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Assessment of Attitudes of Physicians and Nurses towards Incident Reporting in Palestinian Governmental Hospitals

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Assessment of attitudes of physicians and nurses toward incident reporting in Palestinian Governmental Hospitals.

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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 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:18/5/2013

Dedication

To those who have supported me all the time
To the Spirit of my Father
To my mother,
To my wife,
To my sisters and Brothers
To my colleagues,
With all my love and respect

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

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Conceptual definitions

This section provides the main concepts that were used in the study and their operational definitions**.**

Safety: freedom from accidental injury (IOM, 1999)

Near miss: an event or circumstance that has the potential to cause an incident or critical incident but that did not actually occur due to corrective action and/or timely intervention (Barnard et al, 2006).

Adverse event: an injury resulting from a medical intervention, not due to the underlying medical condition of the patient (IOM, 1999). The Canadian Patient Safety Dictionary (CPSD) lists three acceptable definitions related to adverse event: (1) an unexpected and undesired incident directly associated with the care or services provided to the patient, (2) an incident that occurs during the process of providing health care and results in patient injury or death, and/or (3) an adverse outcome for a patient, including injury or complication (Davies, Hebert, & Hoffman, 2003).

Preventable adverse event: an adverse event that was attributable to a medical error. Negligent adverse events represent a subset of preventable adverse events that satisfy legal criteria used in determining negligence: whether the care provided failed to meet the standard of care reasonably expected of an average physician qualified to take care of the patient in question (IOM, 1999).

Error: the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim; not all errors result in injury (IOM, 1999). It is important to highlight that an error does not necessarily result an adverse outcome or harm to a patient. However, it does often refer to an individual error, rather than a systems error (Bishop, 2012).

Abstract

Background: medical errors, adverse events or incidents are global public health problems. There is absence of formal incidents reporting system in Palestinian public hospitals. This can poses a risk to patient's population as there is no mechanism to review and learn from errors. Assessment of health professional's attitudes toward incident reporting is critical for recognizing the reason for under reporting.

This study deeply investigates the physician and nurses' attitudes toward incident reporting in MoH hospitals.

Method: a cross-sectional, descriptive design employed using self-administered questionnaire to collect data. The study was conducted in all the 11 public hospitals in the West Bank. A total of 584 doctors and nurses participated in the study. Response rate was (83.5%).

Findings: results showed that (52.6%) of participants are not aware of any formal incident reporting system in their hospitals. (59.6%) of the participants didn't report any event in the past year; nurses significantly are more reluctant to report incidents (65.5%) than doctors (47.7%) ($P<0.001$). Participants mainly (70.7%) fear of punitive actions, 61.8% fear of reporting negative consequences, only (30.6%) of participants are aware about events reported structure. The most perceived motivator to report was getting help to patients (93%). As for the views of participants on possible future incident reporting system in the public hospitals, 77.8% prefer a written reporting, 52.7% prefer that the reporter is identified, 72.7% prefer a mandatory reporting system, 80.3% believe that the use of reporting is to learn from mistakes, 65.5% prefer to report all types of errors, and 57.6% prefer to report to the head of departments. Moreover, 88.1% of the doctors are more likely to report incidents in order to learn from mistakes in comparison 76.5% of the nurses support that ($p=0.004$). Finally nurses (62.4%) are more in favor of reporting incidents to the head of department than doctors (47.2%) ($p<0.001$).

Conclusion: there is a need for a formal incident reporting system, supporting non-punitive culture and building a culture patient safety. The MoH should work on changing the blame culture and create a climate of open communications and continuous learning, building on the fact that most of health professionals are willing to report incidents to their supervisors.

تقيم مواقف الأطباء والتمريض تجاه الإبلاغ عن الأحداث السلبية والأخطاء الطبية في المستشفيات الحكومية الفلسطينية

ملخص الدراسة

خلفيه الدراسة: أصبحت الأخطاء الطبية من أهم التحديات التي تواجه الصحة ألعامه بالعالم . ونظرا لتزايد الأخطاء الطبية والأحداث السلبية في المستشفيات الحكومية في فلسطين ولغياب نظام تعليمي لتوثيق الأخطاء الطبية التي تحدث بالمستشفيات الحكومية ، أجريت هذه الدراسة للتعرف على مواقف الأطباء والتمريض في هذه المستشفيات حول المعيقات والموانع التي تحول دون توثيق هذه الأخطاء والأحداث وبالتالي تقليل هذه الأخطاء قدر الإمكان والتعلم منها مما يعزز مستوى سلامه المرضى.

المنهجية: اعتمدت الدراسة المنهج الوصفي التحليلي، من خلال دراسة مقطعيه حيث جمعت البيانات بواسطة الاستبانه. وقد أجريت هذه الدراسة بين شهر أيار وشهر حزيران من العلم 2012، حيث تم اختيار عينه طبقيه مكونه من 584 طبيب وممرض من جميع المستشفيات الحكومية بالضفة الغربية حيث كانت نسبه الاستجابة 83.5%.

النتائج: أظهرت الدراسة أن (52.6%) من المشاركين غير واعيين لوجود نظام للإبلاغ عن الأخطاء الطبية بالمستشفيات التي يعملون فيها. أكثر من نصف المشاركين(59.6%) لم يبلغوا عن أي خطا طبي أو حدث سلبي خلال ألسنه الماضية. أظهرت أيضا الدراسة أن الثقافة السائدة بالمستشفيات الحكومية هي ثقافة العقاب واللوم الأمر الذي اعتبره المشاركين (70.7%) من أهم المعيقات التي تحول دون توثيق أخطائهم. عدم المعرفة المسبقة والإلمام بالأخطاء الطبية التي قد تحدث (30.6%)، الخوف من العقوبات الاداريه والغرامات المالية والإعلام بالاضافه إلى خوفهم من أهالي المرضى وفقدان السمعة والزبائن بالقطاع الخاص (61.8%) . أظهرت الدراسة أيضا انه لدى المشاركين قناعه بضرورة توثيق الأخطاء الطبية والأحداث السلبية من اجل التعلم منها وعدم تكرارها (91.4%).

أظهرت الدراسة أيضا أن معظم المشاركين (77.8) يفضلون أن يكون أي نظام مقترح لتوثيق الأخطاء بالمستقبل نظام إجباري (72%)، تعليمي وليس عقابي (80%)، يوثق جميع أنواع

الأخطاء الطبية (65%)، (52%) يفضلون أن تكون هوية المبلغ معروفه بينما(57.6%) يفضلون الإبلاغ إلى رئيس القسم.

أظهرت الدراسة أيضا فروقات معنوية حقيقية بين مواقف الأطباء والتمريض فيما يتعلق بعدد الأخطاء الطبية التي قاموا بتوثيقها العام الماضي حيث كان الممرضين أكثر تلكآ من الأطباء ,($p<0.001$) بينما كان الممرضون يفضلون الإبلاغ لرئيس القسم عن أخطائهم أكثر من الأطباء.($p<0.001$)

ألخلاصه:خلصت الدراسة إلى عده توصيات منها ضرورة إقرار نظام لتوثيق الأخطاء الطبية والإبلاغ عنها داخل مستشفيات وزاره الصحة الفلسطينية بهدف جمع المعلومات وتحليها واستخلاص العبر لرفع مستوى حماية وسلامه المريض، العمل على تغير الثقافة السائدة بالمستشفيات وتحويلها إلى ثقافة مبنية على العدالة التي تدعم النقاش المفتوح عن الأخطاء الطبية، ضرورة إقرار نظام التامين ضد الأخطاء الطبية من قبل النقابات المعنية. وأخيرا توصي هذه الدراسة إلى المزيد من الأبحاث المتعلقة بالأخطاء الطبية .

List of abbreviations

PMC	Palestinian Medical Complex
NHC	National Health Service
MoH	Ministry of Health (Palestine
ICHR	Independent Commission for Human Rights
AIDS	Acquired Immunodeficiency Syndrome
IOM	Institute of Medicine
AHQR	Agency of Healthcare Research and Quality
NPCA	National Patient Safety Agency
NRLS	National Reporting and Learning System

Chapter One

1.1 Introduction

People entrust their health to care provided in health care organization. In return, these facilities have an obligation to provide even the best and safest care, treatment and services possible.

The most important knowledge in the field of patient safety is how to prevent harm to patients during treatment and care. The fundamental role of patient safety reporting systems is to enhance patient safety by learning from failures of the health care system. Accuracy of patient safety can only be measured in terms of harm prevented and lives saved.

Reducing medical errors has become an international concern. Numerous studies around the world have shown consistently unacceptably high rates of medical injury and preventable deaths. A global effort, the world Alliance for Patient Safety, has been launched by WHO to facilitate efforts by all Member States to ensure health care safer. One of the most important aspects of patient safety is learning from mistakes that could happen. Health professionals especially physicians, nurses disclosure of medical error and adverse events to institutions, patients and colleagues is important for patient safety, and for patient care and professional education (WHO, 2005). Learning from medical error and near misses is essential for improving the quality of care however one of the greatest frustrations for patients and professionals alike is the apparent failure of the health care systems to learn from their mistakes (Reason, 2000). Documenting patient occurrences is the first step to understanding the causes of medical errors.

International studies in many countries showed health professionals reluctance to report events (WHO, 2005). The same situation is also prevalent in Palestine (Hamdan & Salim, 2013).

This study highlights the perception of health workers towards reporting medical errors in Palestinian governmental hospitals.

1.2 Problem statement

Patient safety emerged as a major health policy issue in 1999 with the release of the Institute of Medicine (IOM, 1999) report "To Err Is Human''. The IOM report concluded that preventable medical errors are the fifth-leading cause of deaths in the USA and cause as many as 98,000 deaths each year and increases the total costs of health between $17 Billion and $29 Billion (Spath, 2000). The World Health Organization (WHO) estimates show that in developed countries as many as one in 10 patients is harmed while receiving hospital care.

International researches have shown that errors in the delivery of health care are a major threat to patient safety. In the National Health Service (NHS) of England and Wales it has been reported that mistakes or 'adverse events' in the delivery of health care are experienced in around 10% of inpatient admissions. It has been calculated that the human cost of these mistakes could be more that 40,000 lives a year with a financial cost over £2billion in additional care (Waring, 2005).

The medical errors issue became public concern, which demonstrated the magnitude of the problem of medical errors that happen in Palestinian governmental hospitals. The independent commission for human rights in Palestine reported that there are no accurate statistical figures of prevalence medical errors occurring in Palestinian health sector, but infer the existence of large numbers scattered from MoH and Medical association (ICHR, 2012). Based on information obtained by MoH, the report indicated that in 2009, 57% of maternal death in the West Bank could have been prevented.

There is lack of incident reporting among physicians and nurses in (MoH) hospitals. A recent study assessed the patient safety culture in the public hospitals in the West Bank indicated low level of incident reporting among health professionals, where more than 53.2% of the participants indicated that they didn't report any events in the past 12 months (Hamdan& Salim, 2013). This form a concern for patient safety and quality of care provided to patients in the Palestinian hospitals.

1.3 justification of the study

Very limited framework of incident reporting exists in the Palestinian governmental hospitals. Physicians and nurses are reluctant to report incidents and medical errors and there is no systematic way of reporting adverse events in public hospitals. This poses serious risk on the patients and compromises the quality and safety of care provided to patients. Development of a nationwide incident reporting system is inevitable in Palestinian Governmental Hospitals. Recognizing the attitudes of health professionals who will implement this system is mandatory for its success. Therefore, there is a need to explore attitudes of professionals towards incident reporting and to identify reasons behind lack of reporting adverse events and error in Palestinian hospitals. Such assessments although can serve as the starting point for making further developments and build up a so called "culture of safety to incident reporting". To the best of our knowledge similar studies have not been conducted in Palestine.

1.4 Study setting

The study was conducted in all the governmental hospitals in the West Bank, except for the Bethlehem Psychiatry Hospital, a total of 11 public hospitals (Table 1.1).

The total number of beds was 1,134 beds, with occupancy rate (88.6%). The total number of physicians and nurses in these hospitals was 634 and 1,313) respectively (MoH, 2011).

Table 1.1: Distribution of hospitals beds, population served, number of physicians and nurses.

Hospital	Occupancy rate (%)	Beds	N. of physicians	N. of nurses
Khaleel Suliman	90.2	123	62	111
Thabet Thabet	67.2	108	63	117
Rafedia	84.8	212	114	190
Alwatani	84.4	55	29	86
PMC	87.1	111	115	248
Biet Jala	92.2	119	60	128
Jericho	67.2	54	34	60
Alia	151	216	80	200
Yatta	105.8	30	22	61
Yasser Arafat	64.8	50	25	63
eesh Nazal	94.5	56	30	59
Total		**1134**	**634**	**1313**

Source: (MoH, 2011**)**

1.5 Objectives of study

The aim of the study is to assess the attitudes and of nurses and physicians towards incident reporting and barriers for incident reporting in the Palestinian governmental hospitals.

1.6 Specific objectives

-To assess the attitudes of physicians and nurses towards incident reporting in the governmental hospitals.

-To assess the physicians and nurses perceived barriers and motivations for incident reporting in the governmental hospitals.

- To assess the perceptions of the physicians and nurses towards the nature of possible future incident reporting system in the governmental hospitals

-To assess the differences in attitudes according to the different characteristics of the respondents (profession, education, gender, age, experiences in hospital and in profession, work hours per week, etc).

1.7 limitations

- The study is limited to the main professional groups' physicians and nurses. Other health professionals were left out the study.
- Reluctance of participants to participate in the study due to the issue under study. Lower participation of physicians and nurses were observed (48.3%) at Palestinian Medical Complex.

1.8 Study assumptions

The following are the assumption of the study:

1. Sufficient number of professionals will participate, respond and cooperate in filling out the study instrument questionnaire.
2. All of items and concepts, in the study instrument will be understood and clear for participants.
3. All of participants will fill the questionnaire honestly and sincerely while will reflect the real situation in each hospital.

Chapter Two

Literature view

2.1 Introduction

The literature review in this chapter is organized around five areas: 1) history of adverse events; 2) prevalence of adverse events; 3) detection of adverse events; 4) reporting adverse events; 5) types of reporting system 6) health professionals' attitudes towards reporting adverse events; and lastly,7) reasons for lack of reporting.

2.2 History of adverse events

Long time ago**,** it was noticed an unintentional harm or injury to patients during delivering health care. 2000 years ago, Hippocrates stated "first, do no harm" which was adopted by Greeks later. The adverse events were not until the late1980s that medical errors and the problem of patient injury in health care began to be discussed more openly.

In April 1982, a television program presented an account of anesthetic accidents, that 600 American die or suffer brain damage related to anesthetic procedures (Jansin T, 1982). In 1983, Harvard Medical School concerned to conduct studies and to collect statistics on anesthesia deaths and injuries in UK(Ellicon,2011), where the Quality in Australian Health Care Study in 1991 released that almost 4% of all patients admitted to hospital care suffered an adverse event (WHO,2005).

The Institute of Medicine (1999) defines a “medical error” as the failure of a planned action to be completed as intended, or the use of a wrong plan to achieve an aim. The Agency for Healthcare Research and Quality (2000) similarly defines “adverse event” as an injury or death resulting from a medical intervention, something that is not due to the underlying condition of the patient (AHRQ, 2000). Adverse events were still ignored until Institute of Medicine’s (2000) landmark report, entitled *To Err Is Human: Building a Safer Health System,* has been credited with creating the awareness required to motivate change in the patient safety movement (Clancy et al., 2005; Stafford, 2000; Vincente, 2003).

2.3 Prevalence of Adverse Events

Globally

The incidence of medical errors in USA has been investigated by Harvard Medical Practice Study (Brennan *et al*, 1991), which found that 3.7% of analyzed 30,000 files had adverse events of hospitalizations. 58% of these adverse events were preventable.
In Australia, a study reported that 16.6% of 14,000 reviewed hospital admissions from 28 hospitals were associated with an adverse event (Wilson *et al*, 1995).

Medical adverse events are the eighth leading cause of death in the United States.
(National Institute of Medicine, 1999) estimates of the number of people who die in hospitals each year as the results of adverse events range from 44,000 to 98,000. The (IOM) report recognized medical errors as one of the five most common causes of death. The frequency of adverse events is also recognized among patients with 42% of Americans reporting that they had personal knowledge of an adverse event in their own care, or in the care of a relative or friend (Stark *et al*., 2002). Total national costs (lost income, lost household production, disability, and health care costs) of preventable adverse events (medical adverse events resulting in injury) are estimated to be between $17 billion and $29 billion (AHRQ, 2000). The economic burden of drug-related morbidity and mortality alone is estimated to exceed $100 billion annually in the United States; a major component of these costs is from adverse drug events (Baker *et al*, 2002). More than 50% of the medical record reviewed from primary healthcare visits in Malaysia had a medical error, 93% of these errors were preventable (Khoo E M *et al*, 2012).

Regionally

Studies related to medication errors in the Middle Eastern countries were relatively few in number and of poor quality (Alsulami *et al*, 2012).
However, adverse events occurred in about 28% of all hospital admissions in Jordan. (Hayajneh *et al*, 2010), while 3963 errors were discovered from 2627 reviewed patent's files for adult hospitalized patients from June 1, 2000 to June 30, 2002 at Hera General

hospital in Makah, Saudi Arabia (Dibbi *et al* , 2006). In Israel, 160 medical errors were detected from 14,385 reviewed prescriptions in Israel's general hospital pharmacies during 6 months (Lustig, 2000).

Locally

In Palestine, literature on adverse events is scarce. The medical errors issue became public concern, which demonstrated the magnitude of the problem of medical errors that happen in Palestinian governmental hospitals. The independent commission for human rights in Palestine reported that there are no accurate statistical figures of prevalence medical errors occurring in Palestinian health sector, but infer the existence of large numbers scattered from MoH and Medical association (ICHR, 2012). Based on information obtained from MoH, the report indicated that in 2009, 57% of maternal death in the West Bank could have been prevented. The report recommended adoption of incident reporting system and the formation of specialized committees to investigate the medical errors, and the establishment of an independent Palestinian administration to follow medical errors.

2.4 Adverse event systems

Adverse event systems have two fundamental components—methods for detecting adverse events and methods for analyzing such events.
There are many sources of adverse event data. These include the following:

Negligence claims

Historically, claims data has played a central role in the analysis of patient harm, especially in anesthesiology (MacRae, 2007). However, its function in recent years has come under review given the growth in the selection of data sources and analysis methodologies available (Vincent *et al*, 1998; Lawthers *et al*, 2000).

Case note review

Identification of adverse event data from individual case records has shown good reliability (Thomas *et al*, 2000), and is typically applied as the gold standard measure of adverse events (Weingart, 2000; Vincent C *et al*, 2001; IOM, 1999).

Routinely collected data

An alternative source of patient information comes from routinely collected hospital data, which allows for detailed exploration of the processes, involved in safety events and can also be used to track progress across different levels of care (Zhan *et al*, 2003).
The monitoring and analysis of incidents of patient harm have also drawn from other data sources, including malpractice claims (Vincent C *et al*, 2006) observations (Andrews *et al*, 1997**)**; medical records (Vincent C *et al*, 2001).

Reporting systems

Greater knowledge about the processes involved in medical errors and adverse events, together with a systematic approach to investigations, has improved the design of patient harm measurement tools (Vincent *et al*, 1998). One of the most popular methods of investigation has been the incident reporting system (Wu AW *et al*, 2002; Beckmann *et al*, 1996). This tool is used to identify high-risk areas which may need, and be amendable to, structural changes within the healthcare organization (Wu AW *et al*, 2002; Leape, 2002; Beckmann *et al*, 1996; Hutchinson, 2002). An example of this type of safety monitoring instrument is the National Patient Safety Agency's (NPSA‟ s) National Reporting and Learning System (NPSA, 2008).
Reporting incident by health workers within healthcare organizations through a system-wide, regional or international reporting system has became international concern in order to reduce medical errors which demonstrated unacceptably high rates of preventable deaths (WHO, 2005).Incident reporting is vital for providing information on which to base trend analysis and recommendations.

The first published report of medical adverse events dates back to 1976, when a Physician-attorney named Don Harper Mills analyzed more than 20,000 medical charts concluding that one patient in 20 was harmed by treatment (Mills, 1976).

Further research describing the problem emerged in subsequent years and was largely sponsored by the Agency for Health Care Policy and Research, which is now the Agency for Healthcare Research and Quality (AHRQ, 2000). Developments in medical adverse events reporting were largely ignored until the 1999 publication of *To Err is Human*, a widely-disseminated indictment of the prevalence of medical adverse events in US health care by the Institute of Medicine (IoM). As of December 2006, 27 states have passed legislation, regulation, or executive orders related to hospital reporting of adverse events (National Academy for State Health Policy, 2006).

Types of reporting systems

Learning systems

Reporting to learning systems is usually voluntary, and typically spans a wider scope of reportable events than the defined set of events typically required by a mandatory system. Rather than assure a minimum standard of care, learning systems are designed to foster continuous improvements in care delivery by identifying themes, reducing variation, facilitating the sharing of best practices, and stimulating system-wide improvements. Following careful expert analysis of underlying causes, recommendations are made for system redesign to improve performance and reduce errors and injuries. The National Reporting and Learning System (NRLS) in England and Wales is an example of a learning system (WHO, 2005).

Accountability systems

Reporting in accountability systems is usually mandatory and restricted to a list of defined serious events (also called "sentinel" events) such as unexpected death, transfusion reaction, and surgery on the wrong body part. Accountability systems typically prompt improvements by requiring an investigation and systems analysis ("root cause analysis") of the event. The effectiveness of these systems depends on the ability of the agency to induce health-care organizations to report serious events and to

conduct thorough investigations. In Netherlands is an example of accountability system (WHO, 2005).

2.5 Professional's attitudes towards incident reporting

Quantitative, qualitative and mixed methods studies have been conducted to date on incident reporting by health professionals. Barriers to incident reporting affect both physicians and nurses; however, there appear to be significant differences in how nurses and physicians approach incident reporting due to their different professional cultures and values (Espin *et al*, 2007). Nurses are more likely to cite fear of organizational response as a barrier to reporting, which may be a reflection of the culture of nursing to follow protocols and directives as organizational employees (Kingston *et al*, 2004; Uribe *et al*, 2002). In contrast, the culture of medicine emphasizes physician autonomy and self regulation (Kingston *et al*, 2004). Physicians were less likely than nurses to know what should be reported, how to report errors, and to believe that reporting contributed to quality improvement efforts (Jeffe, 2004; Uribe *et al*, 2002). Researcher investigated the reporting behavior of health professionals in Australia (Evans *et al,* 2006), indicated that both doctors and nurses were equally aware of an incident reporting system at their institutions, but nurses were significantly more likely to have filed. Another study conducted in Washington showed that doctors are more reluctant to report than nurses in pediatric patients (Taylor A *et al*, 2004).

2.6 Reason for not reporting

Underreporting is an organizational wide issue, which hinders improvement patient safety (Firth-Cozens *et al*, 1997; O'Dowd, 2006). In 2006, it was estimated in United Kingdom that 22% of incidents and 39% of near misses were unreported (O'Dowd, 2006). Studies on the reporting behavior of health professionals have shown that under-reporting is the main problem of incident reporting system (Stanhope *et al*, 1999). There are significantly more barriers than facilitating factors to incident reporting mentioned in the literature. Administrative response, personal fear, and organizational factors are reported as barriers to incident reporting (Blegen *et al*., 2004; Evans *et al*., 2006; Jeffe *et al*., 2004; Kim *et al*., 2007; Kingston *et al*., 2004; Stratton *et al*., 2004; Uribe et al.,

2002; Walker & Lowe, 1998). A review of the literature provided a comprehensive overview of the diverse factors identified in research affecting willingness of hospital staff to report incidents.

See table (2.1) for a summary of empirical research on barriers to incident reporting.

Table 2.1: Summary of empirical research on barriers to incident reporting

Author	Title & Objectives	Participants	Setting
Lawton and Parker (2002)	Barriers to incident reporting in a healthcare system. **Objectives**: investigates the willingness of healthcare professionals to report the mistakes of others.	315 doctors, nurses and midwifes	Three English NHS Trust England
Jeffe *et al* (2004)	Using focus groups to understand physicians' and nurses' perspectives on error reporting in hospitals. **Objectives**: To increase error reporting, a better understanding of physicians' and nurses' perspectives regarding medical error reporting in hospitals, barriers to reporting.	49 nurses, 10 nurse managers, 30 physicians	20 academic and community hospitals-USA
Coyle *et al* (2005)	Effectiveness of a graduate medical education program for improving medical event reporting attitude and behavior. **Objectives**: To evaluate the effectiveness of an educational program for improving medical event reporting attitude and behavior in the ambulatory care setting among graduate medical trainees	Family practice residents (n = 30).	University of Texas Southwestern Medical Center- USA
Evans *et al* (2006)	Attitudes and barriers to incident reporting: a collaborative hospital study. **Objectives**: To assess awareness and use of the current	186 doctors and 587 nurses	Six hospitals – South Australia

	incident reporting system and to identify factors inhibiting reporting of incidents in hospitals.		
Schectman *et al* (2006)	Physician perception of hospital safety and barriers to incident reporting. **Objectives**: To assess safety reporting behavior and witnessed adverse events or near misses	120 physicians	academic medical center-USA
Abdullah *et al* (2007)	Barriers to Incident Reporting among Doctors and Nurses in Hospital Sultan Abdul Halim. **Objectives:** To study the contributions of barriers such as culture of blame, the occupational hierarchy in health care system and the burden of effort to incident reporting among doctors and nurses in Hospital Sultan Abdul Halim (HSAH); and (2) to determine whether these barriers differ among the practitioners.		
Sylvia Blake (2009)	A qualitative study of the barriers to incident reporting at the Christie NHS Foundation Trust **Objectives:** to identify if there are barriers to incident reporting at The Christie NHS Foundation Trust.	800 staff (nurses, doctors, dentists, managers and others)	Christie NHS Foundation Trust- England

Malik *et al* (2010)	Attitudes and perceived barriers of tertiary level health professionals towards incident reporting in Pakistan **Objectives:** To determine the attitudes and perceived barriers towards incident reporting among tertiary care health professionals in Pakistan	217 doctors and nurses	Shifa International Hospitals- Pakistan
Jansma J D *et al* (2011)	Effects on incident reporting after educating residents in patient safety: a controlled study **Objectives**: To examine effects of patient safety education for residents on knowledge, skills, attitudes, intentions and behavior concerning incident reporting	210 resident doctors	Teaching hospitals- Netherlands
Heard GC *et* al, 2012	Barriers to adverse event and error reporting in anesthesia **Objectives:** To explore the attitudinal/emotional factors influencing reporting of an unspecified adverse event caused by error, and to examine strategies that anesthesiologists believe would facilitate reporting	629 anesthesiologists and 263 anesthesiology residents	Australian and New Zealand College of Anesthetists – Australia.

Several categories of barriers to incident reporting have been concluded from literature analysis:

Cultural barriers to incident reporting

Many studies indicated that organizational culture were playing major role in encouraging or discouraging incident reporting. Lack of trust in the organizational culture can be inhibiter to report medical errors. Many studies investigated the organization environment and found non supportive environment, that ensure identifying and reporting errors (Kaldjian, 2006 ; Westrum, 1992), while Evan (2006) didn't find that culture issue. Another important cultural issue was the culture of blame, which was found to be the strongest barrier to reporting incidents (Waring, 2005). Variant of studies results showed low proportion of health professionals reported incidents for fear of blame**.** Wilson (2007) indicated that the culture of medicine itself was a significant barrier to incident reporting. According to the Healthcare Commission for England, a culture of blame still stops healthcare professionals from reporting patient safety incidents (Hitchen, 2007). Culture that exists in some organizations leads to underreporting and a loss of valuable information that can be used to improve patient safety (Walsh & Greenall, 2007).

Punitive culture and the fear of negative consequences of incident reporting were identified and represented cultural barriers to incident reporting in MoH.

Organizational barriers

Organizational factors relating to structure and process such as inadequate feedback, long forms and insufficient time to report were found to be barriers to incident reporting (Evan, 2006). Evan found that the organizational factor was more significant barrier than cultural factor (blame). In our study we added a new organizational factor which highlights on the clarity of events reported "Lack of feedback about medical errors, lack of definition of medical errors".

Barriers as a result of fear

Fear has been reported as a barrier to reporting errors in the NHS (Vincent et al, 1999). “Fear of retribution” was also reported by Firth-Cozens (2003). Malik (2010) indicated also that fear of administrative sanctions was a barrier to incident reporting.

Chapter Three

Conceptual framework

3.1 Introduction

This chapter presents the operational definition for the dependent and the independent variables that influence the attitudes of doctors and nurses toward incident reporting. Also presents the conceptual framework of the association between these variables.

3.2 Study dependent variable

3.1.1. Attitudes of health professionals (physicians and nurses)

Central to this study is the concept of "attitudes ". Attitude is one of the essential building blocks of social psychology. Derived from the Latin *aptus*, and like its by-form, *aptitude*, it denotes a subjective or mental state of preparation for action (Fishbein, 1967). Thomas and Znaniechi (1981) defined attitude as a process of personal consciousness that verifies individual actions in the social world, such as feelings, tendencies, needs, ideas, fears, thoughts and interests. Attitudes cannot be observed directly but may be revealed in observable behavior and in what people say. They may be altered but do not change quickly and may last for some time (Bluff, 2011).

There is an extensive research reporting studies investigating health professional's attitudes towards incident reporting (Braithwaite et al, 2008; Evans et al, 2006; Kingston et al, 2004). Studies on the reporting attitudes of healthcare providers have shown that under-reporting is a major problem of Incident reporting system (Stanhope, 1999; Schuerer, 2006). Multi perceived barriers to disclosure have been identified (Gallagher, 2003; Gallagher, 2006; Garbutt, 2007; Finkelstein, 1997; Kaldjian, 2006). Physicians describe situations in which they might not disclose an adverse event that harmed a patient. Some feel that there was no need to disclose an adverse event if the harm was trivial or if the patient was unaware that an adverse event had taken place. Others believe that certain patients would not want to know about an error and informing these patients diminishes their trust in the physicians (Gallagher, 2003). Malik (2010) identified that the administration sanctions and lack of feedback are the most important barriers to report incident. However, Evans (2006) found that the most frequently stated

barrier to reporting for doctors and nurses was lack of feedback. Not surprisingly, fear of medical malpractice litigation is the most common institutional barrier to disclosure (Lamb, 2003).

3.3 The dependent variables

The survey measures six dimensions that form the basis of this conceptual framework in relation to the perception towards incident reporting. Each dimension consists of a number of items. The dimensions are the following:

3.3.1. Prevalent culture

The domain measure whether the prevalent culture is punitive culture or not. The prevalent culture in hospitals influences the health professional's willingness to report adverse events (Westrum, 1992; Firth-Cozens, 2004; Warburton, 2005, Kaldjian, 2006). In other word, it measures whether the staff feels free and secure to report their mistakes or not.

The Institute of Medicine states that if a safety culture environment, where adverse events can be reported without people being blamed and shamed, that will provide opportunity for a staff to learn from their mistakes and to prevent future human and system errors (Smits et al, 2008). Garbuttet al (2007) showed that a non-punitive system can increase the physicians' willingness to report events.

Many previous studies recognized carried out in healthcare found that culture of blame is noteworthy barrier to incident reporting (Waring, 2005; Wilson 2007; DH, 2000).

Hamdan and Saleem (2013) found prevalence of punitive culture in response to medical errors in public Palestinian hospitals. Similar items to those used by Hamdan (2013) and Wilson (2007) were designed to measure the prevalent culture among the study participants. All dimension statements are negatively worded and measured on a 5-point Likert scale (table 3.1)

Table 3.1: Prevalent culture dimension and corresponding items

Prevalent culture (5 points Likert scale: Strongly disagree, Disagree, Neither, Agree, Strongly agree)
• Staff feels like their mistakes are held against them. • Staff worry that mistakes that they make are kept in their personal file. • Reporting adverse events, it feels like a person is written up. • Reporting is a method through which to pin point blame. • Reporting adverse events let everyone knows that I have made mistake.

3.3.2. Fear of negative consequences of reporting incidents

Fear has been reported in many studies as the main barrier to incident reporting (Vincent et al, 1999; Firth-Cozens, 2003; Schectman, 2006). Fear of administration sanction, financial penalties and loss of prestige among colleagues were also reported as barriers to incident reporting (Malik, 2010). Koohestani (2009) reported that fear to being recognized as incompetent and fear of patient families' revenge as barriers to report. Dutta (2007) indicated that both physicians and nurses nervous about the public reporting of medical errors through the press.

The items of this dimension were designed by utilizing and adopting those used by earlier studies (Malik, 2010), Koohestani (2009), Dutta (2007). All items of this dimension were negatively worded and measured on a 5-point Likert scale (table 3.2)

Table 3.2: Fear of negative consequences dimension and corresponding items

Fear of negative consequences (5-point Likert scale: Strongly disagree, Disagree, Neither, Agree, Strongly Agree)
• Fear of administrative sanctions (loss of job, transfer, prevent promotion). • Fear of lawsuits (legal and financial penalties). • Fear that own competence may be questioned. • Fear of loss respect of colleagues. • Fear of loss reputation. • Fear of revenge of patients or their families. • Fear of press and the issue become public. • Fear of loss clients.

3.3.3. Manager's attitudes

Manager's commitment to safety was reported as the most important attribute of patient safety culture (Hughes et al, 2009). Proactive safety culture needs commitment of leadership to discussing and learning from errors by reporting and analyzing adverse events (Pronovost, 2003). Few research studies investigated managers' attitudes toward incident reporting. Hamdan and Saleem (2013) found that hospital management support patient safety in public hospitals is an area that needs improvement. Lack of feedback about medical errors was reported in many studies as a barrier to incident reporting (Malik, 2010; Evan, 2011, Koohestani, 2009). The dimension individual items were designed by modifying those used by Hamdan and Saleem (2013).

The domain refers to whether leadership consider staff suggestions seriously to improve patient safety , protect the reporter from negative consequences, inform staff about medical errors that happen in the unit and whether the staff feel to question the decision of those with their managers. All the items/ statements of this dimension were positively worded and measured on a 5-point Likert scale (table 3.3)

Table 3.3: Manager's attitudes dimension and corresponding items

Manager's attitudes (5-point Likert scale: Strongly disagree, Disagree, Neither, Agree, Strongly agree)
• My supervisor seriously considers staff suggestion to improve patient safety. • Staff feels free to question the decision of those with high authority. • Manager /supervisor protect reporters of error from negative consequences. • We are informed about errors that happen in the unit.

3.3.4. Individual believes on reporting

Generally attitude is viewed as affective or evaluative in nature and is derived from individual beliefs about an object. Most people hold both positive and negative beliefs about objects: i.e., a person associates the object with both positive and negative attributes. Significantly, a person‘s attitude may be inferred from the overall feelings associated with a person‘s beliefs about an object (Alsenany, 2009). Most of the personal attitudes related to the personal factor, individual perception or expected consequences ((Wicker, 1969; Liska, 1975).

Pfeiffer (2010) identified the belief that reporting incident is not part of one's job as personal belief.

This domain measures to what extent the personal believes of health professionals in MoH influence incident reporting. All the items/ statements were positively worded and measured on a 5-point Likert scale (table 3.4).

Table 3.4: Personal believes dimension and corresponding items.

Personal believes (5-point Likert scale: Strongly disagree, Disagree, Neither, Agree, Strongly agree)
• Reporting incident is not part of my job. • I am not sure whose responsibility it is to report errors. • Reporting take long time to complete. • No perceived benefits of reporting incidents (learning from mistakes). • Near miss (those errors intercepted and prevented before happen) should not be reported.

3.3.5. Structure for event reporting

Unclear definition of medical adverse events also reported as organizational barriers (Koohestani, 2009).

In our study we used the same statements to investigate perception about the available structure for event reporting the structure of incident reporting. The domain measures, whether the lack of knowledge about medical errors, unclear definition of adverse events influence reporting events. Positively statement worded was reversed coded and were measured on a 5-point Likert scale (table 3.5).

Table 3.5: Reporting system structure dimension and corresponding items

Reporting system structure (5-point Likert scale: Strongly disagree, Disagree, Neither, Agree, Strongly agree)
• System enforces physicians and nurses to report adverse events and errors. • There is clear definition of medical error that may occur in the hospital. • Lack of knowledge about medical error

3.2.6. Perceived motivators to report

Expectancy theories describe motivation as a function of the belief that action/inaction will result in some aversive/rewarding outcome and the value placed on this outcome (Holden et al, 2007). Elder (2007) stated that the most commonly mentioned motivator to incident reporting was perceived benefits. Malik (2010) stated that to get immediate help to patients, learn from mistakes and develop system that minimizes repetition of errors were reason to report incidents. Linthorst (2012) reported that prevention future errors, learning from errors motivated health workers to report errors. Alsafi (2011) reported that most of participants think that reporting is an ethical issue.

This dimension was measured using these items on a 5-point Likert scale. All the items/ statements were positively worded (table 3.6)

Table 3.6: Perceived motivation dimension and corresponding items.

Perceived motivation (5-point Likert scale: Strongly disagree, Disagree, Neither, Agree, Strongly agree)
• Reporting incident is important to get immediate help to patient. • Reporting is important to learn from mistakes (minor, near miss, serious). • Reporting is important because clinicians have ethical and professional responsibility to report incident or towards patients. • Reporting is important to develop a system that minimizes the repetition of errors.

3.4 Study independent variables

Independent variables:

Previous studies showed the influence of the independent variables/individual characteristics of the participants such as age, professional, sex, etc on the perceptions toward patient safety culture. For instance, Barrow (2012) found that respondents above 30 years old have lower score on patient safety culture than their younger counterparts. Malik (2011) indicated that incident reporting behavior differs between doctors and

nurses. Bodur and Filiz (2009) found that work experience in the unit had an impact on patient safety culture**.** Ahmad (2011) stated that there was negative significant correlation between nurse age and overall perception of patient safety culture. Eslamian (2010) reported a direct relationship between gender, ward, and having an extra job with the score of the nursing errors. Duncan (2004) also stated that there were a few significant relationships found between the nurse characteristics and percentage of errors perceived reported but these relationships were weak.

Hamdan and Saleem (2013), found significant association between (hospital size, profession position and staff's experience) and number of events reported. In addition, significant relations were found between (working hours, work) unit and patient safety score.

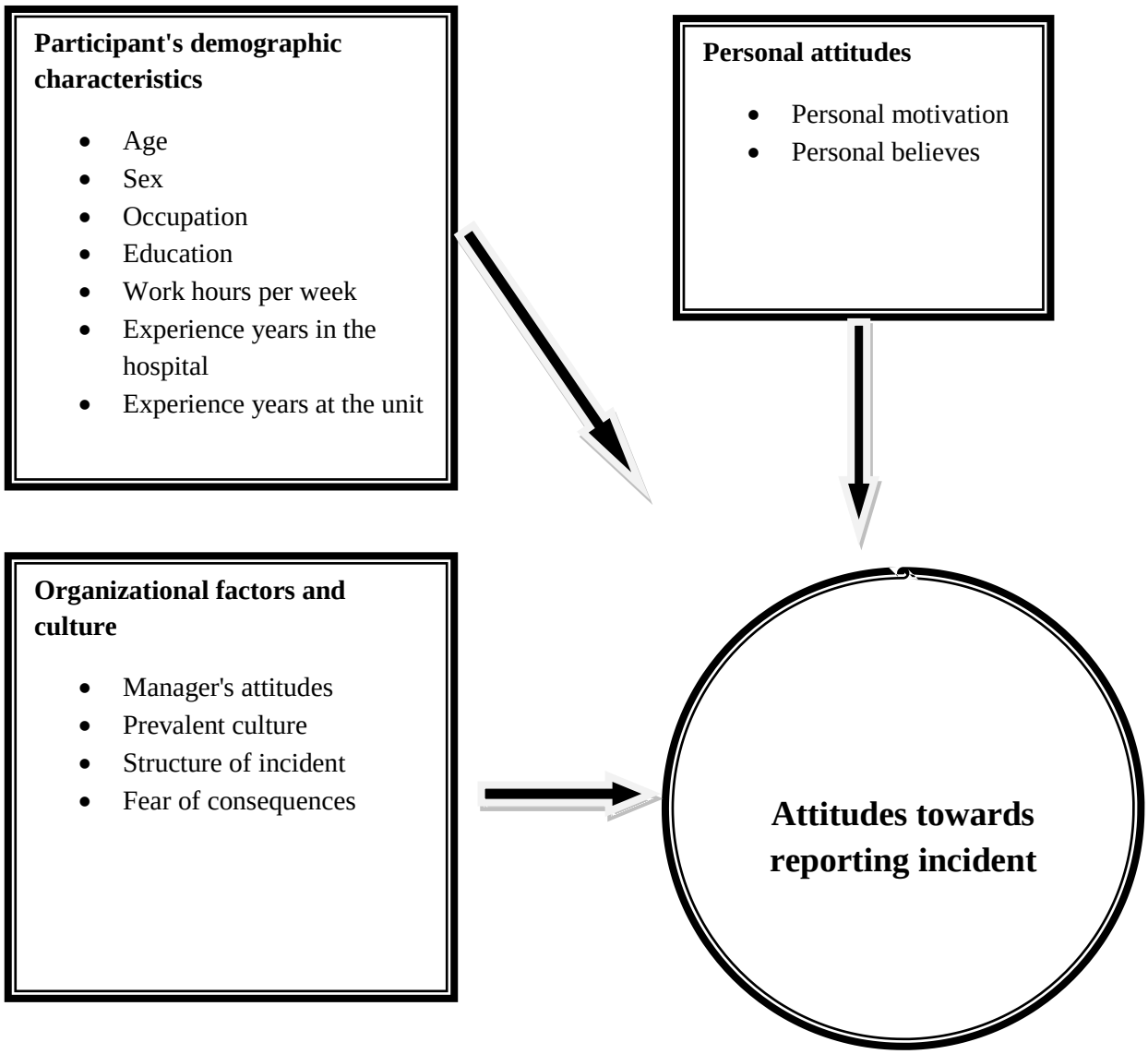
In this study the following independent variables were used presumed considered important:

- **Gender:** This referred to male and female respondents.
- **Age:** This referred to the age to a respondent belong. Data was collected then grouped under two groups. (<30 years, ≥30 years).
- **Educational level:** This referred to the level of education obtained by respondents. It was categorized into two groups: (2 years diploma, BA and above).
- **Occupation:** This referred to profession of respondents. It was categorized into two groups: (physicians, nurses)
- **Years of work in the current hospital:** This referred to the duration of service within the current hospital. It was categorized into the following: (≤ 5 years, > 5 years).
- **Number of work hours per week:** This referred to the total weekly number of hours the staff worked. It was grouped into the following: (< 40 h/w, ≥ 40 h/w).
- **Years of work in the current unit:** This referred to duration of service within the current unit. It was grouped into the following: (≤ 5 years, > 5 years).
- **Unit or work area at the hospital**

This referred to the work area at which the staff worked. It was categorized into the following**:** (Different units, Medicine, Surgery, Emergency, and Pediatric).

The figure below depicts several contextual elements that may be influence on reporting events among respondents. These elements may be influenced by characteristics of respondents. Graph (3.1) represents dimensions and independent variables that might affect health professional's attitudes towards incident reporting.

Figure 3.1: conceptual framework model of the study



Chapter Four

Methodology

4.1 Introduction

This chapter describes the research methodology including the study design, the target population, sample frame and size, survey instrument, data collection and analysis, validity and reliability of the instrument and ethical consideration.

4.2 Research design

A quantitative, descriptive, cross-sectional survey design was used in this study to assess the perceptions of physicians and nurses towards incident reporting in Palestinian governmental hospitals. The study was conducted between May and June 2012.

4.3 Sampling and methodology

Study Setting

Health care services mainly are provided in Palestine by government through the Ministry of Health (MoH). There are (12) governmental hospitals in the West Bank, with capacity of (1.367) beds.

The setting of the study consists of 11 governmental hospitals in the West Bank including: Rafidia hospital, Alia hospital, Yalta hospital, Khaleel Suliman hospital, Darweesh Nazal hospital, Thabet Thabet hospital, Alwatani hospital, Jericho hospital, Yasser Arafat, Biet Jala hospital, Palestinian medical complex Bethlehem Hospital was excluded to keep similarity among participants work environment.

Study population and sample

The study population consists of all licensed physicians and nurses working in all the governmental general hospitals in West Bank. The total number of the population is 1947 distributed as in table (4.1) (MOH, 2011). The inclusion criterion was:

- Worked in governmental hospital for at least six months.
- Fully employed and registered nurses or physicians (including those are on residency program). Trainee and students were excluded.

Table 4.1: Distribution of the study population by category and hospital, 2011

Hospital	N of physicians	N of nurses	Total
Rafedia	114	190	304
Khaleel Suliman	62	111	173
Thabet Thabet	63	117	180
Biet Jala	60	128	188
Alwatani	29	86	115
Yasser Arafat	25	63	88
Yatta	22	51	73
Darweesh Nazal	30	59	89
Medical Complex	115	248	363
Alia	80	200	280
Jericho	34	60	94
Total	634	1313	1947

Sample size:

A stratified proportional random sampling was used to in order to obtain at least 584 subjects from all registered physicians and nurses working in targeted hospitals. Physicians and nurses were randomly selected for each part hospital. (table 4.2). The sample was calculated using the rule that if population is about 1500 subjects, 30% of the population needed to get representative sample (Gray, 1981).

Table 4.2: Distribution of the study population and sample size

Hospital	Population size			Sample size		
	Nurse	Physician	Total	Nurse	Physician	Total
Rafedia	190	114	304	57	34	91
Suliman Khaleel	111	62	173	33	18	51
Thabet-Thabet	117	63	180	35	19	54
Biet-Jala	128	60	188	38	18	56
Watani	86	29	115	26	8	34
Yasser Arafat	63	25	88	19	8	27
Yatta	51	22	73	16	7	23
Darweesh Nazal	59	30	89	18	9	27
PMC	248	115	363	74	35	124
Jericho	60	34	94	18	10	28
Allia	200	80	280	60	24	84
Total	**1313**	**634**	**1947**	**394**	**190**	**584**

4.4 Instrument

The study instrument was designed by the researcher by utilizing similar tools and used by earlier studies (Malik, 2010; Pfeiffer, 2010; AHQR, 2005) and others literature. The survey (Annex 1) includes five parts.

The first part was about the characteristics of the participants e.g. age, gender, position, educational level, work area/ unit, work hours per week, experience years in the hospital and experience years in the unit.

The second part consists of two sections which include two closed-ended items to measure the availability of incident reporting system in MoH and the number of events reported. The third part consists of three sections that include twenty nine items which are scored on five point Likert scale to measure perceived barriers and motivators to events reporting. Five response cells indicate extent of agreement (Strongly disagree, disagree, neither, agree, and strongly agree).The fourth part consists of two sections that include six closed-ended items to assess the perceptions of respondents about possible future incident reporting system characteristics in MoH. The last part in the survey has an open-ended question to allow respondents the opportunity to provide unstructured comments about developing incident reporting in MoH hospitals.

After developing survey items and before distribution, the survey was translated into Arabic and reviewed by three experts (annex 5).

4.5 Data collection

Permission was achieved from the MoH to conduct the study in the governmental hospitals in the West Bank (Annex 2). Each questionnaire contained a cover letter which included informed consent (Annex 3) as well as definitions of the key concepts used in the tool such as incidents, adverse events, near misses, and incident reporting. Surveys were administrated to the participant by the researcher and also collected back from them the same day. Data collection was conducted by the researcher in the period between April and May 2012.

12 surveys were excluded for one of the following reasons:

- Less than one entire section of the survey is completed.
- Respondent characteristic data were not completed
- Every item was given the same answer (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.

4.6. Data analysis

Data were analyzed using the Statistical Package for the social Sciences (SPSS 19.0). Descriptive statistics including frequencies and percentage were produced for the survey items. The 5 points scores of the survey items/ domains were transformed to a 100-points score in order to facilitate the interpretation of the results. ANOVA test was used to assess the relationship between the study domains and respondent's characteristics. Finally Chi square was used to test the significance association between characteristics of future possible incident reporting system and respondent's characteristics. P value of < 0.05 was considered as significant.

The survey items were grouped according to the barriers and motivators to incident reporting; punitive culture, fear of consequences, manager's attitudes, personal perceptions, events reporting structure and motivators.

4.7. Validity and Reliability of the instrument

Validity

Validity is the degree to which an instrument measures what it is supposed to measure (Pilot & Beck, 2010). There are many types of validity: face validity, construct and content validity.

Content validity refers to the degree in which a measure covers the full range of behavior of the ability being measured. Items in the instrument was judged by a group of experts in the field in order to rate the adequacy of items to represent the construct (Clark, 1997).

Content validity of original items was evaluated by experts. Based on their feedback, three items were dropped, one item was added, four items were changed and several items were rephrased for clarity.

Pilot study

The pilot study was carried out in order to identify the possibility of problems and revise the data collection methods before starting the actual research.

The questionnaire was tested on a sample of 10 nurses and 5 physicians who areworking at Rafedia hospital who were later excluded from the study sample. The participants had no difficulty to understand the items and the instructions of questionnaire

Reliability

Reliability is a major criterion for assessing the instrument quality and adequacy. It is the consistency with which it measure the target attributes (Pilot *et al*., 2004).

The reliability analysis procedure calculates a number of commonly used measures of scale reliability and also provides information about the relationships between individual items in the scale. Reliability analysis can determine the extent, to which the items are related to each other, produce overall index of the reliability or internal consistency of the scale as a whole (Saunders *et al*, 2003).

Cronbach's Alpha was applied to check the internal consistency of the questionnaire. Acceptable levels of internal consistency were obtained as evidenced by a Cronbach's

Alpha coefficient of .702. The highest value (0.91) was for fear of negative consequences and the lowest value (.50) was for personal believes (table 4.3)

Table. 4.3. Internal consistency of domains

	Fear of consequences	Motivation	Prevalent culture	Manager's attitudes	Structure of incident reporting	Individual believes
Cronbach' s Alpha	0.91	0.81	0.78	0.76	0.70	0.50

4.8. Ethical consideration

Ethical approval to carry out the assessment at MoH hospitals was obtained from the hospitals general director, and that the results will be shared with the general administration of hospitals (Annex 2). The participation was voluntary. The participants were informed about the purpose of the study and its significance.

Participants were assured that their responses would be confidential and information that might reveal their identity would not be recorded, and only aggregated data would be communicated

Chapter Five

Results

5.1 Introduction

This chapter presents the results of the study including the characteristics of the participants/ respondents, the mean score and the average percentage of positive responses for each of the surveys items and domains, and the responses of mean's score of domains by the characteristics of participants are provided. The participant perceptions/ preferences toward future possible incident reporting system, differences in responses by the characteristics of participants also provided.

5.2 Characteristics of respondents

A total of 584 personnel were selected and questionnaire distributed to them, of that 488 participants returned the survey. The overall response rate was 83.5%, as mentioned earlier 12 surveys were disqualified per the pre-established criteria. The response rate ranged between 100% for Yasser Arafat hospital and 48% for the Palestinian Medical Complex in Ramallah (Table 5.1)

Table 5.1: Distribution of the study participants by hospital, and response rates.

Hospital	Population size			Sample size			Returned Surveys	Response Rate (%)
	Nurse	Physician	Total	Nurse	Physician	Total		
Rafedia	190	114	304	57	34	91	86	94.5
Suliman Khaleel	111	62	173	33	18	51	46	90.1
Thabet Thabet	117	63	180	35	19	54	46	85.1
Biet-Jala	128	60	188	38	18	56	47	83.9
Watani	86	29	115	26	8	34	30	88.2
Yasser Arafat	63	25	88	19	8	27	27	100.0
Yatta	51	22	73	16	7	23	22	95.6
Darweesh-Nazal	59	30	89	18	9	27	26	96.2
PMC	248	115	363	74	35	124	60	48.3
Jericho	60	34	94	18	10	28	21	75.0
Allia	200	80	280	60	24	84	77	91.6
Total	**1313**	**634**	**1947**	**394**	**190**	**584**	**488**	**83.5**

Table (5.2) shows the characteristics of the participants. The age distribution show that 37.3% of all participants are less than 30 old age, while 62.7% are 30 years old age and more. More than half of participants are male 57.1%, while 42.9% are female. Among participants nurses represent 67.9% while, physicians represent 32.1% and 29.8% have 2 years diploma while 70.2% have higher educational level.

About 46.2% of the participants have been working 5 years and less at their hospitals, while 53.8% have been working more than 5 years. Moreover, 25.5% of respondents work up to the regular working less than 40 hours per week), and 74.5%% work 40 hours per week and more. Finally, the results show that 60% of participants have worked for 5 years and less in the unit, while 40% have worked more than 5 years at their work area.

. **Table 5.2: Characteristics of the participants**

Sex	**N**	**Percent (%)**
Male	261	57.1
Female	196	42.9
Total	457	
Age		
Less than 30 years	161	37.3
30 years and more	271	62.7
Total	432	
Occupation		
Physician	152	32.1
Nurse	321	67.9
Total	473	
Educational level		
Diploma	141	29.8
Others (higher than diploma)	332	70.2
Total	473	
Work unit/ area		
Many different	50	5.6
Medicine	55	11.6
Surgery	106	22.4
Gynecology & obstetrics	46	9.7
Radiology	3	0.6
Pediatric	39	8.2
Emergency	25	5.3
Intensive care	46	9.7
Dialysis	23	4.9
NICU	12	2.5
Operation theater	18	3.8
Outpatient clinic	6	1.3
Anesthesia	6	1.3
Orthopedic	17	3.6
Others	21	4.4
Total	473	
Experience at hospital		
5 years and less	219	46.2
More than 5 years	255	53.8
Total	474	
Working hours per week		
Less than 40 hours/week	120	25.5
40 hours/week and more	350	74.5
Total	470	
Experience at the unit		
5 years and less	284	60.0
More than 5 years	189	40.0
Total	473	

5.3 Reporting system at the hospital

The results showed that 30% of participants thought that there is an implemented reporting system at their hospitals, 17.5% thought that there is a reporting system but not implemented. While 31.6% though that there is no reporting system, 21% of participants did not know whether there is a reporting system at their hospitals or not (table 5.3)

Table 5.3: Perceptions towards reporting system availability

Reporting system	Number	Percent (%)
Reporting system approved and implemented	127	30.0
No reporting system	134	31.6
Reporting system approved but not implemented	74	17.5
I don't know	89	21.0

5.4 Incident reporting

The respondents were asked to rate their perception towards statements related to event reporting using 5-point response categories in terms of agreement (Strongly agree, Agree, Neither, Disagree, Strongly disagree). This part of the survey included 29 items measuring six dimensions related to the perceptions of physicians and nurses toward reporting events in hospitals (Table 5.4). The 5 points scores of the survey items/ domains were transformed a 100-points score in order to facilitate the interpretation of the results. In addition to the mean percentage of positive responses were also calculated for each item and domain. Whereas positive responses in positively worded survey items were 'agree/strongly agree' and in negatively worded items were 'disagree/strongly disagree'. The results are summarized per each domain as follow:

5.4.1. Structure of reporting events

The result showed low perception about structure of reported medical errors in the MoH hospitals, in which represented by a mean score of (57.1%) and only (30.6%) of positive scores. Only 55% agreed that the system enforce physicians and nurses to report adverse events and errors, and only 31% believed that there is clear definition of

medical error that may occur in the hospital, and more surprisingly 5.4% think that there is a proper knowledge about medical errors in their hospitals (Table 5.4.1).

Table 5.4.1: Perceptions towards the event reporting in MoH hospitals

Domains & items	Mean (SD) (100-points) score	Means of % positive responses
Reporting system	**57.11(19.2)**	**30.6**
System enforce physicians and nurses to report adverse events and errors	60.5	55.6
There is clear definition of medical error that may occur in the hospital	45.25	31.0
Lack of knowledge about medical error (R)	34	5.4

R: reverse coded

5.4.2. Individual believes on reporting incidents.

The general believes on event reporting is represented by a mean score of (44.8) and only 31% of positive scores. (25%) of respondents indicated that there is no perceived benefits of reporting incidents, 24.8% thought that near miss should be not reported, (27.3%) of the participants said that reporting incident is not part of their job, 31.6% thought that reporting take long time to complete, 46.3% indicated that they are not sure whose responsibility it is to report errors (table 5.4.2).

Table 5.4.2: Individual believes about event reporting

	Mean(SD) (100-points)score	Means % of Positive responses
Personal believes about event reporting	**44.8(16.2)**	**31.0**
Reporting incident is not part of my job	43.0	27.3
I am not sure whose responsibility it is to report errors	54.75	46.3
Reporting take long time to complete	49.0	31.6
No perceived benefits of reporting incidents (learning from mistakes)	39.0	25.0
Near miss (those errors intercepted and prevented before happen) should not be reported	38.5	24.8

5.4.3. Motivation for reporting

This domain received the mean score (83.3) and the highest mean positive score 91.4%. This dimension showed the extent to which participants support reporting adverse events and willing to report the medical errors and adverse events to learn from mistakes, to get help to patients. The majority (93.5%) believed that reporting incident is important to get immediate help to patient, 91.9% thought it is important to develop a system that minimizes the repetition of errors, and 91.5% indicted that it is important to learn from mistakes, and 88.8% believed it is important because clinicians have ethical and professional responsibility to report incident or towards patients (table 5.4.3).

Table 5.4.3: Perceptions towards the motivation to report events

Domains & items	Mean(SD) (100-points)score	Means % of positive responses
Motivation to report	**83.18(16.1)**	**91.4**
Reporting incident is important to get immediate help to patient	85.25	93.5
Reporting is important to learn from mistakes (minor, near miss, serious)	83.75	91.5
Reporting is important because clinicians have ethical and professional responsibility to report incident or towards patients	80.75	88.8
Reporting is important to develop a system that minimizes the repetition of errors	83.75	91.9

5.4.4. Prevalent culture

The results showed that the participants believe that a punitive culture is prevalent at their hospitals, received only 70.7% of positive responses. However, most respondents thought that the mistakes they make will be kept in their personal file held against them. In addition, the majority believed that reporting is a method through which to pin point blame and feel that reporting adverse events like a person is written up and, 55.7% of the participants indicated that reporting adverse events let everyone knows that they have made mistake (table 5.4.4).

Table 5.4.4: Participant perceptions on the prevalent culture regarding reporting

Domains & items	Mean(SD) (100-points) score	Means % of Positive responses
Prevalent culture	**69.6(18.6)**	**70.7**
Staff feels like their mistakes are held against them	73.0	72.4
Staff worry that mistakes that they make are kept in their personal file	77.25	82.8
Reporting adverse events, it feels like a person is written up	71.0	74.8
Reporting is a method through which to pin point blame	67.5	67.8
Reporting adverse events let everyone knows that I have made mistake	60.0	55.7

5.4.5. Manager attitudes

Generally, the results showed low perception of the attitude of managers regarding event reporting, received 49.08 score and 41.5% of positive responses. While 54% believed that their supervisors seriously considers staff suggestion to improve patient safety, 49.4% indicated that they are informed about errors that happen in the unit, 32.3% staff felt that they can question the decision of those with high authority, and only 28.9% thought that managers/supervisors protect reporters of error from negative consequences (Table5.4.5).

Table 5.4.5: Perceptions towards management attitudes

	Mean(SD) (100-points)score	**Means % of positive responses**
Manager attitudes	**49.09(23.7)**	**41.5**
My supervisor seriously considers staff suggestion to improve patient Safety	58.5	54.0
Staff feel to question the decision of those with high authority	41.5	32.3
Manager /supervisor protect reporters of error from negative consequences	42.0	28.9
We are informed about errors that happen in the unit	54.25	49.4

5.4.6. Fear of negative consequences

Fear of consequences was a dominant perception among participants. This domain received only 61.8% positive responses indicating an area for potential improvement. Results showed that 74.8% of respondents fear of administrative sanctions, 74.5% fear of lawsuits, 68.5% fear of that their own competence may be questioned, while 55.9% fear of loss respect of their colleagues, 62.9% fear of loss of their reputation, 60.8% fear of revenge of patients and their families, 61.5% fear of press and issue become public and finally 36.4% of respondents fear of losing their clients (table 5.4.6).

Table5.4.6: Participant's perception toward fear of incident reporting consequences.

Domains & items	Mean(SD) (100-points)score	Means of% positive responses
Fear of reporting incident	**64.96(23.0)**	**61.8**
Fear of administrative sanctions (loss of job, transfer, prevent promotion)	72.75	74.8
Fear of lawsuits (legal and financial penalties)	72.25	74.5
Fear that own competence may be questioned	68.25	68.5
Fear of loss respect of colleagues	62.0	55.9
Fear of loss reputation	64.5	62.5
Fear of revenge of patients or their families	64.5	60.8
Fear of press and the issue become public	65.25	61.5
Fear of loss clients	50.5	36.4

5.5 Number of events reported

The participants were asked to indicate the number of events they reported over the past 12 months (Table 5.5). The results showed that 59.6% did not report any event, 25.5% reported 1-2 events and 8.4% reported 3-5 events and 6.1% reported 6 or more events.

Table 5.5: Number of events reported in the past 12 month

Number of events reported	Number	Percent (%)
No event reported	276	59.6
1-2 event reported	118	25.5
3-5 event reported	39	8.4
6-10 event reported	19	4.1
More than 10	11	2.4

5.6 characteristics of future suggested incident reporting system

Respondents were asked about the characteristics of the reporting system that they would support, in specific the method of reporting, confidentiality, enforcement, culture, use of reports, type of errors reported, to whom they would be willing to report errors.

Results showed that (77.8%) of participants preferred paper based/ written method to report adverse events, while (22.2%) supported verbal method to report adverse events. Moreover, (47, 25%) of respondents attended to agreement that reporting system should be confidential and anonymous, while (52.75%) preferred that reporter should be identified and known. Also (27.25%) of participants supported voluntary reporting system, while (72.75%) preferred compulsory/ mandatory reporting system. The majority (80.27%) of participants believed that the purpose of the system is to identify errors and learn from mistakes to improve patient safety, while (19.73%) thought that it should be for identifying errors and punishing responsible persons. In terms of the type of errors that should be reported, (65.55%) of participants preferred to report all type of errors (minor, near miss, serious), but (34.45%) preferred to report only errors that harm patients. Finally (17.23%) of participants were willing to report errors to their colleagues/peers, (14.74%) to the hospital administration, (57.6%) to the head of department, (3.17%) to independents agency outside the hospitals, (2.95%) to profession association, and (4.13%) preferred to report to others (table 5.6).

Table 5.6: Perception of the characteristics of future event reporting system

Method of reporting incident	**N**	**(%)**
Paper based/ written	357	77.8
Verbal reporting	102	22.2
Confidentiality		
Confidential, anonymous	215	47.3
Reporter identified, known	240	52.7
Enforcement		
Voluntary system	121	27.3
Compulsory/ mandatory system	323	72.7
Use of reports		
Identify errors and learning from mistakes; improve patient safety	362	80.3
To identify errors and punish responsible person	89	19.7
Type of error reported		
Report all type of incidents (minor, near miss, serious)	293	65.5
Report only errors that harm the patients	154	34.55
Person that would you be willing and easy to report errors to		
Colleague/ peer	76	17.2
Hospital administration	65	14.7
Head of unit	254	57.6
Independent agency outside the hospital(patient safety agency)	14	3.2
Profession association (physician , nursing association)	13	2.9
Others	19	4.3

5.7 Reporting events perceptions by participants characteristics

Table (5.7) showed the mean scores of the study dimensions by the characteristics of participants. Significant differences were found between reporting system process and the gender of participants. Females significantly scored (60.84) reporting system higher than males (53.79) ($p<00.001$). A significant differences was also found between reporting system domain and the occupation of participants, nurses scored (58.8) significantly higher than physicians (53.59), ($p=0.006$).

Also there was a significant differences the perceptions toward reporting system process, in relation to the educational level of the participants ($P<0.001$). Participants who had 2 years diploma (61.70) scored higher for this dimension than the participants with higher education level.

Statistically association between the participant experiences at their hospital and the perceptions towards the prevalence culture in the institution was also found ($p=0.03$). Participants, who had more than five years experience at their hospitals scored higher for this dimension (73.48) than who had five years experience and less at their hospitals (70.35).

Also we noted that there was a significant differences in the mean score of the fear of consequences of reporting incidents domain in relation to the number of working hours per week of the participants ($p=0.02$). Participants who worked part time (more than 40 hours/ week) were scored higher (66.29) than who worked less than 40 hours/week (60.25).

Table 5.7: Study domains means score by participants characteristics

	Reporting system		Culture		Perception of incident reporting		Fear of consequences		Manager attitudes		Motivation	
	M	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Sex												
Male	53.8	19.5	71.6	15.7	48.9	14.1	64.4	22.0	47.9	24.3	82.0	16.5
Female	60.8	18.5	72.8	16.2	48.2	13.7	65.8	24.0	50.6	22.9	84.5	15.6
	F=14.5	P<0.001	F=0.64	P=0.42	F=0.33	P=0.56	F=0.42	P=0.51	F=1.42	P=0.23	F=2.61	P=0.10
Age												
<30 years	56.4	19.9	71.1	17.7	50.0	14.9	64.6	23.7	47.0	22.8	81.8	17.3
≥30 years	56.7	19.0	73.0	15.2	47.8	13.5	65.5	22.8	49.7	24.4	84.4	14.8
	F=0.02	P=0.88	F=1.2	P=0.25	F=2.58	P=0.10	F=0.16	P=0.68	F=1.28	P=0.25	F=2.71	P=0.10
Occupation												
Physician	53.5	19.1	71.4	15.9	48.6	13.3	64.1	21.6	48.8	23.8	82.7	16.8
Nurse	58.8	19.0	72.3	16.1	48.8	14.4	65.3	23.8	49.4	23.7	83.4	15.8
	F=7.67	P=0.006	F=0.30	P=0.58	F=0.12	P=0.91	F=0.26	P=0.61	F=0.06	P=0.80	F=0.24	P=0.62
Education												
Diploma	61.7	18.9	70.5	16.0	50.5	14.4	62.2	23.3	52.3	23.4	82.6	14.1
Others	55.1	19.0	72.7	16.0	47.9	13.8	66.1	22.8	47.8	23.8	83.4	16.9
	F=11.63	P<0.001	F=1.83	P=0.17	F=3.16	P=0.07	F=2.86	P=0.09	F=3.41	P=0.06	F=0.26	P=0.61

Experience at hospital												
≤ 5 years	55.8	20.2	70.3	16.9	48.0	14.2	64.0	23.5	49.4	23.1	83.6	15.3
> 5 years	58.3	18.2	73.4	15.0	49.2	13.9	65.7	22.6	48.8	24.4	82.8	16.8
	F=1.99	P=0.15	F=4.52	P=0.03	F=0.79	P=0.37	F=0.58	P=0.44	F=0.07	P=0.78	F=0.31	P=0.57
Work hours												
< 40 h/w	60.0	17.8	71.1	16.8	46.7	14.6	60.7	25.1	52.1	24.7	84.1	14.3
≥ 40 h/w	56.1	19.6	72.3	15.7	49.4	13.7	66.3	22.2	48.0	23.4	82.7	16.7
	F=3.72	P=.054	F=0.46	P=0.49	F=3.5	P=0.06	F=5.18	P=0.02	F=2.7	P=0.10	F=0.64	P=0.42
Experience at unit												
≤ 5 years	56.3	19.8	71.1	16.6	48.5	14.3	64.4	23.3	48.8	23.7	83.5	15.1
> 5 years	58.3	18.2	73.3	15.0	48.9	13.7	65.5	22.6	49.5	24.0	82.6	17.5
	F=1.21	P=0.27	F=2.1	P=0.14	F=1.24	P=0.72	F=0.27	P=0.60	F=0.11	P=0.73	F=0.38	P=0.53
Unit or work area at the hospital												
Many	56.6	1.9	73.8	1.4	51.3	14.5	70.7	19.1	47.5	24.8	81.9	15.7
Medicine	57.5	1.8	71.6	1.56	49.3	13.8	65.0	22.5	49.5	20.9	80.2	19.7
Surgery	57.0	1.9	71.9	1.60	47.5	13.7	63.9	22.7	50.8	25.0	85.6	13.1
Emergency	53.3	2.3	72.6	1.88	51.2	14.1	59.8	30.1	37.0	25.3	83.2	18.0
Pediatric	59.39	1.72	70.3	1.77	46.0	14.3	62.2	26.3	49.5	22.8	83.5	14.8
	F=0.44	P=o.77	F=0.40	P=0.80	F=1.78	P=0.13	F=1.84	P=0.11	F=1.97	P=0.09	F=2.35	P=0.05

5.8 Future incident reporting system preferences by characteristics of participants

Table (5.8) shows the associations between the preferences regarding the future possible incident reporting system and participants' different characteristics. The results can be summarized as follow for each aspect of the reporting system:

Type of reporting system: There was no significant difference in the preferences about the type of the reporting system, whether it was written or verbal, and any of the participants' characteristics ($P>0.05$).

Confidentiality of the reporting: There were no significant differences in the preferences regarding the confidentiality of the system and any of the participants' characteristics.

Enforcement of reporting: Only differences between participants in relation to the educational level were significant. While 62.7% of those with diploma education level preferred compulsory system, 77.3% of those have higher educational level were with the same system, and this difference was statistically significant ($p<0.002$).

Use of reports: Differences in the preference regarding the uses of reports in relation to participants' age, occupation, education, work hours) were significant ($p<0.05$). Although most of the participants agreed that the main use of the reporting system should be for identifying errors and learning from mistakes, 26.6% of those less than 30 years old in comparison with 16.3% of those older participants believed it should be used for punishing those who are responsible for errors and this difference is statistically significant ($p<0.01$). Moreover, while only 11.9% of the physicians thought that the system should be used for punishment, 23.5% of the nurses supported the same idea ($p<0.004$). There was 27.3% of those with diploma level education with use for punishment in comparison with only 16.4% of those with higher educational level ($p<0.007$). Lastly, 28.8% with those working less than 40 hours per week with the punishment use in comparison with only 16.4% of those working more hours ($p<0.003$).

Type of error reported: Difference was only found significant only in relation to the participants' education level, where 56.2% of those have diploma believed that all

types of errors (minor, near-miss, and serious) should be reported in comparison 69.6% of those with higher educational level ($p<0.006$) .

Person that would be willing and easy to report errors to: generally the results showed that there were significant differences in the preferences to who should errors reported in relation to all the characteristics of the participants (age, occupation, experience at hospital, work hours) except for sex and education were not significant. Nearly more than half of participants prefer to report to their head of departments, 59.7% of those less than 30 years old in comparison with 56.9% of those older are willing to report to head of department and this difference is statistically significant ($p<0.01$). 47.2% of physicians preferred reporting to head of department, while 62.4% of nurses would be willing to report to the same person ($p<0.001$). Moreover, while 60.3% of those who had 5 years experience at their hospital and less supported reporting to head of department, 55.1% of those who have less than 5 years experience at their hospitals supported reporting to the same person. Although 66.1% of participants who worked 40 hours and less per week preferred reporting to head of department, while54.9% of those who worked more than 40 hours per week preferred reporting to same person. Finally 58.9% of those who had 5 years experience at the unit and less preferred reporting to head of department, while 55.1% of those who had more than 5 years experience at the unit preferred to report to the same person.

5.8: Future incident reporting system characteristics by characteristics of participants.

		Sex		Age		Occupation		Education		Experience at hospital		Work hours		Experience at unit	
		M	**F**	**<30**	**≥30**	**Phys**	**Nurse**	**Diploma**	**Other**	**≤ 5 years**	**>5 yeas**	**< 40 h/w**	**≥ 40 h/w**	**≤5 years**	**> 5 years**
Method of reporting															
Paper based / written	(N)	198	147	122	206	107	249	112	244	165	192	97	258	210	146
	(%)	78.9%	77%	78.2%	78.6%	73.3%	80.1%	79.4%	77.2%	77.5%	78.4%	82.9%	76.6%	76.4%	80.2%
Verbal reporting	(N)	53	44	34	56	39	62	29	72	48	53	20	79	65	36
	(%)	21.1%	23%	21.8%	21.4%	26.7%	19.9%	20.6%	22.8%	22.5%	21.6%	17.1%	23.4%	23.6%	19.8%
		P=0.62	X^2=0.23	P=0.91	X^2=0.01	P=0.1	X^2=2.60	P=0.59	X^2=0.27	P=0.81	X^2=0.05	P=0.15	X^2=2.05	P=0.33	X^2=0.94
Confidentiality															
Confidential/ anonymous	(N)	116	92	78	116	68	147	63	152	110	105	53	160	134	80
	(%)	46.2%	49.2**%**	50.6%	44.8%	46.9%	47.7%	46.0%	48.1%	51.6%	43.6%	45.7%	47.8%	49.6%	43.7%
Reporter identified, known	(N)	135	95	76	143	77	161	74	164	103	136	63	175	136	103
	(%)	53.8%	50.8%	49.4%	55.2%	53.1%	52.3%	54.0%	51.9%	48.4%	56.4%	54.3%	52.2%	50.4%	56.3%
		P=0.53	X^2=0.38	P=0.24	X^2=1.33	P=0.86	X^2=0.02	P=0.67	X^2=0.17	P=0.08	X^2=2.95	P=0.70	X^2=0.14	P=0.21	X^2=1.53
Enforcement															
Voluntary system	(N)	67	48	42	67	33	87	50	70	51	69	35	83	70	50
	(%)	27.6%	26.1%	27.6%	26.4%	22.9%	29.2%	37.3%	22.7%	24.4%	29.5%	30.7%	25.5%	26.2%	28.6%
Compulsory/ mandatory system	(N)	176	136	110	187	111	211	84	238	158	165	79	242	197	125
	(%)	72.4%	73.9%	72.4%	73.6%	77.1%	70.8%	62.7%	77.3%	75.6%	70.5%	69.3%	74.5%	73.8%	71.4%
		P=0.73	X^2=0.11	P=0.78	X^2=0.07	P=0.16	X^2=1.93	P=0.002	X^2=10.0	P=0.22	X^2=1.44	P=0.28	X^2=1.14	P=0.58	X^2=0.29

Use of reports															
Identify errors and learning from mistakes	(N) (%)	199 80.2%	149 79.3%	113 73.4%	216 83.7%	126 88.1%	235 76.5%	101 72.7%	260 83.6%	170 80.2%	192 80.3%	84 71.2%	276 83.6%	217 81.0%	144 79.1%
To identify errors and punish responsible person	(N) (%)	49 19.8%	39 20.7%	41 26.6%	42 16.3%	17 11.9%	72 23.5%	38 27.3%	51 16.4%	42 19.8%	47 19.7%	34 28.8%	54 16.4%	51 19.0%	38 20.9%
		P=0.79	X^2=0.06	P=0.01	X^2=6.14	P=0.004	X^2=8.22	P=0.007	X^2=7.24	P=0.96	X^2=0.00	P=0.003	X^2=8.53	P=0.62	X^2=0.23
Type of error reported															
Report all type of incidents(minor , near miss, serious)	(N) (%)	167 76.6%	114 61.6%	95 62.5%	176 68.5%	96 67.6%	196 64.5%	77 56.2%	215 69.6%	134 64.1%	159 66.8%	82 70.7%	209 63.7%	172 64.7%	120 66.7%
Report only errors that harm the patients	(N) (%)	80 32.4%	71 38.4%	57 37.5%	81 31.5%	46 32.4%	108 35.5%	60 43.8%	94 30.4%	75 35.9%	79 33.2%	34 29.3%	119 36.3%	94 35.3%	60 33.3%
		P=0.19	X^2=1.66	P=0.21	X^2=1.52	P=0.51	X^2=0.42	P=0.006	X^2=7.51	P=0.55	X^2=0.35	P=0.17	X^2=1.84	P=0.66	X^2=0.19
Person that would be willing and easy to report errors to															
Colleague / peer	(N) (%)	44 18%	31 17.2%	34 22.8%	39 15.4%	24 16.7%	52 17.6%	20 15.5%	56 18.1%	39 19.1%	37 15.7%	18 16.5%	57 17.4%	48 18.3%	28 15.9%
Hospital administration	(N) (%)	36 14.8%	23 12.8%	10 6.7%	44 17.4%	27 18.8%	38 12.9%	19 14.7%	46 14.8%	16 7.8%	49 20.8%	17 15.6%	47 14.3%	27 10.3%	38 21.6%
Head of unit	(N) (%)	135 55.3%	112 62.2%	89 59.7%	144 56.9%	68 47.2%	184 62.4%	81 62.8%	171 55.2%	123 60.3%	130 55.1%	72 66.1%	180 54.9%	155 58.9%	97 55.1%
Independent agency	(N)	10	2	3	10	11	3	3	11	8	6	1	13	10	4

outside the hospital	(%)	4.1%	1.1%	2.0%	4.0%	7.6%	1.0%	2.3%	3.5%	3.9%	2.5%	.9%	4.0%	3.8%	2.3%
Professional association	(N)	8	5	6	5	6	7	3	10	8	5	0	13	12	1
	(%)	3.3%	2.8%	4.0%	2.0%	4.2%	2.4%	2.3%	3.2%	3.9%	2.1%	.0%	4.0%	4.6%	.6%
Others	(N)	11	7	7	11	8	11	3	16	10	9	1	18	11	8
	(%)	4.5%	3.9%	4.7%	4.3%	5.6%	3.7%	2.3%	5.2%	4.9%	3.8%	.9%	5.5%	4.2%	4.5%
		P=0.46	X=4.61²	P=0.01	X²=13.47	P=0.001	X²=21.27	P=0.60	X²=3.63	P=0.007	X²=15.87	P=0.02	X²=12.51	P=0.006	X²=16.22

5.9 Number of events reported in past 12 month by characteristic of participants (position)

Significant differences were found between number of events reported in the past 12 months and occupation ($p<0.001$). Of the physicians, 47.7% did not report any events in the past 12 months, 41.6% reported 1-3 reports, and 10.7% reported more than 3 reports. In comparison, 65.5% of the nurses did not report any event in the past 12 months, 30.4% reported from 1-3 reports, and 4.3% reported more than 3 reports ($p<0.001$).

Table 5.9: Number of events reported by position of respondents

Number of events reported in past 12 month	**Position**			
	physician		Nurse	
	N	%	N	%
No events reported	71	47.7	205	65.5
1-3 events	62	41.6	95	30.4
More than 3 events	16	10.7	13	4.2
	P=0.00		X^2= 16.11	

For open-ended Question, 35 of respondents commented. Most of the comments were about the necessity of incident reporting, accountability for errors and malpractice.

Chapter six

Discussion

6.1 Introduction

The study's aim was to assess the perceptions and attitudes of physicians and nurses towards incident reporting system in Palestinian governmental hospitals. The purpose of this study was to gain a better understanding of what factors within a hospital setting either encourage or discourage healthcare professionals from reporting medical errors when they happen. This chapter presents discussion of the findings: lack of incident reporting, perceived barriers to incident reporting, perceived motivators to report incident and perception on future possible reporting system.

6.2 Lack of incident reporting

There was evidence of lack of structural system for reporting incidents in Palestinian public hospitals, where 31.6% of the respondents thought that incident reporting system did not exist and 21% of the respondents were not aware if a reporting system exists. On the other hand, 30% thought that the incident reporting system was approved and implemented. This can be explained that, when an error harmed the patient or caused disability or death, patient families complained on the physician to hospitals administration which forces the physician to report. In addition, serious errors can't be hidden, which casting hospital administration to investigate and report it. This could be an indicator of the spread of the medical errors in our hospitals despite the absence accurate data about it. In addition, only 31% of respondents thought that there was clear definition of medical errors and only 5.4% have knowledge about medical errors. These findings confirm the lack of a robust incident reporting in Palestinian public hospitals. It follows that if a few health professionals report incidents then there will be little to know about errors. Our study findings differ from what other studies reported (Evans S M et al, 2006), where 93.6% of physicians and 99.8% of nurses know that an incident reporting system existed at three referral hospitals in South Australia. In their countries there is reporting system, so they normally would know about it. Under reporting in MoH hospitals may be explained

as a result of absence developed clear policies for disclosure of medical errors and adverse events in MoH.

The fact, that lack of a robust incident reporting in MoH hospitals was supported also by another finding in our study, where 59.6% of respondents reported no events in the past 12 month. The high percent of no events reported indicates under-reporting of errors. This is an area of improvement for governmental hospitals because potential patient safety problems may not be recognized. Nearly similar findings were also found in previous studies (Hamdan and Saleem, 2013), where 53.2% of respondents of the Palestinian public hospitals safety culture assessment indicated that did not report any events in the last 12 months.

Significant association was found between the number of events reported and staff occupation, where physicians reported more events than nurses during the previous year ($p< 0.001$). While 47.7% of the physicians did not report any events, 56.5% of the nurses did not. In contrast, Taylor et al (2004) found that only 10.5% of nurses did not report any event in the past year comparing with 45.9% physicians did not. This might be explained by the fact that physicians are forced to report events by the investigation committees once the patients got complications or complained against the medical errors.

6.3 Perceived barriers

Prevalent culture

The main barrier to incident reporting in Palestinian public hospitals was the prevalent of a punitive culture, where 74.4% of participant indicated that a culture of blame and punishment prevalent in their hospitals.

Most of the participants (82%) worried that their mistakes are kept in their personal files. Similar findings were found in another study conducted in Qatar (Al-Ishaq, 2008), where (90%) of nurses feel the same. Our result also showed that 74.8% of the respondents feel that reporting adverse events it like a person is written up. This is lower than what was found in Pakistan study (Malik, 2010), where about of the respondents (57%) feel the same or among nurses (42.6%) in the Philippines (Guzman, 2012). It is clear that the culture of organization influences incident reporting practices. Clinicians

working in a culture of blame and punishment do not report all errors, primarily because they fear punishment *(*Hughes et al, 2008). Our findings result showed that employees did not feel sure that they will receive fair treatment when they report incidents or that they will be unfairly blamed. However 55.3% of respondent believed that reporting let everyone knows that they have made mistakes and this was lower (62%) than other researches (Wilson *et al*, 2008). An explanation may be that in our hospitals, as mentioned previously, nurses and physicians reported errors when they were requested to report by investigations committees when error has harmed the patients. This fact justified by the culture of shame and fear of negative consequences among health workers in the MoH hospitals. This is very relevant to other barrier (Fear of consequences). The fear of blame from peers and non peers, which may lead to damage their reputation or unjustified reprisals, will discourage medical error reporting. Another issue that may play a vital role in reluctance to report is the dominant culture and social values that influence their professional's advancement due to the fact that medical errors are costly in term of human lives. Results in this study showed that the administrations of hospitals focus on the person than the system and the fear of consequences to incident reporting generated as a result of the prevalent punitive culture in Palestinian hospitals which is considered reason for not reporting. These findings were confirmed in another study (Koohetatani *et al*, 2009) where, (97%) of nursing students thought that administration of hospitals focus on individual rather than system factors to medication adverse events.

Significant difference was found in responses to the years of experience at the hospital regarding to punitive culture. Doctors and nurses who have spent more than 5 years at their hospitals (73.48%) believe more that the dominant culture in their hospitals is punitive one than those who have spent 5 years or less (70.35%) ($p<0.05$). This may be explained by the fact that doctors and nurses who work more than 5 years are more familiar with the administrative procedures when an error occurs than those who have worked less than 5 years.

Reporting system structure

There was very low (30.6%) participant perception towards the event reporting structure in the MoH hospitals. This was evident by the lack of knowledge about medical errors that only (5.4%) had knowledge about medical errors which indicated as one of the main reasons of underreporting. Different results were found in another study which conducted in children hospital in Washington, where 65.4% of physicians and nurses had better education about what is considered medical error that should be reported (Taylor et al, 2004).

The study showed also that 55.6% of respondents believed that system enforce doctors and nurses to report adverse events and medical errors. This may be explained by that doctors and nurses in MoH hospitals are usually enforced to write report about the medical error by administration of hospital when an error has harmed the patients.

About one third of participants indicated that there was a clear definition of medical error. In a study in Washington, 40% of pediatric doctors and nurses were unsure about what is considered medical error (Taylor et al, 2004). Reporting of errors in the medical setting in MoH hospitals usually takes place in an informal, nonofficial manner among healthcare professionals involved in with patient care. Many errors, as well as events that are considered complications, are discussed verbally a one-on-one basis or in larger groups such as in morning meetings. Clinicians are expected to document complications and adverse events in medical record; however errors are formally reported in case of death or disability that may occur and families' complaints.

Significant differences were found in responses in relation to the sex of participants regarding lack structure events reported, where female (60.84%) were more likely to believe that the lack of feedback about reporting system process is important barrier to reporting than male (53.79%) $P<0.001$. Moreover, nurses (58.8%) were significantly higher than doctors (53.59%) in believing that reporting process is a barrier to reporting ($p=0.006$). These differences may be explained that nursing practice incident reporting less than doctors which in turn reduce nursing feedback about medical errors. This fact supported our previous finding that nurses reported events less than doctors. Also significant differences were found according to the

educational level. Respondents who had 2 years diploma (61.7%) were more likely to think that reporting process is influential barrier to incident reporting than those with above educational level (55.18%) (P<0.001). This showed that educational level play role in professionals' attitudes regarding medical errors and adverse events reporting.

Fear of negative incident reporting consequences

Our study findings showed that 61.8% of doctors and nurses fear of the negative consequences of reporting events. The biggest fear was of administrative sanctions, where 74.8% of the participants feel insecure about their job and are afraid of administrative sanctions. Fear of administrative sanctions may explain the findings that 34.55% of respondents like to report only errors that harm patients. This may be because health professionals were afraid that they will face administrative punishments after committing and reporting an error. In Palestine, disciplinary actions such as written alert, reprimand, financial compensation and dismissal are taken by the MoH and the professional association against doctors who proved to responsible for patient harm (Asaf, 2008). Similar to our study, Malik and colleagues (2010) found that 69.2%, 67.9% of physicians and nurses respectively believe that administrative sanctions is the most important barrier to incident reporting, in comparison with our study 64.15% and 65,3% of physicians and nurses respectively fear of consequences of reporting.

On the other hand, 74.3% of respondents fear of legal and financial penalties. Different results were found by Malik et al (2010), where (24.5%) and (26.2%) of doctors and nurses respectively fear of financial and legal penalties. This may be explained by the issue that insurance companies and professional associations don not insure health professionals against malpractice financial penalties in Palestine.

Significant (p=0.02) differences according to fear of incident reporting consequences in relation to work hours were found, where who worked 40 hours per week and more were more likely to fear of incident reporting consequences (66.29%) than those who worked less than 40 hours per week (60.75%). Those who worked more than 40 hours per week probably mistake more and faced administration sanction more.

Manager attitudes

Another perceived barrier for incident reporting is manager attitudes, where this domain received only 41.5% of positive responses. Our study showed negative perception towards attitudes of management which adversely influences the incident reporting behavior. Similar finding was observed by Hamdan and Saleem (2013), where management support to patient safety received only 43% of respondents' agreement. Moreover, our results were lower than those reported by (60%) in the study conducted in Hamad Medical Corporation in Qatar state (Al-Ishaq, 2008). While, in this study 54% of respondents believed that manager/ supervisor seriously consider their suggestion to improve patient safety, in Pakistan study 61.4% believed that their managers adopt their suggestions to improve patient safety (Malik *et al*, 2010). In addition, while 49.4% of participants indicated that they were informed about medical errors that happen in their units, 71% of the participants in Pakistan were informed (Malik et al, 2010). Many studies referred to the lack of feedback about medical errors as a strong barrier to incident reporting. Similar study conducted in Pakistan (Malik et al, 2010) also found that 88% of doctors and 84% of nurses believe that "lack of feedback about medical error" is the most important barrier to incident reporting. Another study in South Australia also found that almost two third of health professionals (doctors and nurses) believed lack of feedback was the greatest deterrent to reporting events (Evan et al, 2006).

These findings may be explained by that managers did not have enough awareness toward patient safety issues and the absence of clear policy and procedure for reporting medical errors in public hospitals. One of the strongest barriers which related to manager's attitudes was that "28.9% of doctors and nurses believed that managers did not protect them when an error occur" justified their fear of incident reporting consequences. Higher error reporting rate is more likely in organizations with clear and open communication between workers and managers when quality improvement efforts are focused on healthcare process, and not on individual error, and where organization is supportive of error reporting (Naveh et al, 2006; Nast et a*l*,2005).

Individual believes

Individual believes of health professionals (doctors and nurses) was weakest barrier to incident reporting in our study, where the positive response rate (35.1%).

Another interesting finding was that 46.3% of participants were not sure whose responsibility it is to report. Results obtained from another study (Evan *et a*l, 2006) showed that 17.2% of doctors and 16.4% of nurses respectively were not sure whose responsibility it is to report. This emphasizes the lack of incident reporting system, lack of training on the procedure and feedback about medical errors in MoH hospitals.

In addition to that, 24.8% of respondents thought that near miss should not be reported, although was lower than (36%) of doctors and (48%) of nurses respectively did not see any point in reporting near misses (Evan *et al*, 2006). An explanation of these findings may be that reporting near misses can facilitate a blame-free approach and fewer cultural and psychological barriers. Yet, health professionals (doctors and nurses) may believe that near miss is unimportant and caused no harm especially if intercepted. Interesting findings which considered as motivator to report that only 25% of respondents believed that there was no perceived benefits of incident reporting

6.4. Perceived motivators

The study investigated the nurses and physicians/ perceptions towards the motivation to report events in their hospitals. The findings indicated that most of health professionals (doctors and nurses) believed that reporting is important to get immediate help to patients (93.5%). Almost similar results were found in a study conducted in Saudi Arabia (Alsafi et al, 2011), where 83.2% of respondents believed that reporting events prevents further complications. Also in this study most of the participants indicated that reporting is important to learn from mistakes (91.5%), in comparison while Garbutt and colleagues (2008) reported 95% of the physicians agreed with that Malik (2010) in Pakistan showed that only 42.3% of the physicians and 12.6% of the nurses agreed with the same motivation for reporting.

Although noted in our study that 88.8% of participants believed that reporting medical errors is important because they have ethical and professional responsibility to report or towards patients. Similar results were found in another study (Alsafi et al., 2011),

where 85% thought that reporting is ethical issue. Also our study suggested that most of health professionals (doctors and nurses) believed that reporting is important to minimize repetition of errors. Similar results were found in other study (Malik et al. 2010), where (80%, 84%) of doctors and nurses respectively supported the same idea. These findings may be explained that most of health professionals in MoH have high awareness about the importance of reporting medical error especially for the purpose of learning and reducing the recurrence of similar errors in the future.

6.5. Future possible incident reporting system

Methods of reporting system

The findings showed that 77.8% of doctors and nurses preferred paper/based written, while 22.2% preferred verbal method. Other studies confirmed that, in the presence of written protocols and guidelines, an incident is more likely to be reported (Malik *et al*, 2011).

Confidentiality

As for the confidentiality of the system, 47.25% of participants preferred that reporting system should be confidential and anonymous, while 52.75% preferred that reporter should be identified and known. Identifying reports disclose the reporter's identity within the report for anyone reviewing the incident to take note of. This method allows the reporter to be contacted for further information regarding the incident, which can be very useful in obtaining a complete and rich description of the event. However, providing the identities of those involved with an incident carries with it a heightened fear of blame. Identifying reports clearly link individual personnel with an incident which can influence reporters to not report incidents which they can hide to avoid any potential embarrassment or punishment (Colvin, 2011). Very different findings were found in other study (Sexton et al 2000), where 90% of respondents believed that confidential reporting system that documents medical errors is important for patient safety. Many studies focused on anonymity of incident reporting and justified the anonymity to protect the reporter from any punitive reactions (Runciman, 1993; Beckman, 1996; Geiduschek, 1998; Alsafi, 2011). In addition, 60% of the study sample which conducted in Saudi Arabia felt that it would encourage reporting if

confidentially assured (Alsafi et al, 2011). In this context, it has been reported that a feature of successful reporting system is that should be confidential (Leap, 1994). Also Taylor et al (2004) suggested that anonymous reporting system have a higher rate of reporting compared to confidential incident reporting system. The weakness of anonymous reporting is that it removes the potential for reporters to be asked further questions to supplement the information that was recorded by the incident reporting system and it may limit the potential learn from incidents that are reported on (Holden & Karsh, 2007)

Enforcement

Our results showed that participants (72.7%) preferred mandatory incident reporting system, while 27.25% preferred voluntary incident reporting system. This may be explained that doctors and nurses willingness's to report was their confident that information reported would be used to make improvements. If they have little confidence that this will happen, they are likely to seek out opportunities to formal mandatory reporting system. Different results were obtained from another study (John et al, 2004) where, the minority of participants (18%) agreed the reporting of adverse incidents should be mandatory, while a majority (73%) agreed that they would be selective in their reporting in a mandatory system.

Use of reports

Findings of our study indicated that the majority (80.2%) of participants believed that the purpose of incident reporting system is to identify errors and learn from mistakes to improve patient safety, while (19.8%) thought that it should be to identify errors and punish the responsible person. Similar findings to our study findings were found in other study (Garbutt et al, 2007), where the majority of respondents believed that it should be used to improve patient safety. While 97% believed that they should report serious errors only, 82% agreed that near miss should be reported also. These findings was consistent with the earlier result on that the majority of physicians and nurses believed that reporting necessary to get immediate help to patients and to learn from mistakes. This may be interpreted as health professionals have become convinced that policy of punishment is of no value in reducing the medical errors that may occur.

In relation to the age of participants, significant difference was found; where 83.7% of those who were 30 old age and more were more likely to believe that the use of reports is to identify errors learn from mistakes than those who were less than 30 years (73.4%) P=0.01. This may be explained that the older age participants had more experiences and spent more years in their units and hospitals that may faced many medical errors in their professional life, which in turn they faced more administration sanction. They became more convinced that punishment did not reduce medical errors.

Moreover, significant difference association was found regarding to the occupation, where physicians (88.1%) were more likely to believe that the use of reports is to identify errors and learn from mistakes than nurses (76.5%) (p=0.004). Similar findings were found by Malik and colleagues (2010), where significant difference was found between physicians (42.1%) and nurses (12.6%) in relation to the use of reporting to for learning from errors. As we obtained from our study that physicians reported errors more than nurses because they enforced by investigation committees to report as a result of patient's complaint which forcing them to think how to reduce their errors.

Types of errors reported

Our study indicated that 65.5% of respondents preferred to report all types of errors (minor, near miss, serious) but, 34.45% preferred to report only errors that harm patients. Compared with previous studies, while physicians (43.8%) were less willing to report medical errors in our study, Garbutt et al (2007) found that 99% of the physicians were willing to disclose major errors performed on pediatricians. Gallagher et al (2006) studied 2637 physicians in the USA and Canada and found that 98% and 78% of the participants respectively believed that major and minor errors should be disclosed to the patients. The difference observed in Palestine may be as a result of differences in challenges faced by physicians in the Palestinian medical care system and doctors' knowledge regarding error disclosure. Social and cultural differences of our patients, lack of a support system for physicians in case of medical error and neglect of ethical issues during their education may also be among other reasons. In addition to that there is no system to enforce reporting like other countries.

Person that would be willing and easy to report errors to

More than half of respondents (57.6%) preferred to report events to the head of department This was more than reported in Italian hospitals (Albolino et al, 2010), where 38.8% preferred to report to their head of department but less than reported in Pakistan, (60.5%, 80.5%) of doctors and nurses respectively preferred to report to the head of department (Malik et al, 2010). This preference may be because department heads are more accessible, offer a certain level of confidentiality and feedback may be pursued easily.

Significant difference was found in relation to age, where 59.7% of those who were less than 30 years old age preferred to report to head of department, while 56.9% of those who were 30 old age and more preferred to report to the same person ($p<0.01$). This may be explained that participants under 30 years may feel close and more confidence to their head of department. Also our study show significant proportion of doctors (47.2%) and (62.4%) of nurses were in favor of reporting an incident to the head of department ($p<0.001$). Similar findings to our findings that nurse were significantly more likely to report an incident to the head of department than doctors in other previous study (Malik et al, 2011), where (80%, 60%, nurses and doctors respectively) preferred to report to the head of department. This may be explained that physicians fear that head of department will tell others colleague, which lead to loss their clients in the private sector, while the nurse didn't practice in other private clinics. Although, physicians rotate different department, so they might be not so close to their supervisors.

Also in our study, found that participants who have spent 5 years experience and less (60.3%) were more likely to prefer to report to head of department than those who have spent more than 5 years experience (55.1%) ($P=0.007$). These differences may be explained that, who spent more than 5 years were more aware to the negative consequences that could happen when they report to their head of department or they know the way out.

Also, significant difference was found in relation to work hours, where (66.1%) of those who worked less than 40 hours per week were significantly more in favor to report to their head of department than those (54.9%) who worked 40 hours per week

and more (P=0.02). This difference may be explained that sometimes who work more than 40 hours per week have no time to report or they give themselves excuses because they are working extra hours.

Finally,(58.9%) of those who had 5 years experience in the unit and less were significantly more likely to prefer to report to their head department than(55.1%) of those who had less than 5 years experience in the unit (P=0.006). Table 1.1 shows comparison literature review finding with our study findings.

Table 6.1.. Comparison of our results with other studies

Authors	Title	country	setting	participants	Results	Our results
Evans *et al,2006*	Attitudes and barriers to incident reporting: a collaborative hospital study	South Australian	Six hospitals.	186 doctors and 587 nurses.	93.6% of physicians, 99.8% of nurses knowing that an incident reporting system existed.	49.8% of respondents think that incident reporting system does not exist.
					Two third of health professionals (doctors and nurses) believed lack of feedback was the greatest deterrent to reporting.	70% don't have feedback about medical errors.
					17.2%, 16.4% of doctors and nurses respectively are not sure whose responsibility it is to report.	46.3% of participants are not sure whose responsibility it is to report.
					42% of staff surveyed believed that medication near miss should be reported.	24.8% of respondents think that near miss should not be reported
Hamdan *et al* 2013	Assessment of Patient Safety Culture in the Ministry of Health Hospitals in the West Bank	Palestine	MoH hospitals	282 doctors, 693nurses , 52pharmacist, 221 administrative support and 170 other health professionals	53.2% of respondents reported no events at Palestinian public hospitals	59.6% of respondents reported no events in the past 12 month.

Taylor *J et al. 2004*	Use of Incident Reports by Physicians and Nurses to Document Medical Errors in pediatric patients	USA	Children's hospital	100 doctors, 100 nurses	45.9% of physicians completed 0 incident reports during the previous 12 months as compared with 10.5% of the responding nurses.	47.7% of physicians completed 0 reports as compared with 56.5% of the responding nurses.
					40% of pediatric doctors and nurses in Washington were unsure about what is considered medical error.	About third of participants believed that there was a clear definition of medical error.
Alishaq A, 2008	Nursing perception of patient safety at Hamad Medical corporation State of Qatar	Qatar	Three private hospitals	400 nurses	(90%) of nurses feel that their mistakes also are kept in their files.	(82%) worry that their mistakes are kept in their personal files.
Malik M R *et al.*2010	Attitudes and perceived barriers of tertiary level health professionals towards incident reporting in Pakistan	Pakistan	One hospital	217 doctors & nurses	(57%) worry that their mistakes are kept in their personal files.	(82%) worry that their mistakes are kept in their personal files.
					(88%) of doctors and 84% of nurses believed that "lack of feedback about medical error" is the most influential barrier to incident reporting.	(49.9%) did not have feedback about medical errors.
					69.2%, 67.9% of physicians and nurses respectively believed that administrative sanctions are the most important barrier to incident reporting.	74.8% feltl insecure about their job and are afraid of administrative sanctions.

					(24.5%) and (26.2%) of doctors and nurses respectively fear of financial and legal penalties.	74.3% of respondents fear of legal and financial penalties
					(57%) feel that reporting adverse events, it like a person is written up.	74.8% of respondents feel that reporting adverse events, it like a person is written up.
					61.4% of respondents believed that manager/ supervisor seriously consider their suggestion to improve patient safety.	54% of respondents believed that manager/ supervisor seriously consider their suggestion to improve patient safety.
					Only (42.3%, 12.6%) of doctors and nurses respectively agreed that incident reporting is important for purpose of learning from mistakes.	(91.5%) of participants agreed with same idea.
					71% of the participants in Pakistan were informed about medical errors that happen in their units.	49.4% of participants indicated that they were informed about medical errors that happen in their units.
					(60.5%, 80.5%) of doctors and nurses respectively preferred to report to the head of department.	More than half of respondents (57.6%) preferred to report to the head of department.

					(80%, 84%) of doctors and nurses respectively believed that reporting is important to minimize repetition of errors	Most of (doctors and nurses) believed that reporting is important to minimize repetition of errors.
Wilson B, 2008	Reporting of Clinical Adverse Events Scale: a measure of doctor and nurse attitudes to adverse event reporting	England	Leeds, York and Hull Universities	201 doctors and nurse/nurse-midwives undergoing post qualification training	(0.62%) of respondents believed that reporting let everyone knows that I made mistakes.	55.3% of respondent believed that reporting let everyone knows that they made mistakes.
Alsafi M D et al, 2011	Physicians' Attitudes Toward Reporting Medical Errors-An Observational Study at a General Hospital in Saudi Arabia	Saudi Arabia	Al-Iman General Hospital, a tertiary care hospital.	161 physicians	83.2% of respondents believed that reporting prevents further complications.	(93.5%). of health professionals (doctors and nurses) believed that reporting is important to get immediate
					85% thought that reporting is ethical issue	88.8% of participants believed that reporting medical errors is important because they have ethical and professional responsibility to report

Garbutt J et al, 2007	Reporting and disclosing medical errors: pediatricians' attitudes and behaviors	USA	Two children's hospitals	898 pediatric physicians and residents	The majority of respondents believed that to improve patient safety, they should report serious errors (97%), near miss (82%).	(80.2%) of participants believed that the purpose of incident reporting system is to identify errors and learn from mistakes to improve patient safety

6.6 Conclusion

Assessment of health professional's attitudes toward incident reporting is critical for recognizing the reason for under reporting. Theses assessment should be viewed as a starting point in developing formal incident reporting system in Palestine. This study is the first to Palestine in order to stand on the reasons for not reporting medical errors in MoH hospitals and to deeply investigate the physician and nurses' attitudes toward incident reporting in MoH hospitals. Factors that may play role in discouraging and motivating incident reporting were also evaluated. The fact that the target staff is those with direct contact with patients and the quite significant participation in the study by the MoH hospital personnel increase the validity of the results. We can conclude from the results there is a lake of formal incident reporting system in MoH hospitals, very little knowledge about medical errors. This reveals the prevalence of a punitive culture and fear of negative consequences of reporting errors in MoH and weak management role in providing a climate that promotes patient safety and encouraging reporting incidents. There are motivating factors that can help in promoting event reporting in public hospitals, especially the believe of the clinicians (nurses and physicians) that reporting will assist in getting help to the patients and event reporting can help in minimizing the repetition of the same errors. We also conclude that the physicians and nurses prefer a sort of mandatory incident reporting system that mainly used for learning from errors and improving patient safety rather than a tool for punishing those doing errors.

The study showed that there are statistically significant differences among physicians and nurses in their attitudes regarding to number of events reported, structure of events reported, use of reporting and to who should be reported. However, nurses significantly are more reluctant to report incidents than doctors and are more in favor of reporting incidents to the head of department than doctors.

6.7 Recommendation

Based on the study results, the main recommendations are summarized as follows:

- The MoH should develop and enforce a formal incident reporting system in public hospitals.
- The MoH should work on changing the blame culture and create a climate of open communications and continuous learning, building on the fact that most of health professionals are willing to report incidents to their supervisors.
- Patient safety education should be integrated into health education.
- Insuring health professionals against malpractice financial penalties by professional associations in Palestine.

Areas for future researches

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

- Assessment of the policy maker's attitudes toward incident reporting in MoH.
- Exploration patient's perceptions toward disclosure of medical errors.
- Measuring adverse events and medical errors in MoH hospitals.
- Comparison of health professional's attitudes towards incident reporting between private and public hospitals in Palestine

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Annexes

Annex 1: Study survey (English version)

Part One: Background information.

1- Gender:

1- Male.
2- Female.

2- Age: ……

3- Profession Occupation:

1- Resident Physician.	2- Stuff Nurse.
3- Specialist Physician.	4- Aid Nurse (diploma).
5- Other specify…	

4- Educational level :

1- Diploma (2 years and less)	2- Bachelor
3- Graduate studies(MS and more)	4- Other specify…

5- What is your primary work area/ unit at this hospital

1- Many different hospitals/units.	2- Pediatric
3- Medicine (nonsurgical).	4- Emergency department.
5- General surgery.	6- Intensive care unit.
7- Obstetrics/gyn.	8- Orthopedic.
9- Radiology.	10- Anesthesiology.
11- Other, specify ……	

6- How long have you worked in the hospital?

1- Less than one year	2- 11-15 years
3- 1-5 years	4- 16 and more
5- 6-10 years.	

7- Typically, how many hours per week do you work in this hospital?

1- Less than 39 hours per week (part time)	2- 60-79 hours per week
3- 40 –59 hours per week	4- 80 hours and more
5- 60-80 hours per week	

8- How many years have you worked in your current specialty or profession?

1- Less than one year	2- 11-15 years
3- 1-5 years	4- More than 15 years.
5- 6-10 years	

Part two:

Section A: Frequency of Events Reported

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

1- No event report	2- 1-2 event report
3- 3-5 event report	4- 6-10 event report
5- More than 10 event	

Section B: Availability of incident repotting

Reporting system for adverse events and medical errors in the hospital at which you work is:

1- Approved and implemented	2- There is no incident reporting
3- Approved and not implemented	4- I do not know

Part Three

Section A: Please indicate your agreement or disagreement with the following statement about incident reporting your hospital system/work environment and the factors that influence your Incident Reporting behavior:

		Strongly disagree	Disagree	Neither	Agree	Strongly agree
1	System enforces the physicians and nurses to report the adverse events and medical error.	1	2	3	4	5
2	There is a clear definition of error that may occur at this hospital	1	2	3	4	5
3	Lack of knowledge about error.	1	2	3	4	5
4	Staff feels like their mistakes are held against them.	1	2	3	4	5
5	Staff worry that mistakes they make are kept in their personal file.	1	2	3	4	5
6	Reporting adverse events, it feels like a person is written up.	1	2	3	4	5
7	Reporting is a method through which to pin point blame	1	2	3	4	5
8	Reporting incident is not part of my job.	1	2	3	4	5
9	I am unsure whose responsibility it is to report errors.	1	2	3	4	5
10	Reporting take long time to complete.	1	2	3	4	5
11	No perceived benefits of reporting incidents (learning from error).	1	2	3	4	5
12	Reporting adverse events let everyone knows that I have made mistake.	1	2	3	4	5
13	Near miss (those errors intercepted and prevented before happen) should not be reported.	1	2	3	4	5
14	My supervisor seriously considers staff suggestion to improve patient safety.	1	2	3	4	5
51	Staff feels free to question the decision of those with high authority.	1	2	3	4	5
16	Manager /supervisor protect reporters of error from negative consequences.	1	2	3	4	5
17	We are informed about errors that happen in the unit.	1	2	3	4	5

Section B: **Please indicate your agreement or disagreement with the following statements about what you think about the consequences (fears) of reporting incidents**

		Strongly disagree	Disagree	Neither	Agree	Strongly agree
18	Fear of administrative sanctions (loss of job, transfer, prevent promotion).	1	2	3	4	5
19	Fear of lawsuits(legal and financial penalties)	1	2	3	4	5
20	Fear that own competence may be questioned.	1	2	3	4	5
21	Fear of loss respect of colleagues.	1	2	3	4	5
22	Fear of loss reputation.	1	2	3	4	5
23	Fear of revenge of patients or their families.	1	2	3	4	5
24	Fear of press and the issue become public.	1	2	3	4	5
25	Fear of loss clients.	1	2	3	4	5

Section C: Please indicate your agreement or disagreement with the following statements about the motivation to report incidents.

		Strongly disagree	Disagree	Neither	Agree	Strongly agree
	Reporting incident is important to get immediate help to patient	1	2	3	4	5
	Reporting is important to learn from mistakes (minor, near miss, serious).	1	2	3	4	5
	Reporting is important because clinicians have ethical and professional responsibility to report incident.	1	2	3	4	5
	Reporting is important to develop reporting system to minimize repetition of errors.	1	2	3	4	5

Part Four

Section A: Select one from each of the following pairs of selection characteristics of an incident reporting system that would you support?

Method of reporting	1) Paper based/written	2) Verbal reporting
Confidentiality	1) Confidential, anonymous	2) Reporter identified, known
Enforcement	1) Voluntary system	2) Compulsory /mandatory system
Use of reports	1) Identify errors and learning from mistakes; improve patient safety	2) To identify errors and punish responsible person
Type of error reported	1) Report all type of incidents (minor, near miss, serious).	2) Report only errors that harm the patients.

Section B: Please select one of the following person that would you be willing and easy to report errors to:

1) Colleague/ peer	**2)** Hospital administration
3) Head of unit	**4)** Independent agency outside the hospital (e.g. patient safety agency)
5) Profession associations (e.g. physicians, nursing associations)	**6)** Other, specify…….

Part Five

Please specify other recommendation that would be to developing an incident reporting system at the governmental hospitals.

……
……

Thank you

Annex 2: Study survey (Arabic version)

الجزء الأول: معلومات عامة

1. الجنس 1) ذكر 2) أنثى

2. العمر .....

3. المسمى الوظيفي:

1) طبيب مقيم	2) طبيب اختصاص
3) ممرض قانوني (بكالوريوس)	4) ممرض مؤهل(دبلوم)
5) وظيفة أخرى، حدد من فضلك _____	

4. مستوى التحصيل العلمي:

1) دبلوم	2) بكالوريوس
3) دراسات عليا (دبلوم عالي/ ماجستير/ دكتوراه	4) أخرى، حدد _____

5. في اي قسم تعمل في هذا المستشفى؟

1) أقسام متعددة	2) الباطنية
3) جراحة عامة	4) نسائية و توليد
5) أشعة	6) أطفال
7) طوارئ و إسعاف	8) تخدير
9) عظام	10) عناية مركزة و إنعاش
11) غير ذلك، حدد _____	

6. منذ متى و أنت تعمل في هذا المستشفى؟

1) اقل من عام واحد	2) 1 -5 أعوام
3) 6 – 10 أعوام	4) 11 – 15 عام
5) أكثر من 15 عام	

7. كم عدد ساعات العمل التي تعملها أسبوعيا في هذا المستشفى؟

1) اقل من 39 ساعة أسبوعيا (عمل جزئي)	2) 40 – 59 ساعة أسبوعيا
3) 60 – 79 ساعة أسبوعيا	4) أكثر من 80 ساعة أسبوعيا

8. ما هي ألمده التي أمضيتها وأنت تعمل بهذا القسم في المستشفى؟

1) اقل من عام واحد	2) 1-5 أعوام
3) 6-10 أعوام	4) 11-15 عام
5) اكثر من 15 عام	

الجزء الثاني

القسم الاول : نظام الإبلاغ عن الحوادث السلبية والأخطاء الطبية في المستشفى الذي تعمل به هو:

1) نظام مقر ومعمول به
2) لا يوجد نظام مقر
3) نظام مقر وغير معمول به
4) لا اعلم

القسم الثاني: عدد الأحداث السلبية والأخطاء الطبية

خلال 12 الشهر الماضية، كم عدد الأحداث والأخطاء الطبية التي علمت بها تم توثيقها أو الإبلاغ عنها

1) لا يوجد	2) من 1- 2
3) من 3-5	4) من 6-10
5) أكثر من 10	

الجزء الثالث

القسم الأول : الرجاء أن تختار مدى موافقتك او رفضك للجمل التاليه فيما يتعلق بنظام الإبلاغ عن الحوادث والأخطاء الطبية والعوامل التي تؤثر على ذلك

		أوافق بشده	أوافق	محايد	لا أوافق	لا أوافق بشده
1	النظام في هذا المستشفى يلزم الأطباء و الممرضين الإبلاغ عن الحوادث والأخطاء الطبية.	5	4	3	2	1
2	يوجد في هذا المستشفى تعريف واضح للخطأ الطبي الذي قد يحدث .	5	4	3	2	1
3	نادرا ما يكون معرفه مسبقة لدى الأطباء والتمريض عن الحوادث ولأخطاء الطبية.	5	4	3	2	1
4	يشعر الموظفون في هذا المستشفى بأن أخطاءهم الطبية تسجل ضدهم.	5	4	3	2	1
5	يخشى الموظفون أن تحفظ أخطاءهم في ملفاتهم الشخصية.	5	4	3	2	1
6	يشعر الموظفين عندما يبلغون عن الحوادث والأخطاء الطبية وكأنه يدينون أنفسهم .	5	4	3	2	1
7	يعتبر الإبلاغ عن الحوادث و الأخطاء الطبية وسيلة لإلقاء اللوم على الموظفين	5	4	3	2	1
8	الإبلاغ عن الحوادث والأخطاء الطبية ليس جزءا من وظيفتي.	5	4	3	2	1
9	أنا غير متأكد على من تقع مسؤولية الإبلاغ عن الحوادث والأخطاء الطبية.	5	4	3	2	1
10	يتطلب القيام/ إتمام نموذج عملية الإبلاغ عن الحوادث والأخطاء الطبية وقتاً طويلاً.	5	4	3	2	1
11	لا يوجد فوائد مرجوة من عملية الإبلاغ عن الحوادث والأخطاء الطبية (لا نتعلم من أخطائنا).	5	4	3	2	1
12	يعلم الجميع إنني ارتكبت خطأ طبي عندما أقوم بالإبلاغ عن الحوادث والأخطاء الطبية.	5	4	3	2	1
13	لا حاجه/ ضرورة للإبلاغ عن الحوادث والأخطاء الطبية وشيكة الحدوث (الأخطاء التي يتم اعتراضها و منعها قبل حدوثها أو تسببها بضرر للمريض).	5	4	3	2	1

14	يأخذ مشرفي في العمل اقتراحات الموظفين لتحسين سلامة المريض بشكل جدي	5	4	3	2	1
15	يشعر الموظفون بالحرية الكافية لطرح أسئلة بخصوص القرارات التي تتخذ من أصحاب السلطات العليا في المتشفى	5	4	3	2	1
16	يقوم المديرا المشرف بحماية الموظفين من العواقب السلبية المترتبة على إبلاغهم عن الحوادث والأخطاء الطبية.	5	4	3	2	1
17	يتم إبلاغنا بالحوادث والأخطاء الطبية التي تحصل في هذا القسم.	5	4	3	2	1

القسم الثاني: الرجاء أن تختار مدى موافقتك او رفضك للجمل التالية فيما يتعلق بالتبعات (المخاوف) المتعلقة بنظام الإبلاغ عن الحوادث السلبية والأخطاء الطبية1

		أوافق بشده	أوافق	محايد	لا أوافق	لا أوافق بشده
18	الخوف من العقوبات الإدارية (فقدان العمل، النقل، منع الترقيات) .	5	4	3	2	1
19	الخوف من الدعاوى القضائية (العقوبات القانونية و المادية).	5	4	3	2	1
20	الخوف من التشكيك في كفاءتي .	5	4	3	2	1
21	الخوف من فقدان احترام الزملاء .	5	4	3	2	1
22	الخوف من فقدان السمعة.	5	4	3	2	1
23	الخوف من الانتقام من المرضى أو عائلاتهم .	5	4	3	2	1
24	الخوف من الصحافة و من أن تصبح القضية علنية.	5	4	3	2	1
25	الخوف من فقدان الزبائن (المرضى).	5	4	3	2	1

القسم الثالث : الرجاء ان تختار مدى موافقتك او رفضك للجمل التالية فيما يتعلق بالحافز / آو ضرورة الإبلاغ عن الحوادث والأخطاء الطبي

		أوافق بشده	أوافق	محايد	لا أوافق	لا أوافق بشده
26	الإبلاغ عن الحوادث والأخطاء الطبية مهم لتأمين المساعدة الفورية للمريض .	5	4	3	2	1
27	الإبلاغ عن الحوادث والأخطاء الطبية مهم للتعلم من الأخطاء (بسيطة،	5	4	3	2	1

	وشيكة الحدوث، خطيرة).					
28	الإبلاغ عن الحوادث و الأخطاء الطبية مهم لأن الأطباء والتمريض يتحملون المسؤولية الأخلاقية و المهنية للإبلاغ عن الحوادث الطبية.	**5**	**4**	**3**	**2**	**1**
29	الإبلاغ عن الحوادث والأخطاء الطبية مهم من اجل التقليل من تكرار الحوادث والأخطاء .	**5**	**4**	**3**	**2**	**1**

الجزء الرابع

القسم الأول: إختر واحدا من كل من الأزواج التالية لتحديد خصائص نظام الابلاغ عن الحوادث\ الأخطاء الطبية الذي تؤيد إنشائه في مستشفيات وزاره الصحة الفلسطينية

طريقة الإبلاغ	1) تقارير مكتوبة (نموذج) .	2) تقارير لفظية .
السرية	1) سرية ، هوية المبلغ مجهولة .	2) هوية المبلغ معروفه .
التطبيق	1) نظام طوعي .	2) نظام إلزامي/ إجباري.
استخدام نظام التقارير	1) تعريف الأخطاء الطبية و التعلم منها، تحسين سلامة المريض.	2) تعريف الاخطاء الطبية و معاقبة المسؤول عنها.
نوع الخطأ المبلغ عنه	1) الإبلاغ عن كل أنواع الأخطاء الطبية (طفيفة، وشيكة الحدوث، خطيرة) .	2) الإبلاغ فقط عن الأخطاء التي تؤذي المريض.

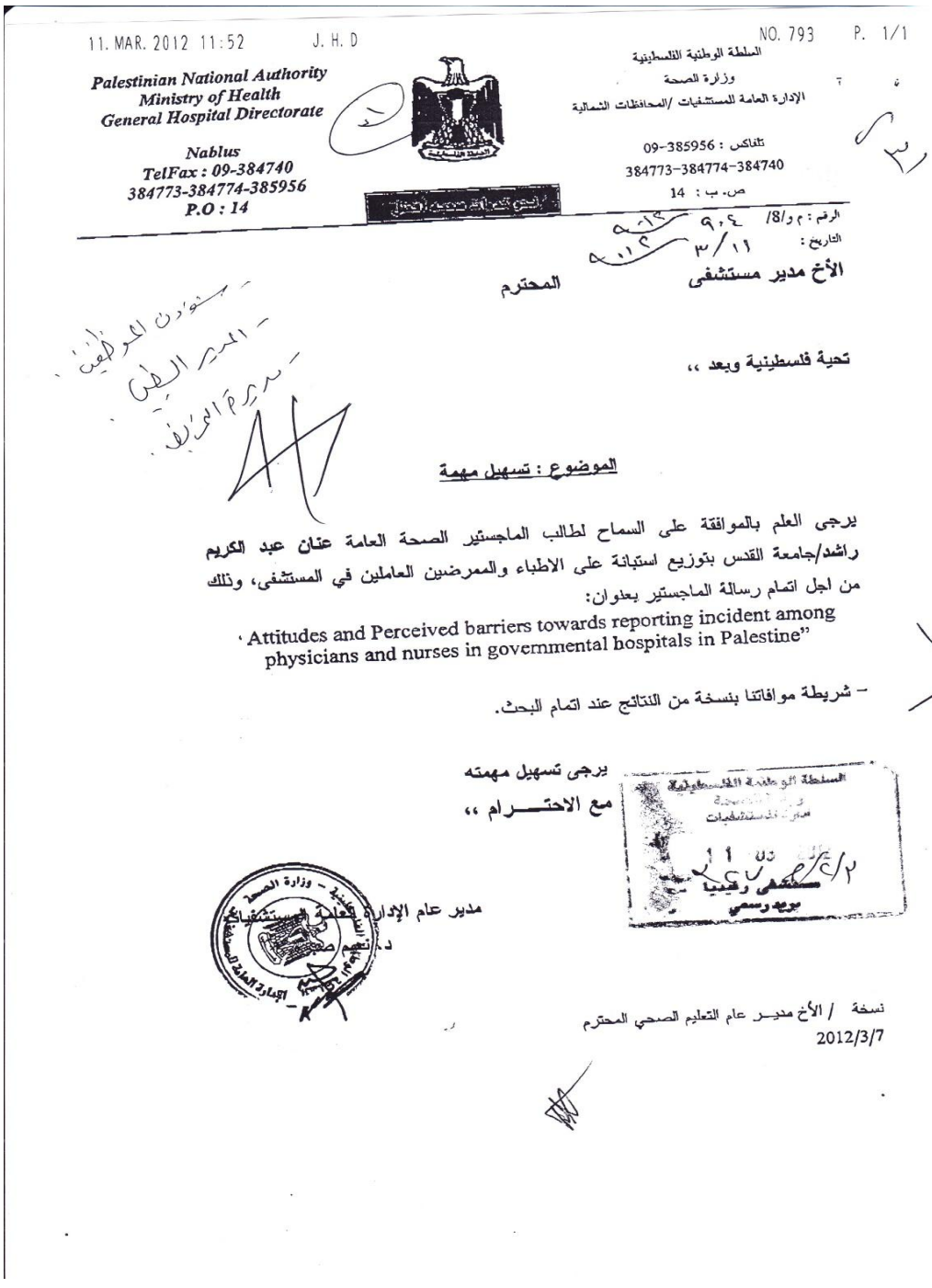
القسم الثاني: الرجاء اختيار شخص واحد تجد نفسك قادراً على التبليغ عن الأخطاء الطبية له

1. زميل	2. إدارة المستشفى
3. رئيس القسم	4. وكالة أو هيئه مستقلة خارج المستشفى (مثل وكالة سلامة المريض)
5. نقابات مهنية (مثل نقابة الأطباء، المرضيين)	6. غير ذلك، حدد .....

الجزء الأخير: الرجاء إضافة التوصيات اللازمة التي تراها ضرورية لتطوير نظام التبليغ عن الاخطاءا الحوادث الطبية في المستشفيات الحكومية

شاكرا حسن تعاونكم

Annex 3



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Palestinian National Authority
Ministry of Health
General Hospital Directorate

Nablus
TelFax : 09-384740
384773-384774-385956
P.O : 14

السلطة الوطنية الفلسطينية
وزارة الصحة
الإدارة العامة للمستشفيات /المحافظات الشمالية

تلفاكس : 09-385956
384773-384774-384740
ص. ب : 14

الرقم : م و/8/ ٩٠٤
التاريخ : ٣/١١

الأخ مدير مستشفى المحترم

تحية فلسطينية وبعد ،،

الموضوع : تسهيل مهمة

يرجى العلم بالموافقة على السماح لطالب الماجستير الصحة العامة عنان عبد الكريم راشد/جامعة القدس بتوزيع استبانة على الاطباء والممرضين العاملين في المستشفى، وذلك من اجل اتمام رسالة الماجستير بعنوان:

" Attitudes and Perceived barriers towards reporting incident among physicians and nurses in governmental hospitals in Palestine"

- شريطة موافاتنا بنسخة من النتائج عند اتمام البحث.

يرجى تسهيل مهمته
مع الاحتـــرام ،،

السلطة الوطنية الفلسطينية
مستشفى وفيا
بريد رسمي

مدير عام الإدارة العامة للمستشفيات
د.

نسخة / الأخ مديـر عام التعليم الصحي المحترم
2012/3/7

Annex 4

عزيزي المشارك /ه في هذه الدراسة

تحية طيبة و بعد

هذا البحث يهدف إلى التعرف على آرائكم و وجهات نظركم حول قضايا سلامة المريض (توثيق الإحداث/ الأخطاء الطبية) في المستشفيات الحكومية الفلسطينية في الضفة الغربية والموانع التي تؤثر على عمليه الإبلاغ عن الأخطاء الطبية والحوادث السلبية.

إن هذه الدراسة مهمة بمكان للتعرف على مواقف ووجهات نظر والموانع التي تحول دون توثيق الأخطاء الطبية التي تحصل في المستشفيات وبالتالي تقليل هذه الأخطاء قدر الإمكان والتعلم من هذه الأخطاء مما يعزز مستوى سلامة المرضى..

تتكون الاستبانة من بعض العبارات/ المقولات ذات علاقة بالإبلاغ عن الأحداث السلبية/ الأخطاء الطبية لكل منها خمسة أجوبة ممكنه، الرجاء اختيار الإجابة التي تتوافق مع رأيك الخاص بوضع دائرة حول احد الأرقام ألخمسه . تستغرق إجابة هذه الاستبانة من ١٠ – ١٥ دقيقة.

وأخيراً، نود أن ننوه إلى أن المشاركة في الدراسة طوعية و أن السرية التامة حول هوية الشخص الذي قام بتعبئة الاستبانة مضمونة في هذا البحث. كذلك نود إعلامكم بأنه لن يكون بمقدور إدارة المستشفى أو الباحثون معرفة هوية المشاركين في البحث، حيث ستتم معالجة المعلومات بشكل عام وليس بشكل خاص.

الرجاء إتمام الاستبانة وإعادتها بالظرف المغلق لجامع البيانات، ونود أن ننتهز الفرصة لنشكر لكم حسن تعاونكم ومساهمتكم في تحسين مستوى وسلامة الخدمات في المستشفيات الفلسطينية.

الباحث: جامعه القدس- كليه الصحة العامه

Annex 5

1- Dr Asma Imam. Assistant Professor of health management and community studies- Al-Quds University. Educated at De Montfort University, Leicester/England.

2- Dr Fahed Alsaid. General Director of Alitehad hospital-Nablus, PHD of pediatric, MBA of management.

3- Dr Abdul Naser Qadomi. Assistant Professor of Physical education- An-Najah National University.