize the risk of malpractice and harms on patients and consequently liability.

Safety culture is increasingly recognized as an important strategy—and perhaps a necessary precursor—to improving the widespread deficits in patient safety. The Joint Commission for Accreditation of Healthcare Organizations (JCAHO) included an annual assessment of safety culture in its 2007 patient safety goals (Pronovost &Sexton, 2005).

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[1] JCI was established in 1997 as a division of Joint Commission Resources, Inc. (JCR), a private, not-for-profit affiliate of The Joint Commission. JCI extends The Joint Commission's mission worldwide by assisting international health care organizations, public health agencies, health ministries and others to improve the quality and safety of patient care in more than 80 countries.

Patient safety usually starts with a patient safety culture assessment, which aims at assessing the perception of health professionals toward patient safety, and identifies the areas of strengths and areas for improvement.

This investigation is the first of its kind in Makassed Hospital. There is no data available about the status of patient safety in the hospital, and there is a lack of data about the issue in Palestine in general. The data generated from the study can provide information about the prevailing culture of patient safety and will support Makassed hospital in the process of acquiring the JCI accreditation. Moreover, the study will raise the awareness of participating health professionals on the concepts and determinant factors of patient safety culture.

1.4 Context of the study

Makassed Islamic Charitable Hospital

Makassed Islamic Charitable Society was officially established in 1956. It is a Palestinian charitable non-profit, non-governmental organization that provides diversified health services and extends its services in accordance with its bylaws, without distinction of any kind such as color, religion, creed, or political belief in the Holy Land.

In 1964, the society started to build its hospital on the Mount of Olives in Jerusalem. The hospital was officially inaugurated in 1968 as a small community hospital with few departments and a limited number of beds.

Makassed hospital now is the leading medical center in Palestine providing secondary and tertiary health services for the population. The main financial resources that keep the hospital functioning properly are the donations from different countries and benevolent institutions all over the world, in addition of the income from insured and paying patients.

Makassed Hospital has the capacity of 250 beds, and 755 staff out of which 419 are health care professionals. The main hospital medical departments are as follows:

- Surgical Department

The surgery department consists of General and Laparoscopic Surgery, Neurosurgery, Vascular, Thoracic, Open Heart, Plastic, Maxillofacial, Orthopedics, Urology and lithotripsy (Eswl), and Pediatric Surgery .The total number of surgical operations performed per year is more than 4000.

- Internal Medicine and Cardiology

Includes General Internal Medicine Ward, a Coronary Care Unit and a Cardiac Catheterization Unit, other subspecialties include Rheumatology, Endocrinology and Gastroenterology.

- Pediatric Department

Includes a General Pediatrics Ward, a Pediatrics ICU and Neonatal Unit. Other subspecialties include Pediatric Cardiology and Pediatric Neurology with a neuromuscular laboratory.

- Department of Obstetrics and Gynecology

It provides a variety of Gynecological and Laparoscopic surgeries, a comprehensive obstetrics care, infertility and fetal medicine Clinics.

- Anesthesia Department

It provides comprehensive anesthetic care to different patients undergoing variety of surgical interventions. The department also runs the adult ICU.

- Radiology Department

Provide a variety of diagnostic and Interventional Services as: Plain X-Rays, Barium and Contrast Studies, Ultrasonograophy, Dupplex US, Angiography, CT scan, and MRI.

- Emergency Department

The hospital is open 24 hours. It runs the only Emergency department in East Jerusalem, and receives more than 30,000 patients annually.

- Pathology Department

Provide a variety of routine and specialized histopathological techniques.

- Genetics Department

Provide a clinical genetic services as well as cytogenetic, molecular and metabolic laboratories.

- Outpatient Clinics

The clinics are open six days a week and provide a variety of general and subspecialties services. The clinics are attended by consultants of the different specialties available at the hospital.

- General hospital laboratory

Provide a variety of routine and specialized tests with strict internal and external quality control measures.

- Central Blood bank

The only central blood bank in East Jerusalem, providing blood and its components to East Jerusalem hospitals as well as hospitals in the suburb areas of Jerusalem.

- Infection prevention and control department that oversights and manage all the activities in controlling and preventing hospital acquired infections, communicable diseases and staff incidents.

- Continuous Education department that is responsible for conducting the continuous in service training of health care professionals.

1.5 Aim of the study

The aim of the study is to assess the patient safety culture among health professionals (nurses, physicians and paramedics) at Makassed Islamic Charitable Hospital in Jerusalem.

1.6 Study objectives

1. To assess the overall perception of patient safety among the health professionals (nurses, physicians and paramedics) in Makassed Hospital.
2. To assess the hospital -level aspects of patient safety culture.
3. To assess the unit/department -level aspects of patient safety culture.
4. To assess the differences in perception regarding the hospital and unit level patient safety culture dimensions among the health care professionals according to characteristics of the participants including: types/ groups (nurses, physicians and paramedics) and direct interaction with patients.

1.7 Study limitation

1. The study only included the three health care professional groups, while administrative and support staff (non clinical) were excluded from the study.
2. The researcher is an employee of the hospital, and her identity was anonymous for the participants, and she couldn't distribute, collect or interact with the participants.

1.8 Study assumptions

The following are the assumptions of the study:
1. Sufficient number of professionals will participate, respond and cooperate in filling the study instrument.
2. All the items and concepts, in the study instrument will be understood and clear for participants.
3. All the participants will fill in the questionnaire honestly and sincerely that will reflect the real situation in the organization.
4. Valid and reliable data are provided by participants.

1.9 Summary

This introductory chapter provides an overview about the importance of patient safety for improving the quality of care services provided, also an overview of the study aim and objectives, that is, to assess the patient safety culture in Makassed Islamic Charitable Hospital, and the safety perception among the health professionals to investigate opportunities for improving patient safety in the hospital.

Chapter Two

Literature Review

2.1 Introduction

As to diseases, make a habit of two things—to help or at least to do no harm— Hippocrates, *Epidemics* (Book I, Chapter XI), *c.* 400 BC

The most important transformation in health care in the last twenty years is not managed care, minimally invasive surgery, or diagnostic-related groups (DRG). It is the transformational knowledge about safety science, how medical accidents occur, and how we can prevent harm from reaching patients through accidents. To prevent patients from being harmed, our healthcare leaders-executives medical directors, nurse executives, pharmacy leaders, patient care managers, quality and risk professionals, and front-line staff providers-need critical knowledge and skills, but the skills crucial to designing care that does no harm have not been part of the educational process in the healthcare. The healthcare professionals has been educated and acculturated in individual responsibility and personal failure, shame, blame, and embarrassment, often with the accompanying threat of litigation, when things go wrong. Although the safe care of patients is a primary accountability of healthcare leaders, it is the least understood (Morath&Turnbull, 2005).

Patient safety is a critical component of health care quality. As health care organizations continually strive to improve, there is growing recognition of the importance of establishing a culture of patient safety. Pronovost and Sexton (2005) suggest that having a culture that promotes safety within your organization is an important and necessary precursor to improving the insufficiencies in patient safety. Achieving a culture of patient safety requires an understanding of the values, beliefs, and norms about what is important in an organization

and what attitudes and behaviors related to patient safety are supported, rewarded, and expected (Pronovost, 2005).

A transformation concept of safety science is that the system not individuals acting alone, creates safety. The patient safety movement is about building a culture and systems that do no harm (Kohn et al., 2000).

The IOM noted that many of the errors in health care result from a culture and system that is fragmented, and that improving health care needs to be a team sport. Research indicated that mistakes were not due to clinicians not trying hard enough; they resulted from inherent shortcomings in the health care system. Today, while progress has been made, it has not spread evenly throughout the health care system (Kohn et al., 2000).

In the 1990s, reports in several countries revealed a staggering number of patient injuries and deaths each year due to avoidable adverse health care events. In the United States, the Institute of Medicine report (1999) called for a broad national effort to include the establishment of patient safety centers, expanded reporting of adverse events and development of safety programs in health care organizations. These organizations need to function on data collection and analysis, reporting, education, funding and advocacy (Stelfox et al., 2006).

The term patient safety is now widely used but seldom clearly defined. Those involved with patient safety are often concerned with other quality care issues such as risk management and quality assurance. Patient safety can at its simplest be defined as "*the avoidance, prevention, and amelioration of adverse outcomes or injuries stemming from the process of healthcare* " (Wachter, 2008).

The USA National Patient Safety Foundation in 2000 captured the characteristics of patient safety and its associated background:

1.   Patient safety is concerned primarily with the avoidance, prevention, and amelioration of adverse outcomes or injuries stemming from the process of healthcare itself .It should address events that span the continuum of "errors" and deviation to accidents.

2.   Safety emerges from the interaction of the components of the system. It is more than the absence of adverse outcomes and it is more than avoidance of identifiable "preventable "errors" or occurrences. Safety does not reside in a person; device or department .Improving safety depends on learning how safety emerges from the interaction of components.

3.   Patient safety is related to quality of care, but the two concepts are not synonymous. Safety is an important subset of quality. To date, activities to manage quality have not focused sufficiently on patient safety issues (Vincent, 2006).

2.2 International patient safety organizations

2.2.1 WHO

In the fifty-fifth world health assembly conducted in May 2002 about quality of care: patient safety, concerned that the incidence of adverse events is a challenge to quality of care, and recognizing the need to promote patient safety as a fundamental principle of all health systems, WHO urged the Member States to :

1. To pay the closest possible attention to the problem of patient safety;
2. To establish and strengthen science-based systems, necessary for improving patients' safety and the quality of health care, including the monitoring of drugs, medical equipment and technology.

And requested the Director-General in the context of a quality program:

1. To develop global norms, standards and guidelines for quality of care and patient safety, the definition, measurement and reporting of adverse events and near misses in health care by reviewing experiences from existing programs and seeking inputs from Member States, to

provide support in developing reporting systems, taking preventive action, and implementing measures to reduce risks;

2. To promote framing of evidence-based policies, including global standards that will improve patient care, with particular emphasis on product safety, safe clinical practice in compliance with appropriate guidelines and safe use of medicinal products and medical devices taking into consideration the views of policy-makers, administrators, health-care providers and consumers;

3. To support the efforts of Member States to promote a culture of safety within health care organizations and to develop mechanisms, for example through accreditation or other means, in accordance with national conditions and requirements, to recognize the characteristics of health care providers that offer a benchmark for excellence in patient safety internationally (Ninth plenary meeting, 18 May 2002).

2.2.2 World Alliance for Patient Safety

In response to the 2002 World Health Assembly Resolution, the (WHO) launched the World Alliance for Patient Safety in October 2004. The goal was "to develop standards for patient safety and assist UN member states to improve the safety of health care". The Alliance raises awareness and political commitment to improve the safety of care and facilitates the development of patient safety policy and practice in all WHO Member States. Each year, the Alliance delivers a number of programs covering systemic and technical aspects to improve patient safety around the world.

Since the launch of the Alliance in October 2004, significant progress was achieved in six areas (Fifty-Ninth World Health Assembly-WHO, 2006).

1.   The First Global Patient Safety Challenge, which for 2005-2006 (addressing health care-associated infection) developed the WHO Guidelines on Hand Hygiene in Health Care.
2.   A patient involvement group, Patients for Patient Safety, built networks of patients' organizations from around the world, through regional workshops.
3.   Patient safety taxonomy was developed to classify data on patient safety problems.
4.   Prevalence studies conducted on patient harm in ten developing countries.

5. A WHO Collaborating Centre was established to develop and disseminate safety solutions.

6. The WHO Draft Guidelines on Adverse Event Reporting and Learning Systems.

   The WHO launched the Collaborating Centre on Patient Safety Solutions on August 2005, WHO has designated The Joint Commission and Joint Commission International (JCI) as a WHO Collaborating Centre on Patient Safety Solutions dedicated to patient safety solutions.

The most important knowledge in the field of patient safety is how to prevent harm to patients. A first step to turning such a vision into reality is to ensure that interventions and actions that have solved patient safety problems in one part of the world are made widely available in a form that is accessible and understandable and where the basis for replicating the success is made clear*(http://www.who.int/patientsafety/newsalert/WHO_final.pdf.)*.

2.2.3 Joint Commission on Accreditation of Healthcare Organizations

Founded in 1951, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) is an independent, not-for-profit organization that evaluates and accredits nearly 15,000 health care organizations and programs in the United States. An organization must undergo an on-site survey by a Joint Commission survey team at least every three years. The scope of reviews by JCAHO is broad, including hospitals, home care agencies, medical equipment providers, nursing homes, rehabilitation facilities, surgical centers and medical laboratories.

In 1997, JCAHO began including outcomes and other performance data into the accreditation process. Information gained allowed the Joint Commission to develop National Patient Safety Goals to promote specific improvements in patient safety. The Goals highlight problem areas in health care and describe evidence-based solutions. Examples include prevention of falls, patient identification, reducing hospital infections and pressure ulcers, and improving hospital staff communication. In addition, the Joint Commission created a "do not use" list of

abbreviations in 2004 to avoid acronyms and symbols that lead to misinterpretation. *(hptt://www.jointcommission.org).*

Identifying sentinel events and analyzing the root causes has been a focus of JCAHO since 1996; the first eight alerts were published in 1998. The Commission defines a sentinel event as "any unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof. The heath care facility experiencing the sentinel event is expected to complete a thorough root cause analysis, make improvements to the underlying processes, and monitor the effectiveness of the changes. Although the cause of most sentinel events is human error, changes in organizational systems will reduce the likelihood of human error in the future and protect patients from harm when human error does occur. Specific causes of sentinel events and the solutions that hospitals then used successfully to reduce risks are publicized by JCAHO annually. Alerts have included issues as varied as wrong site surgery, restraint deaths, transfusion and medication errors and patient abductions *(hptt://www.jointcommission.org).*

In 2002, The Joint Commission established its National Patient Safety Goals program and the first set of NPSGs was effective January 1, 2003. The NPSGs were established to help accredited organizations address specific areas of concern in regards to patient safety. The development and annual updating of the NPSGs is overseen by an expert panel of widely recognized patient safety experts, as well as nurses, physicians, pharmacists, risk managers, and other professionals who have hands-on experience in addressing patient safety issues in a wide variety of health care settings.

Joint Commission International (JCI) has developed international patient safety goals, adapted from the JCAHO's National Patient Safety Goals. Since January 2006, JCI has been monitoring compliance among international hospitals to test the feasibility of the goals. The goals are:

- ▪ Identify patients correctly
- ▪ Improve effective communication
- ▪ Improve the safety of high-alert medications

- Eliminate wrong-site, wrong-patient, wrong-procedure surgery
- Reduce the risk of health-acquired infections
- Reduce the risk of patient harm from falls

In 2005, JCAHO established an International Center for Patient Safety to collaborate with international patient safety organizations to identify, develop and share safety solutions, conduct joint research, and advocate public policy changes.

2.2.4 Agency for Healthcare Research and Quality

In 2001, the US Congress responded to the IOM recommendation to create a National Center for Patient Safety by allocating $50 million annually for patient safety research to the Agency for Healthcare Research and Quality (AHRQ), the lead federal agency for health care safety. The AHRQ organizes patient safety activities, provides grants to other organizations, serves as a clearinghouse (NGC) for safety information, and publishes guidelines for evidence-based or "best practices". The goal of the NGC is to provide health professionals and institutions, health plans and health care purchasers an accessible mechanism for obtaining objective clinical practice guidelines.

Patient Safety Indicators (PSIs) are a set of measures developed by AHRQ that screen billing diagnosis for adverse events (potentially preventable complications) that patients sometimes experience while receiving medical care. Hospitals and health care providers track and analyze these events in an effort to prevent future occurrences.

As part of its goal to support a culture of patient safety and quality improvement in the Nation's health care system, the Agency for Healthcare Research and Quality (AHRQ) sponsored the development of patient safety culture assessment tools for hospitals, nursing homes, and ambulatory outpatient medical offices.

2.3 Literature review

According to Pittet and Donaldson, Improving the safety of patient care requires system-wide action on a broad range of fronts to identify and manage actual and potential risks to patient safety and implement long-term solutions. Actions that embraces all health care disciplines and caregivers including performance improvement, environmental safety, and risk management, infection control, safe use of medicines, equipment safety, safe clinical practice, and safe environment of care(Pittet &Donaldson,2006).

According to Cook (2007), Safety is a characteristic of systems and not of their components. Safety is an emergent property of systems. In order for this property to arise, health care organizations must develop a systems orientation to patient safety, rather than an orientation that finds and attaches blame to individuals. It would be hard to overestimate the underlying, critical importance of developing such a culture of safety to any efforts that are made to reduce error. The most important barrier to improving patient safety is lack of awareness of the extent to which errors occur daily in all health care settings and organizations. This lack of awareness exists because the vast majority of errors are not reported, and they are not reported because personnel fear they will be punished, thus health care organizations should establish nonpunitive environments and systems for reporting errors and accidents within their organizations.

Cook sees that health care organizations should develop and maintain an ongoing process for the discovery, clarification, and incorporation of basic principles and innovations for safe design and should use this knowledge in understanding the reasons for hazardous conditions and ways to reduce these vulnerabilities, these tasks need resources to monitor and evaluate errors and to implement methods to reduce them(Cook et al., 2007).

The IOM Quality of Health Care in America Committee believes that a major force for improving patient safety is the intrinsic motivation of health care providers, shaped by professional ethics, norms and expectations, and the interaction between factors in the external environment and factors inside health care organizations can also prompt the changes

needed to improve patient safety. Factors in the external environment include availability of knowledge and tools to improve safety, strong and visible professional leadership, legislative and regulatory initiatives, and actions of purchasers and consumers to demand safety improvements. Factors inside health care organizations include strong leadership for safety, an organizational culture that encourages recognition and learning from errors, and an effective patient safety program (Stelfox et al., 2006).

National patient safety Agency (NHS) describes seven steps that are needed to improve patient safety (NHS, 2004) .These seven steps are:

Step 1: Building a safety culture that is open and fair

Step 2: Leading and supporting staff by establishing a clear and strong focus on patient safety throughout your organization

Step 3: Integrating risk management activity by developing systems and processes to manage risks that identify and assess things that could go wrong

Step 4: Promote reporting: Ensure your staff can easily report incidents locally and nationally

Step 5: Involvement and communication with patients and the public.

Step 6: Learning and sharing safety lessons by encouraging staff to use root cause analysis to learn how and why incidents happen

Step 7: Implementing solutions to prevent harm through changes to practice, processes or systems.

Safety science encompasses the realm of "non-technical skills", which have been shown to have a significant impact on patient safety. Non-technical skills are the cognitive and social skills (complementing technical skills—such as clinical skills in healthcare) that allow people working in safety-critical industries to function effectively and safely. (They are also often referred to as "Human Factors".)Some examples of such skills are:

- teamwork / team coordination;
- communication;
- leadership;
- decision making;

- conflict resolution;
- assertiveness;
- coping with stress and fatigue;
- workload management;
- prioritization of tasks;
- situation awareness

Non-technical skills have become increasingly important in medicine in recent decades as healthcare has become much more complex and dependent upon invasive technology with greater scope for things to go wrong and cause harm. The growing complexity of medicine has been accompanied by increasing specialization among clinicians and greater devolution of knowledge, skills and responsibilities within clinical teams. These developments make effective teamwork in healthcare all the more crucial to safety and effectiveness. Safe and effective healthcare depends increasingly on close interdisciplinary teamwork between a range of clinicians and other healthcare workers (Harrison, 2008).

Kizer views that patient safety improvements are best achieved when health care organizations adopt a culture of safety. A culture of safety can be defined as an integrated pattern of individual and organizational behavior, based upon shared beliefs and values that continuously seek to minimize patient harm that may result from the processes of care delivery (Kizer, 2001).

A study of eight hospitals about patient safety carried by the Institute of Medicine in the year 2008, found that strong safety leadership requires six actions: (1) setting and communicating a clear, compelling vision of patient safety; (2) valuing and empowering personnel; (3) engaging actively in the effort to improve patient safety; (4) leading by example; (5) focusing on system issues; and (6) continually searching for improvement opportunities. Data suggests that substantial variation in these behaviors exists among senior hospital leaders. This research contributed to the safety literature by describing specific mechanisms that senior leaders use to create a strong safety culture, such as sharing patients' experiences related to safety issue (Harrison, 2008,Singer & Tucker, 2004) .

Following a council of Europe recommendation, the first safety culture development stage is to define the organizations existing safety culture, by setting priorities for action, making changes aimed at improving health care services delivery and measuring the effect on patient safety, this work begins after communicating survey results to staff and managers. Any safety focused initiatives should be preceded by culture change in order to be successful (Pernrger, 2008).

A strong safety culture can help prevent or minimize medical errors, and hospital leaders have been encouraged to take responsibility for assuring patient safety (Institute of Medicine, 2001; JACHO, 2003; National Quality Forum, 2002, 2003). However, leading researchers in the field of patient safety suggest that few chief executives have made safety a top priority or committed substantial resources toward improving safety (Leape & Berwick, 2005).

The key elements of a culture of safety include (1) a shared belief that although health care is a high-risk undertaking, delivery processes can be designed to prevent failures and harm to participants; (2) an organizational commitment to detecting and analyzing patient injuries and near misses; and (3) an environment that balances the need for reporting of events and the need to take disciplinary action. Improving patient safety requires a multiphase process beginning with the detection of injuries and near misses and ending with a mechanism for ensuring that improvements in patient safety are maintained (Chamberlain & Webber, 2004).

The culture of safety described by the IOM emphasizes the need for leaders and managers committed to promoting safety at all levels of the organization. It empowers employees to watch for potential problems that need to be addressed. It encourages open communication among staff and management. It requires that staff be properly trained and educated regarding patient safety and prevention. Finally, it requires adequate resources and infrastructure so staff can function efficiently and effectively (IOM, 2004).

According to Leape, driving cultural change is the most critical role of the nurse leader. Cultural change must target everyone in the organization, particularly nurses. They are the

largest group of health care providers in the hospital, closer to patients than other clinicians, and spend the most time in the patient care departments. They recognize workflow, physical plant, or communication-related issues that give rise to patient safety problems and also identify possible solutions and work to implement them. (Leape, 1994).

A study about management commitment concluded that everyday management commitment to safety helps in making up a safety culture. This culture will also include wider organizational concepts such as the degree to which members report unsafe conditions, the speed of remedial action by management. Individuals can change their attitudes to safety, but this is unlikely to be maintained without the organizational commitment to safety being clearly strong. However, those organizations can also change through feedback of survey results. A regular demonstration of the ''products of safety'' to staff and management alike may be a way to unite them in a single organizational goal to create the safest organization possible (Firth-Cozens, 2003).

Much has already been written around cultural change, notably how difficult it can be to move from a mostly silent, hierarchical culture of blame to an open, team-oriented culture of safety. A starting point is by administering a safety culture assessment throughout your organization. One that is particularly useful is the Agency for Healthcare Research and Quality (2005) Hospital Survey on Patient Safety Culture. The results will not only provide a baseline from which to work but it will help raise safety awareness throughout the organization and identify areas most in need of improvement (Thompson et al, 2005).

2.4   Global studies in patient safety assessment

A patient safety assessment was conducted on Sixty-eight Lebanese hospitals participated in the study using HSOPSC tool, (El-Jardadli et al., 2010) .The results showed that the dimensions with the highest positive ratings were *teamwork within units*, *hospital management support for patient safety*, and *organizational learning and continuous improvement*, while those with lowest ratings included *staffing and non-punitive response to*

error. Approximately (60%) of respondents reported not completing any event reports in the past 12 months and over (70%) gave their hospitals an 'excellent/very good' patient safety grade.

HSOPSC tool was also used to measure patient safety culture in 42 hospitals in Taiwan(Chen & Li, 2010). The survey received 788 respondents including physicians, nurses, and non-clinical staff. The results revealed that the dimension that received the highest positive response rate was "Teamwork within units", similar to the results reported in the US. The dimension with the lowest percentage of positive responses was "*Staffing*". Statistical analysis showed discrepancies between Taiwan and the US in three dimensions, including "*Feedback and communication about error", "Communication openness", and "Frequency of event reporting"*.

Another research was conducted in the year 2009 in Riyadh hospitals (Al-Ahmadi, 2010) to explore their perceptions including public and private hospitals .The highest positive response of patient safety culture dimension was the *organizational learning* (75.9%), while the non-punitive response to error received the lowest positive response (21.1%). The key areas that need improvement in the studied public hospitals include *handoffs and transitions, communication openness, staffing, and non-punitive response to error.* The private hospitals need an improvement in two aspects; staffing and non-punitive response to error. The results showed that all types of mistakes were reported more frequency in private hospitals than in public hospitals. Most respondents reported "no events" in the twelve months preceding the survey, with the percentage of not reporting being higher in private sector compared to public hospitals. The high percent of "no event" reports may represent under-reporting in all hospitals. Regression analysis indicated that event reporting was influenced by feedback and communication about error, staff position, teamwork across units, non- punitive response to error, supervisor/managers expectations and actions promoting patients safety, and type of hospital. Al-Ahmadi (2009) concluded that some areas needs improvement in Riyadh hospitals includes handoffs and transitions, communication openness, staffing and non-punitive response to error. Healthcare organizations should reduce the fear of blame culture and create a climate of open communication and continuous learning.

The same researcher conducted the patient safety assessment to evaluate the extent to which the culture supports patient safety at Saudi hospitals (Al-Ahmadi, 2010) .The results were: the overall Patient Safety Grade was rated as excellent or very good by (60%) of respondents, acceptable by(33%) and failing or poor by (7%). More than half of respondents thought that managers overlook safety problems that happen over and over. Areas of strength for most hospitals were organizational learning/continuous improvement, teamwork within units, feedback and communication about errors. Areas with potential for improvement in most hospitals were under-reporting the events, non-punitive response to error, staffing, teamwork across hospital units. The conclusion was that leadership is a critical element to the effectiveness of patient safety initiatives. Response to errors is an important determinant of safety culture in healthcare organizations. In order for healthcare organizations to create a culture of safety and improvement, they must eliminate fear of blame and create a climate of open communication and continuous learning (Al-Ahmadi, 2010).

A patient safety culture survey was carried out on 239 nursing staff in an Iranian Hospital (Mohammadreza & Omid, 2010).Supervisor expectations and actions promoting patient safety and teamwork within units were highest scored dimensions of hospital regarding patient safety. Among hospital weaknesses regarding patient safety, no punitive response to error and overall patient safety grade were most brilliant. The study conclusions were that hospital can establish a safe environment by trying to overcome its weaknesses. Creating an events reporting system and encouraging personnel to report probable errors and events and taking non punitive actions is suggested to treat events (Mohammadreza and Omid, 2010).

The *Hospital Survey on Patient Safety Culture 2009 Comparative Database Report* consisted of data from 622 hospitals in USA and 196,462 hospital staff respondents who completed the survey (AHRQ, March, 2009).The areas of strength were Teamwork within Units and patient safety grade and the two weakness areas were Nonpunitive Response to Error and Handoffs and Transitions.

As for the number of events reported, on average, most respondents within hospitals (52%) reported no events in their hospital over the past 12 months. It is likely events were

underreported. However, responses varied widely in the number of events reported. Responses ranged from one hospital where (96%) of respondents had not reported a single event over the past 12 months to one where only (5%) had not reported an event (Westat et al., March 2009).

Another measurement for patient safety culture was conducted in five Belgian general hospitals. (Hellings et al., 2007) The study was conducted from March through November2005. In total, 3,940 individuals responded (overall response rate 77%), including 2,813 nurses and assistants, 462 physicians, 397 physiotherapists, laboratory and radiology assistants, social workers and 64 pharmacists and pharmacy assistants. The dimensional positive scores were found to be low to average in all the hospitals. The lowest scores were "hospital management support for patient safety" (35%), "non-punitive response to error" (36%), "hospital transfers and transitions" (36%), "staffing" (38%), and "teamwork across hospital units" (40%). The dimension "teamwork within hospital units" generated the highest score (70%). Although the same dimensions were considered problematic in the different hospitals, important variations between the five hospitals were observed. The researcher concluded that the actual attention given to patient safety should not imply a focus on safety as a culture in itself, separate from quality and the organizational culture as a whole, but to balance the "doing no harm" (safety) with "doing good" (effectiveness or quality health care) at both the individual patient and the health system levels (Hellings et al., 2007).

2.5   Summary

This chapter provides a theoretical background and empirical evidence of literature review. Many researches were done about patient safety culture. Global studies were conducted using the same tool, and the results were overviewed.

Chapter Three

Conceptual Framework

3.1 Introduction

Lack of safe, reliable systems of care is the problem that all health care providers face in crossing the chasm from the care we currently provide to the care we could provide. Solving this problem requires changing the culture of health care from one in which errors are viewed as the result of individual failure to one in which errors are viewed as opportunities to improve the system. A voluntary reporting system that emphasizes learning from errors and improving systems of care is the foundation of an informed, safe culture (Jones et al., 2008,p1).

Recognizing the need for a measurement tool to assess the culture of patient safety in health care organizations, the Medical Errors Workgroup of the Quality Interagency Coordination Task Force (QuIC) sponsored the development of a hospital survey focusing on patient safety culture. The Agency for Healthcare Research and Quality (AHRQ) funded and supervised development of the Hospital Survey on Patient Safety Culture (HSOPSC) .Developers reviewed research pertaining to safety, patient safety, error and accidents, and error reporting. They also examined existing published and unpublished safety culture assessment tools. In addition, hospital employees and administrators were interviewed to identify key patient safety and error-reporting issues *(http://www.ahrq/qual/quicfact.htm.).*

The survey was pilot tested and revised and then released by AHRQ in November 2004. It was designed to assess hospital staff opinions about patient safety issues, medical error, and event reporting and includes 42 items that measure 10 areas or dimensions and four outcomes of patient safety culture *(http://www.ahrq.gov/qual/hospsurveydb/y2dbsubmission.htm).*

3.2 Concepts and definitions

The Institute of Medicine (IOM 1999) defined safety as "freedom from accidental injury,"(Kohn et al., 2000,p4)

In IOM report (2000) "Safety is more than just the absence of errors". Safety has multiple dimensions, including the following:" an outlook that recognizes that health care is complex and risky and that solutions are found in the broader systems context; a set of processes that identify, evaluate, and minimize hazards and are continuously improving, and an outcome that is manifested by fewer medical errors and minimized risk or hazard". I.O.M defined *safety as freedom from accidental injury*. This simple definition recognizes that from the patient's perspective, the primary safety goal is to prevent accidental injuries. If an environment is safe, the risk of accidents is lower. Making environments safer means looking at processes of care to reduce defects in the process or departures from the way things should have been done. Ensuring patient safety, therefore, involves the establishment of operational systems and processes that increase the reliability of patient care. (IOM, 2000, P58)

The National Patient Safety Foundation in USA in 1999 identified the key property of safety as "emerging from the proper interaction of components of the health care system, thereby leading the way to a defined focus for patient safety, namely systems." Its goal has been defined as: "the avoidance, prevention, and amelioration of adverse outcomes or injuries stemming from the process of care" (*http://www.ama-assn.org/med-sci/npsf/research.htm*).

Quality Interagency Coordination Task Force in the year 2000 defined medical error is "the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim, including problems in practice, products, procedures, and systems." (Quality Interagency Coordination Task Force, 2000).

Reason in the year 2001 defined adverse event as an injury caused by medical management rather than the underlying condition of the patient. An adverse event attributable to error is a

"preventable adverse event". Negligent adverse events represent a subset of preventable adverse events that satisfy legal criteria used in determining negligence (Reason, 2001).

A culture of safety is present in high-reliability organizations, characterized by complex, risky processes and very low error rates. Such organizations achieve high reliability, because they are preoccupied with failure, sensitive to how each team member affects a process, allowing those who are most knowledgeable about a process to make decisions, and resist the temptation to blame individuals for errors within complex processes (Weick, 2001).

In 2006, the European Society for Quality in Health Care in Denmark adopted the following definition of 'culture of safety' '*An integrated pattern of individual and organizational behavior, based upon shared beliefs and values that continuously seeks to minimize patient harm, which may result from the processes of care delivery*' (Kristensen &Bartels, 2010).

The most widely used definitions is "safety culture of an organization is *the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety management*".(HSC, 1993) 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 preventive measures (Health and Safety Commission of Great Britain, 1993).

The Institute of Medicine (IOM) states that a culture of safety in health care requires three elements:

1. A belief that although health care processes are high risk, they can be designed to prevent failure.
2. A commitment at the organizational level to detect and learn from errors.
3. An environment that is perceived as just because managers discipline only when an employee knowingly increases risk to patients and peers.

The various definitions of safety culture contain several common elements. Safety culture refers to the enduring and shared beliefs and practices of organization members regarding the organization's willingness to detect and learn from errors (I.O.M, 2004).

HSC -UK definitions conceptualized safety culture as more of the products and results of people's 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.

3.3 Measurement of patient safety

The assessment of patient safety culture has many benefits for health care organizations. According to Neiva &Sorra (2003) the assessment serves a number of objectives:

1. Profiling (diagnosis): It may aid in determining the specific safety culture or climate profile of the unit; including the identification of "strong" and "weak" points.
2. Awareness enhancement: it may serve to raise staff awareness, typically when conducted in parallel with other staff oriented patient safety initiatives.
3. Measuring change: It may be applied and repeated over time to detect changes in perceptions and attitudes, possibly as part of a "before-and-after-intervention" design.
4. Benchmarking: it may be used to evaluate the standing of the unit in relation to a reference sample (comparable organizations and groups).

AHRQ funded the development of the Hospital *survey on Patient Safety Culture* (HSOPSC) to provide health care organizations with a valid tool to assess safety culture.
Psychometric analyses conducted on a very large database of hospitals provided overall support for the patient safety culture dimensions and items included in the AHRQ *Hospital Survey on Patient Safety Culture*. The survey's items and dimensions overall are

psychometrically sound at the individual, unit, and hospital levels of analysis and can be used by researchers and hospitals interested in assessing patient safety culture (Sorra & Dyer, 2010).

3.4 Safety Culture Dimensions Measured in the Survey

The survey places an emphasis on patient safety issues and on error and event reporting. Table (3.1) shows the patient safety culture dimensions and their corresponding definitions. The survey measures seven unit-level aspects of safety culture: (Table 3.1).

- Supervisor/manager expectations & actions promoting safety (4 items).
- Organizational learning— continuous improvement (3 items).
- Teamwork within Units (4 items).
- Communication openness (3 items).
- Feedback and Communication about Error (3 items).
- Nonpunitive Response to Error (3 items).
- Staffing (4 items).

In addition, the survey measures three hospital-level aspects of safety culture:

- Hospital management Support for Patient Safety (3 items).
- Teamwork across Hospital Units (4 items).
- Hospital handoffs and transitions (4 items).

Finally, four outcome variables are included:

- Overall perceptions of safety (4 items).
- Frequency of event reporting (3 items).
- Patient safety grade (of the Hospital Unit) (1 item).
- Number of Events Reported (1 item).

Table3.1: Patient Safety Culture Dimensions and Definitions

Patient Safety Culture Dimension	Definition: *The extent to which….*
1. Communication openness	Staff freely speak up if they see something that may negatively affect a patient, and feel free to question those with more authority
2. Feedback and communication about error	Staff are informed about errors that happen, given feedback about changes implemented, and discuss ways to prevent errors
3. Frequency of events reported	Mistakes of the following types are reported: (1) mistakes caught and corrected before affecting the patient, (2) mistakes with no potential to harm the patient, and (3) mistakes that could harm the patient, but do not
4. Handoffs and transitions	Important patient care information is transferred across hospital units and during shift changes
5. Management support for patient safety	Hospital management provides a work climate that promotes patient safety and shows that patient safety is a top priority
6. Nonpunitive response to error	Staff feel that their mistakes and event reports are not held against them, and that mistakes are not kept in their personnel file
7. Organizational learning–Continuous improvement	There is a learning culture in which mistakes lead to positive changes and changes are evaluated for effectiveness
8. Overall perceptions of patient safety	Procedures and systems are good at preventing errors and there is a lack of patient safety problems
9. Staffing	There are enough staff to handle the workload and work hours are appropriate to provide the best care for patients
10. Supervisor/manager expectations and actions promoting safety	Supervisors/managers consider staff suggestions for improving patient safety, praise staff for following patient safety procedures, and do not overlook patient safety problems
11. Teamwork across units	Hospital units cooperate and coordinate with one another to provide the best care for patients
12. Teamwork within units	Staff support each other, treat each other with respect, and work together as a team

The items in the HSOPSC are grouped according to the safety culture dimensions they are intended to measure. The item's survey location in the survey is shown to the left of each item. Negatively worded items are indicated Table (3.2).

Table3.2: Patient Safety Culture Dimensions and their corresponding items

1.	**Teamwork Within Units** (Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree)
	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.
2.	**Supervisor/Manager Expectations & Actions Promoting Patient Safety** (Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree)
	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. (negatively worded) **B4**. My supervisor/manager overlooks patient safety problems that happen over and over. (negatively worded)
3.	**Organizational Learning—Continuous Improvement** (Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree)
	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
4.	**Management Support for Patient Safety** (Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree)

	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. (negatively worded)
5.	**Overall Perceptions of Patient Safety** (Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree)
	A15. Patient safety is never sacrificed to get more work done. **A18**. Our procedures and systems are good at preventing errors from happening. **A10**. It is just by chance that more serious mistakes don't happen around here. (negatively worded) **A17**. We have patient safety problems in this unit. (negatively worded)
6.	**Feedback & Communication About Error** (Never, Rarely, Sometimes, Most of the time, Always)
	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.
7.	**Communication Openness** (Never, Rarely, Sometimes, Most of the time, Always)
	C2. Staff will freely speak up if they see something that may negatively affect patient care. **C4**. Staff feels free to question the decisions or actions of those with more authority. **C6.** Staffs are afraid to ask a question when something does not seem right. (Negatively worded).
8.	**Frequency of Events Reported** (Never, Rarely, Sometimes, Most of the time, Always)
	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?
9.	**Teamwork Across Units** (Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree)
	F2. Hospital units do not coordinate well with each other. (negatively worded) **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. **F6**. It is often unpleasant to work with staff from other hospital units. (negatively worded)
10.	**Staffing** (Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree)
	A2. We have enough staff to handle the workload. **A5.** Staff in this unit work longer hours than is best for patient care. (negatively worded) **A7**. We use more agency/temporary staff than is best for patient care. (negatively worded) **A14**. We work in "crisis mode" trying to do too much, too quickly. (negatively worded)
11.	**Handoffs & Transitions** (Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree)
	F3. Things "fall between the cracks" when transferring patients from one unit to another. (negatively worded) **F5**. Important patient care information is often lost during shift changes. (negatively worded) **F7.** Problems often occur in the exchange of information across hospital units. (negatively worded) **F11**. Shift changes are problematic for patients in this hospital. (negatively worded)
12.	**Nonpunitive Response to Errors** (Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree)
	A8. Staff feels like their mistakes are held against them. (negatively worded) **A12.** When an event is reported, it feels like the person is being written up, not the problem. (negatively worded) **A16**. Staff worry that mistakes they make are kept in their personnel file. (negatively

	worded)
13.	**Patient Safety Grade**
	(Excellent, Very Good, Acceptable, Poor, Failing)
	E1. Please give your work area/unit in this hospital an overall grade on patient safety.
14.	**Number of Events Reported**
	(No event reports, 1 to 2 event reports, 3 to 5 event report, 6 to 10 event reports, 11 to 20 event reports, 21 event reports or more)
	G1. In the past 12 months, how many event reports have you filled out and submitted?

Graph (3.1) represents the conceptual frame work that shows the patient safety culture dimensions: both at the hospital level and unit/department level, patient safety culture is a prerequisite for patient safety and patient safety is one main dimension of the quality of healthcare services.

Graph3.1: Conceptual frame work of patient safety culture.

Sorra & Neiva (2004) tested the tool 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 0.23 (between Non-punitive Response to Error and Staffing or Frequency of Event Reporting) to 0.60 (between Hospital Management Support for Patient Safety and Overall Perceptions of Safety). These inter-correlations indicated that none of the safety culture dimensions appeared to be the same construct (Sorra and Dyer, 2010) .

3.5 Summary

This chapter presents the conceptual framework developed by the AHRQ, definitions of the items used by the questionnaire, and the dimensions measured. The overall survey's items and dimensions are psychometrically sound at the individual, unit, and hospital levels of analysis and can be used by researchers and hospitals interested in assessing patient safety culture.

Chapter Four

Methodology

4.1 Introduction

This chapter describes the study design, the target population, sample frame and size, variables, survey instrument, data collection and analysis, using Hospital Survey on Patient Safety Culture developed by Agency of Healthcare Research and Quality (AHRQ).

4.2 Study Design

A quantitative, descriptive, cross sectional survey design was used. A questionnaire was used to measure the dependent variable of health professional's perceptions about safety culture in Makassed Islamic Charitable Hospital in Jerusalem.

The survey design is an efficient method to collect data in a short time and is less costly, and permits collection of the data from a much larger sample. Surveys are frequently used to measure the perceptions, attitudes, and values of workers about safety culture (Polit, 2010) .

4.3 Instrument

The Hospital Survey of Patient Safety Culture (HSOPSC) was used in this study (Annex1). This survey is developed by Agency of Healthcare Research and Quality (AHRQ) in 2005 and it is designed to assess hospital staff opinions about patient safety issues, medical error, and event reporting. It takes approximately 10-15 minutes to complete the survey. The survey

consists of 14 dimensions including 10 safety culture dimensions, and 4 outcome variables (Table3.2). 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?"

The ten safety culture dimensions are divided into two dimensions that measure the hospital level aspects and seven dimensions that measure the unit level aspects of patient safety.

The hospital level aspects of safety culture are: h*ospital management support for patient safety*, *team work across hospital units*, and *hospital hand-offs and transitions*.
The unit level aspects of patient safety culture are: *Supervisors/manager expectations and actions promoting safety, Organizational learning/continuous improvement, Teamwork within units, Communication openness, Feedback and communication about errors, No punitive response to error and Staffing.*

The HSOPSC 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 (4.1) 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.

Table4.1: AHRQ Survey Sections A through G and the Dimensions in Each Section

Section	Dimension
A. Work Area	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

4.4 Psychometric of the survey:

Psychometric analyses conducted by Sorra & Dyer (2004) on a very large database of hospitals provided overall support for the patient safety culture dimensions and items included

in the AHRQ *Hospital Survey on Patient Safety Culture*. The survey's items and dimensions overall are psychometrically sound at the individual, unit, and hospital levels of analysis and can be used by researchers and hospitals interested in assessing patient safety culture.

The results from the psychometric analyses—intra-class correlations (ICCs), design effects, MCFA(Multilevel confirmatory factor analysis) results, model fit indices, item factor loadings, internal consistency reliability analyses, and dimension inter-correlations, all provide solid evidence supporting 14 dimensions and 42 items included in the AHRQ Hospital Survey on Patient Safety Culture as having acceptable psychometric properties at the individual, unit and hospital levels of analysis, with a few exceptions. The multilevel psychometric results indicate that both unit and hospital membership influence how individuals respond on the survey. The findings support the conclusion that the survey measures what it is supposed to: group culture at these higher levels, not just individual attitudes. Strength of the survey is that it assesses a number of key cultural dimensions related to patient safety, focused at both the unit/department level, as well as hospital wide. This multi-dimensional approach provides a level of specificity that makes it useful as a tool to guide patient safety improvement interventions (Sorra & Dyer 2004, p3).

Sorra and Neiva (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 0.23 (between Non-punitive Response to Error and Staffing or Frequency of Event Reporting) to 0.60 (between Hospital Management Support for Patient Safety and Overall Perceptions of Safety). These inter correlations indicated that none of the safety culture dimensions appeared to be the same construct (Sorra & Nieva, 2004,p4).

Internal consistency reliabilities were assessed using Cronbachs alpha. All dimensions were shown to have acceptable levels of reliability measuring 0.7.

The results from the survey can be used to diagnose the current status of patient safety culture; raise staff awareness about patient safety; evaluate the impact of patient safety

interventions and programs; trend culture change over time; conduct benchmarking with other hospitals; and fulfill regulatory directives and requirements (Sorra & Dyer, 2010,p12).

4.5 Sampling Methodology

Stratified proportional random samples were drawn from the study population. The population is the Makassed Hospital health professionals divided into three categories:

- Hospital staff that have direct contact or interaction with patients (Nursing staff including staff nurses and practical nurses).
- Hospital-employed physicians who spend most of their work hours in the hospital (Medical staff including specialists, residents and general practitioners).
- Hospital staff who may not have direct contact or interaction with patients but whose work directly affects patient care .This includes pharmacologist, radiology technicians, laboratory technicians, pathology technicians, physiotherapist and dietitian.

The total number of our target health professionals at Makassed Hospital including these three categories is 419.

The number of subjects participating in this study is 300 (72% of target cohort at Makassed Hospital). The sample size was calculated by using the following equation:

$$x \quad = \quad Z(c/100)2r(100-r)$$

$$n \quad = \quad N\ x/((N-1)E2 + x)$$

$$E \quad = \quad Sqrt[(N - n)x/n(N-1)]$$

Where **n** is the sample size, **E** is margin of error, **N** is the population size, **r** is the fraction of responses, and **Z**(c/100) is the critical value for the confidence level **c**. According to this equation, a sample size of 300 achieves an error level of 3% and 95% confidence level.*(http://www.raosoft.com/samplesize.html)*

The number of samples for each category is directly proportional to the size of the population in that category, (67%) of the population is nurses (72% staff nurses and 28% practical nurses), (27%) of the population is physicians and (6%) of the population is paramedics (Table 4.2).

A list of the different departments in the hospital and the corresponding employee's numbers of each category mentioned previously in each department was provided from the human resources department from which the participants were randomly selected.

The HSOPSC was adopted without any modification on its content and the English version of the survey was distributed.

Surveys were administrated directly and delivered by hand to all of the selected staff from each medical, and paramedics departments by the medical secretary of each department and were returned back to the medical secretary when completed.

A formal letter was sent to Makassed Hospital director asking for their permission before conducting the study (Annex2) and a copy of the approval was send to the Nursing director, and Medical directors of each department (Annex3).

Table4.2: Sample frame of the study

Category	n	Percentage (out of 419)	No. Survey	Survey Percent (out of 300)
1. **Nurses**	280	67%	0.67(300) = 201	67%
Staff nurse	203	72%	0.72(201) = **146**	
Practical nurse	77	28%	0.28(201) = **55**	
2. **Physicians**	114	27%	0.27(300) =**81**	27%
3. **Paramedics**	25	6%	0.06(300) =**18**	6%
TOTAL	**419**	**100%**	**300**	**100%**

4.6 Data Analysis

Upon completion of data collection, statistical analyses were completed using the Statistical Package for the Social Sciences (SPSS 16.0) was used for calculating the reliability and one way, ANOVA test and Microsoft Excel Data Entry tool.

Descriptive statistic including frequencies and percentages were produced for the survey items. The survey items were grouped according to the safety culture dimension each item was intended to measure. For each item, the 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 and missing answers were 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, 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 participants' 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.

Surveys were excluded when:
1. Less than one entire section of the survey is completed.
2. Fewer than half of the items throughout the entire survey (in different sections).
3. Every item the same (e.g., all "4"s or all "5"s). If every answer is the same, then respondent did not give the survey their full attention.

Only four surveys were excluded because they fulfill the pervious mentioned reasons.

The survey includes reverse-worded items that exercise both the high/positive and low/negative ends of the response scale to provide consistent answers *(http://www.ahrq.gov/qual/patientsafetyculture/hospsurvindex.htm).*

4.7 Ethical consideration

Ethical approval to carry out the assessment at Makassed Hospital was obtained from the hospital general director (Annex3) .The participation was anonymous, voluntarily and confidential. The Participants were informed about the purpose of the study, and that the results of the study will be shared with the top management of the hospital to support the quality improvement process (Annex 4).

4.8 Summary

This chapter provides an overview of the methodology which was used in this assessment, describing the study design, population and sampling method, Psychometric of the survey, data collection and data processing.

Chapter Five

Results

5.1 Introduction

This chapter presents the survey results including the characteristics of the respondents and the average percentage of positive responses for each of the survey's items and dimensions and the differences in response among the three health professionals and differences according to the staff position and patient interaction.

Data were entered and analyzed using Excel and SPSS 16. Descriptive analysis presents the respondent characteristics of the study, arithmetic average percent of positive response using Microsoft Excel Data Entry tool.
(www.premierinc.com/quality-safety/tools-services/safety/store/#custom-tool).

5.2 Characteristics of Respondents

The survey response rate (percent of the surveys returned) was **84 %.**

The data presented in this section are based on respondent's answers to the survey questions about the hospital work area/unit where they spent most of their work time, their staff position, and their direct interaction with patients. In table (5.1) the characteristics of the respondents including the wok area /unit, staff position and the percentage of the respondents with direct interaction with patients are presented.

Table5.1: Characteristics of the respondents

1. Primary hospital work area, department or clinical area where respondents spend most of their work time:

5%	Many different units / No specific unit	29%	Intensive care unit (any type)
9%	Medicine (non-surgical)	2%	Pharmacy
13%	Surgery	3%	Laboratory
12%	Obstetrics	3%	Radiology
8%	Pediatrics	4%	Anesthesiology
9%	Other	3%	Emergency department

2. Staff position in the hospital:

73.4%   Nurses(Staff nurses and practical nurses)

19.3%   Physicians(Specialist, residents and internship)

7.3 %   Paramedics(Lab, Radiologist ,Pharmacologist, and Dietitian)

3. Time worked:

- in the hospital (hours)

1%	Less than 20 hours per week	0%	60 to 79 hours per week
24%	20 to 39 hours per week	0%	80 to 99 hours per week
74%	40 to 59 hours per week	0%	100 hours per week or more

- in the hospital (years)

14%	Less than 1 year	12%	11 to 15 years
32%	1 to 5 years	14%	16 to 20 years
7%	6 to 10 years	21%	21 years or more

- in their current hospital work area (years)

16%	Less than 1 year	12%	11 to 15 years
40%	1 to 5 years	11%	16 to 20 years
9%	6 to 10 years	12%	21 years or more

- in their current specialty (years)

14%	Less than 1 year	12%	11 to 15 years
33%	1 to 5 years	12%	16 to 20 years
10%	6 to 10 years	18%	21 years or more

4.Percentage of respondents with direct interaction or contact with patients   88%

Work area/unit in the hospital

About one –third of respondents (29%) were staff who spend most of their time at different types of intensive care units in the hospital including adult intensive care units, neonatal intensive care units, pediatric intensive care units, and open heart intensive care unit, followed by the "Surgery" (13%) and "Obstetrics "(12%), from other department (9%) which include orthopedics, neonatal unit and theater.

Staff position in the hospital

Almost two third of respondents were nurses including staff nurses, and practical nurses from different medical departments (73%), followed by the physicians (19%), which include specialists, residents and internship. (7%) of the respondents were paramedical professionals, including laboratory technicians, blood banking technicians, pathology technicians, dietitian, pharmacologists, and radiology technicians.

Time worked

Seventy four (74%) of the respondents worked the regular working hours per week (40- 59 hours per week), and (24%) worked from 20 to 39 hours per week, and (1%) worked less than 20 hour per week in the hospital.

When respondents were asked about how long you worked in the hospital , (14%) had worked less than 1 year, (32%) had been working from 1 to 5 years , (7%) from 6 to 10 years , (12%) worked from 11- 15 years, (14%) worked from 16 to 20 years , and (21%) worked for more than 21 years in the hospital.

Forty percent (40%) of respondents were working in their working area/unit from 1 to 5 years, (16%) worked in the same unit for less than one year, (9%) worked from 6 to 10 years, (12%) worked from 11to15 years, (11%) worked from 16 to 20 years in the same unit and (12%) worked for more than 21 years in the same unit.

Those who have worked in their current specialty for less than 1 year accounted for (14%) of the total respondents, those who worked from 1 to 5 years represent the majority and accounts for (33%) of the total respondents, (10%) of those who worked in the same specialty from 6 to 10 years, (12%)worked from 11 to 15 years ,(12%) worked from 16 to 20 years and (18%) for those who worked in the current specialty for more than 21 years .

Interaction with patients

The participants were asked whether they typically have direct interaction or contact with patients and the results showed (Table (5.1)) that most of them (88%) indicated that they have.

5.3 Patient safety culture dimensions

5.3.1 Patient safety item's scores:

Most of the survey's items ask respondents to answer using 5-point response categories in terms of agreement (Strongly agree, Agree, Neither, Disagree, Strongly disagree) or frequency (Always, Most of the time, Sometimes, Rarely, Never). Two of the 10 patient safety culture dimensions use the frequency response option (*Feedback and Communication about Error*, and *Communication Openness*,) while the other eight dimensions use the agreement response option.

Both positively worded items (such as "People support one another in this work area") and negatively worded items (such as "We have patient safety problems in this work area") are included in the survey. Calculating the percent positive response on an item is different for positively and negatively worded items.

Definition of positive, neutral and negative response:

1.   **Positive** is the percent of responses that were answered (Agree /Strongly agree or Most of the Time /Always) for positively worded questions, (Disagree /Strongly Disagree or Rarely /Never) for negatively worded questions.

2.   **Neutral** is the percent of responses that were answered (Neither or Sometimes) for any question.

3.   **Negative** is the percent of responses that were answered (Disagree /Strongly Disagree or Rarely /Never) for positively worded questions, or (Agree /Strongly agree or Most of the Time / Always) for negatively worded questions.

AHRQ (Sorra & Neiva, 2004) defined patient safety areas of strength and areas for potential improvement as;

1.   **Areas of strength**: Defined as those positively worded items which about (75%) of the respondents endorse by answering "Agree / Strongly agree," or "Most of the time / Always". Also defined as when about (75%) of respondents disagreed with reverse worded item.

2.   **Potential for improvement** Defined as items which about (50%) or more of respondents answered negatively using "Disagree / Strongly disagree" or "Never / Rarely". Also defined as when (50%) of respondents disagreed with reverse worded items

5.3.2   Patient safety dimensions' positive scores

The survey's 42 items measure 14 areas or dimensions of patient safety culture. Ten of the patient safety culture dimensions include 3 or 4 items. Dimension scores were calculated for the hospital by averaging the percent positive response on the items within a dimension. For example, for a 3-item dimension, if the item-level percent positive responses were (50%), (55 %,) and (60 %), the hospital's dimension-level percent positive response would be the average of these three percentages or (55%) positive.

5.4 Overall Results:

The Hospital Survey on Patient Safety Culture is designed to measure four overall patient safety outcomes, seven unit- level patient safety aspects and three hospital- level patient safety aspects

The item-level results in graph (5.1) show the average of percentages of the positive responses for each of the 42 survey items in all patient safety dimensions. The survey items are grouped by the patient safety culture dimension they are intended to measure. Within each dimension, the items are presented in the order in which they appear in the survey. The survey item with the highest average percent positive response (93%) (A6) was from the patient safety culture dimension" *Organizational Learning-continuous Improvement*: "We are actively doing things to improve patient safety," and (A3) from "*Teamwork within Units* "When a lot of work needs to be done quickly, we work together as a team to get the work done, scored (90%). The survey item with the lowest average percent positive response (11%)(A5) was from the patient safety culture dimension *Staffing (A5)*: "Staff in this unit work longer hours than is best for patient care" (that is, an average of only (11%) of respondents in each hospital *Strongly disagreed* or *Disagreed* with this negatively worded item), and only (13%) of respondents scored for (A14) We work in "crisis mode" trying to do too much, too quickly from "*Staffing*" dimension.

5.4.1 Item-level overall results

Graph (5.1) shows the positive percent of response for items as perceived by the respondents.

Graph 5.1: Item –level Average Percent Positive Response

Note: "R" indicates a question that was worded negatively. The code after the question e.g. (A14) indicates the original survey question number. Total may not equal 100% due to rounding.

Items/Dimensions	Hospital Responses	Result
Supervisor/Manager Expectations & Actions Promoting Patient Safety	Positive ▮ Neutral ▯ Negative ▮	
1. My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures. (B1)	76% 16% 9%	**Area of Strength**
2. My supervisor/manager seriously considers staff suggestions for improving patient safety. (B2)	78% 15% 8%	**Area of Strength**
R3. Whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means taking shortcuts. (B3)	43% 22% 35%	
R4. My supervisor/manager overlooks patient safety problems that happen over and over. (B4)	19% 20% 61%	**Potential for Improvement**
Organizational Learning— Continuous Improvement	Positive ▮ Neutral ▯ Negative ▮	
1. We are actively doing things to improve patient safety. (A6)	93% 4%	**Area of Strength**
2. Mistakes have led to positive changes here. (A9)	67% 17% 16%	
3. After we make changes to improve patient safety, we evaluate their effectiveness. (A13)	77% 13% 11%	**Area of Strength**
Teamwork Within Units	Positive ▮ Neutral ▯ Negative ▮	
1. People support one another in this unit. (A1)	81% 11% 8%	**Area of Strength**

3. In this unit, people treat each other with respect. (A4)	90%　6%　3	**Area of Strength**
4. When one area in this unit gets really busy, others help out. (A11)	68%　14%　18%	
Communication Openness	■ Positive　□ Neutral　■ Negative	
1. Staff will freely speak up if they see something that may negatively affect patient care. (C2)	70%　23%　7%	
2. Staff feels free to question the decisions or actions of those with more authority. (C4)	52%　35%　13%	
R3. Staffs are afraid to ask questions when something do not seem right. (C6)	51%　29%　20%	
Feedback and Communication About Error	■ Positive　□ Neutral　■ Negative	
1. We are given feedback about changes put into place based on event reports. (C1)	44%　36%　19%	
2. We are informed about errors that happen in this unit. (C3)	77%　15%　8%	**Area of Strength**
3. In this unit, we discuss ways to prevent errors from happening again. (C5)	73%　21%　6%	
Nonpunitive Response to Error	■ Positive　□ Neutral　■ Negative	
R1. Staff feels like their mistakes are held against them. (A8)	25%　23%　52%	**Potential for Improvement**
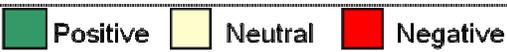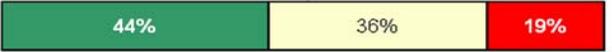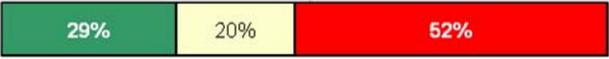
R2. When an event is reported, it feels like the person is being written up, not the problem. (A12)	29% / 20% / 52%	**Potential for Improvement**
R3. Staff worry that mistakes they make are kept in their personnel file. (A16)	15% / 17% / 68%	**Potential for Improvement**
Staffing	■ Positive ☐ Neutral ■ Negative	
1. We have enough staff to handle the workload. (A2)	53% / 14% / 33%	
R2. Staff in this unit work longer hours than is best for patient care. (A5)	11% / 15% / 75%	**Potential for Improvement**
R3. We use more agency/temporary staff than is best for patient care. (A7)	36% / 25% / 39%	
R4. We work in "crisis mode" trying to do too much, too quickly. (A14)	13% / 16% / 72%	**Potential for Improvement**
Hospital Management Support for Patient Safety	■ Positive ☐ Neutral ■ Negative	
1. Hospital Management provides a work climate that promotes patient safety. (F1)	76% / 14% / 11%	**Area of Strength**
2. The actions of hospital management show that patient safety is a top priority. (F8)	74% / 15% / 11%	
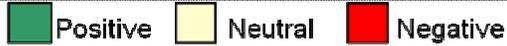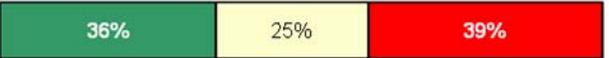
R3. Hospital management seems interested in patient safety only after an adverse event happens. (F9)	Positive 43% — Neutral 25% — Negative 32%	
Teamwork Across Hospital Units	■ Positive ☐ Neutral ■ Negative	
1. There is good cooperation among hospital units that need to work together. (F4)	Positive 61% — Neutral 23% — Negative 16%	
2. Hospital units work well together to provide the best care for patients. (F10)	Positive 71% — Neutral 16% — Negative 14%	
R3. Hospital units do not coordinate well with each other. (F2)	Positive 48% — Neutral 24% — Negative 28%	
R4. It is often unpleasant to work with staff from other hospital units. (F6)	Positive 38% — Neutral 24% — Negative 38%	
Hospital Handoffs & Transitions	■ Positive ☐ Neutral ■ Negative	
R1. Things "fall between the cracks" when transferring patients from one unit to another. (F3)	Positive 43% — Neutral 37% — Negative 20%	
R2. Important patient care information is often lost during shift changes. (F5)	Positive 60% — Neutral 15% — Negative 25%	
R3. Problems often occur in the exchange of information across hospital units. (F7)	Positive 33% — Neutral 26% — Negative 41%	
R4. Shift changes are problematic for patients in this hospital. (F11)	Positive 52% — Neutral 23% — Negative 25%	

The participants' positive and negative scores to the patient safety culture items are summarized in Table (5.2) in terms of areas of strengths and areas needs improvement.

Table5.2: Patient safety culture items, by score, areas of strength and areas of potential improvement.

	Areas of strength	
	Item	**Positive score**
1.	We are actively doing things to improve patient safety. (A6)	93%
2.	When a lot of work needs to be done quickly, we work together as a team to get the work done. (A3)	90%
3.	In this unit, people treat each other with respect. (A4)	83%
4.	People support one another in this unit. (A1)	81%
5.	My supervisor/manager seriously considers staff suggestions for improving patient safety. (B2)	78%
6.	After we make changes to improve patient safety, we evaluate their effectiveness. (A13)	77%
7.	We are informed about errors that happen in this unit. (C3)	77%
8.	My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures. (B1)	76%
9.	Hospital Management provides a work climate that promotes patient safety. (F1)	76%
Areas for potential improvements		
	Item	**Negative score**
1.	Staff in this unit work longer hours than is best for patient care. (A5)	75%
2.	We work in "crisis mode" trying to do too much, too quickly. (A14)	72%
3.	Staff worry that mistakes they make are kept in their personnel file. (A16)	68%
4.	My supervisor/manager overlooks patient safety problems that happen over and over. (B4)	61%
5.	When an event is reported, it feels like the person is being written up, not the problem. (A12)	52%
6.	Staff feels like their mistakes are held against them. (A8)	52%

Nine areas were identified as areas of strength according to the positive score responses per items, three items (A3, A4,A1) from Teamwork within units dimension , two items (A6,A13) from Organizational learning- continuous improvement dimension, two items from Supervisor/manager expectations and actions promoting patient safety dimension, and one item (F1)from Hospital management support for patient safety .

Six areas were recognized as areas for potential improvements, three items (A16, A12, A8) from Non punitive response to errors, two items (A5, A14) from Staffing dimension, and one item (B4) from Supervisor/manager expectations and actions promoting patient safety dimension.

5.4.2 Dimension-Level overall results

The dimension-level results in table (5.3) show the average percent positive response for each of the 10 patient safety culture dimensions, among the respondents. By displaying the percent positive as an average of the percent positive response on the items within a dimension, each hospital's dimension score is weighted equally. The patient safety culture dimensions are shown in order from the highest average percent positive response to the lowest (Graph 5.2).

Teamwork within Units: —this dimension shows the extent to which staff support one another, treat each other with respect, and work together as a team. This area was the patient safety culture dimension with the high average percent positive response (80%), indicating it is an area of strength (Table 5.3).

Organizational Learning-continuous Improvement: — means the extent to which there is a learning culture in which mistakes lead to positive changes and changes are evaluated for effectiveness.

This area was the patient safety culture dimension with the second high average percent positive response (79%), indicating it is an area of strength (Table5.3).

Nonpunitive Response to Error—the extent to which staff feel that event reports and their own mistakes are not held against them, and that mistakes are not kept in their personnel file. This area was one of the two patient safety culture dimensions with the lowest average percent positive response (23%), indicating it is an area with potential for improvement (Table5.3).

Staffing —the extent to which there are enough staff to handle the workload and work hours are appropriate to provide the best care for patients. This area was the other patient safety culture dimension with an average percent positive response (28%), indicating it is also an area with potential for improvement for most hospitals (Table5.3).

Table 5.3: Safety culture dimensions' average percentage of positive responses

	Safety Culture Dimensions	Average % of positive responses
1.	**Teamwork Within Units**	80%
2.	**Organizational Learning--Continuous Improvement**	79%
3.	**Feedback & Communication About Error**	65%
4.	**Hospital Management Support for Patient Safety**	64%
5.	**Communication Openness**	58%
6.	**Overall Perceptions of Safety**	54%
7.	**Supervisor/Manager Expectations & Actions Promoting Patient Safety**	54%
8.	**Teamwork Across Hospital Units**	54%
9.	**Frequency of Events Reported**	49%
10.	**Hospital Handoffs & Transitions**	47%
11.	**Staffing**	28%
12.	**Nonpunitive Response to Error**	23%

Graph5.2: Safety culture dimensions' average percentage of positive responses
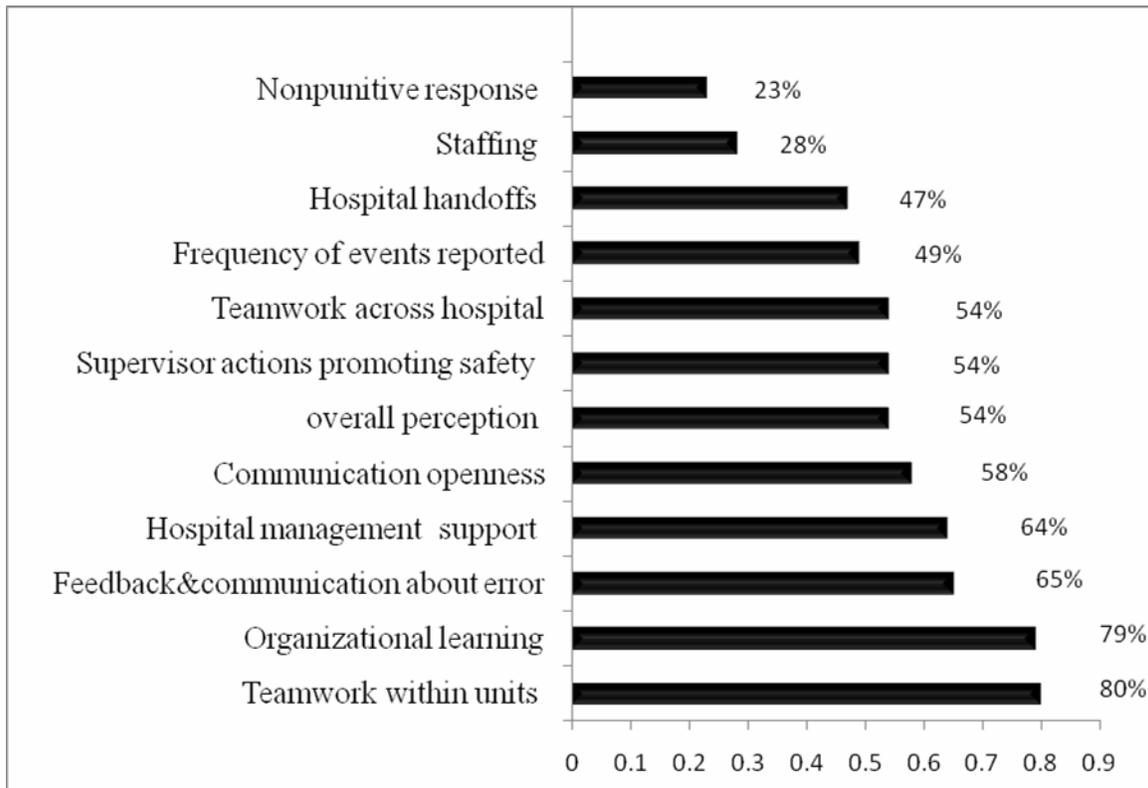
5.3.3 Unit -level overall results:

Graph (5.3) shows the dimensions that reflect patient safety aspects at the unit –level, showing that the areas of strength at unit level are organizational learning –continuous improvement (80%), and teamwork within units (79%). Graph (5.3) also identifies the areas for potential improvement; nonpunitive response to error (23%) and staffing (28%).

Graph 5.3 Unit-level aspects of patient safety culture

- Supervisor/Manager Expectations & Actions Promoting Safety (4 items).
- Organizational Learning—Continuous Improvement (3 items).
- Teamwork within Units (4 items).
- Communication Openness (3 items).
- Feedback and Communication about Error (3 items).
- Nonpunitive Response to Error (3 items).
- Staffing (4 items).
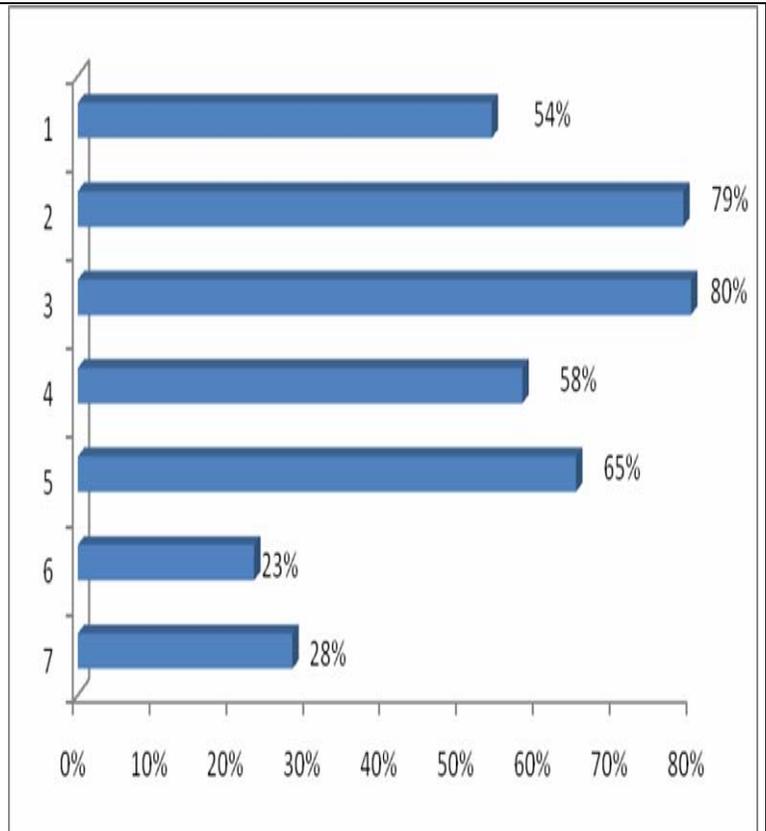
5.3.4 Hospital -level overall results:

Graph (5.4) shows the dimensions' positive scores at the hospital level, the lowest positive score was given to hospital handoffs and transitions (47%).

Graph 5.4 : Hospital –level aspects of patient safety culture

- Hospital Management Support for Patient Safety (3 items).
- Teamwork across Hospital Units (4 items).
- Hospital Handoffs and Transitions (4 items).
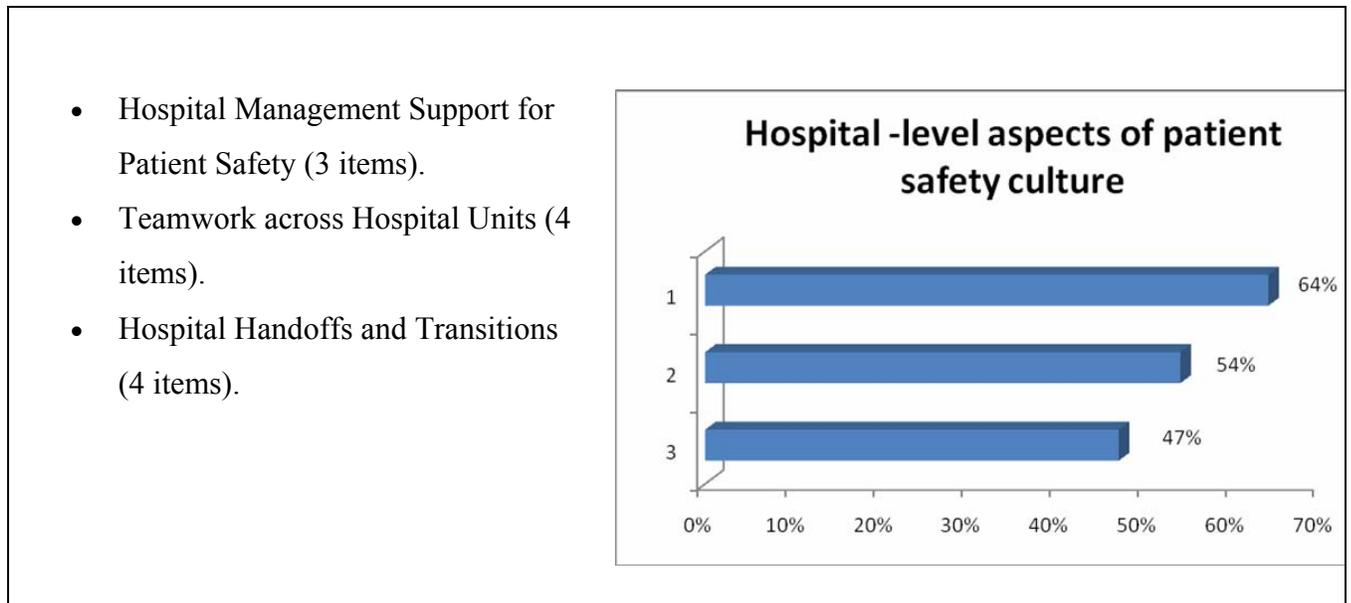
5.3.5 Patient safety culture Outcomes results

1. Overall Patient Safety Grade

Results from the item that asked respondents to give their hospital work area/unit an overall grade on patient safety are shown in graph (5.5). The graph shows the average percentage of respondents within the hospital providing grades from "A-Excellent" to "E-Failing." On average, most respondents were positive, with (16%) giving their work area or unit a patient safety grade of "A-Excellent" (16%) or "B-Very Good" (56%) and Acceptable (28%). None gave their work area/unit a "Poor" (0%) or "Failing" (0%) grade.
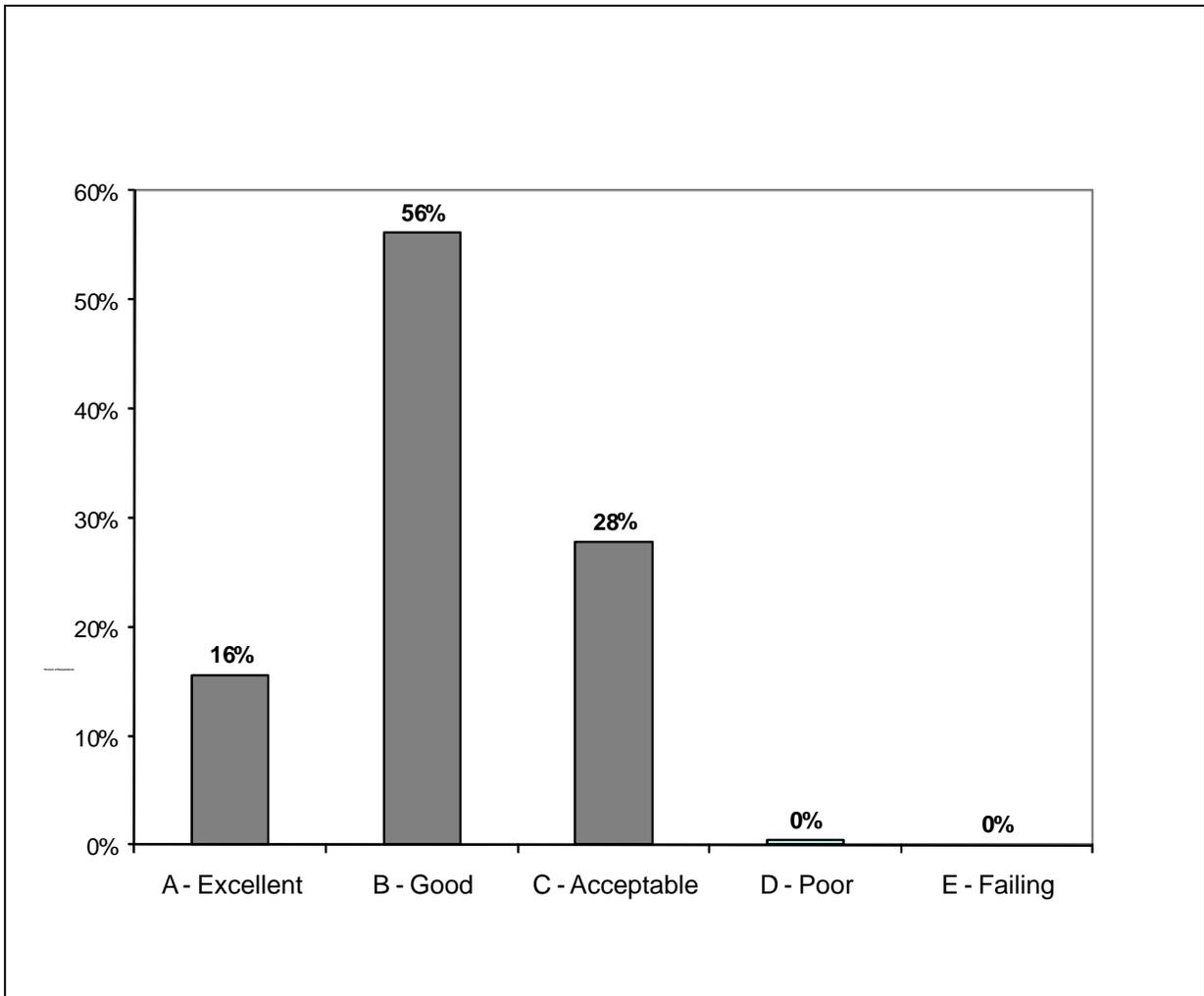
Graph: 5.5 Distributions of Patient Safety Grades

2. Number of Events Reported

Results from the item that asked respondents to indicate the number of events they had reported over the past 12 months is shown in graph (5.6) .The graph shows the average percentage of respondents who indicated that they reported "No event reports" up to "(44%) and the percentage of respondents who reported one or two events in 12 months are (33%).Underreporting is likely. Event reporting was probably identified as an area for

improvement for the hospital because potential patient safety problems may not be recognized or identified and therefore may not be addressed.
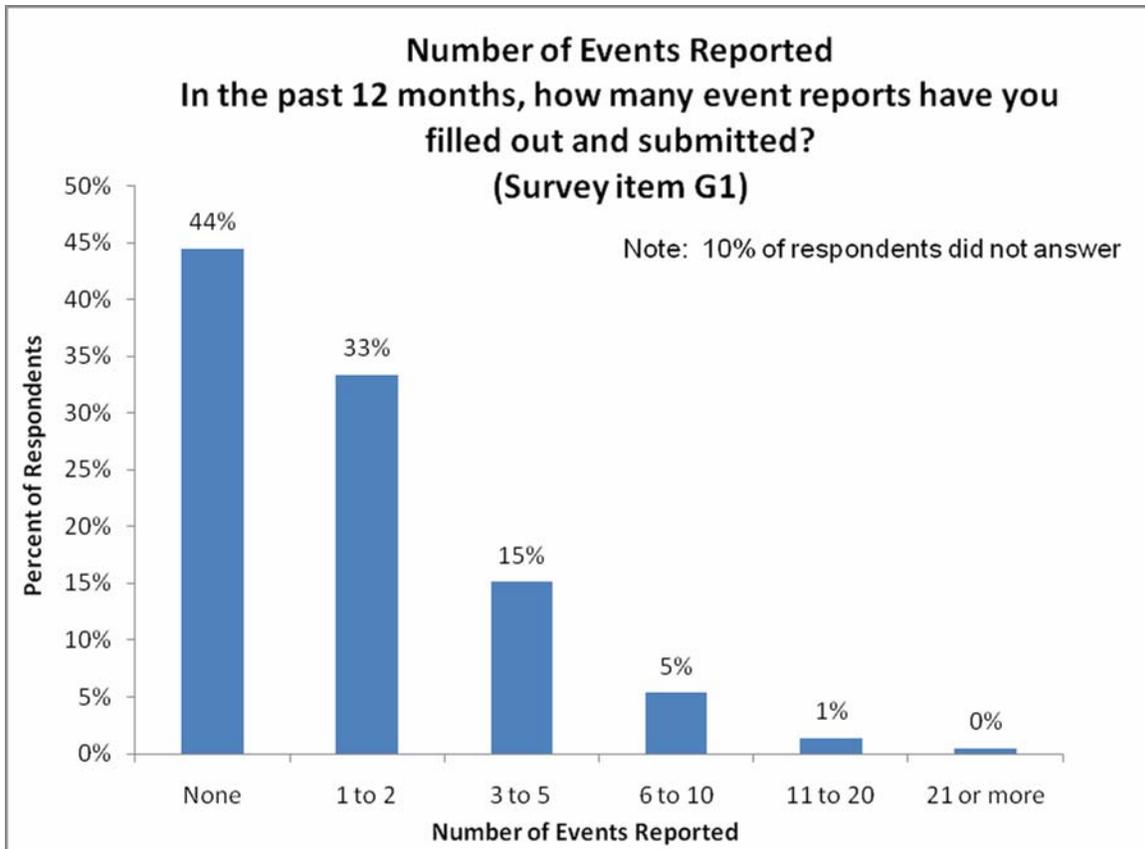
Graph: 5.6 Distribution of Numbers of Events Reported in the past 12 months

3. Overall perceptions of safety:

Graph (5.7) shows the items' scores that reflects the overall perception of patient safety. The average positive score for this dimension was (54%). The item (A18) *Our procedures and systems are good at preventing errors from happening* was considered as an area of strength, the positive score of this item was (78%).

Graph 5.7: Overall Perceptions of Patient Safety

	Positive	Neutral	Negative	
1. Patient safety is never sacrificed to get more work done. (A15)	47%	25%	28%	Potential for improvement
2. Our procedures and systems are good at preventing errors from happening. (A18)	78%	11%	11%	**Area of Strength**
R3. It is just by chance that more serious mistakes don't happen around here. (A10)	43%	15%	42%	
R4. We have patient safety problems in this unit. (A17)	46%	20%	34%	
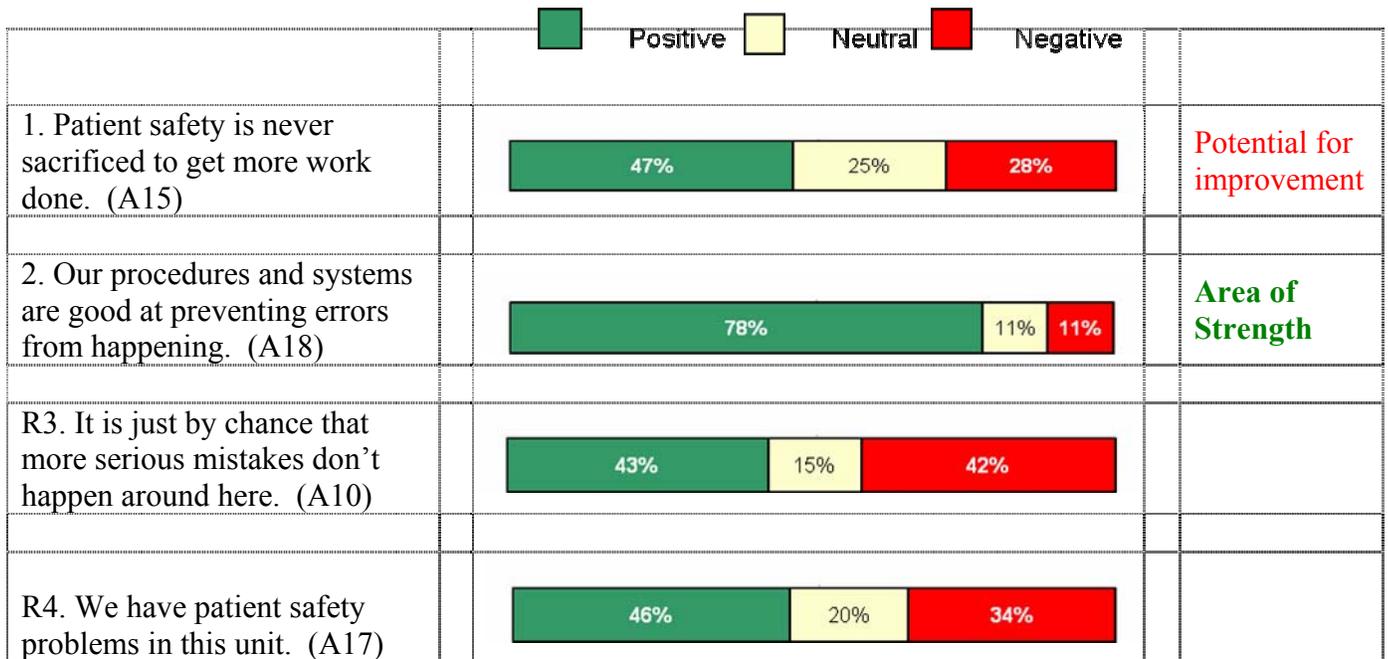
4. Frequency of events reported

Graph (5.8) shows the items' scores that reflect the frequency of events reported. The average positive score for this dimension was (49%). This dimension is considered as an area of potential improvement.

Graph 5.8 Frequency of Events Reported

	Frequently	Sometimes	Rarely/Never	
1. When a mistake is made, but is <u>caught and corrected before affecting the patient</u>, how often is this reported? (D1)	47%	31%	23%	Potential for improvement
2. When a mistake is made, but has <u>no potential to harm the patient</u>, how often is this reported? (D2)	45%	33%	22%	Potential for improvement
3. When a mistake is made that <u>could harm the patient</u>, but does not, how often is this reported? (D3)	52%	31%	13%	

5.3.6 Dimensions' positive score differences among health professionals

Table (5.4) shows the differences in dimensions 'positive response between the different health professionals; nurses, physicians, and paramedics. Physicians had lower positive responses than nurses and paramedics towards teamwork across units, teamwork within units, communication openness, Feedback & Communication about Error, and Hospital Handoffs and Transitions. Nurses responded positively higher than the other professionals in the dimensions; Frequency of Events Reported, Organizational Learning-Continuous Improvement and Hospital Management Support for Patient Safety (Table 5.4).

Table 5.4 Dimension - level percent positive average responses per staff position

Safety Culture Composites	Average % of positive responses			Mean &Standard Deviation	
	Physicians	**Nurses**	**Paramedics**	**Mean**	**SD**
Overall Perceptions of Safety (4 items--% Agree/Strongly Agree)	55%	53%	54%	54%	0.042
Frequency of Events Reported (3 items--% Most of the time/Always)	46%	**52%**	45%	49%	0.167
Supervisor/Manager Expectations & Actions Promoting Patient Safety (4 items--% Agree/Strongly Agree)	50%	56%	54%	54%	0.031
Organizational Learning-- Continuous Improvement (3 items--% Agree/Strongly Agree)	68%	**84%**	74%	79%	0.114
Teamwork Within Units (4 items--% Agree/Strongly Agree)	**70%**	82%	83%	80%	0.095
Communication Openness (3 items--% Most of the time/Always)	**44%**	61%	65%	58%	0.111
Feedback & Communication About Error (3 items--% Most of the time/Always)	**50%**	70%	63%	65%	0.153
Nonpunitive Response to Error (3 items--% Agree/Strongly Agree)	22%	25%	22%	23%	0.0173

Staffing (4 survey items--% Agree/Strongly Agree)	29%	28%	31%	28%	0.015
Hospital Management Support for Patient Safety (3 items--% Agree/Strongly Agree)	58%	**69%**	52%	64%	0.108
Teamwork Across Hospital Units (4 survey items--% Agree/Strongly Agree)	**49%**	57%	61%	54%	0.061
Hospital Handoffs & Transitions (4 survey items--% Agree/Strongly Agree)	**36%**	54%	53%	47%	0.101

Table (5.5) shows One-Way ANOVA test that was used to assess the differences in patient safety dimensions in relation to the three different professional categories (nurses, physicians and paramedics).

Table 5.5: One-Way ANOVA comparing patient safety dimensions by professional category of the participants.

Patient safety dimension		Sum of squares	df	Mean squares	F	Sig.
1.Teamwork within units	Between Groups Within Groups Total	21.050 1180.199 1201.249	2 242 244	10.525 4.877	2.158	.118
2.Supervisors/Managers expectations & actions promoting patient safety	Between Groups Within Groups Total	49.316 1108.480 1157.796	2 237 239	24.658 4.677	5.272	.006*
3.Organizational learning-continuous improvement	Between Groups Within Groups Total	58.918 656.017 714.934	2 241 243	29.459 2.722	10.822	.000*
4.Hospital Management	Between Groups	17.817	2	8.908	3.874	.022*

Support for Patient Safety	Within Groups	567.959	247	2.299		
	Total	585.776	249			
5.Overall Perceptions of Safety	Between Groups	14.597	2	7.298	1.563	.212
	Within Groups	1050.333	225	4.668		
	Total	1064.930	227			
6.Feedback & Communication About Error	Between Groups	33.754	2	16.877	4.212	.016*
	Within Groups	945.510	236	4.006		
	Total	979.264	238			
7. Communication Openness	Between Groups	4.359	2	2.179	.877	.417
	Within Groups	596.415	240	2.485		
	Total	600.774	242			
8. Frequency of Events Reported	Between Groups	106.661	2	53.330	7.543	.001*
	Within Groups	1739.291	246	7.070		
	Total	1845.952	248			
9.Teamwork Across Hospital Units	Between Groups	8.040	2	4.020	.391	.677
	Within Groups	2449.321	238	10.291		
	Total	2457.361	240			
10.Staffing	Between Groups	60.273	2	30.137	4.095	.018*
	Within Groups	1729.580	235	7.360		
	Total	1789.853	237			
11.Handoffs&transitions	Between Groups	83.612	2	41.806	6.143	.003*
	Within Groups	1572.152	231	6.806		
	Total	1655.765	233			
12.Nonpunitive response to errors	Between Groups		2	4.189	.880	.416
	Within Groups	1118.613	235	4.760		
	Total	1126.992	237			
13.Patient safety grade	Between Groups	2.844	2	1.422	3.324	*.038
	Within Groups	100.101	234	.428		
	Total	102.945	236			
14.Number of events reported	Between Groups	.754	2	.377	.379	
	Within Groups	220.509	222	.993		
	Total	221.262	224			

*Statistically Significance P<0.05

A statistically significant differences were found (Table5.5) between the three professional categories (nurses, physicians and paramedics) in relation to about eight of the fourteen

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patient safety dimensions , *Supervisors/Managers expectations & actions promoting patient safety (p=.006), Organizational learning-continuous improvement (p=.000), Hospital Management Support for Patient Safety (p=.02), Feedback & Communication About Error (p=.016), Frequency of Events Reported (p=.001), Staffing (p=.018) ,Handoffs and transitions (p=. 003)* and *Patient safety grade (p=.038).*

There was a consensus upon the other dimensions among the health professional with no statistically significant differences in their perceptions toward *Teamwork within units*, *Overall Perceptions of Safety*, *Communication Openness*, *Teamwork across Hospital Units Nonpunitive response to errors and Number of events reported*

To determine between which groups the differences are found, Scheffes'post hoc test was used, the results are shown in (Table 5.6).

Table: 5.6 Scheffes'post hoc test for patient safety dimensions and staff positions.

Patient safety dimension	(I) What is your staff position in this hospital?	(J) What is your staff position in this hospital?	Mean Difference (I-J)	Std. Error	Sig.
1.Supervisors/Managers expectations & actions promoting patient safety	nurses	Physicians	1.01704*	.33957	*.012
		paramedics	.84796	.48171	.215
	physicians	nurses	-1.01704*	.33957	*.012
		paramedics	-.16908	.53849	.952
	paramedics	nurses	-.84796	.48171	.215
		Physicians	.16908	.53849	.952
2.Organizational learning-continuous improvement	nurses	Physicians	1.16560*	.25650	*.000
		paramedics	.65651	.37421	.217
	physicians	nurses	-1.16560*	.25650	*.000
		paramedics	-.50909	.41620	.474
	paramedics	nurses	-.65651	.37421	.217
		Physicians	.50909	.41620	.474
3.Hospital Management Support for Patient Safety	nurses	Physicians	.63718*	.23364	*.026
		paramedics	-.02353	.33066	.997
	physicians	nurses	-.63718*	.23364	*.026
		paramedics	-.66071	.36996	.205
	paramedics	nurses	.02353	.33066	.997
		Physicians	.66071	.36996	.205
4.Feedback & Communication About Errors	nurses	Physicians	.92285*	.31809	*.016
		paramedics	.26076	.46359	.854
	physicians	nurses	-.92285*	.31809	*.016
		paramedics	-.66209	.51752	.442
	paramedics	nurses	-.26076	.46359	.854
		Physicians	.66209	.51752	.442
5.Frequency of Events Reported	nurses	Physicians	1.52976*	.41029	*.001
		paramedics	.99262	.57000	.222
	physicians	nurses	-1.52976*	.41029	*.001

		paramedics	-.53714	.63958	.703
	paramedics	nurses	-.99262	.57000	.222
		Physicians	.53714	.63958	.703
6.Staffing	nurses	Physicians	1.21605*	.42629	*.018
		paramedics	.16554	.61642	.965
	physicians	nurses	-1.21605*	.42629	*.018
		paramedics	-1.05051	.68618	.312
	paramedics	nurses	-.16554	.61642	.965
		Physicians	1.05051	.68618	.312
7.Handoffs and transitions	nurses	Physicians	-1.42313*	.41090	.*003
		paramedics	-.03953	.60572	.998
	physicians	nurses	1.42313*	.41090	*.003
		paramedics	1.38360	.67091	.122
	paramedics	nurses	.03953	.60572	.998
		Physicians	-1.38360	.67091	.122
8.Patient safety grade	nurses	Physicians	-.26398*	.10240	*.038
		paramedics	-.06171	.14329	.911
	physicians	nurses	.26398*	.10240	*.038
		paramedics	.20227	.16001	.451
	paramedics	nurses	.06171	.14329	.911
		Physicians	-.20227	.16001	.451

*The mean difference is significant at the 0.05 level.

Table (5.6) shows Scheffes'post hoc test indicates that significant differences were mainly between nurses and physicians in the seven patient safety dimensions mentioned above (Table 5.6).

Comparing the results of positive response for the health professionals with the positive response of the staff who have interaction with patients, it is noticed that those staff which have interaction with patients have lower positive responses in all the patient safety dimensions except for nonpunitive response for errors and handoffs and transitions.

Staff with patient interaction feels that their mistakes and event reports are not held against them, and that mistakes are not kept in their personnel file and believe that important patient care information is transferred across hospital units and during shift change more than staff with no patient interaction (Table5.7).

Table 5.7 Average percent positive responses by patient interaction

Safety Culture Composites	Average % of positive responses **with direct patient interaction**	Overall Average % of positive responses
Overall Perceptions of Safety	47.5%	54%
Frequency of Events Reported	37.7%	49%
Supervisor/Manager Expectations & Actions Promoting Patient Safety	49.2%	54%
Organizational Learning--Continuous Improvement	63.3%	79%
Teamwork Within Units	66%	80%
Communication Openness	46%	58%
Feedback & Communication About Error	54%	65%
Nonpunitive Response to Error	**35%**	23%
Staffing	26%	28%
Hospital Management Support for Patient Safety	53%	64%
Teamwork Across Hospital Units	47%	54%
Hospital Handoffs & Transitions	**49%**	47%

For open-ended Question in section I; the last section of the questionnaire, 38 of the respondents wrote their comments. The comments were grouped into two main groups according to its relation to the patient safety dimension, 18 of the respondents commented on

about the reporting system, its importance, the necessity of a continuous learning system from errors for the purpose of improvement, accountability for errors, no-blame culture and the need for an effective reporting system in place.

Twelve of the respondents commented about patient safety, its importance, the need for more education and awareness in this issue, safety environment for patients and workers and formulation of a patient safety committee.

The rest of the comments were about the importance of teamwork among health professionals, especially during over work load, the role played by supervisors, and importance of effective communication between physicians and patients in safety issues, and the need of qualified personnel to implement safety and quality in healthcare.

Chapter Six

Discussion

The purpose of this study was to assess health professionals perception of the safety culture in Makassed Islamic Charitable Hospital using the Agency for Healthcare Research and Quality (AHRQ) survey developed in the United States.

The findings of this study elicited some information about hospital level aspects and unit level aspects of patient safety culture. In addition to that, information about the overall patient safety grade, the frequency of reporting errors, and identifying areas of weakness and areas of strength. The study results were also benchmarked with AHRQ database in USA for the year 2010.

6.1 Participants characteristics

Three hundred surveys were distributed to physician, nurses and paramedical professionals from the pre-selected units of Medical, Surgical, Intensive Care, Obstetrics and Gynecology, Pediatrics, Neonate, Emergency, Rehabilitation, and Orthopedic services at Makassed Islamic Charitable Hospital including all the medical departments. 251 surveys were returned back. The response rate was (84%). Sorra and Neiva (2004) stated that an overall response rate of (50%) or more should be the minimal for acceptable safety culture analysis (Sorra, 2004). The response rate is considered high and adds strength to the study results. The participants and researcher anonymity on surveys was adequately assured, because the researcher is an employee in the hospital.

Twenty nine percent of the respondents were from intensive care units including adult, pediatric and neonatal intensive care units .This response rate can be explained by the high number of the nursing staff of these units ,(41%) were the patient per bed ratio in intensive care units is one or two nurses per one patient .The intensive care is followed by (13%) of the respondents from surgery department and (12%) from the gynecology departments ,and (5%) working in other different units .The respondents of this category were mainly physicians specialized in internal medicine and pediatric physicians who work in different units. (9%) of the respondents answered other, this includes the departments that were not specified in the questionnaire like orthopedics, neonate, CCU, and open heart surgery, and (4%) of respondents were from laboratory including blood bank, main laboratory and pathology department.

Seventy three percent of the respondents were nurses mainly register nurses, (68%) of the nursing staff in the hospital is registered nurses, and the nursing staff consists (47%) of the total hospital staff.

Seventy four percent of the respondents worked from 40 to 59 hours per week, this is the regular working hours for the nursing staff and the full times physicians, (24%) works from 20 to 39 hours per week, this category includes mainly the paramedic professionals, they work 38 hours per week, in addition to some part time physicians or nurses.

The study showed that (46%) of the health professional worked in the hospital less than 5 years due to the turnover mainly of the nursing staff and the residency program of physicians that last for five years. The remaining staff work in the hospital more than six years .Almost the same answers and the same percentage was given for answering about years worked in the same work area /unit and working in the same specialty, this indicates that hospital employee's are hired upon the hospital's need, and the specialization of health professional in the hospital.

About (88%) of the respondents were with direct contact with patients, and this is an important issue, (94%) of the participants were nurses and physicians. Health professionals

having direct patient interaction are more aware with issues related to patient safety like adverse events reporting, team work within units and across units, handoffs and transition, feedback and communication dimension, and one of the indirect objectives of this study is to raise the awareness about patient safety issues, mainly among the health professionals that their work have direct influence on patients.

6.2 Results Summary

The areas of strengths and potential areas for improvement of patient safety dimensions as perceived by the participants are summarized in Table (6.1).

Table6.1: Summary of patient safety culture dimensions as perceived by participants

Patient safety dimensions	Areas of strength	Areas for potential improvement
Unit-level patient safety aspects	1.Teamwork within units 2.Organizational learning-continuous improvement	1. Nonpunitive response to errors. 2. Staffing
Hospital-level patient safety aspects		1.Hospital handoffs and transitions
Patient safety outcomes		1.Frequency of events reported

Despite that there was a positive response by the participants to patient safety grade (72%) corresponding to excellent and very good, however, the overall perception of patient safety was (54%).

On the other hand,(70%) of the respondents reported from zero to two adverse events during the past 12 months, and only (49%) of the respondents frequently reported events that could or couldn't harm patients, these results indicate that half of the health professionals do not document the events because they fear that these documented errors are kept in their personal files or it is a time consuming process , and prolong the process of feedback , thus , reporting errors is routinely don verbally which is more preferable to the health staff.

6.3 Unit –level aspects of patient safety

At the unit –level, there was two strength areas; *Teamwork within units and Organizational learning-continuous improvement,* three neutral dimensions; *Supervisors/manager expectations* and actions promoting safety, *Feedback and communication about errors and Communication openness*, and two weakness areas *Nonpunitive response to errors and Staffing* .

1.   *Teamwork within units:* The extents to which staff supports each other, treat each other with respect, and work together as a team. Findings from this study shows that this dimensions had the highest positive response rate (80%). The average teamwork dimension positive response rate of USA hospitals was (80%), and it is defined as an area of strength according to AHRQ definition. 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" (90% agreed), "In this unit, people treat each other with respect (83%) and "people support one another in this unit" (81% agreed). These are identified as areas of strength.

A *team* consists of two or more individuals, who have specific roles, perform interdependent tasks, are adaptable, and share a common goal. To work effectively together, team members must possess specific knowledge, skills, and attitudes (KSAs), such as the skill in monitoring each other's performance, knowledge of their own and teammate's task responsibilities, and a positive disposition toward working in a team. Based on its definition alone, it is easy to see how teamwork is critical for the delivery of health care. Physicians, nurses, pharmacists,

technicians, and other health professionals must coordinate their activities to deliver safe and efficient patient care. As specified in our definition of a team, health care workers perform interdependent tasks (e.g., a surgeon cannot operate until a patient is anesthetized) while functioning in specific roles (e.g., surgeon, surgical assistant, anesthesiologist) and sharing the common goal of safe care. However, despite the importance of teamwork in health care, most clinical units continue to function as discrete and separate collections of professionals (Knox &Simpson, 2004).

The delivery of health care occurs in a hyper complex environment that is dependent on multi team systems. Even though health care workers have historically operated in distinct silos and have been trained in separate professions and possess distinct expertise, these individual must coordinate to deliver safe care. Tasks performed by one member of the team are dependent on tasks performed by other members of the team and the performance of these tasks must be coordinated among team members for effective team performance (delivery of safe care) (Baker et al., 2006).

Working as a team, members can ascertain which outcomes to measure, determine how such outcomes can best be measured; develop data-gathering processes and analyze results; and feed information back to clinicians (so that they may learn how to improve care) and administrators (so that they may make more informed decisions). Team-oriented processes will emphasize systems level thinking, bring forth new ideas and hypotheses, foster collaboration, build awareness and respect for what nurses and others on the patient care team do, and, most importantly, ensure that at the end of the day real efforts are made to improve the quality of patient care, promote a safer and more rewarding patient care environment, and minimize the risk of patients experiencing a preventable adverse outcome (Needleman & Buerhaus, 2003) .

2.   *Organizational learning–Continuous improvement*: There is a learning culture in which mistakes lead to positive changes and changes are evaluated for effectiveness. This dimension contains the highest positive item (A6) "We are actively doing things to improve patient

safety" (93%),this positive response reflects the culture of learning from errors and the concepts of continuous improvement and this is the main goal of reporting adverse events .

This dimension was classified as an area of strength and had a positive response of (79%) and higher than the ARHQ benchmark (2010). (*http://www.ahrq.gov/qual/hospsurvey10)*

Learning is a fundamental human capability, naturally occurring in response to needs arising from internal and external demands from the very beginning of life. It is essential that our efforts to make learning more effective and directed, supports and reinforces the individual's and the organization's inherent capability to engage in continuous learning as a basis for continuous improvement. Effective learning occurs when there is an organizational culture with active oscillation between practice and reflection. Learning takes place on several levels: from single-loop learning (adaptive learning) through double-loop learning (reflection in and on action) to triple loop learning (meta-learning) and extending one's understanding and competences of how to learn individually and in groups. Linking professional and improvement knowledge is crucial to understand how patient care and safety can be improved. This learning, paying attention to interdisciplinary learning, occurs best when the process allows for integration of single, double and triple-loop learning grounded in evidence-based knowledge (Mikkelsen & Holm, 2007) .

3. *Feedback and communication about errors*: Staff is informed about errors that happen, given feedback about changes implemented, and discuss ways to prevent errors.

This was a neutral dimension, including an item which was considered as a strength area "We are informed about errors that happen in this unit "(77%) this item is consistence with the organizational learning –continuous improvement , staff learns from mistakes to improve the system of working .

4. *Communication openness:* Staff freely speaks up if they see something that may negatively affect a patient, and feel free to question those with more authority. This is a neutral dimension; the three items in this dimension were neutral too (Table 5.1).

5. *Staffing:* There is enough staff to handle the workload and work hours are appropriate to provide the best care for patients. This is one of the weakness areas, containing two items considered as potential for improvement "Staff in this unit work longer hours than is best for patient care" and "We work in crisis mode trying to do too much, too quickly". As perceived by the staff there is a lack of staff in comparison to the workload in the hospital in comparison to the total number of beds ,the number of intensive care beds, the occupancy rate that usually exceed (100%) and the acuity of patients that are referred to the hospital.

Five studies funded by AHRQ (Research in action, 2004) that examined the relationship between adverse patient outcomes and hospital nurse staffing. All five studies found at least some association between lower nurse staffing levels and one or more types of adverse patient outcomes. Higher rates of register nurse staffing were associated with a 3- to12% reduction in adverse outcomes; depending on the outcome Researchers found that lower nurse-to patient ratios were associated with higher rates of nonfatal adverse outcomes (Stanton, 2004).

A research was conducted on 779 hospitals in USA on 1.3 million registered nurses to study the relation between the level of staffing by nurses in hospitals and patients' outcomes (Jack Needleman, 2002) .The findings clarify the relation between the levels of staffing by nurses and the quality of care. The study concluded that a higher proportion of total hours of nursing care provided by registered nurses were more frequently associated with lower rates of adverse outcomes. It was found consistent evidence of an association between higher levels of staffing by registered nurses and lower rates of adverse outcomes. Other factors, such as effective communication between nurses and physicians and a positive work environment, have been found to influence patients' outcomes (Needleman et al., 2002).

6.   *Nonpunitive response to errors:* Staff feels that their mistakes and event reports are not held against them, and that mistakes are not kept in their personnel file. 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 (44%) for USA hospitals, although an area for improvement in USA hospitals as well. As in this study, results from the AHRQ studies indicated that most USA hospitals (2010) 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" (15%), "Staff feel like their mistakes are held against them" (25%), and "When an event is reported, it feels like the person is being written up, not the problem" (29%). Findings from this study indicate that health professionals do not feel free to report and write down errors or issues related to patient safety. This may be due to many reasons such as fear of punishment, blame, and potential for shame. On the other hand, it has been informed that health professionals report errors verbally more frequently than written errors. This is very relevant to the fact that documenting errors will possibly lead to medical liability suits against the hospital in Israeli courts, the issue that is most often, resulting in considerable compensations for patients and form a huge financial burden to the hospital.

Another issue that plays a vital role in medical professionals not reporting medical errors is the dominant cultural and social values that influence their professional advancement and reputation due to the fact that medical errors are costly in term of human lives.

Blaming employees who makes a mistake creates and reinforces a culture of fear. In this environment, people learn quite quickly to be quite about problems, mistakes, and near misses, because they except punishment if they speak up. This in turn limits an organization's ability to learn from and addresses system errors. An adverse event provides insight into the care delivery process and the open, honest discussion of adverse events is a primary way to truly understand the strengths and weakness of care delivery and opportunities for improving flawed policies and practices that increase the risk of error and patient harm.

Thus, of the most important jobs of organization's leadership is to foster a "just culture "in which everyone knows how the organization will view and respond to errors. A just culture is a culture of trust in which people are encouraged to provide essential safety –related information. A just culture is not about removing blame. Removing blame from the workplace does not eliminate individual or organizational responsibility. A just culture is characterized by clear system thinking, organizational learning, well-developed decision making mechanism, and clear organizational structures (Frankel et al., 2009) .

6.4 Hospital –level aspects of patient safety

1.   Hospital management support for patient safety: Hospital management provides a work climate that promotes patient safety and shows that patient safety is a top priority. This dimension was classified as neutral (64%). One item was considered as strength area "Hospital management provides a work climate that promotes patient safety". Staff feel that the working environment is safe for patients and staff but in their perception they do not believe that the management provides the enough support and commitment to patient safety as a priority issue in the hospital, the hospital management must show its support and commitment daily through walking rounds and communication with the staff about patient safety.

2.   Teamwork across hospital: Hospital units cooperate and coordinate with one another to provide the best care for patients (54%). This shows that the informal social relationship between employees within the unit strengthen teamwork in a better way than teamwork across units.

3.   Handoffs and transitions: Important patient care information is transferred across hospital units and during shift changes. This dimension was the lowest positively perceived item by the respondents (47%), and considered as an area for improvement, at the hospital level. This low positive response can be correlated to the positive answer to Teamwork work across units (54%) , workload and insufficient time given to the process of handoffs and lack of knowledge about the importance of the transferring the right patient information during the process of handoff , that could lead to an error. Handoffs transfer not only a knowledge exchange process, but also transfer of responsibility and authority. Failure in adequate handoff communication may result from the inability of staff to construct a shared picture of what is going with the patient at the time of transition, as well as expectations and plans .Standardizing handoffs communication can help healthcare professionals in avoiding common reasons for communication failure during handoffs (Parker et al., 2008) .

According to the Joint Commission Sentinel Events Database, communication breakdowns were the root cause of more than (65%) of sentinel events,(73%) of these sentinel events resulted in patient's death (Parker et al., 2008) .

6.5 Patient safety culture outcomes

The overall patient safety grade as perceived by the health professional was (16%) excellent and (56%) perceived as very good, in another words, around two thirds of the participants see that patient safety in their units/departments is satisfactory.

The overall perception of safety, the extent to which procedures and systems are good at preventing errors from happening scored positively (78%) as seen by the health professionals.

These two dimensions are complementary to each other and show that the staff believed that the procedures and systems in their departments assure safety and prevents errors and safety level is satisfactory.

The number of events reported in written during the last 12 months, (77%) of the respondents reported from 0 to 2 reports only.

Half of the health professionals frequently report events that could harm patients .This explains why the number of reported events during the last 12 months ranged from 0 to 2 reports only.

6.6 Comparison with AHRQ database 2010

The following section summarize dimension positive response rates with comparison to data from 885 USA hospitals and 338,607 hospital staff respondents that measured patient safety culture using the AHRQ HSOPSC submitted in their annual report "Hospital Survey on Patient Safety Culture 2010 User Comparative Database Report(Table 6.2) *(hptt://www.ahrq.gov.)*

Table6.2: Comparable results of positive culture percentages with USA hospitals (AHRQ Benchmark, 2010)

	Safety Culture Dimensions	Makassed Hospital's Dimension Score	AHRQ Benchmark 2010	Makassed Dimension status
		Average % of positive responses		
1.	**Overall Perceptions of Safety**	54%	**65%**	Neutral
2.	**Frequency of Events Reported**	49%	**62%**	Weakness
3.	**Supervisor/Manager Expectations & Actions Promoting Patient Safety**	54%	**75%**	Neutral
4.	**Organizational Learning--Continuous Improvement**	79%	**72%**	Strength
5.	**Teamwork Within Units**	80%	**80%**	Strength
6.	**Communication Openness**	58%	**62%**	Neutral
7.	**Feedback & Communication About Error**	65%	**63%**	Neutral
8.	**Nonpunitive Response to Error**	23%	**44%**	Weakness
9.	**Staffing**	28%	**56%**	Weakness
10.	**Hospital Management Support for Patient Safety**	64%	**72%**	Neutral
11.	**Teamwork Across Hospital Units**	54%	**58%**	Neutral
12.	**Hospital Handoffs & Transitions**	47%	**44%**	Weakness

By comparing Makassed Hospital with the 855 USA hospitals, it is observed that "*Teamwork Within Units* "had the highest positive responses (80%) in both USA hospitals and Makassed Hospital. The second high positive response was" *Organizational Learning--Continuous Improvement*" (79%) in Makassed Hospital, and this is higher than the USA hospitals (72%), while the second positive response in USA hospitals was "*Supervisor/Manager Expectations*

& Actions Promoting Patient Safety" (75%) while in Makassed hospital the positive response was only (54%) ,and there is a big difference in the staff perception between USA hospitals and Makassed hospital in their perception about the management support for patient safety.

The lowest positive responses in both Makassed Hospital and in USA hospitals was for "*Nonpunitive Response to Error,* and "*Staffing* was the second lowest positive response in Makassed Hospital , while " *Hospital Handoffs & Transitions*" was the second lowest positive response in USA hospitals .

Makassed Hospital was better than USA hospitals in three dimensions; "*Organizational Learning--Continuous Improvement*", "*Feedback & Communication about Error* "and "*Hospital Handoffs and Transitions*". This shows that communication between staff about errors or in transferring patient information is better in Makassed hospital than USA hospitals.

6.7 Conclusion

Patient safety culture assessments are a recognized tool in patient safety improvement, these assessments should be viewed as a starting point in the development of patient safety improvement interventions. This study permitted assessment of health professional perceptions of hospital patient safety culture dimensions. In particular, it allowed us to have a clear understanding of strengths and weaknesses of the current prevailing culture regarding patient safety at the hospital. This is an important exercise at the time when the hospital is introducing the JCI accreditation system at the hospital, where patient safety is in the core of the system.

The data demonstrated the urgent need of the hospital for formulating safety- oriented strategies and acquiring senior management support for safety actions in order to strengthen positive culture across hospital. A culture of safety, in which everyone accepts responsibility for patient safety is necessary before other patient safety practices are introduced, otherwise individuals expected to implement the safety initiatives are unable to effectively communicate

or work together. This study indicated that, lack of an established system to report events inhibited the hospital to review events systematically; this finding highlights the importance of developing a reporting system as a priority for this hospital. Staff general perception about an existing a punitive response to events is a main barrier facing any safety improving initiative. This study highlighted the importance of cultural change prior to any safety initiative.

Results show that there is statistically significant differences among nurses and physicians in their perception of eight patient safety dimension; Supervisors/Managers expectations & actions promoting patient safety ,Organizational learning-continuous improvement , Hospital Management Support for Patient Safety, Feedback & Communication About Errors, Frequency of Events Reported, Staffing, Patient safety grade and Patient safety overall perception. These Patient safety dimensions were more positively perceived by nurses than physicians except for two dimensions Handoffs and transitions and Patient safety grade.

The area for potential improvement at the unit/department level was the reporting system in the organization. Staff feels that their mistakes and event reports are held against them, and that mistakes are kept in their personnel files. This leads to underreported adverse events and errors and (77%) of the participants reported no or from one to two incident reports during the last 12 months any only (49%) of the participants frequently report these incidents. There is an urgent need to an effective reporting system that has leadership support and be easy to access. Often referred to as incident reports, these descriptions of harm to patients and "near misses" are critical to continuous learning about how to prevent errors within the organization. In a culture of safety, staff members are aware of safety issues and are free to report conditions that could lead to near misses or actual adverse events. This open exchange of information requires the management to have a non-punitive response philosophy that rewards reporting of safety issues and events and does not punish staff members involved in errors or adverse events related to system failures. The overall perception of patient safety as perceived by the participants was only (54%) answered positively and this result should be considered as a potential area for improvement by the hospital management.

Patient safety is dependent on many factors, including: an adequate level of resources; sufficient financing; an appropriate number of well-trained staff; appropriate buildings; use of high-quality material, technical equipment and medicines; the establishment of standard diagnostic and therapeutic procedures (clinical practice guidelines); a clear division of tasks and responsibilities; appropriate and smooth connections between processes; proper information systems; accurate documentation and good communication between health-care professionals and teams, patients and informal caregivers. The creation of suitable working conditions and atmosphere through: correct work organization, the reduction of stress and tension; the provision of good, safe, social and health conditions for health-service workers; and increased motivation reduces the role of the "human-factor" issues in patient-safety incidents. It includes prevention of causes contributing to (near) incidents and errors, such as: time-pressure on health-care providers (leading to insufficient time to communicate properly among professionals and with patients and other informal caregivers); frequent "handing over" of patients from one health-care professional to another (which leads to poor communication and errors related to poor transfer of information); shortage of staff; pressure on health-care professionals to quickly discharge a patient from hospital; intrusion of commercial elements in health care and side-effects of competing commercial insurance companies.

6.8 Recommendations:

Patient safety should be a top strategic priority for policy makers, managers, leaders and frontline staff. An organization can improve upon safety only when leaders are visibly committed to change and when they enable staff to openly share safety information. When an organization does not have such a culture, staff members are often unwilling to report adverse events and unsafe conditions because they fear reprisal or believe reporting won't result in any change.

The commitment to quality and patient safety should be articulated at the highest level of the health-care system and translated into policies and political support of public-health and patient safety issues. Senior leaders should drive the culture change by demonstrating their own commitment to patient safety and providing the needed resources to achieve results. Their message about safety must be consistent and sustained, as it takes a long time for culture to change.

These recommendations are targeted to affect and promote patient safety in Makassed Islamic Hospital including:

- Defining the existing culture of the organization. The organization should introduce systems allowing it to regularly conduct safety-culture assessments and learn from them. It is recommended to repeat performing patient safety culture assessment periodically as a mean of tracking changes, possible improvements or degradations.

- Developing a safety culture in the organization through strong leadership and careful planning and monitoring. It also requires changes and commitment to safety at all levels of the organization, from the governance ,senior leaders to clinical teams and supporting staff;

- Improving Communication between individuals and teams and across organizational levels Communication must be frequent, cordial, constructive and problem-oriented. Organizational management must be kept informed about and involved in the improvement of patient safety.

- Standardizing an approach to hand-over between staff, change of shift and between different communication patient care units in the course of a patient transfer.

- Reporting of incidents should be promoted. At all levels, actual patient-safety incidents, problems and errors should be properly reported when they occur. Staff should be comprehensively trained in clinical and administrative procedures for responding to a serious error. At all levels, problems and errors should be treated openly and fairly in a non-punitive atmosphere. The response to a problem must not exclude individual responsibility, but should focus on improving organizational performance rather than on individual blame.

- Reviewing and investigating incidents thoroughly, transparently and fairly, free from hindsight bias. Problem analysis should focus on organizational performance and continuous learning .All staff should be trained in teamwork-based problem solving and encouraged to use root-cause analysis to learn how and why incidents happen.

- Leaders need to pay attention to the impact of staffing numbers and workload that is adequate and have impact on the quality of patients' outcomes. Adequate health professional staffing is a key to improve the quality of patient care.

- Establishing a hospital Patient Safety Committee that meets regularly to review incidents and safety matters across the organization and recommend actions. The committee should include senior managers as well professional groups.

Although no single activity can offer the solution, the combination of activities proposed offers a roadmap towards a safer health care organization. With adequate leadership, attention and resources, improvements can be made. It may be part of human nature to err, but it is also part of human nature to create solution, find better alternatives and meet the challenges ahead.

6.9 Areas for future research

The results of this study have elucidated some avenues for further research:

- The relationship between patient safety culture and patient outcomes (mortality and morbidity).

- An in-depth assessment of the relationship between each patient safety dimension on patient safety indicators.

- Future research should not stop at the level of hospital wards, out-patient clinics, and ERs, but collect and analyze data on the micro-systems within them: nurse teams, doctor-nurse teams, operating teams etc.

- A comparative study on patient safety culture among EJH, governmental and private hospitals.

- Building and promoting an event reporting system within the Makassed hospital context.

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Annexes

Annex 1

HOSPITAL SURVEY ON PATIENT SAFETY CULTURE

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 adverse events resulting from the processes of health care delivery.

SECTION A: Your Work Area/Unit

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

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

○ a. Many different hospital units/No specific unit

○ 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 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 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

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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

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

SECTION F: Your Hospital

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

<u>In the past 12 months</u>, 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

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Annex 2

From: Butheina I. Surkhi

Al-Quds university

School of Public Health

Date: 10/1/2020

To: Makassed Islamic Charital Hospital Director

Dr. Rustum Nammeri

Dear Dr. Rustom:

I am in the process of finalizing my thesis for Master degree in "Policies and health management "at AL-Quds University. The thesis is entitled "'**Assessment of patient safety culture in Makassed Islamic Charitable Hospital; a tool for improving patient safety** ". The methodology involves distributing 300 questionnaires to the health professional (physicians, nurses, and paramedics) about their overall perception of patient safety, teamwork. Management support, non-punitive response to errors and communication about errors. The planned time for distribution will be during January – February 2010 after your approval to conduct this study which I will appreciate.

I would like to ensure that the information collected will be confidential and will only be used for research purposes, and I will keep you informed with the results of the study.

Best Regards

Butheina Surkhi

Annex.3

مستشفى جـمعية المقاصد الخيرية الإسلامية
القدس

MAKASSED ISLAMIC CHARITABLE HOSPITAL
JERUSALEM

Ref. .... 3/2/21 ....　　　　رقم الشارة: ....

Date: .... January 25, 2010 ....　　　التاريخ: ....

Ms. Butheina I. Surkhi
School of Public Health
Al-Quds University
Abu-Dies

Dear Ms. Surkhi,

In reference to your letter dated January 10, 2010 regarding your thesis for Master's Degree entitled **"Assessment of Patient safety culture in Makassed Islamic Charitable Hospital"**.

We are pleased to inform you that we accept to distribute the questionnaires to health professionals at our hospital during January-February 2010.

Sincerely yours,

Dr. Rustom Nammari
Hospital Director

Annex 4

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Agency For Healthcare Research And Quality " "   ‚ "(Hospital Survey On Patient Safety")

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makiso9000@yahoo.com

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