

CHAPTER 1

Introduction

1.1 Introduction

A hospital's Quality Management System (QMS) is considered to be the 'procedures explicitly designed to monitor, assess and improve the quality of care' (Wagner, Gulacsi, Takacs, & Outinen, 2006, p. 2). Implementing a QMS, which is an essential component in the development of a contemporary approach to quality management, can help hospitals, managers, decision makers, and heads of departments create and implement procedures that improve patient and employee satisfaction. QMSs are essential for hospitals globally and all hospitals have some form of QMS processes in place, including those in Jordan.

Most developed countries such as the United States, Australia, the United Kingdom, and Canada, have a greater focus on patient safety and the quality of health care outcomes measured more broadly than simply patient or staff satisfaction (Macinko, Starfield, & Shi, 2003; Schoen, Osborn, Doty, Bishop, Peugh, & Murukutla, 2007). However, developing countries, such as Jordan, Egypt, Taiwan, and Thailand, often focus on patient and staff satisfaction and the process of completing the activities within the QMS rather than outcomes (Mosad, 2006; Pongpirul, Sriratanaban, Asavaroengchai, Thammatach, & Laoitthi, 2006; Lin & Jang, 2008). This study focuses on staff perception of the development and implementation of QMSs. Implementing QMSs successfully in hospitals will allow Jordan to move forward to look at patient safety, and the outcomes of quality health care.

The World Health Organisation (WHO) (WHO, 2008a) asserts that QMSs enhance management, allow more effective organisation, improve quality of services, increase staff satisfaction and commitment to the organisation, enhance co-operation among employees and management, and improve patients' satisfaction. For these reasons, hospitals in most countries are constantly trying to improve their QMSs. Maintaining quality requires that every hospital should have a QMS that covers domains such as leadership and management, resource management, quality improvement, and organisational culture (Lin & Jang, 2008; Pongpirul, et al. 2006) to deal with current and future challenges that obstruct quality service. In the past, most hospitals had their own criteria for a QMS. However, in recent times the Joint Commission on Accreditation of Health Care Organisations (JCAHO) and the International Organisation for Standardization (ISO) have started using the implementation of a QMS as a basis for recognition of accreditation. In the United States, the JCAHO has recommended the institution of continuous quality improvement. The recommendation is predicated on the notion that quality improvement is a reply to newly emerging standards and practices in health organisations and is the basis for new accreditation requirements.

The ISO also endorses the position that without a QMS, a hospital will be unable to ensure that service quality is continuously improved. Therefore the ISO has also focussed on utilising the QMS as a basis for accreditation and recognition of health organisations that successfully apply a QMS. This recognition by the ISO is in line with organisational theory (the performance, success, and survival of organisations), which directs organisations to focus on their systems, such as the QMS, to improve the quality of their services (Hauswirth, 2007). While many hospitals are driven by the stance of the ISO to implement QMS, some have argued that this kind of external drive is not sufficient. In

particular, DiMaggio and Powell (1983) and Westphal, Gulati, and Shortell (1997) argument that hospitals are motivated to apply QMS because of the ISO means that an organisation's quality effort is not motivated by substantive concerns over its quality or efficiency of health care, but rather by negative perceptions of external groups if it does not pursue continuous quality improvement. In essence, it will be better for hospitals to apply QMS solely because they are motivated by quality improvement.

1.2 Study context: The health system in Jordan

The health system in Jordan has three main sectors: public-sector hospitals, private-sector hospitals, and a donor sector including organisations such as the United Nations Relief and Works Agency (UNRWA).

In Jordan, the main institution, based on the extent of its process and use in financing and providing health care services for all of the population, is the Ministry of Health (MOH). There are 31 hospitals owned and operated by the Ministry (MOH, 2010). Royal Medical Services (RMS) is the main public programme for individuals covered by health insurance. In terms of expenditure, it is the second main public programme (The first is MOH). RMS provides five outpatient centres and seven main hospitals distributed throughout Jordan; its core function is to provide health services to the military (RMS, 2010). In the public sector, Jordan University Hospital (JUH) is considered an advanced health care centre with a range of important expert/specialised services. The JUH is affiliated with the Jordan University (JU) medical school (JUH, 2012). King Abdullah Hospital (KAH) is the teaching hospital at the Jordan University of Science and Technology (JUST). KAH was established in 2002 and is the referral hospital for smaller hospitals in the northern region of Jordan (KAH, 2012).

The private sector plays a significant role in financing and providing health care services. The employees of private organisations get their health care coverage through the purchase of private health insurance. The private sector offers services through 61 hospitals, concentrated mostly in the province of the capital, Amman (MOH, 2010).

In the donor sector, the main health agency is the United Nations Relief and Works Agency (UNRWA), a humanitarian development and relief agency for Palestinian refugees. UNRWA provides social and emergency aid, health care, and education (WHO, 2008b).

The MOH manages the overall Primary Health Care (PHC) system, which includes PHC centres, comprehensive health centres, maternity and child centres, dental clinics, and chest-disease centres. PHC centres manage a wide range of personal primary patient care, including such matters as dental care. At the local level, they are responsible for information systems such as health data collection. They also serve some public health functions such as water safety, health education, pest control, food quality control, and sanitation. The private sector is dynamic in PHC, with about 40% of all primary patient contacts. It is mostly available in towns (MOH, 2010; WHO, 2009) (Chapter 2 describes the Jordanian health system in more detail).

1.3 Study problem

Jordanian hospitals, like many other hospitals around the world, have some form of QMS; however, they also have some obstacles to QMS implementation. Obstacles to QMS are not uncommon and include issues related to leadership and management, resource

management, quality improvement, and organisational culture. These obstacles have been explored in research conducted in countries such as USA (Messner, 1998), Thailand (Pongpirul, et al., 2006) and Taiwan (Lin & Jang, 2008). When these obstacles have been explored in studies, there are unique differences by country. It is necessary therefore to observe that the number and seriousness of QMS obstacles are different in each country.

The government of Jordan has created the Jordanian Health Care Accreditation Council to ensure that hospitals meet standards in order to continue to operate. For this reason, hospitals in Jordan try to ensure that they maintain the standards set by the Jordanian government and international bodies in order to introduce a high quality services. However, many Jordanian hospitals face challenges as part of the health system. These challenges include rising health care costs; reduced support to hospitals from the government due to the declining gross domestic product (GDP); inefficiencies in the financing of health services; and inefficiencies in the provision of health services (Jordanian Department of Statistics (JDOS), 2010; Jordanian High Health Council, 2012; WHO, 2006). To some extent, these deficiencies are being addressed in Jordan through the implementation of QMS in the health care system (Jordanian High Health Council, 2012).

Jordan has 101 hospitals, and each one of them has its own QMS. However, it is unclear how these hospitals apply their QMS processes. No study has been conducted to determine the use of QMSs in Jordanian hospitals, and given that QMS is important for improving the quality of services and for accreditation, it is timely for this area of the hospitals' operations to be researched.

1.4 Research aim

The aim of this study is to explore the obstacles facing the QMSs implementation in high- and low-performing hospitals in Jordan. It will focus on whether high- and low-performing hospitals have different QMS obstacles.

1.5 Research objectives

- Develop a specific questionnaire to identify the obstacles to QMS implementation in high- and low-performing hospitals, including rigorous testing of the data collection instrument.
- Identify the key differences and similarities in the obstacles to QMSs between high- and low-performing hospitals.
- Establish whether there are differences and similarities in the obstacles to QMSs for staff in high- and low-performing hospitals.

1.6 Research questions

1. What do hospitals in Jordan consider to be major QMS implementation obstacles?
2. Are there any significant differences in Quality Management System Obstacle Scale (QMSOS) scores between three high-performing hospitals and three low-performing hospitals?
3. Which of the QMSOS domains do hospital staff believe are the major obstacles?

4. What are the major obstacles in each of the five domains (human resources, material resources, vision and change, leadership and management, and communication)?
5. What are the effects of the demographic characteristics (gender, age, profession, education level, department, work experience in the hospital, and work experience in the health field) on participants' perceptions of obstacles to QMSs?
6. How can hospitals address the QMS obstacles that they experience?

1.7 Theoretical framework

The QMS domains on which this study focusses are related to the different areas of organisational systems. Therefore, this study employed a theoretical framework that has roots in systems theory and organisational theory.

1.7.1 Systems theory and organisational theory

Systems theory involves the concepts of interrelationship and interdependence of objects and their attributes; goal seeking; holism; transformation process; entropy; inputs and outputs; regulation; differentiation; and hierarchy (Litterer, 1969).

According to Boulding (1985, p. 16), a system 'is anything that is not chaos'. The nature of systems means that every part contributes something so that the whole system can have order. Systems theory was first proposed as a way of understanding organisms in the biological sciences and this was the foundation for the many subsequent versions of systems theory. Systems theory recognises the organisation as a system of cooperating

functions. It is the most widely applied theory of organisation performance (Anderson, 1979).

Several influential theorists have developed conceptualisations of organisations as functional systems, making a link between structures and process in organisations and those of systems. Such a link between systems and organisations has informed some definitions of organisations. For example Scott (1987, p. 5) defined an organisation as an entity that ‘is an open social system that has a formal and an informal structure’. This essentialises the fact that the elements and functions of organisations can be seen as mirroring the elements and functioning of systems.

There are various types of organisations, such as communication, education, and health services. Health service organisations introduce a high quality of services to their patients and continuously try to improve their quality of services. From an organisational theory perspective, efforts at continuous quality improvement might be analysed as a reply to newly emerging standards and practices in health organisations. If this is to occur, then every part of the system should be working efficiently.

Organisations must achieve the four functional tasks (integration, adaptation, pattern maintenance, and goal attainment) to remain in equilibrium. The work of carrying out these tasks is left to the organisation’s leader and its members. The leader and members act to help their organisation survive, so they can be gratified as the organisation reaches its goal (Treviño, 2001).

According to Germain and Gateman (1996), organisations are in constant interaction with their environments, and for this reason, Homans (1950) suggested, more than five decades

ago, that organisations have external and internal systems. External systems introduce an organisation's method of addressing the adaptive issues that are a consequence of its relationship with its surrounding area. Internal systems contain models of interactions, activities, and rules happening within the organisation as it tries to function. It is within this internal system that the QMS exists and it is an internal system that is intended to respond to external drivers. Research on QMSs has shown that internal domains such as leadership, resource management, quality improvement, and organisational culture are critical to efficient delivery of services (Lin & Jang 2008; Pongpirul et al., 2006). Therefore, these domains should work efficiently without obstacles (Desai, 2010; Krzemien & Wolniak, 2007). This study explored the QMSs obstacles (which are the internal domains of the hospital system such as leadership, resource management, quality improvement, and organisational culture) in high- and low-performing hospitals in Jordan.

As hospitals are part of the broader health and social system and function and are structured as organisations, both system and organisational theory are useful to frame the study. QMSs and their associated obstacles are also open to elucidation by both theories (see Figure 1-1). The main domains of QMS align with the framework in figure 1 and inform the data collection instruments of the study (see Chapter 3).

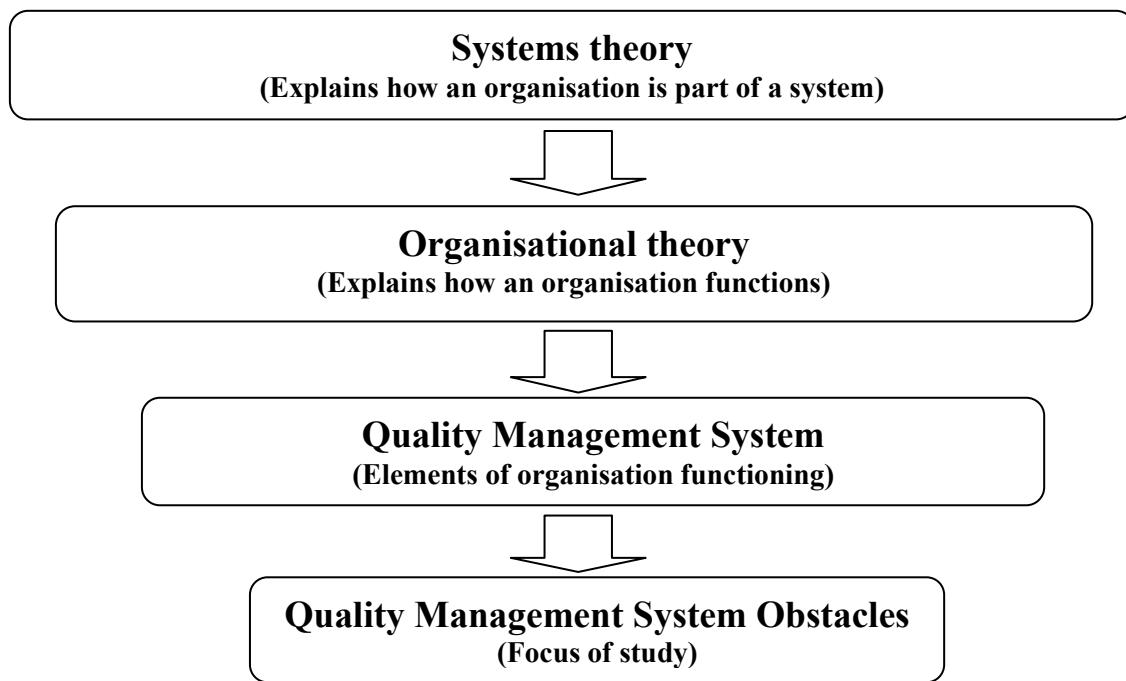


Figure: 1-1 Theoretical framework

1.7.2 Quality management system (QMS)

Hospitals apply the components of QMSs to improve their quality of services and achieve patient satisfaction (WHO, 2008a) as well as to meet the accreditation requirements of the ISO. According to the Clinical and Laboratory Standard Institute (CLSI) (2004) and International Organisation for Standardization (ISO) 9001 (2008), the 12 components of the QMS in hospitals (which are described in more detail in Chapter 2) are:

1. Documents and records; hospitals should have systems that can manage and control documents and records in hospitals.
2. Organisation; support from top managers to QMS and stabilising plan for quality.
3. Employees; recruiting and retaining qualified employees with experience to occupy suitable positions or jobs.
4. Equipment; hospitals should have equipment, instruments, analytical systems, and computer programmes to support their services.

5. Purchasing and inventory; hospitals should have sound procedures for managing supplies, materials, reagents, and services.
6. Process control; operation procedures should be valid to meet the patients' needs.
7. Information management; the flow of information between departments inside hospitals should be within a secure system.
8. Incident management; an occurrence management programme should aim to identify problems in hospitals and find solutions for these problems.
9. Assessment, external and internal; each hospital should assess the effectiveness of its QMS regularly.
10. Process improvement; a hospital should look for process improvement compared to other competent hospitals.
11. Customer service; hospitals should look for patient satisfaction and measure it to determine their needs.
12. Facilities and safety; a hospital should maintain a safe environment to provide safety for patients and employees, and the safe environment includes treatment, care, and services.

The components of QMS work together as a whole system to improve patient services. However, there are many obstacles that can hinder this system, therefore hospital managers should identify the obstacles that hinder the QMSs in their hospitals and address them to implement the QMSs successfully.

1.7.3 QMS obstacles

QMS obstacles may be related to leadership and management. Some obstacles related to these factors include insufficient staff motivation, inappropriate procedures, lack of patient

focus, and lack of teamwork encouragement (Desai, 2010; Gibson & Schroeder, 2003). Another factor is material resources, including issues such as inadequate material resources, an insufficient budget for quality, lack of cost–benefit analysis, and improper data utilisation (Desai, 2010; Hauck and Street, 2006). Some barriers related to the human resources factor are lack of rewards for hospital staff, lack of staff, lack of training programmes, and inadequate authority delegation (Hudelson, Cleopas, Kolly, Chopard, & Perneger, 2008; Pongpirul et al., 2006). The vision and change factor entails issues such as focussing on short-term goals only and resisting changes (Desai, 2010; Dixon-Woods, McNicol, & Martin, 2012). Finally, the communication factor includes many barriers, such as inadequate communication, inaccurate databases, and inability to change organisational cultural work towards quality (Pongpirul et al. 2006; Taib, Rahman, & Queshi, 2011).

1.8 Importance of the study

Jordanian hospitals make efforts to improve the quality of services and reduce the cost of health services. However, Jordan's health system has many challenges. Some of these are rising healthcare costs; decreased support to the hospitals from the government because of declining Gross Domestic Product (GDP), which fell from 8.5% in 2007 to 3.1% in 2010; inefficiencies in financing of health services; and inefficiencies in the provision of health services (Jordanian Department of Statistics, 2010; Jordanian High Health Council, 2012; WHO, 2006). In addition, there are some unidentified obstacles which have not been properly explored that hinder the capacity of hospitals from achieving their stated goals. Therefore, the study tried to identify the obstacles that hinder QMS implementation and suggest solutions to overcome these obstacles.

This study about QMS obstacles in high- and low-performing hospitals is significant because it is a pioneering study about QMS in Jordan and it will produce reliable information that can help hospitals to implement QMS successfully. It will also make recommendations that can help hospital managers and decision makers to deal with the identified QMS obstacles; improve the effectiveness and efficiency of hospitals; and meet the needs and expectations of patients. In essence, the study will unearth the QMS obstacles and make suggestions to support decision makers to more accurately address these obstacles.

Successful QMS implementation is an important step towards reducing the cost of health care services (Heuvel, Koning, Bogers, Berg, & Dijen, 2005). According to Deming (1993), a quality orientation leads to higher productivity and thereby lower costs. Organisations that do not have a quality orientation will incur more costs (direct and indirect costs) than organisations that have a quality orientation (organisations that focus on quality improvement). Direct costs mean costs arising as a result of non-achievement of quality and that are visibly attributable to that fact. For instance, if a physician in a hospital makes a medical error, this leads the hospital to fix the error and pay compensation to the patient. Indirect costs mean costs arising in the organisation as a result of non-achieving quality, but not visibly attributable to that fact, those where the relationship between low quality and cost may not have been discerned by the organisation. For example, the time required to repeat a procedure that was done incorrectly results in duplication of effort. Any production system for a product or service that is not designed to achieve the quality standard ‘first time, every time’ will incur rework and rectification costs. These are the costs of putting right errors and performing a particular task or a service again. Traditionally, such costs have been treated by organisations as part of the overall cost of

services, and a percentage is included in the price of every service provided in a hospital to cover these costs (Cheah, 2011; Shalmani et al., 2011).

1.9 Outline of the thesis

This thesis is organised into five chapters. Chapter 1 begins with the research problem, provides the study background, and states the study questions. Chapter 2 presents the context of the study and explores the nature of quality. The literature related to the application of approaches to quality in the health sector, the history of quality in health care, the measures of quality in health care, factors influencing health care and the quality of health care, QMS components and their implementation, strengths and weaknesses of QMSs is explored. The Jordanian health care system is described and the strengths, weaknesses, opportunities and threats of the Jordanian health care system are identified. The importance and benefits of QMSs for Jordanian hospitals, is discussed with reference to literature that presents a contemporary view of studies of quality in health care systems and discusses obstacles to implementing a QMS. Chapter 3 provides a description of how this research project into QMS obstacles was conducted. The results of the study (quantitative and qualitative data) are provided in Chapter 4. Chapter 5 presents the findings and conclusions of the study. The chapter integrates the results of the study (quantitative and qualitative data) and analyses them in relation to the relevant literature. The conclusions derived from the findings lead to the study recommendations which are intended to inform the further implementation of QMS in Jordan.

CHAPTER 2

Literature review

2.1 Introduction

The literature review in this study describes the population, geography, and economy of Jordan and its health status, health system, health expenditure, health insurance, and the financing of health. It then explores definitions of quality and quality approaches, presents a summary of quality approaches, points out factors influencing health care and quality of health care, and explores measures of quality in health care. It presents a history of quality in health care. QMS components and their implementation are introduced, and strengths and weaknesses of QMSs detailed. Strengths, weaknesses, opportunities, and threats to the Jordanian health care system are presented. The importance of QMS for Jordanian hospitals and likely impact and implications for introducing QMS for Jordanian hospitals are examined and conclusions about QMS are drawn. Finally, studies of quality in health care systems and obstacles to implementing QMSs are presented.

Managing for high quality services has become an essential strategy for many organisations to improve their level of services. In the manufacturing and service sectors, quality management systems are being used to ensure effective service delivery. In the health care sector these quality systems are implemented to enhance patient safety. Therefore, a review of the concept of and approaches to quality in the manufacturing and service sectors will provide a useful background to understanding quality issues in the health sector.

2.2 Context of study: Jordan

2.2.1 Population, geography, and economy of Jordan and health status

Jordan has a small population compared with most countries. The estimated population of Jordan is 6.338 million (JDOS, 2012). Most of the population lives in urban areas and is concentrated in three main governorates: Amman, Irbid, and Zarka.

The total area of Jordan may also be considered small; with a total area of 89,342 sq. km. Jordan is a developing country completely dependent on oil imports for energy. Its water supply is one of the most limited in the world (JDOS, 2012). Jordan is a constitutional monarchy with representative government and an elected parliament. A Council of Ministers (or cabinet) manages all government activities over an area divided into 12 governorates. Governorates are headed by people responsible for managing the projects of their area.

The Gross Domestic Product (GDP) in Jordan was worth 33.68 billion US dollars in 2013 (World Bank, 2014a). This indicates the country is considered to have a lower-middle-income population. The human development indicator for Jordan has decreased from 86 in 2006 to 100 in 2014 out of 187 countries, based on the human development report (World Bank, 2014b). This means that human development in Jordan faces many problems.

More than one-third of Jordanians are considered to be living below the poverty line. People who live below the poverty line make up 22.7% of the population in rural areas and 14.9% in urban areas. The unemployment rate in 2012 was 15.15%; it is higher among female (19.9%) than male (10.4%) (JDOS, 2012).

A National Agenda was launched in Jordan in 2006. Its premise is to provide resources to accomplish the nationwide health aims of the Millennium Development Goals (MDGs) by accomplishing a set of determined macroeconomic and social growth objectives, such as reducing poverty and lowering the unemployment rate (European University Institute, 2006). The National Agenda aimed at improvement of the health sector with a focus on primary health care and protective medicine, the quality and effectiveness of public care, universal health insurance, improving human resources skills in the health care system, and emergency medical services.

Jordan's population is increasing at an annual growth rate of 2.2% (World Bank, 2014b). This is higher than developed countries such as Australia (1.7%) (Australian Bureau of Statistics, 2014). In 2012, the death rate in Jordan was 7 per 1,000 persons (JDOS, 2014). This was higher than Australia (5.5 per 1,000 persons) in the same year (Australian Bureau of Statistics, 2013).

2.2.2 Health system

In the Middle East, Jordan is considered one of countries that has modern health sector infrastructures (buildings, materials, and equipment). The health system in Jordan is a mixture of three main sectors: public, private, and donor. Figure 2-1 shows the General Health System in Jordan.

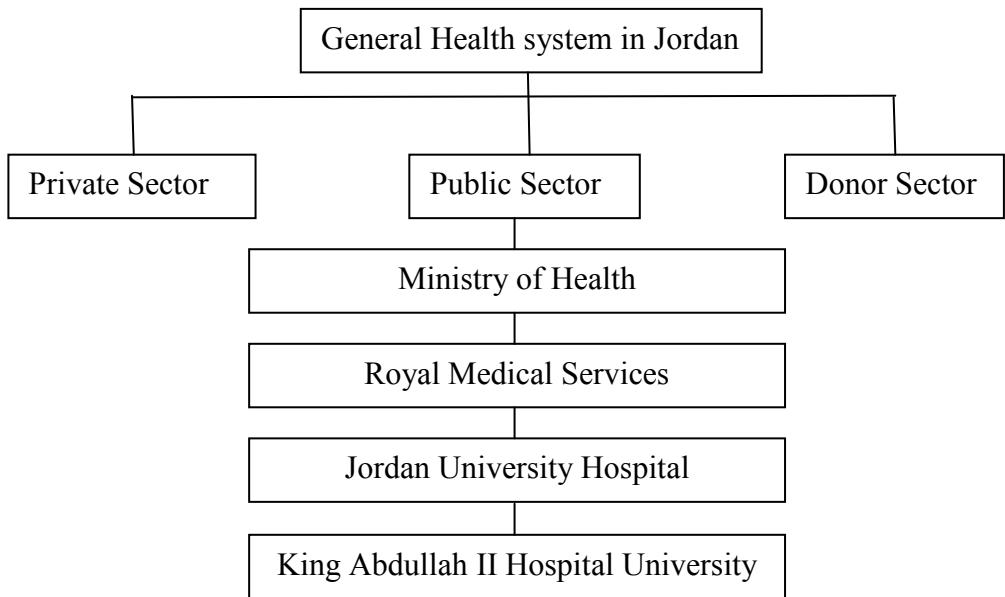


Figure 2-1: General Health System in Jordan

2.2.2.1 Public sector

The MOH with the Royal Medical Service (RMS) fund comprise the public sector. Moreover, there are some public university programmes, such as at King Abdullah Hospital, located in Irbid, and the JUH, located in Amman. Health expenditure per capita is 499 US dollars per year and makes up 9.3% of the GDP (WHO, 2010). Individual financing and delivery systems for each health care sub-sector are based on contractual planning between the health care sub-sectors. The health funding and delivery system of each sector will be described in the following section.

- **Ministry of Health (MOH)**

In Jordan, the main organisation, based on the extent of its processes and use of finance and provision of health care services, is the MOH. It is larger than all other public and private sectors organisations. There are 31 hospitals owned and operated by the ministry. It provides 37.1% of the overall number of hospital beds in Jordan, making available 4,373

hospital beds. The main role of the MOH is to provide common public health functions such as disease diagnosis, treatment, health prevention, and health education. In addition, it controls two financing functions. Firstly, the MOH provides health services for citizens by allowing them to join insurance by paying subsidised rates of from 15% to 20% of the cost of the total budget of MOH services. Secondly, it manages the Civil Health Insurance Plan (CHIP). CHIP serves about 20% of citizens, including the disabled, blood donors, poor people, and children below the age of 6 years. It covers civil servants and their dependents (MOH, 2012).

- **Royal Medical Service (RMS)**

The main public programme for individuals covered by health insurance is the RMS. In terms of expenditures, it is the second main public programme. RMS provides five outpatient centres and seven main hospitals distributed throughout Jordan; its core function is to offer health services to the military and associated individuals. It covers 25% of the population, which represents about 1.55 million individuals. The individuals include the dependents of military personnel, retired personnel and their dependents, and national defence and public security staff and their dependents. RMS provides specialty treatment and complex procedures for Jordanian citizens (even if they are also getting benefits from the MOH) and other people, and also acts as a referral centre. It plays an important part in Jordan's response to regional political issues, sending health groups to catastrophes in various countries, such as Iraq, Croatia, Palestine, Afghanistan, and Eritrea. It provides 18.1% of the total beds in Jordan, which amounts to 2,131 hospital beds (RMS, 2012).

- **Jordan University Hospital (JUH)**

In the public sector, JUH is considered an important and advanced health care centre. Its name relates to JU in that it is affiliated with its medical school. The hospital was established in 1971, and the affiliation occurred in 1975. It has 602 beds, which represent 5.1% of all beds in Jordanian hospitals. Its occupancy rate is 68%. About 42% of its income comes from MOH funds. JUH covers JU workers and their dependents, patients who are transferred from the MOH, workers of private organisations with which JUH contracts, and a few independent people (JUH, 2012; MOH, 2012).

- **King Abdullah II Hospital (KAH)**

KAH is the teaching hospital at the Jordan University of Science and Technology. KAH was established in 2002. In the northern region, it is the referral hospital for all public sector health services. KAH covers the MOH and RMS patients for 85% of hospital admissions. The MOH and RMS finance KAH. It has 504 beds (KAH, 2012; MOH, 2012).

2.2.2.2 Private sector

The private sector plays a significant role in providing health care services and financing them. The employees of private organisations get their health service coverage through the purchase of private health or self-insuring insurance. The private sector offers services through 61 hospitals, concentrated mostly in the provincial capitals such as Amman, Zarqa, Irbid, and Karak. The hospitals in the private sector have 3,888 beds. The average patient's stay is 2.3 days, and the occupancy rate is 45.9% (MOH, 2012).

2.2.2.3 United Nations Relief and Works Agency (UNRWA)

UNRWA is a human development and relief agency for Palestinian refugees. It also provides social and emergency aid, health care, and education. In Jordan, there are over 600,000 Palestinian refugees who are covered by UNRWA, RMS, and the MoH. The United Nations General Assembly established UNRWA in 1949. UNRWA offers comprehensive health care to eligible refugees. It provides services for refugee camps, such as health learning plans and environmental health services. UNRWA has 17 non-communicable disease clinics, 23 child and maternal health centres, 23 family health clinics, 21 laboratories, 21 dental clinics, and 13 specialist health centres (WHO, 2008b).

2.2.3 Strengths, weaknesses, opportunities of and threats to the Jordanian health system

The Jordanian health care system has some strengths, weaknesses, opportunities, and threats. The Jordanian High Health Council (2012) noted the following strengths, weaknesses, opportunities, and threats. Firstly, its strengths are a desire for superiority and progress, advanced infrastructure of equipment and construction, medical organisations with accreditation programmes, centres in Jordan for medical teaching, and exceptional health employees at the local level. Secondly, its weaknesses are restricted health programmes and plans, limitations in coordination and communication, shortage of developed human resources and motivation programmes, confusion in service providers' functions, weaknesses in safety substructure and security, repetition of service provisions, and limitations of health information systems. Thirdly, its opportunities are the political environment, support from the government, availability of an award from King Abdullah II for superiority, modernised communication systems and powerful infrastructure, increased health knowledge level, experienced medical centres, and good quality lifestyle.

Finally, threats are amplified charges for medical services, disease transmission and population increase, increased speed in technology development, weak confidence of people, loss of qualified technical workforce, nonexistence of general health insurance, and limitations of the financial rules for paying back fees.

2.2.4 Health expenditure, health insurance, and financing health

2.2.4.1 Health expenditure

There are many separate programmes that deliver and finance health care in Jordan's health system, of which the MOH and the RMS are the main public programmes. In addition, Jordan University of Science and Technology and the University of Jordan, which are also publicly funded, have smaller public programmes. Moreover, a large private sector and several Non-Government Organisations (NGOs) provide health services for Palestinian refugees through the UNRWA (WHO, 2008b).

Four main sources of income finance the health system in Jordan, according to the National Health Accounts Report for 2008 (WHO, 2008b). The WHO report of 2008 showed that household spending, such as the purchase of pharmaceuticals, user fees, and other health commodities, as well as payroll deductions for insurance, represent 47.7% of the health budget. Public funding, such as contributions to charitable NGOs, general taxation, and premiums paid by public firms, represents 46%. Donor contributions, including those for NGOs and the UNRWA, represent 6.3%. In addition, private firms pay their employees' health insurance premiums (WHO, 2008b). The private sources of health care in Jordan have become important as the amount of public expenditure has decreased from 51% in 2003 to 35% in 2008. About 9.5% of the GDP, which amounted to about JD 598 million (US \$860 million), was spent on the health sector in 2008. Private sources

contributed 58% of the total funds, public funds contributed 37%, and other sources and international donors contributed 5%. Private commercial insurance, out-of-pocket expenditure for health care and self-insured companies are the private sources of funding. Regarding public health expenditures, 7% is paid for miscellaneous activities, 3% for training, 5% for administrative activities, 27% for primary care and preventive services, and 58% for curative health care. Financing from the government budget breaks down to 83% on health expenditure in the public sector; 10% on prescription fees, donations, and insurance premiums; and 7% on doctors' fees. In 2008, JD 185 million was spent on drugs, representing 3% of GDP and 31% of overall health care expenditure. In 2008, total private and public health expenditure was estimated at JD 133 per capita (US \$188 dollars), or JD 727 million. That is equal to 10.4% of GDP (6.1% private and 4.3% public) (WHO, 2008b).

2.2.4.2 Health insurance

In Jordan, overall health insurance covers 68.3% of the country's citizens. The health insurers are university hospitals (2%), private firms (8.8%), UNRWA (11%), MOH (19.5%), and RMS (27%) (WHO, 2008b).

MOH is concerned about the equity and efficiency of the health insurance system. MOH manages one of the main insurance programmes related to public health, civil health insurance. RMS manages another main programme, military health insurance. In addition, MOH offers a safety net for Jordanians who have no insurance coverage and need health services, as it is legally responsible to provide subsidised health care for all Jordanian people.

2.2.4.3 Health financing

The core supply of health financing is the private sector, including user fees, purchase of health commodities and pharmaceuticals, and payroll deductions for insurance, which finances 58% of funding. The public sector finances 42% of overall health spending. There was a decrease in government health care financing from 51% to 42% from 2003 to 2008, although its role is important in providing health services (WHO, 2008b).

MOH and RMS are financed by taxes, although no particular tax is dedicated to financing health services. Moreover, specific parts of the health budget are allocated for health financing. In 2004, when tobacco and cigarette prices increased by 6%, the government allocated part of its funds to the Al-Hussein Cancer Centre to treat its cancer patients. The financing for public programmes comes from user fees, premium contributions, and the general budget. Processes are related to the government budget and are used to determine the civil insurance, RMS, and MOH annual budgets. The resources are allocated to individual facilities through centralised budgeting systems in RMS and MOH. There are no budgets for individual facilities, but they draw from fundamental RMS and MOH departments' allowances for equipment, salaries, pharmaceuticals, supplies, etc. Private sector services and practitioners are paid based on schedules of charges. The MOH must approve all schedules, although it varies in all programmes. The MOH charges are largely documented, whereas real costs for market prices for the other programmes are estimated (WHO, 2008b).

Summary

Despite the fact that Jordan has tried to put in place health infrastructure and fund health care services to meet the needs of the population, the persistence of low-performing

hospitals is an indicator that the problem of quality still remains. Jordan, like all other countries, faces challenges to maintain QMS in hospitals at all times. This study, which seeks to explore obstacles to QMSs in Jordanian hospitals, required that a comprehensive review of the literature on QMS be undertaken. The next section will therefore focus on the nature of quality.

2.3 Nature of quality

2.3.1 Definitions of quality

It is not easy to define what is meant by *quality*. The vocabulary and concept of quality are elusive. According to the Macquarie Dictionary (2009), quality is ‘character with respect to excellence, fineness, etc., grade of excellence: food of poor quality; silks of fine quality’. Different people interpret quality differently. Juran defined quality as ‘Quality is fitness for use or purpose’ (Juran, 1988, p 8). Quality is defined as conformance to requirement, neither goodness nor elegance (Crosby, 1979). Quality ‘is a function of continuous improvement based on reduction in variation around the desired output’ (Deming, 1986, p 2).

Deming’s definition is relevant to health care services and quality management obstacles (the focus of this study) due to the variable nature of delivery of care involving patients with different conditions as well as varying service situations. The notion of continuous improvement to reduce extreme variation around a desired output has to do with ensuring that any potential obstacles to quality are monitored and rectified in order that health care staff are able to maintain quality.

2.3.2 Quality approaches

This section presents an overview of some of the major quality approaches discussed in the literature, which inform quality approaches in health. These include Deming, Juran, Crosby, Feigenbaum, Japanese and European approaches, and are detailed below.

2.3.2.1 Deming approach

William E. Deming (1982) focussed on the enhancement of service and product conformance to design by decreasing variability and uncertainty in designing and manufacturing the product. For this purpose, Deming proposed that management follows an unending cycle (Deming or PDCA cycle) that consists of Plan, Do, Check, and Action (Deming, 1982). This cycle is repeated; once it has been automatically completed, it recommences without ceasing (Figure 2-2). The approach is seen as re-emphasising the role of managers to be positively involved in the organisation's quality programme (Rothwell & Sullivan, 2005).

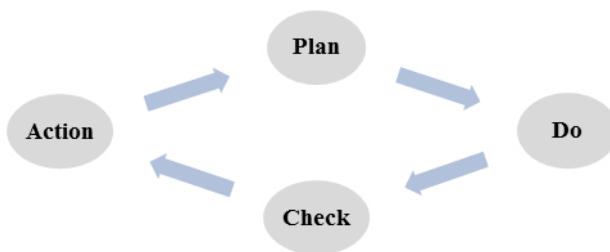


Figure 2-2: PDCA cycle

According to Deming (1993) a quality orientation leads to higher productivity and thereby to lower costs. Thus, Deming proposes that top management ‘works on the system’ by improving it and by inducing a structural change needed for greater coherence of the

organisation and its operational effectiveness. Furthermore, Deming asserts that most quality problems are not workers' fault but management's. The cost of quality currently used in most industrial firms is viewed by Deming as too crude a measure. Rather, some attempts should be made to measure the indirect cost and benefit effects of quality. The tools mostly recommended by Deming are Pareto analysis, Ishikawa diagrams, and histograms. To control the manufacturing process, Deming points out that there are two sources for improvement: firstly, reduction of systemic recurring errors such as poor design, faulty bills of materials, inadequate training, and the like, which give rise to common problems; and secondly, special causes that are associated with specific material, individual, and machine problems, should be removed.

Over the intervening years, Deming has made significant contributions to the improvement of Total Quality Management (TQM), and he is perhaps best known for the 14-point programme of recommendations that he devised for management to improve quality. The following are Deming's recommendations:

- ‘1. Create and publish to all employees a statement of the aims and purposes of the company or other organisation. The management must demonstrate constantly its commitment to this statement.
2. Learn the new philosophy—top management and everyone else.
3. Understand the purpose of inspection, for improvement of processes and reduction of costs.
4. End the practice of awarding business on the basis of price tag alone.
5. Improve constantly and forever the system of production and service.
6. Institute training.

7. Teach and institute leadership.
8. Drive out fear. Create trust. Create a climate for innovation.
9. Optimise toward the aims and purposes of the company the efforts of teams, groups, and staff areas.
10. Eliminate exhortations for the workforce.
11. Eliminate numerical quotas for production. Instead, learn and institute methods for improvement, and eliminate management by objective.
12. Remove barriers that rob people of pride of workmanship.
13. Encourage education and self-improvement for everyone.
14. Take action to accomplish the transformation' (Deming, 1986, p 54).

2.3.2.2 Juran approach

Joseph M. Juran (1988) suggests an approach that focuses on quality management at two levels in organisations. A first level, oriented towards top management, emphasises quality as fitness for use by consumers, while a second level consists of a breakdown of first-level quality missions into missions oriented towards departments in the firm. For these departments, it is then necessary to work in accordance with specifications designed to reach fitness for use. The key aspects of the first quality level involve, according to Juran (1988, p. 22):

1. Product design
2. Conformance to specification
3. Availability
4. Reliability
5. Maintainability
6. Serviceability.

For Juran, top management is important as it is an essential actor in the everlasting process of from market research to manufacture to sales. For the quality management process, Juran proposes three phases: first is the control sequence, which seeks to solve sporadic problems. This is in essence the function of quality control. Second is the breakthrough sequence, which consists of quality improvement by solving chronic problems. To do so, Juran recommends that we use the ‘universal processes for quality improvement, consisting of studying the symptoms, diagnosing the causes, and applying remedies. In this sequence, Juran advocates a project-by-project improvement. At any time, many such projects are ongoing simultaneously. The breakthrough sequence requires a breakthrough in attitudes. Third is institutionalisation of the review process over the quality management process. In such a programme, short- and long-term goals are made explicit, priorities are set up, and the relationships between the firm and the quality strategy are built. Throughout these phases, Juran recommends that training be given a top priority (Juran & Gryan, 1988).

2.3.2.3 Crosby approach

Philip B. Crosby (1979) has an approach based on the definition of ‘absolutes of quality management’ that define quality and the standard required to achieve quality, and prescribes the basic elements for improvement. There are 14 such basic steps: quality improvement team, management commitment, cost of quality, quality measurement, corrective action, quality awareness, supervisor training, zero-defects planning, goal setting, zero-defects day, recognition, error-cause removal, quality council, and do it all over again. Crosby also recommends an unending cycle. The basic tenets of this cycle are that:

- Quality improvement is an everlasting process.

- Quality education and its philosophy begin at the top.
- Quality control departments should believe in zero defects.
- Quality education and training should be excellent.
- Management is patient and never ceases its concern for quality (Crosby, 1984, p. 205).

These recommendations are essential in the health sector because they ensure that quality services are delivered to patients and that barriers to quality management are reduced.

Crosby, perhaps more than Deming and Juran, emphasises the need for a change to corporate culture so that it can embed the values of quality and its improvement in the organisational process. Furthermore, Crosby emphasises zero defects and preventive measures to attain it (Crosby, 1979, 1984).

2.3.2.4 Feigenbaum approach

Armand V. Feigenbaum (1983) introduced the ‘total quality control’ phase, and he described it as an effective consistent system for combining the functions of quality improvement (conception, planning, design; setup), quality maintenance (production, distribution, services), and quality improvement (training, data analysis, user feedback). These functions cut across all activities in the organisation (including marketing, production, and finance) and involve all system phases (inputs, transformation, outputs, and outcomes). Both suppliers and customers are drawn into the total quality concept. The goal of quality, according to Feigenbaum, is to meet satisfactorily whatever customers believe to be their requirements for the service or product. Factors outside organisations such as cultural, attitudinal, and technological changes can make customers dissatisfied with one otherwise satisfactory outcome, thereby continuously motivating new quality improvement cycles (Feigenbaum, 1983).

2.3.2.5 Japanese approach

The Japanese have made numerous original contributions to continuous quality improvement (CQI) thinking, tools, and techniques, especially since the 1960s. The most famous Japanese approaches are Poka-Yoke (Shigeo Shingo), Genichi Taguchi, and Kaoru Ishikawa.

Poka-Yoke stands for ‘resistant to errors’. It is an approach that seeks to render the workplace mistake proof. By reducing the opportunity to make errors, the workplace is simplified into a stream of activities that will have a propensity to produce ‘zero defects’. A Poka-Yoke system can at times institute a full (100%) control if some problems are detected. In this case, there is instantaneous feedback for corrective action (Shingo & Dillon, 2003). The problem is that the Poka-Yoke system is reactive when a default is detected, for this reason; it is combined with control upstream to reduce the chances of errors of being detected downstream, once it is too late. The basic steps implied by the Poka-Yoke are based on common sense and include:

- Controlling upstream, as close to the source of the potential defect as possible.
- Establishing control in relation to the severity of the problem.
- Thinking smart and small.
- Not delaying improvement by prior over-analysis (Asaka & Ozeki, 1996).

Poka-Yoke was developed (at Matsushita Electric and Toyota) in conjunction with the just-in-time (JIT) approach, which seeks to render manufacturing as a flawless flow process while at the same time reducing dramatically the level of stocks. In JIT, the cost of quality is far greater, since ‘there are no buffer stocks’, and therefore each problem has an effect on the production line as a whole. For these reasons, the management of quality in a

JIT production philosophy is a necessity to implement JIT successfully (Shimbun & Magazine, 1988).

The position of controls in a production process, as Poka-Yoke states, is both important and obvious. Sony Alsace (France), for example, claims that the cost of component failure increases dramatically when it is detected downstream rather than upstream. That is, the cost of quality (COQ) is necessarily a function of the position where the quality problem originates and is detected. The closer the detected problem to consumers (downstream), the greater this cost. A control position upstream, at the time materials enter the process, has the smallest COQ. As we move downstream, the COQ increases, since it involves cumulative costs of machine time, personnel, and so on working on defectives. Further, the costs of prevention are smallest upstream and increase importantly when we move downstream (since in-process production and control are quite complex, and they require both sophisticated equipment and intensive managerial efforts). Although these costs of measurement and prevention could theoretically decline once we approach the state of a finished product, the total cost of quality remains higher. For this reason, it is natural to concentrate quality management efforts at the point at which it is least costly and can prevent the most damage (Hartkopf, 1993), and this notion of reducing most damage in a health setting, relates to the design of the care and treatment process, which Taguchi's approach emphasises.

Taguchi emphasised using statistical techniques developed for the design of experiments for quick identification of problematic variations in a service or product and focussed on what he called robust (forgiving) design. He also emphasised evaluating quality from both an end-user and a process approach. This is essential in health systems as the steps in the

care process are critical to how staff engage with the process and what outcomes the patients achieve.

Ishikawa (1985) and other Japanese quality engineers refined the application of the foundations of CQI and added:

- Total participation by all members of an organisation (quality must be companywide).
- Identifying the next step of a process as its customer, just as the preceding step is its supplier.
- The necessity of communicating with both customer and supplier (promoting feedback and creating channels of communication throughout the system).
- A participative team emphasis, starting with quality circles.
- An emphasis on education and training.
- Quality audits.
- Rigorous use of statistics.
- ‘Just in time’ processes.

New approaches, refinements of older concepts, and different combinations of ideas are occurring almost daily. As more organisations adopt CQI, we are seeing increasing innovation and experimentation with CQI thinking and its applications. In health settings, this will relate to the necessity of communication and adequacy of tasks from one care phase to the other and this essentially is the basis for the European approach to quality.

2.3.2.6 European approach

The European Foundation for Quality Management (EFQM) has suggested an approach that presumes that procedures are the means by which the organisation releases and

harnesses the intelligence of its employees to achieve good outcomes. This means the procedures and the employees are the vital parts of any organisation. The approach revolves around the idea that client and employee satisfaction and effect on community are achieved through strategy and policy, leadership, employee management, processes, and resource control to ultimately perfect results in business (Koontz & Weihrich, 2010).

Each of these elements is a measure that can be used to assess the firm's development in the direction of TQM. The outcomes are concerned with what the organisation has accomplished. The enablers' aspects are interested in how outcomes are accomplished. The European strategy for quality is intimately related to the implementation of the ISO 9000 standard (EFQM, 1992).

Summary of quality approaches

Throughout these approaches, there seem to be some common and recurring features. Firstly, all approaches are sensitive to the definition of quality. Secondly, the core attributes of approaches are functional management and a growth of lateral functions and communication within. Thirdly, they involve a structural change to simplify organisational flows, reduce operational complexity, eliminate bottlenecks, and devise a system that is coherent, flexible, and sensitive to the environment, and yet performs well, and includes the involvement of higher-level management echelons. Finally, most of these approaches focus on quality management, where quality management is implemented by enterprises, both service and manufacturing, which have allowed a range of organisations in manufacturing, service, and information industries to reap the benefits.

2.4 Application of approaches to quality in health sector

The same approaches have been used to develop the notions of quality health care services by recognising that organisations need to produce high quality services or, in this case, service. Most of the quality approaches have many recommendations that can appeal to the health sector, such as creating clear aims, involving top management in the quality system, improving the quality process, analysing the cost of quality, creating training programmes, encouraging staff education, and removing barriers to quality. The factory needs to work well as a team and so does the hospital. If there are delays or defects in the service, then the customer will be dissatisfied with the service (Bjørn, Tom & Marti, 2009). The next section examines the history of quality in health care and compares and contrast quality management in production and service organisations.

2.5 History of quality in health care

Quality has been and continues to be a central issue in health care organisations. The following is an historical overview of the quality of health care and the contributions of health care quality pioneers.

In the 19th century, Florence Nightingale, an English nurse, built her reputation upon the cycle of standard setting, observation, review, and improvement (Graham, 1995). The improvements she effected in the hospital at Scutari in Turkey were only possible because her observations allowed her to demonstrate that hospitalisation of wounded soldiers led to an increase rather than a decrease in mortality. Her *Notes on Nursing* from 1859 were in fact standards for nursing care and remained benchmarks for high but achievable quality for many years (Donabedian, 2003).

In the 20th century, Avery Codman recognised that practitioner competence in a Boston hospital was not the sole determinant of quality and published a far-sighted, if dogmatic, volume on economic and organisational as well as clinical aspects of hospital efficiency (Codman, 1916). Sadly, his colleagues were so unimpressed by his activities that they asked him to leave their hospital. He set up his own hospital and called it ‘The End Results Hospital’—thus becoming the first physician to market assured quality.

Despite Codman’s perspicacity, most early ventures in a systematic approach to quality seem to have been only indirectly concerned with end results and to have concentrated instead on the education and licensing of practitioners. During this time, the American Medical Association and the Carnegie Foundation sponsored an evaluation of medical schools. This became the Flexner report (1910), which suggested uniform standards for theoretical and practical education. In the United Kingdom and in Europe, the gradual formalisation of the health care professions saw similar standards set for education and training. The Royal Colleges began their inspections of relevant departments, units, and wards to satisfy themselves that their facilities and procedures were appropriate for medical students. Likewise, the professional bodies for nursing and other health professions set up procedures for the inspection of practical training facilities, offered guidelines on curriculum content, set rules for the balance between classroom learning and practical placement, and began to involve themselves in course evaluation and examination. After that, the rate of change in health care practice and technology has led colleges and professional bodies to take a similar interest in standards for continuing education. There has even been discussion of systems of regular relicensing (Duncan, 1980). All of these activities reflect considerable confidence in the effectiveness of professional education as a guarantee of quality and are some way away from Codman’s focus on the effects of care.

From the 1930s onwards, however, there emerged a stream of studies of health care outcomes. Notable among these are British and American investigations of preventable maternal death. These began in the 1930s and continued in modified form to the present day (Maxwell, 1984). Other regular UK enquiries include reviews of anaesthetic deaths (Lunn & Mushin, 1982), deaths in people under 50 (Royal College of Physicians, 1978), and preoperative deaths (Buck, Devlin, Lunn & Trust, 1987). There have also been studies of the outcomes of cardiac surgery (Society of Cardiac and Thoracic Surgeons of Great Britain and Ireland, 1985); of the use of diagnostic testing (Fowkes, Hall & Jones, 1986); and of the use of Caesarean section (Rosenburg, Hepburn & Mcilwaine, 1982).

In the 1960s, Avedis Donabedian (1966), a professor at University of Michigan, USA, distinguished between technical and interpersonal aspects of quality health care and between quality of structure, process, and outcome with respect to each aspect. The technical aspects of quality care concern the physical manipulation of material things, while the interpersonal are about interactions with patients to achieve maximum benefits of care. For example, an orthopaedic surgeon replacing a hip joint remains in the technical arena just as long as the patient remains unconscious. When giving preoperative reassurance or postoperative instructions for self-care, the surgeon has ventured into the interpersonal. Interpersonal interventions are just as important as technical ones but are much less predictable in their impacts. Donabedian later introduced his three approaches to assessing quality: structure, process, and outcome. He urged health care organisations to examine all three approaches when monitoring and ensuring the quality of care (Donabedian, 2003). These processes suggested by Donabedian (2003) which are detailed later in this literature review, have contributed to health systems' increased attention to the notion of quality as a multidimensional issue.

From the 1980s onwards, quality has been an explicit topic in national and international discussion and debate among health care professionals. In 1983, the European member states of the WHO set up a working group charged with the responsibility of developing a strategy for the introduction of quality for health professionals. The working group recommended the development of strategies for the collection and dissemination of information on quality and for encouraging professionals and others to involve themselves. Partly in response to this recommendation, the King's Fund set up a quality initiative in 1984, this has given support to a range of projects and publications. In UK community medicine, the Royal College of General Practitioners (RCG) launched a quality initiative in 1983 (RCGP, 1985), and by 1990 Hughes and Humphrey (1990, p. 9) were able to refer to an 'extremely large collection of examples' of local quality activities. These are more diverse than the records-based scrutiny of outcomes. They range from large-scale patient and practitioner surveys to informal practice meetings reviewing both the processes and outcomes of care in individual cases (Irvine, 1990). A similar efflorescence of quality initiatives has taken place in UK hospital medicine. These are often referred to as medical audit (Shaw, 1990). Active opposition has been tempered, however, by the perception that failure to participate may result in systems imposed by less well-informed managerial or government forces. The professional bodies for non-physician health care groups have been particularly active in encouraging a range of quality initiatives. Further, the UK Royal College of Nursing (RCN) set up standards of care project as early as 1965. This has developed into a major programme of research, development, and education (RCN, 1990).

In the United States, too, there has been particularly substantial activity in the development of quality systems by and for non-physician groups. Indeed, major surveys of quality activities in the United Kingdom (Dalley, Baldwin, & Carr-Hill, 1991) and in the United States (Casanova, 1990) have both demonstrated that the profession most heavily involved in quality is nursing.

and that it is followed in degree of involvement by rehabilitation professions such as occupational therapy and physiotherapy. Explicit reviews of the quality of care have thus developed as a result of professional concern for standards of practice as well as for standards of education. Almost by definition, however, these reviews have tended to be confined to the work of single professions. Significant exceptions to this are the systems of hospital accreditation, which take as their subject of review the entire operation of specified health care organisations.

From the end of 1980s some countries such as Australia and the USA began to change the direction of quality health care towards patient safety via the establishment of national safety bodies, and national standards. Australia, as one of the pioneers in this field, set up the Australian Patient Safety Foundation (APSF) in 1988. This foundation developed an Advanced Incident Management System Software, which helps to collect and analyse detailed information about health care incidents using a classification based on unintended or unnecessary harm or suffering arising from any aspect of health care management and the things that can go wrong in health care (APSF, 2014). In 2006, the Australian Federal Department of Health created the Australian Commission on Safety and Quality in Health Care (the Commission). This commission created the National Safety and Quality Health Service Standards. These standards included: Governance for Safety and Quality in Health Service Organisations; Partnering with Consumers; Preventing and Controlling Health care Associated Infections; Medication Safety; Patient Identification and Procedure Matching; Clinical Handover; Blood and Blood Products; Preventing and Managing Pressure Injuries; Recognising and Responding to Clinical Deterioration in Acute Health Care; and Preventing Falls and Harm from Falls (Australian Commission on Safety and Quality in Health Care, 2011).

These days many of developed and developing countries have accreditation schemes recognised as providers of national healthcare accreditation services such as Joint Commission (USA), Quality Health care Advice Trent (UK), Australian Council for Health Care Standards, Taiwan Joint Commission on Hospital Accreditation, and Health Care Accreditation Council (Jordan) (ACHS, 2014; HCAC, 2014; Joint Commission, 2014; QHA-Trent, 2014; TJCHA, 2014). These initiatives are crucial to quality of health care. In particular the accreditation scheme will support the identification of QMS in different systems as well as the implementation of better QMS in any jurisdiction, including developing countries such as Jordan.

2.6 Measuring quality in health care

According to Donabedian (2003) there are three main approaches to describe and measure quality in health care. These are the structure, process, and outcome approaches.

2.6.1 Structure approach

The structure approach refers to three main things: firstly, material resources in a hospital such as the facilities available and equipment that the professionals use; secondly, the human resources, including the numbers of physicians, nurses, and technicians as well as variation in specialisations and qualifications of professionals; and finally, hospital organisation structure, such as the distribution of nurses and physicians in a hospital, staff training, method of supervision, and so on (Donabedian, 2003).

It is generally agreed that structure, meaning the method by which a hospital is organised, is a significant determinant of how people in that hospital work and, consequently of the quality of care enjoyed and offered. In some ways, structure in a hospital could be

important for the quality of care that the hospital is able to introduce. Structural approach has a weak relationship with the process and outcomes of health care services (Mitchell & Shortell, 1997). Some studies have also pointed out that the relationship between structure and process is unclear (Ioannidis & Lau, 2001). Counterbalancing advantages are that some attributes of structure are more readily observable, more easily documented and also tend to be more stable. It is important also that the elements in the structure approach, such as material and human resources, constitute key domains of the QMS and therefore attention is focussed on the fact that obstacles within a hospital's QMS can significantly affect quality of care.

2.6.2 Process approach

The process approach signifies activities that constitute health services, including diagnosis, treatment, rehabilitation, and prevention (Donabedian, 2003). The process of care comprises all of the procedures and activities through which health professionals and support workers deploy their time, skills, knowledge, and resources in pursuit of improved patient health and well-being. It has technical, interpersonal, and morale components and includes access, diagnosis, treatment, discharge, after-care, and health education and promotion. Some studies have used the process technique to evaluate process performance, implementation, and improvement (Debra, Riley, & Parsons, 2007). The importance of process in any system or organisation cannot be overemphasised, because systems only reach equilibrium when there are no obstacles to the defined processes. Therefore in examining QMS implementation, particular attention needs to be paid to obstacles that might hinder the internal processes relating to health care service delivery.

2.6.3 Outcome approach

Outcome is considered as the change in individuals and populations related to health care services. According to Donabedian (2003, p 54), outcomes may include:

1. ‘Changes in health status.
2. Changes in knowledge acquired by patients and family members that may influence future care.
3. Changes in the behaviour of patients or family members that may influence future health.
4. Satisfaction of patients and their family members with the care received and its outcomes’.

The outcomes of care are its various effects on patients. These effects can be physical or psychological and can be assessed in individual patients or in groups of patients. They include mortality; health status (in general and in respect to specific conditions); level of function; freedom from pain and discomfort; well-being and attitudes towards self, health, and illness; and response to care delivered, including understanding, participation, compliance, and satisfaction. When outcomes are achieved, new changes should occur. It has been considered that a positive outcome in some situations is maintaining a patient’s health status (Jacobs & University of York, 2009). The existence of sound techniques for the measurement and analysis of outcomes might be thought essential to health care quality assurance, and many studies also rely on the outcome approach (Harris, 2010).

There has been much argumentation about the relative merits of outcome as compared with process as a means for assessing the quality of care. Outcome assessment is favoured because it can be asserted, quite justifiably, that what matters most is the effect of the care

on a patient's health and welfare. However, it should be remembered that outcomes have been defined as consequences attributable to antecedent care. An outcome is also a product, result, or effect usually of some activities (Trauer, 2010). In other words, if one is to use an outcome to make a judgment on quality, one should be able to declare that the care given to a patient led to the outcome observed in that patient. It is often difficult to make this connection between antecedent care and subsequent outcomes. This is called the problem of attribution. The problem of attribution arises, in part, because the relationship between process and outcome is often imperfectly known, and when known, a relationship is a probability that could be small. The probabilistic nature of the relationship between process and outcome means that, in a given case, or in a small number of cases, we cannot be certain that a given set of processes eventuated in one outcome or more specified outcomes. More cases are needed to establish the relationship (Jacobs & University of York, 2009).

Even when large numbers of cases have been observed, there is a further difficulty to overcome. This is because people differ in their social, psychological, medical, and genetic characteristics—features that can, in turn, affect outcomes either separate from the process or by cooperating with the process. This means that before some outcomes can stand for quality, one must correct for differences among patients regarding such characteristics, extraneous to the process of care, through a procedure known as easy-mix adjustment (Trauer, 2010).

According to Harris (2010), outcomes reflect not only what was done for patients but also how skilfully it was done, an aspect of care that process assessment can also reveal but only with the added effort to seek the needed information. The authors also stated that

many outcomes are subject to being experienced and evaluated by patients, such that they can assess the health care services quality they have received. This can also lead to faulty conclusions because not all outcomes are visible, and the outcomes that could appear further on in the future are as yet unknown to the patient, even if practitioners, with some accuracy, can predict them. However, some well-experienced Italian health care centres emphasise that outcome assessment in Italian routine health care practice is successful in the medium and long terms (Ruggeri et al., 2007).

Outcomes that occur during the course of care can of course be easily observed and assessed. In fact, it is by evaluating these concurrent or intermediate outcomes that practitioners ordinarily guide the conduct of care. When the relevant outcomes appear after care has been terminated, however, special effort is needed to obtain the necessary information, by questioning patients or by calling them back for examination, for example. In some cases, it is only after years have elapsed that the more remote consequences of care can be observed. And the longer the time elapsed, the more opportunities for factors outside of the health care to have intervened, rendering the relationship between past care and a remote outcome even more questionable (Jacobs & University of York, 2009).

One must also choose how outcomes are to be measured. In this respect, outcomes could be classified into ‘partial, diagnosis specific’ or ‘inclusive, generic’ (Block, 2006). Partial, specific outcomes are meant to tell us whether or not, in defined situations, specific clinical objectives have been attained: for example, if in a hypertensive patient, blood pressure has been controlled or if after a prostatectomy, urinary incontinence has resulted. Such measures are more dependent upon health care quality and more sensitive to deviations in it.

Inclusive, generic measures are ones that measure general health status inclusive of physical symptoms, function, and emotional dimensions of health (Bhandari & Joensson, 2011) Mortality and its opposite, longevity, are two such measures, but longevity alone does not give a full picture of health. Consequently, a great deal of effort has gone into developing measures of longevity that also take into account various degrees of functional performance or disability and other aspects of what is called the quality of life (Leplege & Hunt, 1997). Despite these difficulties with measuring outcome, it is clear that quality management systems in hospitals need to maintain structures and process through minimising potential QMS obstacles as a way to ensure that services are able to deliver patient outcomes as close as possible to the optimum. Thus all of the three approaches to quality measurement are interrelated and critically important in service delivery.

2.6.4 Choice of an approach

Donabedian (2003) suggests that before choosing an approach, managers should consider the following comments about the three approaches:

1. Inferences regarding quality are not possible unless there is a previous relationship among the structure, process and outcome approaches that can represent a sequence relationship (Donabedian, 2003). This appears in Figure 2-3:

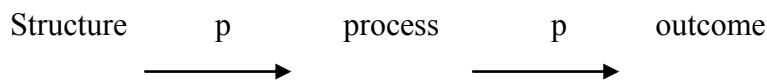


Figure 2-3: Structure-process-outcome approach

2. It should be noted that the relations postulated to exist between adjacent pairs in the structure-process-outcome approach are not certainties. They are probabilities, hence the lowercase ‘p’ that is placed over each of the arrows in the Figure 2-3.

3. A further limitation of the structure-process-outcome approach is that it was developed to assess clinical practice. For that purpose, it performs reasonably well. But when the approach is used to evaluate activities other than clinical practice, it may work as is, may perform only if modified, or may even fail.

All of the three previous approaches have advantages and disadvantages and complement each other. Therefore using a combination of the three approaches is better than using them as separate approaches. The following are some reasons for this:

1. A more complete assessment is obtained from a combination of the three approaches because each of the several categories of information (on structure, process, and outcome) perhaps is more indicative of a given aspect of quality than is another category. If so, the combination can help one explore more fully several aspects of quality.

2. A combined strategy can help identify the causes of failures in quality, attributing them to structure, process, or both. This can suggest what corrective measures should be taken to improve quality.

3. If the inferences about quality based on structure, process, and outcome agree with one another, the agreement tends to confirm that the method of assessment is appropriate and the inferences are valid.

4. However, on the contrary, if the conclusions based on structure, process, and outcome do not agree, one is alerted to the possible presence of one or more of the following problems:

- a. The data on one or more of structure, process, or outcome assessments are incomplete, inaccurately measured, or falsified.
- b. More specifically, measurements may have been made at the wrong time or in an insufficient number of cases or without adequate case-mix standardisation. This is particularly true of outcomes but could be true of processes as well.
- c. The relations postulated to exist among structure, process, and outcome and used as a basis for inferences concerning quality have been erroneous or faulty. This could be because existing scientific knowledge has been misapplied or because the existing knowledge, even properly applied, is fundamentally insufficient or flawed (Kilpatrick & Johnson, 1998).

2.7 Factors influencing health care and the quality of health care

Health care services have the potential to offer patients hope for eventual healing, return patients to a better quality of life after treatment and restore their health completely. However, there are some factors that can influence health care services positively or negatively. The following are the main factors, global factors, social factors, political factors, and economic factors that influence health care and the quality of health care.

2.7.1 Global factors

2.7.1.1 Global health care

Dr Margaret Chan, Director-General of the WHO, (2008a, p. 1) said that ‘Globally, annual government expenditure on health varies from as little as US \$20 per person to well over US \$6000’. Globally, all governments bear varying responsibility for the health of their people. Contexts differ economically, politically, and socio-culturally, as do values and conceptions of what constitutes need. Regardless of this diversity, there are common themes underlying the form that health care takes that relate to the conceptualisation of and balance among the principles of equity, efficiency, and adequacy.

There are many ways in which health systems can be classified: by the nature of state power (Duran-Arenas, 1992), the economic system (Elling, 1994), and the features of the health systems (Roemer, 1991). The first two are based on theoretical perspectives, while Roemer’s classification is more pragmatic. Elling’s model is based on world systems theory, from which he links a country’s position in the world economy with the strength of any workers’ movement and arrives at a five-part model whose components are named: core capitalist (United States); core capitalist/social welfare (Canada/UK); industrialised socialist oriented (former USSR); capitalist dependencies in the periphery or semi-periphery (India, Philippines); and socialist oriented, quasi-independent (People’s

Republic of China, Cuba). The strength of this model is its theoretical derivation; its limitation is that it depends on historical case studies for which data may be limited. Similarly, Duran-Arenas (1992), seeking a model that would explain the variability of the role of doctors as health care managers, produced a fourfold categorisation based on the form of state power: pluralist (United States); social corporatist (Sweden); state corporatist (Mexico); and state centralist (former USSR). Again, there is value in its theoretical derivation, but its utility is limited unless case studies of countries' political systems are available. The features of the health systems (Roemer, 1991) approach is more pragmatic because it allows insight into the structures of health organisations and offers opportunity for identifying what works as well as the obstacles to the systems that need rectification.

2.7.1.2 Quality of global health care

There is a complex interrelationship between a country's level of income and the quality of its health services. Rich countries have higher quality health services and healthier populations than poor countries. A healthier population contributes to economic growth and prosperity. Worsening health increases indebtedness from health care expenditures, furthers marginalisation from the economy, and slows economic growth. Orthodox economic arguments highlight the need for macroeconomic growth to reduce levels of poverty, but not all growth benefits poor people, and there are increasing concerns about 'jobless' growth, with millions of poor people remaining at the margins of society. Debt relief and fairer trade with access to markets for poorer countries and communities are also required actions from rich countries' governments. Poor countries need more international aid. More predictable aid would enable countries to fund sustainable 5- to 10-year health plans and invest in well-trained workforces. Greater investment is needed in new

technology, such as better diagnostics, medicines, and vaccines for HIV, TB, and malaria (WHO, 2008c).

However, none of these will make a significant difference without high-quality health services that are accessible to poor people and staffed by well-trained, supervised, motivated, and adequately rewarded health workers. The framing of numerical goals and targets leads to a more focussed attention, but also runs the risk of leading to a technocratic, top-down approach to the complex challenges facing different countries and cultures (Freedman, 2005).

Global knowledge of effective interventions alone is not enough to enhance the quality of health services. Governments have a key role, and when a government is unwilling or too weak to implement change, poverty and ill health prevail. For poor countries to improve the quality of their health systems, they must establish good communication and cooperation with developed countries and develop systems that take care of QMS obstacles.

Much of the poor performance in terms of health-service delivery is due to weaknesses in public-expenditure management, institutions, and budgeting as well as the fact that governments are not accountable to their people (Grindle, 2004). Governments should be held responsible for updating fiscal discipline and ensuring that the resources are used in an efficient way based on correct management to gain the best health outcomes. Budgeting and expenditure monitoring enable corruption to be tackled more easily; data should be accessible and promote transparency in fees, but there are often strong forces at work to avoid such transparency. The Commission for Africa Report (2005) concluded that

without the development of enhanced governance, all other modifications would have small impact.

2.7.2 Social factors

2.7.2.1 Social context of health care

Socially structured variations occur when some people have more resources such as health facilities and education than others and when they have gained this advantage because of their social situations. Put another way, people are located differently in the social system because they have differential access to resources that are scarce and highly valued, such as wealth, power, prestige, and health, and their access to these resources is largely affected by their income, education, age, gender, and ethnic origin (Graham, 2007). Braveman and his colleges (2005) argued that health, educational and income attainments are the two predominantly used indicators of socioeconomic situation in the United States. These indicators are strongly related to common assessments of health and health-related behaviours during one's life. A discussion of social variations means a discussion of social stratification, the general term for the way in which, in almost all societies, the population divides itself into ranks or strata, one above the other. The people on the top have the most advantageous life chances and the power to change their own and others' destinies and they get better health services and education, while the people below have fewer resources and less freedom to choose the way they live with limited health facilities and educational chance. Societies differ in the number of strata and the ease with which people can move from one level to another, either up or down.

The consensus viewpoint is that society is essentially stable. Variations challenge people to work hard so they can move upward in the hierarchy, and in this way, a stable social system will be maintained. The consensus view also holds that by rewarding people

unequally, society ensures that tasks will be done by the most suitable individuals who will compete for the most interesting, best-paid work. Both perspectives agree that variations are fundamental in every society, and since people's health statuses are an aspect of society, it is inevitable that there will be differences in health (Thomas, 2003).

2.7.2.2 Social context of quality health care

People in a community should be satisfied with the health care services they are provided. People's perspectives reflect perceived quality. People's (patients') satisfaction is an important part of Total Quality Management (TQM) in health care, so health care organisation should measure people's satisfaction. Such measurement efforts will provide health service organisations operating in highly competitive markets with the opportunities to consider the needs of key stakeholders. Furthermore, measurements of consumer satisfaction provides a comprehensive, systematic, and patient-centred approach for analysing, implementing, monitoring, and improving both the perceived and clinical quality aspects of care (Ford, Bach, & Fottler, 1997).

From a marketing perspective, we typically view parties to an exchange of goods and/or services as the context for (dis)satisfaction measures. The expectancy disconfirmation model used to explain post-purchase satisfaction suggests that consumer satisfaction can be defined as the 'evaluation rendered that the experience was at least as good as it was supposed to be' (Cronin, Brady & Hult, 2000, p 32). Post-purchase satisfaction is classically derived from the relationship between the consumer's expectations and the product's (or service's) perceived performance (LaBarbara & Mazursky, 1983). If the rendered service or product meets or exceeds expectations, then the consumer is satisfied; if the rendered service or product does not meet expectations, then the consumer is dissatisfied. Thus, it is critical to understand as much about the consumer's decision processes as possible in order

to assess post-purchase behaviour adequately, particularly, the reported measures of satisfaction. This entire process can be quite complex, depending on the type of health care service being offered.

Who are the people who use health service organisations? They are the consumers, and the consumers, in general, can be viewed as the parties using the provided services and/or products of the exchange. Measures of consumer satisfaction may broadly target measures for patient/family, practitioner, staff, and contract service administrators. Measuring consumer satisfaction is also important to note the role of others, such as health care workers, suppliers, communities, and families. In particular, families can act as a key agent in the market exchange for health care services and have often reported either directly or indirectly as proxies concerning patient satisfaction (Schweikhart, Strasser, & Kennedy, 1993). Furthermore, research suggests that friends and family of patients, acting as their advocates, may be a harder group to satisfy than patients themselves (Shelton, 2000). In considering the various consumers of health care, it is important to recognise that patients, providers, and payers define quality differently. These differences result in different expectations of the health care system and, thus, differing measures of satisfaction in evaluations of quality (McGlynn, 1997).

Consumer satisfaction provides a useful outcome measure for the quality of care offered by a health care organisation. Patient perceptions of quality of care are reflected in reported satisfaction measures. Ford et al. (1997) reviewed the literature that reported some of the benefits of measuring patient satisfaction, including: increased profitability, increased market share, improved patient retention, improved collections, increased patient referrals, improved patient compliance, continuity of care, reduced hospitalisation and

length of stay, and reduced risk of malpractice. Satisfaction measures, together with clinical outcomes and cost data, are increasingly used by employers as part of their value-based purchasing of health care benefits, by insurers in contracting for network services, and by potential partners in establishing health care alliances and systems (Woodbury, Tracy, & McKnight, 1997). Hospitals can improve upon these perceptions of satisfaction and quality by identifying QMS obstacles, which relate to customer concerns and make efforts to address them.

2.7.3 Political factors

2.7.3.1 Health policy in health care

The formulation of health policy is a political process and as such is subject to a variety of influences. Financial and economic expediency and considerations of influence and control are commonly major determinants of policy. Scientific evidence, if it exists, is often overshadowed by these other considerations. As more scientific data on health are made available, biased decisions will be more difficult to make (Bryant, 2009). By employing scientific methods, identifying the population's perspective on health can produce a global definition of health problems and solutions and thus provide an unbiased and objective basis for health policy. A national health policy in the form of explicit objectives and priorities has more to do with an ideal state than with actual practice. By comparison, other types of government policies, such as trade, defence, or international aid, are more explicit and more easily recognisable than policies that promote health. Because chronic disease and accidents are caused by lifestyle and environmental factors, an effective health policy would need to involve the authority of many government departments, including at least education, agriculture, urban development, the environment, communication, social services, and transportation. The common form of health policy is one dominated by the

administration of health services and health insurance, so as to ensure that steps are being made toward improving a nation's health (Weissert, 2012).

2.7.3.2 Health policy in quality of health care

Health policy, just like any other area of public policy, could be a group of institutions, organisations, services, and funding arrangements (Palmer & Short, 2000) that can affect the quality of health services. Obviously, health policy is also influenced by groups and individuals outside the formal institutions and systems of the sector, as are other policy sectors. The established set of groups and individual actors involved in policy making is as important as the structures that, to varying extents, constrain and generate opportunities for policy making to enhance the quality of health services. Understanding the actions and interactions of policy actors is just as important as understanding the institutions and systems of a particular policy sector. The medical profession and other health professions are uniquely placed to shape the health policy process, both as a powerful group of people with expert knowledge and access to the political process and as the labour force that delivers high-quality health care (Giaimo, 1995). Despite societal changes that have reduced the status of experts and specific challenges to professions from governments and others seeking greater control over their work, professions still exert a powerful influence on health policy.

Also, the expert nature of the knowledge that underpins health care provision and the lack of technical expertise that individual consumers have in distinguishing between high and low quality make this one of the most difficult policy areas to govern. With assessments of quality relying on peer reviews, as only equally highly educated people are able to judge the technical aspects of quality, it is difficult for those outside this group of resource rich

politicians and senior administrators, such as the less resource-rich consumers and citizens, to challenge professional knowledge (Palmer & Short, 2000).

Finally, community expectations regarding health are amplified because of the high stakes attached to decision making wherein life and death are frequently involved. One of the most significant consequences of this is that health has enormous political immediacy as compared with other sectors. The medical profession is very skilled at using the media to turn the pressure up on governments by threatening to stop working under current conditions in hospitals and other health service areas. Images of sick children and their unhappy parents make for great television and provide tremendous leverage. The other effect of this focus on ‘crisis’ is that the unglamorous, non-heroic fields of disease prevention, public or population health, and health promotion gain scant attention and relatively little funding. Approximately 30% to 50% of health expenditure is on hospital and nursing-home care in developed countries, and an additional 10% to 20% is on pharmaceuticals. In contrast, an average of just 2.8% of health expenditure is on prevention and public health (Gerard, Bianca, & Uwe, 2007).

2.7.4 Economic factors

2.7.4.1 Economics in health care

Economists have also become interested in health care in recent years, again mainly as a result of the increase in the total health expenditure or the size of the countries’ Gross National Product (GNP) percentages devoted to health, and because of the ability of global measures and economic forecasts to give at least the illusion of greater certainty regarding the planning and execution of health budgets. As governments have become more cost conscious, the promise of economics has been to provide ways in which choices can be

made in allocating finance based on techniques such as cost-benefit analyses and maximising the output for every input of money (Giaimo, 2002). Political economists have contributed to the critical literature that looks at the effects of a capitalist mode of production on the form that health care takes and at the effects of industrial production on the health of workers (Doyal, 1995).

High-cost medical systems, many procedures, and high levels of intensity are a result of the high-quality technology and service those hospitals and physicians have used to increase their profits. High competition occurred between hospitals regarding the availability of technology and services in their hospitals (Rasell, 1995). In addition hospitals can increase their profit by using a quality approach in their services. Quality orientation is a step toward reducing the costs of health care services and increasing profit (Heuvel et al., 2005).

2.7.4.2 Economics in quality of health care

A challenge is how to determine the economic impact of quality on health care organisations. Meaningful cost-benefit and cost-effectiveness studies are often difficult to do. However, as previously indicated, there are costs associated with implementing quality improvements. Boards, third parties, employer groups, and government entities will want to know what the payoff is for quality. The costs of quality have typically fallen into four categories. Two are somewhat easy to determine: the cost of prevention (training, team activities, communication, etc.) and the cost of appraisal (testing and inspection). The other two are difficult to determine: the cost of internal failure (waste, rework, downtime, disruption, etc.) and the cost of external failure (patients go elsewhere, litigation, ill will, etc.) (Penner, 2004).

However, quality or efficiency in health care is the ability to lower the cost of care without diminishing attainable improvements in health. This means that quality or efficiency is increased if, for a given cost, health improvement is also increased or if the same degree of health improvement is attained at a lower cost. It follows that the mere reduction in cost does not denote efficiency unless health benefits are either unaffected or improved. There are three ways of improving the efficiency of quality in health care.

1. One way is for health care practitioners to prescribe and implement care that does not include harmful, useless, or less-effective remedies or methods. This kind of efficiency has been called clinical efficiency because it depends on clinical knowledge, judgment, and skill (Eastaugh, 2004).
2. Eastaugh (2004) also states that another way of improving efficiency is to more efficiently produce the goods and services that are used in providing care. For example, costs are lowered if a hospital is run at a higher occupancy rate, or if a nurse is not asked to do things that an aide or secretary could do just as well. Perhaps one could also include in this category changes in procedure (for example for the preparation and administration of drugs) that reduce the frequency of errors that might cause injury and, consequently, higher costs. Eastaugh has called this kind of efficiency production efficiency. It has also been called managerial efficiency because it depends on organisational and managerial decisions in which clinicians do not play the decisive role. It should be recognised, nevertheless, that without the participation and consent of clinicians, some of these changes would be difficult to introduce (Eastaugh, 2004).

3. Eastaugh also mentioned another way of making care more efficient to distribute it among different classes of patients (characterised by age, sex, ethnicity, economic status, place of residence, kind of illness, etc.) in a way proportionate to expected improvements in health. In other words, resources are allocated to population subgroups that are perhaps sicker or are more likely to benefit from care, and these are allocated for longer periods of time, and at a proportionately lower cost. In doing so, one aims for what is called ‘distributional efficiency’. This is an aspect of quality at the societal level.

Because clinical efficiency is so closely allied with patient care, Eastaugh (2004) mentioned a few illustrative examples and the literature contains many examples of the efforts to devise new strategies of care that lower costs while outcomes remain unchanged or even improve. Stiell et al. (1993) demonstrated that by codifying rules that guide the physical examination of patients who have suffered injuries of the ankle or foot, it is possible to reduce the number of X-ray examinations of these parts by 30% without causing harm. The resulting savings, assuming this procedure was universally adopted, is estimated at \$150 million for the United States. It is important to note by way of summarising that the full benefits of clinical, managerial and distribution efficiency measures in any health organisation can be countered by obstacles to QMS, hence the need for managers to identify and rectify these QMS obstacles.

2.8 QMS components and their implementation

Many hospitals in different countries, such as the United States, Canada, Australia, the United Kingdom, Thailand, Jordan and others apply QMSs based on constituent components. These hospitals are looking for ISO certification. Therefore, they attempt to improve their QMSs to meet the components of a QMS (ISO 9001) to get the ISO certificate (Sampaio, Saraiva & Rodrigues, 2009).

A QMS can be described as a set of key quality elements that must be in place for an organisation's work operations to function in a manner so as to meet the organisation's stated quality objectives. Such a system provides the means to direct and control the organisation with regard to quality. The increasing complexity of today's healthcare services emphasises the need for a systematic approach that both promotes and provides for the highest level of service quality and patient safety. A health care quality management system describes, documents, implements, measures, and monitors the implementation and effectiveness of the work operations of any organisation, service unit, or support operation in the organisation. According to ISO and CLSI (Clinical and Laboratory Standard Institute), the following are components of a QMS (CLSI, 2004; ISO 9001, 2008).

- Systems that can control documents and records in hospitals**

Hospitals should have systems that can control documents and records. These systems should have certain functions, such as creating a standard document, determining where this document should be used and who should use it, and providing record storage to prevent damage or loss. These systems can play significant roles in developing and modifying documents and records.

- **Organisational system**

A hospital cannot work in an efficient way without a successful system. The system should be supported from top managers to create a quality culture among employees; have a plan for quality to develop the hospital mission; have a quality manager with many managerial and quality skills; and have a quality committee to monitor and support quality implementation.

- **Qualified employees with experience**

Hospitals should look for qualified employees with experience to occupy suitable positions or jobs. Hospitals should also determine job qualifications and job descriptions for each job; develop orientations for new employees to become familiar with the hospital culture and facilities; and provide training for new and old employees when implementing a new system, process, instruction, or technology. These procedures can help hospitals to improve their services.

- **Enough and suitable equipment, materials, and instruments**

Hospitals should have enough and suitable equipment, instruments, analytical systems, and computer programmes to support their services. Hospitals should consider the following points to select their equipment and maintain it: procedures for equipment acquisition, installation, and identification should take into account energy use, environmental affect, and method of disposal; all equipment, instruments, materials, computers, and programmes should be described for users and be valid; and equipment records should be available to track equipment and components and include all information about equipment.

- **Purchasing and inventory**

Hospitals should have supplies, materials, reagents, and services all the time; therefore, hospitals should have good relationships with providers. The following activities should be followed in purchasing: identify critical supplies, materials, and services; have a list of approved suppliers and records of suppliers' evaluations; review contracts to obtain or provide materials and services periodically; and have inventory files include dates when received, lot numbers, acceptance criteria, and dates of use or disposition.

- **Process control**

Most hospitals look for effective and efficient processes to implement, and hospitals should identify work procedures in their operations and document them in visual charts. Operation procedures should be valid to meet patients' expectations. Hospitals can control their processes by: creating process flowcharts for all activities in hospitals; validating and verifying hospital processes; identifying and writing work procedures; and monitoring hospital processes and functions to ensure they are going to achieve the hospital's goals.

- **Information management**

The flow of information between departments inside hospitals should be within a secure system, as well as communication with other hospitals and organisation. Information management should deal with the following points: directing and managing the hospital information, concentrating on entering data in the computer and final results; creating a system to manage incoming and outgoing information; and allowing access to all computers by user name and password, which should change regularly for security reasons. Data should maintain their integrity, and a comparison should be made between

final dates and sources of data. Hospitals should have plans or procedures for a computer system break-down, and they should have forms for requests of patients' information.

- **Occurrence management**

Occurrence management programmes are aimed to identify problems in hospitals and make solutions for these problems. This type of programme allows hospitals to avoid financial and legal risks. Occurrence management includes: capturing hospital information to maintain the hospital system and procedures as well as to avoid mistakes and problems; using occurrence report forms; solving problems immediately and documenting problems and actions in occurrence report forms; analysing occurrence information; and taking corrective action by removing the cause of the problem and creating procedures to deal with similar problems in the future.

- **Assessment: external and internal**

External and internal assessment can support hospitals to implement quality management systems effectively. Each hospital should measure the effectiveness of its QMS regularly. External assessment can be one of the following: accreditation assessment according to national, regional, or international requirement; external quality assessment that makes a comparison of methods and services; and benchmarking that compares a hospital or service with other hospitals or services.

Internal assessment is evaluation from inside the hospital to assess the quality of services and requirements. This assessment should depend on: quality indicators (statistics, data, information, or processes) and an internal audit programme (quality audit methods,

auditors, and audit reports). Hospitals need periodic reporting for external and internal findings.

- **Process improvement**

Any hospital should look for process improvement to compete with other hospitals. Process improvement involves: identifying opportunities for improvement from feedback from employees, physicians, patients, external assessment, or internal assessment; preventing non-conformance and corrective action; identifying a problem solution process; making improvement through a work team; identifying quality improvement tools; and reporting quality improvement activities.

- **Customer service**

Hospitals should look for patient satisfaction, measure it, and determine their needs. To do this, hospitals need to: identify hospital customers; identify their needs; document any customer compliance; conduct surveys of customers to get feedback about hospital services; and take improvement action depending on customers' feedback.

- **Facilities and safety**

Each hospital should maintain an environment that provides safety for patients and employees. Environmental safety includes treatment, care, and services. Hospitals can achieve optimum efficiency of facilities and safety by: frequently maintaining equipment and furniture; leaving enough space in rooms and corridors; creating a safety manual; frequently cleaning work areas; recognising any hazards and removing them; isolating dangerous materials; and making a committee for infection control (CLSI, 2004; ISO 9001, 2008).

2.9 Strengths and weaknesses of QMSs

2.9.1 Strengths of QMSs

The literature on QMSs found that they have both strengths and weaknesses. Many writers such as Nanda (2005), Thorpe and Sumner (2004), and also the WHO, have written about the strengths and weaknesses of a QMS. According to the WHO (2008a), the strengths of a QMS are:

1. Enhanced management and more effective organisation

Better management is a philosophy of measurement, calibration, and liability at any time it is required or when any risk may occur. If quality assessment is handled carefully, there is a cost savings. Better management provides clear regulations that are valid for each employee, introduces ongoing development for the daily leadership, and is a clear and practical method for solving problems by defining obvious interfaces and responsibilities. Its purpose is to increase productivity and benefits by allocating cost investments in production control and by providing the amount of inspection required to meet the user's level of satisfaction (Nanda, 2005).

If responsibilities are clear, both workers and managers are satisfied. From an organisational point of view, a QMS is a good tool for reducing training costs when staff changes, for protecting knowledge, and for reducing overlapping work. Its use results in greater employee satisfaction and helps in selecting tenders and subcontracting.

2. Improved quality of products and services

This improvement is achieved by following the events that occurred during production or services and creating the product or introducing services compatible with users'

specifications. Process control is the main goal, and it is to be achieved by describing, observing, simplifying, and optimising the process. This will lead to more knowledge of the process, which will help in detecting errors, resolving them, and avoiding repetition of the same errors. It provides more information about the products by offering control and proof of inspection to patients (Oakland, 2012).

3. Workers' satisfaction and more commitment to the organisation

A more effective QMS leads to greater employee satisfaction. It helps employees to know that customer demand is based on quality, not only on quantity. When they use new methodologies, their experiences allow them to know where and to whom to give direct feedback. With the implementation of a QMS, they know they have done 100% of the job (Thorpe & Sumner, 2004).

4. Promotion

QMS improves co-operation among employees and management and improves the organisation's performance. The corporate image of the organisation can be improved by implementing a QMS (Oakland, 2004).

5. Better customer satisfaction

If the customers' needs are fulfilled, then customer satisfaction will be achieved. Improved and consistent approaches to customers are achieved by the framework of the QMS (Nanda, 2005). A QMS provides a standard process for handling complaints and a better definition of users' specifications. Moreover, it offers the customers and partners a model that includes how and where needs have to be explained, who has to transform these needs

into specifications, who is responsible in claim cases, and how the claim has to be resolved (Oakland, 2012).

2.9.2 Weaknesses of QMSs

Even if there are many strengths of a QMS, there are also weaknesses, as explained by Jelena, Aleksandar and Zdravko, (2008) below:

1. Additional set of rules and paperwork without actual results

Many rules and additional paperwork can be introduced which do not increase outcomes. The paperwork overload could lead to, for instance, lack of appropriate break periods, increasingly heightened expectations, unrealistic deadlines, and work stress (Shimazu & Kosugi, 2003). In addition many rules and paperwork overload can cause exhaustion among employees and interrupt work (Zohar, 1999).

2. Dissatisfaction of employees because of new methodology

QMS implementation is a technological and organisational revolution, the same as all other revolutions with similar worldwide characteristics, such as open systems, data communications technology, computer technology, and so on. Using a new methodology or a new technique most of the time leads to dissatisfaction among employees (Rose, 2005). Dissatisfied employees tend to spend less time focussing on their job duties and more time discussing with family, friends, and co-workers why they are unhappy at work. The dissatisfaction among employees will translate to low productivity, reduce an organisation's profits and cause customer loyalty to decline (Gennard & Judge, 2005). Satisfied employees, on the other hand, make the most of their work time, producing quality services and products (Kuballa, 2007).

3. Increase in production costs

While QMS costs could be considered an extra cost, it is a method for costs saving by organising production. An increase in production costs is expected in the short term. A balanced analysis, however, will be needed to compare the extra cost of implementing a QMS with non-quality costs, and this can be difficult to evaluate. Quality investments in quality management are not necessarily made to achieve the best outcomes; instead, they are made to fit with users' needs to achieve their satisfaction. QMS costs must be reasonable in terms of the added value (Jelena, Aleksandar, & Zdravko, 2008).

2.10 Importance of QMSs for Jordanian hospitals

QMSs are important to all hospitals because successful QMS implementation can lead to enhanced management and more effective organisations. It can provide clearer direction that has validity for each employee. Through the introduction of ongoing staff development to improve daily leadership, there is a clear and practical method for solving problems by defining the link between the challenge and each person's responsibilities. Improved management of services leads to limited or less errors at work. This leads to increased employee commitment to the organisation (Nanda, 2005). A more effective QMS leads to more employee satisfaction, and this leads to employees providing better services to customers, thus improving organisational performance (Oakland, 2012). A QMS improves the cooperation among employees, and in turn, among employees and management, again improving organisational performance (Heuvel et al., 2005).

Jordan, the context of this study can also benefit from QMS implementation. Jordan faces many important challenges in its health care system. Some of these challenges are: inefficiencies observed in the provision and financing of health services, the increasing

demands and expectations of the public for effective and accessible health care, the rapid advances in technology and rising health care costs, increased health expenditure, inadequacy of the health plans and programmes, and lack of skilled management expertise (WHO, 2006; Jordanian High Health Council, 2012).

Countries such as Thailand and Zambia have addressed these deficiencies by the appropriate implementation of QMSs in their respective health care systems (Pongpirul et al., 2006). In the same way, Jordanian hospitals can address these challenges by implementing an appropriate QMS.

QMS Conclusion

QMSs are being used in many hospitals throughout the world to increase quality, improve effectiveness, reduce costs, and conserve resources. Health care must expand its view of quality beyond the departmentalised quality assurance activities to keep pace with the growing role of quality management in today's competitive environment. In the manufacturing and service sectors, quality management systems are being used effectively. To enhance patient safety in the health care sector, these systems should be implemented.

The same quality system fundamentals can be used in many health care organisations or services, but each organisation should specify its specific workflow. This includes all the processes, policies, and procedures for all the services in the whole organisation that could be developed by the health care organisation's management.

To implement quality policies in any organisation, standardised procedures and processes are needed to decrease conflicts, efficiently compete for limited resources among the

organisation's services, and reduce opportunities for medical errors and costly discrepancies. Using the same quality system essentials for each health care service integrates the QMS across the entire organisation.

2.11 Studies of quality in health care systems

The literature shows that the studies about quality in health care systems focus on quality management, TQM, and QMSs. Many researchers have studied quality management, TQM, and QMSs through different approaches (Lee, Roberts, & Lau, 1999; Menezes, 2012; Rad, 2006; Sequist, 2010; Srdoc, Sluga, & Bratko, 2005). While foci vary, the literature includes quality improvement in developing countries, customer satisfaction, and improvement in business performance (Chow-Chua & Goh, 2000; Rad, 2006; Srdoc et al., 2005). Some of these studies will be useful in trying to understand quality management issues in health, and therefore, these studies will be reviewed as well.

2.11.1 Quality management

Quality management is a method that focuses on continuous enhancements in quality and employee involvement that each lead to meeting or exceeding customer expectations (Srdoc et al., 2005). There are many ways to implement quality management. One way is to adopt specific quality management practices that will differ based on the production system and integrated management systems that emphasise the whole organisation's competitiveness and sustainability beyond product quality, such as the European Foundation for Quality Management Excellence Model and the criteria of the Baldrige National Quality Program (White & Prybutok, 2001). The connection between organisational performance and quality management has been the topic of many studies (Bou & Beltran, 2005; Molina-Azorin, Tari, Claver-Cortes, & Lopez-Gamero, 2009;

Narasimhan, 2004). The general expectation is that quality management decreases costs, attains customer satisfaction, leads to a market advantage, and generates greater revenues (Green, 2007; Menezes, 2012; Srdoc et al., 2005).

2.11.2 Total quality management (TQM)

Total quality management (TQM) has been defined as a management philosophy that seeks to integrate all organisational functions (such as the treatment and management of patient records, patient care, administrative activities, marketing, finance, etc.) to focus on patients' needs and organisational objectives (Desai, 2010). The use of TQM practices in business performance is an essential element for improvement. However, many organisations have failed in implementing TQM programmes because they have not overcome the obstacles in their implementation (Rad, 2005).

Successful TQM implementation requires some changes, such as a cultural change. The relationship between organisational design and TQM success might indeed vary according to cultural values. However, the links among different types of cultures, cultural strength, and TQM success have seldom been examined. Therefore, researchers have attempted to investigate the role of organisational culture on TQM success (Rad, 2006). The results of one such study showed that assistance in planning will improve organisations' TQM designs (Tsang & Antony, 2001). There is potential to use these results to develop quality management theory and create a culturally suitable TQM model that can be implemented effectively, simply, successfully, and professionally.

2.11.3 QMS

Improving the QMS of health care has become a concern for governments, patients, professionals, and managers working in low-income countries without universal access to services. On the other hand, patients who can afford health care fees are paying more for health care in public and private hospitals. However, these health care organisations usually do not practice improvement in service quality or health outcomes. Most of the time, patients compare their experiences with those countries with higher QMSs because they anticipate more from their health services.

Accessible, quality health care is one determinant of a nation's health and connected directly to a nation's wealth (Øvretveit & Al-Serouri, 2007). However, there are many challenges to improving quality in the face of increasing economic and human resource pressures. Without low-cost loans or donor support, many countries cannot construct or improve new services, develop managers' competences and systems, use experts, or develop their expertise, all of which are necessary when it comes to quality of services.

Studies of the quality of health services are important to improve overall performance and provide health policymakers and managers in different countries with the best methods to improve QMSs. Indeed, the identification and removal of QMS obstacles can be the first step in improving health care quality. Since the focus of this study is on the obstacles to QMS implementation in Jordan, this literature review will next look at studies on the obstacles to a QMS.

2.12 Obstacles to implementing a QMS

While it is evident that a QMS is useful and that some specific actions can lead to successful implementation of a QMS, there are some obstacles that hinder a QMS. Studies from many countries, such as those of Abdullah, Razak, Hanafi, and Jaafar (2013), Mosadeghrad (2013), Bartunek (2011), and Dixon-Woods et al. (2012) have shown similar and varied types of obstacles to QMS implementation. Diverse interest groups and researchers encourage diverse approaches to studying quality (Menezes, 2012; Rad, 2006; Sequist, 2010; Srdic et al., 2005). While some studies concentrate on quality management (QM), others focus on TQM. This section of the review will look at studies about obstacles to a QMS, including those that used TQM approaches.

Abdullah et al. (2013) explored the main barriers of ISO 9000 implementation in local government organisations in Malaysia. The study questionnaire focussed on statements that related to the barriers, which normally occur in implementing ISO 9000. The participants were 53 quality officers in different organisations. The study found that there are three main barriers: organisational barriers, such as lack of human resources; resource barriers, such as employees' culture regarding quality; and behavioural and cultural barriers, such as negative perception or attitude toward quality and lack of involvement, cooperation, and commitment from employees.

Al-Zamany, Hoddell, and Savage (2002) focussed on the difficulties and barriers that hinder the implementation of quality. Their study involved two case organisations in Yemen. They found that many obstacles hindered quality in Yemen's organisations. These obstacles included assessment and review actions by the managers toward their employees, customers, technology, competitors, quality, and performance; the managers' personal

involvement in setting the organisation's objectives and goals; the continual development actions, whereby the managers should look constantly for further efficient and effective methods for improving and conducting the work; appreciation actions, whereby the managers offer essential appreciation and rewards to groups and individuals for high-quality performance; efficient communication to keep the staff knowledgeable about everything that concerns their work and organisation; understanding and meeting the customers' requirements; cooperation with the community; communication of the organisation's plans, goals, and mission to the staff at every level; developing and reviewing the organisation's policy and strategy, which must be put in line with concepts of quality; and standard meetings to improve and review the tactical plans. The study found that many obstacles hinder quality in a developing country such as Yemen.

Lin and Jang (2008) empirically examined how organisations in Taiwan have successfully implemented and benefited from QMSs. The study used a survey questionnaire. A total of 441 usable responses were compiled in the survey. The findings showed that there is a positive relation between the use of a QMS and organisational performance. The findings showed that an organisation's performance and successful QMS implementation are positively related. Factors facilitating success include four constructs: quality planning, top management support, continuous improvement, and employee involvement. This study connects the implementation of a QMS with organisational performance.

Amar and Zain (2002) examined the barriers faced by Indonesian organisations in the implementation of quality. Out of a total sample size of 364 selected organisations identified for a multi-response survey, 78 organisations responded. The results showed that 11 factors are recognised as barriers that are commonly faced by the local organisations:

issues linked to management, human resources, attitude towards quality, interdepartmental relations, organisational culture, raw materials, equipment, machines, information, training, and methods. The study also found that many obstacles hinder quality in a developing country such as Indonesia.

Messner (1998) referred to the barriers that can prevent the implementation of an effective quality improvement programme in health care settings. Based on the literature, the researcher classified the obstacles under six dimensions: (1) problems with organisational culture such as overcoming engrained philosophies and mind-sets, resistance to role changes, and allowance for behavioural changes being too narrow; (2) problems with management, such as organisational goals not being clearly communicated, lack of perceived management presence and support, viewing quality improvement as a quick fix, role changes for management, organisational commitment, and hiring for the new culture; (3) quality assurance, such as at the end of the process with minimum standards of care, performing quality assurance tasks for the wrong reasons, and outdated standard operating procedures and standards of care; (4) problems with the quality improvement team, such as not having enough time to become a team, lack of interdisciplinary teams, personal agendas, misdirected training and education, and lack of creative benchmarking; (5) cost issues, such as working within the budget, consultants, and the dangers of automation; and (6) other barriers, such as special interest groups, legal hurdles, measuring progress incorrectly, and difficulties in measuring success. This present study relies on the literature to classify these obstacles.

Pongpirul et al. (2006) explored the obstacles in Thailand hospitals that implement quality management systems based on hospital accreditation standards. The participants were a

total of 728 health care professionals and 41 surveyors of the national accreditation programme. The study used both separate self-administered questionnaires with 24 items and individual interviews which focused on obstacles and problems concerning Thailand hospital accreditation standards. The results, based on the opinions of over 90% of both groups of participants, demonstrated that there were problems such as utilisation and integration of information and quality improvement (QI) activities. Some examples of items regarded as major obstacles by health care professionals were utilisation and integration of information (26.6%) and adequacy of workers (34.6%). The items that were classified as major obstacles were integration and utilisation of information (43.9%), referral and discharge process (31.7%) and medical recording process (29.3%), for the surveyed group.

Karaszewski (2004) also conducted a survey to evaluate how certain challenges influence the process of QMS implementation in different organisations in Poland. One of the main objectives was to identify the relationship between the results achieved by the organisations and the scale of challenges that accompany QMS implementations. A survey of literature on the subject, consultations carried out in scientific centres, and research involving selected transnational organisations allowed the researcher to identify six main factors that create challenges: cultural limitations, insufficient management preparation, insufficient employee preparation, employee attitudes, specific legal regulations, and technological limitations. These findings align with the other studies showing that management, leadership and cultural issues are obstacles that can hinder QMSs.

Hudelson et al. (2008) conducted a study to explore the ideas about quality held by hospital-based doctors and nurses in Switzerland. Semi-structured interviews were

conducted with 21 doctors and nurses in five hospital departments to explore their ideas about the definition of quality in health care, as well as their perceptions about the main barriers to achieving quality health care. The researchers found three main obstacles to quality health care. They were tension between clinical and administrative responsibilities; overwork and time pressures; and system constraints on the practitioner.

Some other studies using TQM approaches found similar problems. For example Rad (2005) investigated the success of quality and barriers to its successful implementation in health care services organisations in Isfahan province, Iran. This study focussed on the organisations that apply TQM only. This descriptive and cross-sectional research study was done via questionnaires. The statistical population of this research consists of all managers of health care service organisations who implemented TQM in their organisations. The researcher mainly found vital barriers and obstacles to successful implementation of quality because of a relation between the barriers to quality and human resource, structural, and strategic problems.

Mosadeghrad (2013) also explored the barriers to quality implementation in the health care sector in Iran, focusing on TQM. The study found that unsuccessful TQM efforts in health care organisations could be attributed to the strongly departmentalised, bureaucratic and hierarchical structure, professional autonomy, tensions between managers and professionals, and the difficulties involved in evaluating health care processes and outcomes. Other obstacles to TQM success included the lack of managers' and employees' consistent commitment to and involvement in TQM implementation, poor leadership and management, the lack of a quality-oriented culture, insufficient training, and inadequate

resources. The study focussed on the obstacles that hinder TQM in health care organisations.

Soltani, Lai, and Gharneh (2005) examined the importance of senior management commitment to the successful implementation of TQM initiatives in Iran. The result appeared to be an interrelationship, in general an extremely close and linear one, between chief executive officer commitment, employee commitment, and the efficiency of quality programmes. This study relied on the examination of an obstacle, the lack of top managers' commitment.

In a study conducted in the United States, Huq (2005) focussed on change management issues that address quality management practices in the service sector. The study employed a qualitative case study methodology. Twenty service organisations from health care services were studied over a period of two years to assess their change management practices for implementing TQM. The findings point to a less than total implementation of TQM in the studied organisations. Among other issues, unrealistic expectations for employee commitment, absence of process focus, lack of organisation around information flow, holes in education and training, and failure to create a continuous improvement culture contributed significantly towards failure. More successful companies focussed on avoiding these potholes with strong leadership that emphasised strategic and tactical planning. The study was directed at change management issues.

Some of the studies that used secondary data or extensive literature reviews came up with a range of barriers or obstacles to QMS. For example Dixon-Woods et al. (2012) analysed and evaluated reports relating to five Health Foundation improvement programmes in the

United Kingdom. A rapid narrative review of relevant literature was also undertaken. The authors identified 10 key challenges that health organisations face, which relate to quality improvement. The challenges were identifying the problems; finding solutions; over-ambitious goals; data collection and monitoring systems; organisational context; lack of employee engagement; culture and capacities; relying on the inherent inspirations of employees for quality development; leadership; securing sustainability; and side effects of change. The authors used secondary data from reports to find the challenges and also relied on a rapid review of the literature.

Desai (2010) also conducted an extensive literature review on the barriers to quality implementation and the causes of quality failures common to all types of organisations. The author referred to 22 barriers found in the literature to quality implementation. These barriers were lack of awareness of quality at the management level; deficiency in management commitment; deficiency in vision; deficiency in constant education and training; failure to adjust organisational culture; inappropriate planning; unsuccessful measurement methods; deficiency of access to results and data; inaccessible individuals and department; inappropriate organisational structure; insufficient use of teamwork and empowerment; paying insufficient consideration to external and internal customers; insufficient resources; inability to construct a learning organisation that offers constant development; short-term focus or using a Band-Aid solution; deficiency in congenial interpersonal relations; improper communication across the organisation; lack of customer focus; lack of cost and benefit analysis; lack of organisational structure; quality-seeking creating its own bureaucracy; lack of measurement or erroneous measurement; inappropriate reward and recognition system; and deficiencies in accounting systems. The author also discussed the ways and means of overcoming these barriers. This study not

only mentioned the barriers to quality, but also discussed solutions to overcome these obstacles.

Further, Bhat and Rajashekhar (2009) identified the barriers to quality implementation so as to make them known to the managers in India. The authors relied on an extensive literature review and a survey to identify the obstacles to quality. In this study, there were 41 completed questionnaires, and the overall response rate was 31%. The study found the following obstacles: employees are resistant to change; no benchmarking of other company's practices; lack of planning for quality; lack of customer orientation; lack of total involvement; lack of resources; and lack of management commitment.

Finally, Dew (2003) conducted an extensive literature review to extract the main causes of problems hindering quality in the United States, which he called the seven deadly sins of quality management. The researcher used a root cause analysis to identify the following seven deadly sins of quality management: firstly, the hospital management does not allocate enough budgetary resources to support quality improvement. Secondly, the hospital does not have a suitable schedule for the quality process. Thirdly, the hospital's policy is one of the obstacles to quality. Fourthly, the hospital is arrogant; for example, managers maintaining that their "hospital is the best; it has the best system and the best quality". Fifthly, managers sometimes make decisions without knowledge or enough information. Sixthly, managers believe some decisions or practices are good without any evidence. Finally, managers practice an autocratic approach in the hospital.

Other studies about QMS focus on customer satisfaction and managers' experiences. For example, Helms and Mayo (2008) explored the variables most often associated with

customer dissatisfaction to discern which variables result in customer defection. Employees deal with customers as their exclusive job function and are trained to correct customer concerns. The customer service respondents were surveyed and asked to list their top service complaints. From this list they were also asked to indicate the top-ranked poor-service issue that would cause them, as customers, to defect and select a competitor to provide a substitute service. The researchers found that there were four categories classified as the top reasons for defection and were renowned most frequently as service problems by respondents. These were overall poor service; rude employees/poor attitudes; slow service; and employees socialising and not paying attention to customers. This study concentrated on the customers' views about the service obstacles; however, it did not find the obstacles to a quality system implementation inside the organisation.

In a study conducted in Australia, Briggs (2008) studied the lived experience of health service managers, their perceptions of the health system and the health management role. The researcher found that lack of training for hospital managers impacts negatively upon the outcomes of the health care system. He also found that qualified health service managers encouraged and helped health care professionals to achieve successfully in their roles.

Summary

This literature chapter described the health care system in Jordan; the nation's population, geography, and economy and health status, expenditures, insurance, and financing. Following this, the quality of services and quality approaches were discussed, including factors influencing health care and the quality of health care and how to measure quality in a hospitals' record of care. Next, was an overview of the history of quality in health care.

In addition, the QMS components and their implementation were outlined. The strengths and weaknesses of QMS and the strengths, weaknesses, opportunities, and threats to the Jordanian health care system are discussed. Also discussed are the importance of QMS for Jordanian hospitals and the likely impact and implications of introducing QMS for Jordanian hospitals at both the hospital and national levels. Finally, studies of quality in the health care system and obstacles to implementing QMS were reviewed, and the understanding gained from this review informs this study.

CHAPTER 3

Methodology

3.1 Introduction

The aim of this study was to explore the obstacles facing the implementation of QMSs in high- and low-performing hospitals in Jordan. The research questions were related to which of the factors of QMS the hospital staff think are major obstacles; what are the major obstacles in each of the five factors (human resources, material resources, vision and change, leadership and management, and communication); what are the effects of demographic characteristics (gender, age, profession, education level, department, work experience in the hospital, and work experience in the health field) on the participants' perception of obstacles in QMS; and whether there are any significant differences in QMSOS scores between the three high-performing hospitals and the low-performing hospitals.

This chapter presents the research methodology used to explore QMS obstacles in high- and low-performing hospitals in Jordan. The content includes the study design; population and participants; research methods; sampling and sampling procedures; the study instruments (questionnaire and interviews); pilot study; data analysis; connection of quantitative and qualitative data; and ethical process for the conduct of the research project.

3.2 Study design

This study used a mixed method-sequential exploratory design to investigate QMS obstacles and ways to address them in high- and low-performing hospitals in Jordan. The sequential exploratory design is one of the four mixed method designs. The other mixed method designs are parallel design, triangulation design, and transformation design (Teddlie & Tashakkori, 2009). In sequential designs data is collected in phases. Phase one may involve quantitative data based on a questionnaire and the second phase may be qualitative data based on interviews (Johnson & Onwuegbuzie, 2004). The advantage of sequential exploratory design is that it allows the researcher to have a sound understanding of what to explore in the second phase of data collection (Tashakkori & Teddlie, 2003). In this study phase one involved a cross sectional survey (questionnaire) yielding quantitative data and the second phase involved interviews yielding qualitative data.

The sequential exploration design was deemed suitable in order to identify high- and low-performing hospitals by using an expert reference group, then using participants' responses to identify the QMS obstacles in the high- and low-performing hospitals and then employing the next stage of the sequential design to elicit responses as to how to address the obstacles (Teddlie & Tashakkori, 2009). This approach, rather than other approaches, was chosen for this study for the following reasons. This study sought two types of information: information related to the nature of QMS obstacles in high- and low-performing hospitals and information related to how the QMS obstacles can be addressed. Therefore the data was collected in phases, which was in conformity with a sequential exploratory approach. In the first phase, questionnaires were distributed among hospital staff to collect quantitative data about QMS obstacles. In the second phase, interviews were conducted to seek suggested solutions (qualitative data) to QMS obstacles. The two

types of information are separate, but the two phases are connected. QMS obstacles data in the first phase was connected to the second phase, which focused on the interviews with participants about how to address the QMS obstacles (Creswell & Plano, 2007).

3.3 Research methods

This study used the mixed method because it is ‘a research (approach) in which the investigator collects and analyses data, integrates the finding, and draws inferences using both quantitative and qualitative approaches or methods in a single study or programme of inquiry’ (Tashakkori & Creswell, 2007, p. 4). It used questionnaires that yielded quantitative information to explore QMS obstacles and interviews that yielded qualitative data to extract solutions to address QMS obstacles. Connecting the questionnaire and interview information allowed the researcher to extract recommendations around the implementation of QMS in hospitals.

3.4 Population and participants

The study population was all the staff in the MOH hospitals and private-sector hospitals in Jordan. This study was conducted in six Jordanian hospitals located in four different regions. The study participants were the staff who worked in these six hospitals, such as doctors, nurses, midwives, pharmacists, dentists, accountants, clerks, and allied medical professionals. Staff who participated had at least a diploma qualification, were above 20 years old, and had a minimum of three years’ experience in a hospital. These groups of participants were selected because they had direct knowledge of obstacles in their areas of work and in-depth information about the hospitals in which they worked. The researcher had no prior engagement with the participants.

3.5 Sampling and sampling procedures

The total number of participants in this study was 908 staff from six hospitals, including nurses, doctors, allied medical professions, midwives, accountants, clerks, pharmacists, dentists, and other technical and administrative staff. All 908 participants completed questionnaires about QMS obstacles and 24 of the 908 were also interviewed about how to address the QMS obstacles identified from the questionnaire data. The participants were drawn from three high-performing hospitals (two private and one public) and the three low-performing hospitals (one private and two public). The three high performing hospitals were designated A, B and C. The three low performing hospitals were called X, Y and Z.

3.5.1 Sampling of hospitals

At the time of the study, there were 101 hospitals in Jordan. Sixty-one were private hospitals, 31 were MOH hospitals, seven hospitals were military hospitals, and two were university hospitals (MOH, 2010; RMS, 2010). The sampling of high- and low-performing hospitals in both private and MOH hospitals was done in order to understand the type and number of obstacles according to hospital characteristics as well as performance.

The categorising of the hospitals into high- and low-performing hospitals was determined by the expert reference group because there were no objective data in Jordan to rate the hospitals. The United Kingdom also uses an expert reference group for high-impact policy changes (Shaw, 2008). The criteria for selecting the expert reference group were based on those holding a senior position in MOH or a PhD degree and working in the health departments of Jordanian universities. In this case, the expert reference group was a mix of three people who have senior positions in MOH and three academic experts who hold a

PhD and work in the health departments at Jordanian universities. The expert reference group also had proficiency in management and quality and were familiar with and knowledgeable about the health situation in Jordan. The group was therefore considered qualified to help identify high- and low-performing hospitals.

To select high- and low-performing hospitals, each expert was provided with a list containing all MOH hospitals and private hospitals in Jordan with some information about each one. After that, each expert was asked individually to select three high-performing and three low-performing hospitals based on the three indicators - input, process and outcomes.

Inputs include material resources in a hospital such as the facilities and equipment, human resources such as the numbers of physicians, nurses, and technicians, hospital organisational structure, such as the distribution of nurses and physicians, staff training, and methods of supervision. Process on the other hand, includes activities that constitute health services, such as diagnosis, treatment, rehabilitation and prevention. Finally, outcomes are the changes in individuals and populations such as changes in health status; knowledge acquired by patients that may influence future care; changes in the behaviour of patients that may influence future health; and satisfaction of patients with the care received and its outcomes.

Each expert selected three high performing hospitals and three low performing hospitals based on the criteria. Each hospital that was chosen as high performing was included in a list. Then each hospital that was chosen as low performing was included in another list. From these lists the researcher randomly selected three high and three low- performing

hospitals for data collection. The six selected hospitals belong to four governorates, including Amman.

3.5.2 Sampling of hospitals staff

The sampling of staff was based on a stratified random sampling procedure. Stratified sampling is a powerful and flexible method that is widely used in research (Sarndal, Swensson, & Wretman, 2003). In stratified sampling, the population is divided into groups. In this case the groups were the different professions in the participating hospitals. The study questionnaire was distributed to each group based on the Ministry of Health (2010) data on the average staff percentages in Jordanian hospitals as shown in Table 3-1.

Table 3-1: The average staff percentages in Jordanian hospitals

No.	Profession	%
1	Nurses	46.8
2	Doctors	16.3
3	Allied medical professions	15.6
4	Midwives	3.7
5	Accountants	3.1
6	Clerks	1.7
7	Pharmacists	1.2
8	Dentists	0.6
9	Other technical & administrative staff	11.0

3.5.3 Sampling of interview participants

The selection of hospital managers for the interviews was based on purposive sampling technique, resulting in a total of 24 participants. The 24 participants were hospital managers (medical directors, managing directors, quality managers, and directors of nursing), who were interviewed about how to address the QMS obstacles in high-performing and low-performing hospitals in Jordan.

The prime consideration with the sampling process in this case was to recruit and select informants who could provide a deep understanding of the issues under investigation and to recruit and select them in such a way as to give credibility to the findings so that they can be potentially generalised to another context or a larger population (Ebrahim & Bowling, 2005). Therefore, the sample in this case included role holders and key informers who could provide ‘information-rich’ data, which according to Patton (1990, p. 322) can ‘illuminate the questions under study’. Four participants (hospital managers) were selected from each hospital to participate in the qualitative interviews (for more details, see Table 3-2).

Table 3-2: Frequency and percentages for the interview participants

Characteristics	Groups	Count	%
Gender	Male	13	54.2
	Female	11	45.8
Age	30 - < 40 years	2	8.3
	40 - < 50 years	6	25
	50 years or more	16	66.7
Education level	Bachelor	7	29.2
	Postgraduate	17	70.8
Work experience: in the hospital	6 - < 11 years	2	8.3
	11 - < 16 years	12	50
	16 - < 21 years	6	25
	21 years or more	4	16.7
Work experience: in health field	6 - < 11 years	2	8.3
	11 - < 16 years	3	12.5
	16 - < 21 years	6	25
	21 years or more	13	54.2

Table 3-2 shows that more than half of the participants were male (54.2%). The ages of the participants were from 30 to 50 years old or more, with the majority of them, 50 years or more. Most of the participants were postgraduates. Participants’ years of experience in their hospital ranged from 6 to 21 years or more, with half of them having experience of 11 to <16 years. Participants also had experience in the health field from 6 to 21 years or more, with more than half of them having experience of 21 years or more.

3.6 The study instruments

The study used a set of questionnaire and an interview guide to collect data. The questionnaire called the Quality Management Systems Obstacles Scale (QMSOS) was developed by the researcher to explore the QMS obstacles in Jordanian hospitals. The interview guide was used to explore ways to address QMS obstacles.

3.6.1 The Quality Management Systems Obstacles Scale (QMSOS)

There are different obstacles that can hinder QMS implementation in hospitals. They have an impact on efficiency and effectiveness of performance. Since obstacles are different from country to country, there are also differences in hospitals' performances (Karaszewski, 2004; Pongpirul et al., 2006). Many studies explore quality obstacles using questionnaires (Karaszewski, 2004; Lin & Jang, 2008). While some researchers have used questionnaires based on their country's accreditation standards (Pongpirul et al., 2006), other researchers have restricted their studies to some obstacles in organisations focused on applying TQM programmes (Karaszewski, 2004).

For this study, the researcher first developed a series of statements about QMS and TQM concepts derived from various studies (Chiu, 1999; Davies, Nutley & Mannion, 2000; Desai, 2010; Dixon-Woods et al., 2012; Hudelson et al., 2008; Karaszewski, 2004; Lin & Jang, 2008; Mannion, Davies & Marshall, 2005; Pongpirul et al., 2006; Rad, 2005; Tamimi & Sebastianelli, 1998; Zabada, Asubonteng, & Munchus, 1998). These statements were refined and pruned into 23 statements representing conceptions about QMS. These 23 statements were considered important because each one was identified in more than one study as affecting QMS and were therefore used as items of the QMSOS.

The QMSOS therefore has 23 statements about QMS obstacles, which is consistent with other studies. Tamimi and Sebastianelli (1998) and Messner (1998) used 25 statements in their studies, Pongpirul and his colleagues (2006) used 24 statements, and Desai (2010) used 22 statements.

The QMSOS questionnaire is divided into two sections, A and B. Section A includes demographic variables of participants such as gender, age, profession, education, department, experience in the hospital, and experience in the health field. Section B has 23 QMSOS statements, with 5-point Likert scale response options from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). The total possible score on this scale is 115 and lowest possible score is 23. A high score on this scale indicates high QMS obstacles and a low score indicates low QMS obstacles. The statements of the QMSOS were made up of positive and negative statements. Examples of the statements used in the QMSOS are:

1. Hospital management supports the quality procedures.
2. Hospital has inadequate communication between departments.
3. Hospital has adequate material resources (for more details see Appendix 1A).

The questionnaire (QMSOS) was translated to the Arabic language by an English–Arabic translator (see Appendix 1B). The questionnaire was translated again into the English language by another translator to be sure that the Arabic translation was accurate. The questionnaire translation process was based on Brislin's approach, 'translation and back translation process' (Brislin, 1986, p. 39).

3.6.1.1 Pilot study

After selecting three high- and low-performing hospitals from the list that was selected by the expert group, the researcher randomly selected two hospitals (one high- and one low-performing) for a pilot study. The QMSOS was distributed among staff of the two hospitals, which were not included in the final study. The pilot study was conducted in Jordan in October 2012. The purposes of the pilot study were as follows:

- To assess the validity and reliability of the questionnaire.
- To receive comments about the questionnaire statements.
- To get an indication of whether the statements are clear.
- To ensure that survey statements have operated well.
- To ensure that the research instrument as a whole functions well.
- To examine cultural sensitivity.
- To give a good sense of how the study procedures worked in practice.
- To check the possibility of applying the study in the real world.

Before distributing the questionnaire among hospital staff, the questionnaire was sent to management and quality experts for suggestions on content validity and how the researcher could improve the questionnaire so it would be more suitable for this study.

3.6.1.2 Validity of the questionnaire

Validity refers to the extent to which measures give consistent and accurate results (Sim & Wright, 2000). The content validity of the questionnaire was determined by distributing the questionnaire among six quality and management experts in addition to two persons working in hospitals. These people gave feedback to the researcher, which was used to

ensure that the concepts were written in a clear and unambiguous way, were cultural sensitive and made more suitable for this study.

3.6.1.3 Reliability of the questionnaire during pilot study

During the pilot study the researcher distributed the questionnaire among hospital staff in two high- and low-performing hospitals on two occasions to confirm the reliability of the questionnaire. The data were subjected to reliability analysis on both occasions and the analyses showed Cronbach's alpha values of 0.79 and 0.83 respectively. According to Reynaldo and Santos (1999) a Cronbach alpha value of 0.70 is adequate for research. Hence the score of 0.79 and 0.83 for the QMSOS were taken to indicate a reliable tool.

3.6.2 The interview guide

The Interview Guide consisted of four main questions to address the QMS obstacles. They were framed as below:

1. How can hospitals address the QMS obstacles that are related to the leadership and management factor?
2. How can hospitals address the QMS obstacles that are related to the resource management factor?
3. How can hospitals address the QMS obstacles that are related to the quality improvement factor?
4. How can hospitals address the QMS obstacles that are related to the organisational culture factor? (for full interview questions, see Appendix 2 A & B).

3.7 Data collection

After the pilot study, the questionnaire was found to be a reliable instrument and therefore was used to collect data for the actual study in three high-performance hospitals, and three low-performing hospitals. These were not part of the hospitals in the pilot study. The data were collected between October 2012 and January 2013.

The letters of invitation and questionnaire packages were sent to the managers of the hospitals, and they gave them to the department heads. In each hospital, the questionnaires were distributed among their staff (nurses, doctors, allied medical professions, midwives, accountants, clerks, pharmacists, dentists, and other technical and administrative staff) according to the Ministry of Health (2010) percentages of staff in Jordanian hospitals. Specifically, each hospital was given 200 questionnaires and the heads of departments were required to distribute the questionnaires based on the percentage of staff. For example, the Ministry of Health (2010) data indicate that nurses make up 46.8% of hospital staff, so the Head of the Nursing Department was given 46.8% of the 200 questionnaires (to the nearest whole number) sent to each hospital. Then the Head of Nursing distributed the questionnaires randomly among the nurses (for the details, see Appendix 3).

The participants were required to drop the completed questionnaires into a locked box to preserve anonymity. The researcher collected the completed questionnaires and the response rate was 75.7%.

After the questionnaires were completed, the researcher conducted interviews using the interview questions. The targeted participants were asked by the researcher if they were

willing to participate. After receiving their verbal consent for willingness to participate, each of them was contacted and the interview arranged at a mutually convenient place and time. A printed information sheet about the study was given to each participant. A consent form was given and signed by the interviewee before the interview. The interviews were conducted from December 2012 to January 2013.

Interviews followed a semi-structured format that relied upon central topics when asking questions. The approach to the interview followed an informal conversational style with prompts to get more in-depth information (Leech, 2002). The interviews varied in length from approximately 45 to 60 minutes. The face-to-face interviews were recorded by a digital recording device. Notes during and at the end of the interviews were taken by the researcher. The interview process commenced with the following steps:

1. introduction, information sheet reading, and informed consent completion;
2. collection of background information and demographic data of the participants;
3. questions and prompts; and
4. conclusion and thanks.

3.8 Data analysis

The quantitative data were analysed using the Statistical Package for Social Scientists (SPSS) programme. Before the analysis, the coding for the negatively-worded items of the QMSOS was reversed. The responses to the 23 items of the QMSOS were subjected to reliability analysis. The results showed that the Cronbach's Alpha value for the 23 items was 0.77. According to Reynaldo and Santos (1999) a Cronbach alpha value of 0.70 is

adequate for research. Hence the score of 0.77 for the QMSOS were taken to indicate a reliable tool and was therefore used in further analysis.

3.8.1 Factor Analysis of QMSOS

The responses from the 908 participants on the QMSOS Scale were subjected to factor analysis. Factor analysis computes correlations among all the variables in a set and derives factors by finding groups of variables that are correlated highly among each other, but low with other variables. The objective of factor analysis is to identify groups of the items that clustered into factors, and these identified factors are then used as variables.

The objective in this case was to determine whether the 23 items of the QMSOS developed for this study would yield the same factor structure or QMS Domains as suggested by the literature in the field and used by researchers such as Krzemien and Wolniak (2007), Lin and Jang (2008), and Pongpirul, et al. (2006). The responses from the 908 participants were examined employing a Principal Component Analysis, and then a Varimax Rotation Matrix with Kaiser Normalisation. The rotation yielded five factor components, with initial eigenvalues greater than 1.0. The item-loading of these factors was different from the original domain distribution as contained in the QMSOS. Some items loaded onto different domains. The new five factors (Domains) accounted for 43.4% of the variance and were named as follows:

- Leadership and Management
- Material Resources
- Human Resources
- Vision and Change
- Communication.

The items included in the different factors are shown in Table 3-3 below.

Table 3-3: Factor analysis of QMSOS rotated matrix

Statements	Rotated Component Matrix^a					
	1	2	3	4	5	6
Inappropriate procedures	.652					
Lack of patient focus	.603					
Improper quality and patient safety plan	.563					
Lack of quality lectures	.540					
Improper application of human resources policy	.518					
Ineffective ways to measure quality	.512					
Lack of teamwork encouragement	.464					
Insufficient staff motivation	.442					
Lack of staff				.289		
Frequent changing of the hospital manager		.578				
Lack of costs and benefits analysis			.628			
Lack of quality procedures support			.542			
Inadequate material resources			.502			
Insufficient budget for a QMS			.459			
Improper data utilisation			.411			
Lack of rewards for hospital staff				.664		
Inadequate authority delegation				.521		
Lack of training programmes				.409		
Focusing on short-term goals only					.777	
Resisting changes					.734	

Inaccurate database						.661
Inadequate communication						.606
Inability to change the organisation's cultural perspective regarding quality						.569

The researcher removed one statement about frequent changing of the hospital manager because, based on the factor analysis, this statement did not belong to any factor. The Cronbach alphas for each factor—leadership and management, material resources, human resources, vision and change, and communication—were 0.72, 0.67, 0.29, 0.45, and 0.25, respectively. Although some factors had alpha values of less than .70, this is to be expected for shorter scales of this nature. They were therefore still used in further analysis.

3.8.1.1 Leadership and management factor

The leadership and management factor has eight statements: hospital does not follow standard procedures; hospital management does not focus on quality of patient services; hospital does not have quality and patient safety plans; hospital does not hold lectures for staff about quality; hospital does not have and apply a human resources policy; hospital does not have an effective way to measure quality; hospital managers do not encourage staff to work as a team; hospital does not motivate staff to participate in quality improvement.

3.8.1.2 Material resources factor

The material resources factor has five statements: hospital does not analyse the costs and benefits of quality improvement; hospital management does not support quality procedure design; hospital does not have adequate material resources; hospital does not allocate

sufficient budget for a quality management system; and managers do not utilise the data that are available in the hospital database to make a decision.

3.8.1.3 Human resources factor

The human resources factor has four statements: hospital does not have adequate staff to complete the work; hospital staff is not rewarded for achievements in quality improvement; hospital management does not give enough authority to the staff to improve hospital quality; and hospital does not have adequate training programmes about quality for staff.

3.8.1.4 Vision and change factor

The vision and change factor has two statements: hospital plan focuses on short-term goals only and hospital staff resist change.

3.8.1.5 Communication factor

The communication factor has three statements: hospital has an inaccurate database; hospital has inadequate communication between departments; and managers are unable to change the organisation culture and work towards quality.

These factors emerged based in factor analysis and were also used in further analysis.

3.8.2 Quantitative data analysis

The data were analysed using descriptive statistics, *t*-test, One-way Between Groups ANOVA, and General Linear Model (GLM) Univariate Analysis. These procedures were used for analysing QMS obstacles and the demographic information.

The data from the survey were entered directly into the Statistical Program for Social Sciences (SPSS) for manipulation and analysis. The 5-point Likert scale was used in this study so that an interpretation of the scale scores could be made for QMS obstacles. Mean values for statements were computed. As there is no cut-off point in the literature regarding classifying the QMS obstacles, the study considered that if the mean of an item (obstacle) was less than 2.5, then the obstacle was considered minor. If the mean of the item (obstacle) was 2.5 and less than 3.5, then the obstacle was considered moderate. If the mean of the item (obstacle) was equal or more than 3.5, then the obstacle was considered major.

The data analysis firstly provides basic descriptive information on the distribution of selected demographic data, and statements referring to obstacles (count, percentage, mean, and standard deviation). To compare the significance of the difference between two mean values, *t*-tests were conducted. To evaluate the significance of the difference between more than two mean values, One-way Between Groups ANOVA, and General Linear Model (GLM) Univariate Analysis were conducted. To further explore and interpret these variables, a significant General Linear Model (GLM) Univariate Analysis was followed by multiple comparison analysis (Tukey's Honestly Significant Differences) to determine which of the groups were significantly different for each of the independent variables examined. When a probability value (*p* value) was equal or smaller than 0.05, the difference was considered to be statistically significant.

3.8.3 Qualitative data analysis

The qualitative data from the 24 interviews to address the major QMS obstacles was analysed with the help of N Vivo qualitative data analysis software package. Other studies about quality and obstacles have used the same analysis approach (Dixon-Woods et al., 2012; Hudelson et al., 2008; Tan et al., 2006). The researcher transcribed the interview tapes verbatim, reviewed them and then analysed the data manually. Later, the data were imported into the N Vivo qualitative data analysis software package to assist with linking data and concepts contained in the data.

This qualitative data analysis utilised methodological principles of thematic analysis. Since there is little available information about addressing QMS obstacles, thematic analysis was considered an appropriate method for the study as it allows the researcher to find the best solution to address the study problem (Wilkinson, 2004). The themes were developed by using a summarised interpretative approach to the data, as described by Wojnar and Swanson (2007). The modelled processes include (1) reading the interviews to obtain an overall understanding, (2) coding for emerging codes in a number of cycles, (3) identifying common codes from coded transcripts, (4) clarifying disagreements in interpretation, (5) identifying common themes and patterns and making inferences from them, and (6) selecting sample quotes to illustrate the themes that emerged.

3.9 Connection of quantitative and qualitative data

Sequential mixed-method data analysis occurs when the quantitative and qualitative strands of a study occur in chronological order. Data analysis for the quantitative and qualitative phases may evolve as the study unfolds. In this study, the quantitative phase occurred first, followed by a qualitative phase. The descriptive statistics, ANOVA, GLM, and t-tests analysis in the quantitative phase identified the major factors that hinder QMS.

Then the thematic analysis in the qualitative phase to address the major QMS obstacles was then carried out (see Figure 3-1).

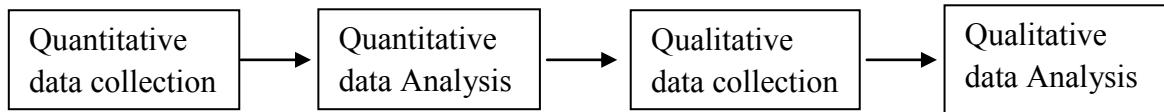


Figure 3-1: Connection of quantitative and qualitative data

3.10 Ethical processes for the conduct of the research project

In most research designs, the researcher should be aware of confidentiality, privacy, avoidance of harm to participants, and informed consent. Since no tracking of participants was required for this study, it was much easier to ensure anonymity. There was no need to keep lists of names or to match names to responses. In some studies, confidentiality issues can arise even when information is provided anonymously. In a survey of an organisation or a specific region or in a national census, it is conceivable that individuals could be identified by examining a set of characteristics. For individuals with relatively unusual characteristics, it may be possible to identify individual people (Oliver, 2010).

To guard against this problem, the data in this study was ‘anonymised’ before being released to other people for further analysis. The study achieved this using various strategies, such as asking participants not to include their names on the questionnaire. Other ways were to omit certain key information, such as any geographic identifiers, and reducing the precision of the data by collapsing categories. For example, instead of providing data with specific ages, only age groups (e.g. from 20 to less than 30 years) were released. Another strategy was to omit any linking of information between individuals. For example, where information is collected from each member of a hospital, the publicly released data may make it impossible to identify which individuals belong to the same

hospital. By controlling the detail and amount of publicly released information in these ways, it was possible to prevent the identification of particular individuals from an anonymous data set.

In addition, this research project was conducted according to the guidelines for Human Research at the University of New England. The researcher sought and gained approval for the components of the study: the survey and individual interviews in the research project. All the participants were given information sheets about the components of the research applicable to them, and each signed a consent form to participate and to be audio-tape-recorded when interviewed. The interviews were conducted privately, and the tapes were transcribed by the researcher. Each interview was between 45 and 60 minutes. Electronic files of the transcripts were coded and stored securely. The study received ethical approval from the Human Research Ethics Committee at the University of New England and ethical approval from the MOH in Jordan (see Appendix 4A&B). Copies of the information sheets (English and Arabic) and consent forms (English and Arabic) are provided in Appendix 5 A&B and Appendix 6 A&B.

CHAPTER 4

Results

4.1 Introduction

This chapter provides details of the findings of the study on QMS in high- and low-performing hospitals. Although the results are presented in line with the research questions, the quantitative results are presented before the qualitative results. The order of presentation is as follows: first, the findings about major QMS obstacles in Jordanian Hospitals, the correlations between high- and low-performing hospitals and the main QMS domains staff consider as major obstacles are presented. This is then followed by the major obstacles in each of the five domains (human resources, material resources, vision and change, leadership and management, and communication); the relationship between QMS obstacles and demographic data and finally, how to address the QMS obstacles.

4.2 Quantitative analysis

4.2.1 Background characteristics of respondents

The background characteristics of the study participants such as gender, age, profession, education level, department, work experience in the hospital, and work experience in the health field are shown in Table 4-1. The table shows that in high performing, hospitals there were more female participants (58.1%) than male participants (41.9%). Participants in the age range of 20 to < 30 constituted the biggest group (44.6%). About half of the participants were nurses (51%). About half of the participants were bachelor degree holders (45%). The participants from the gynaecology departments were the largest group (13.6%). The participants who have 3-<6 years' experience in the hospital constituted

53.9% of the study participants. The participants who have 3–<6 years' experience in the health field were the biggest group (37.4%).

In low-performing hospitals, the table shows that the percentage of females (63.9%) is nearly double that of males (36.1%). The age group 30-<40 years old was the biggest (34.7%). Based on education, the Bachelor group was half of the participants (50%). The participants from the gynaecology departments were the biggest group (10.4%). About a third (34.7%) of the participants had experience in the hospital 6 - < 11 years. According to work experience in the health field the group 6 - < 11 years was also the biggest (30.9%).

Table 4-1: Frequency and percentages for the participants' characteristics in high-and low-performing hospitals

Characteristics	Groups	High-performing		Low-Performing	
		Count	%	Count	%
Gender	Male	203	41.9	151	36.1
	Female	281	58.1	273	63.9
Age	20 - < 30 years	216	44.6	90	21.2
	30 - < 40 years	151	31.2	177	41.7
	40 - < 50 years	85	17.6	124	29.2
	50 years or more	32	6.6	33	7.8
Profession	Nurse	247	51.0	211	49.8
	Doctor	44	9.1	47	11.1
	Midwife	20	4.1	24	5.7
	Accountant	14	2.9	15	3.5
	Clerk	9	1.9	7	1.7
	Pharmacist	6	1.2	9	2.1
	Dentist	3	0.6	4	0.9
	Allied medical professions	85	17.6	78	18.4
	Others	56	11.6	29	6.8
Education level	Diploma	212	43.8	174	41.0
	Bachelor	222	45.9	212	50.0
	Postgraduate	50	10.3	38	9.0
Department	Emergency	31	6.4	38	9.0
	Admission	15	3.1	7	1.7
	Cardiology	29	6.0	9	2.1
	Intensive care unit	28	5.8	17	4.0

	(ICU)				
	Surgery	37	7.6	38	9.0
	Gynaecology	66	13.6	46	10.8
	Ear, nose and throat (ENT)	10	2.1	17	4.0
	Laboratory	34	7.0	32	7.5
	Radiology	34	7.0	19	4.5
	Medical records	19	3.9	19	4.5
	Pharmacy	6	1.2	11	2.6
	Paediatric	19	3.9	32	7.5
	Internal	22	4.5	12	2.8
	Operations	26	5.4	49	11.6
	Bones	20	4.1	6	1.4
	Dental	3	0.6	2	0.5
	Dermatology	10	2.1	2	0.5
	Accounting	11	2.3	11	2.6
	Nutrition	15	3.1	9	2.1
	Maintenance	12	2.5	6	1.4
	Administration	23	4.8	13	3.1
	Psychiatric	14	2.9	-	-
	Outpatient	-	-	13	3.1
	Dialysis	-	-	16	3.8
Work Experience: in the hospital	3 - < 6 years	261	53.9	117	27.6
	6 - < 11 years	112	23.1	147	34.7
	11 - < 16 years	61	12.6	91	21.5
	16 - < 21 years	35	7.2	49	11.6
	21 years or more	15	3.1	20	4.7
Work Experience: in the health field	3 - < 6 years	181	37.4	74	17.5
	6 - < 11 years	130	26.9	131	30.9
	11 - < 16 years	71	14.7	103	24.3
	16 - < 21 years	51	10.5	71	16.7
	21 years or more	51	10.5	45	10.6

4.2.2 Major QMS obstacles in Jordanian Hospitals

The finding here relates to Research Question 1: *What do hospitals in Jordan consider to be major QMS obstacles?* To answer this question descriptive statistics were run for the responses given by participants in both low- and high-performing hospitals. It is important to recall here that this QMSOS used a five-point Likert scale response classification. As there is no cut-off point in the literature regarding classifying the QMS obstacles, the study considered that items with mean scores from the upper-midpoint limit of the 5-point scale

(3.5 or above) are major obstacles. Mean scores between 2.5 and 3.5 are moderate obstacles and mean scores of less than 2.5 are small obstacles. Comparison scores were done for the combined high- and low-performing, high-performing, and low-performing hospitals. The results of the descriptive statistics (Table 4-2) show the key obstacles. The table also shows the mean and standard deviation for the 23 items of the QMSOS.

The results in Table 4-2 show that the major obstacles in combined high and low performing hospitals were lack of rewards ($M= 3.87$, $SD= 2.12$) and lack of authority delegation ($M= 3.73$, $SD= 1.15$). In high-performing hospitals, the major obstacles were lack of rewards for hospital staff ($M= 3.74$, $SD= 1.18$), inadequate authority delegation ($M= 3.73$, $SD= 1.20$) and lack of staff ($M= 3.53$, $SD= 1.20$). The results for low-performing hospitals were slightly different. In this case there are six major obstacles, which are lack of rewards for hospital staff ($M= 4.01$, $SD= 1.03$), inadequate material resources ($M= 3.88$, $SD= 0.97$), lack of training programmes ($M= 3.85$, $SD= 1.09$), insufficient staff motivation ($M= 3.78$, $SD= 1.03$), insufficient budget for QMS ($M= 3.78$, $SD= 1.00$), and inadequate authority delegation ($M= 3.73$, $SD= 1.09$).

Table 4-2: Mean and standard deviation for all obstacles for combined high- and low-performing hospitals, high-performing hospitals, and low-performing hospitals

Obstacles	Combined high- and low-performing hospitals		high-performing hospitals		low-performing hospitals		Mean	SD
	Type of Obstacle	Mean	Type of Obstacle	Mean	SD			
Lack of rewards	MO	3.87	1.12	MO	3.74	1.18	MO	4.01
Inadequate authority delegation.	MO	3.73	1.15	MO	3.73	1.20	MO	3.73
Lack of training	MoO	3.21	1.28	MoO	2.65	1.17	MO	3.85

Insufficient staff motivation	MoO	3.21	1.29	MoO	2.71	1.29	MO	3.78	1.03
Lack of staff	MoO	3.10	1.33	MO	3.53	1.20	MoO	2.61	1.31
Inadequate material resources	MoO	3.10	1.29	MiO	2.41	1.13	MO	3.88	0.97
Inadequate communication	MoO	3.08	1.22	MoO	3.31	1.22	MoO	2.81	1.17
Insufficient budget for a QMS	MoO	3.07	1.24	MiO	2.45	1.08	MO	3.78	1.00
Resisting changes	MoO	2.83	1.23	MiO	2.46	1.13	MoO	3.26	1.20
Lack of teamwork encouragement	MoO	2.80	1.31	MoO	2.72	1.32	MoO	2.88	1.30
Frequent changing of the hospital manager	MoO	2.79	1.34	MiO	2.20	1.13	MoO	3.46	1.27
Improper a human resources policy	MoO	2.76	1.17	MoO	2.65	1.16	MoO	2.89	1.17
Lack of quality lectures	MoO	2.76	1.26	MoO	2.64	1.23	MoO	2.90	1.28
Improper data utilisation	MoO	2.69	1.17	MoO	2.50	1.11	MoO	2.91	1.21
Lack of quality procedures support	MoO	2.68	1.37	MiO	2.18	1.10	MoO	3.26	1.42
Ineffective ways to measure quality	MoO	2.66	1.18	MiO	2.47	1.04	MoO	2.88	1.28
Focusing on short-term goals only	MoO	2.65	1.20	MoO	2.68	1.14	MoO	2.62	1.27
Inappropriate procedures	MoO	2.62	1.17	MiO	2.44	1.06	MoO	2.84	1.24
Inability to change the organisation's cultural perspective regarding quality	MoO	2.60	1.22	MiO	2.37	1.17	MoO	2.85	1.22
Lack of costs and benefits analysis	MoO	2.60	1.12	MiO	2.33	1.02	MoO	2.89	1.16
Improper quality and patient safety plan	MoO	2.57	1.21	MiO	2.27	1.12	MoO	2.91	1.22
Inaccurate database	MiO	2.48	1.20	MiO	2.28	1.06	MoO	2.70	1.30
Lack of patient focus	MiO	2.21	1.02	MiO	2.13	1.04	MiO	2.30	0.98

MO: Major Obstacles; MoO: Moderate Obstacles; MiO: Minor Obstacles.

The t-test analysis to find out whether there were significant differences between high- and low-performing hospitals on the QMSOS Scale is shown in Table 4-3. The table shows the mean, standard deviation, and *t*-test values. Based on the table, there is a significant difference in mean scores between the three high-performing hospitals and the three low-performing hospitals in favour of the three low-performing hospitals. This indicates that participants in low-performing hospitals report more obstacles than those in high-performing hospitals.

Table 4-3: Hospital classification means, standard deviations, and *t*-tests on the QMS obstacles scale in combined high- and low-performing hospitals

Hospital classification	N	Mean	SD	Mean Difference	T-test	Sig.
The three high performing hospitals (two private and one public)	484	2.65	0.50	-0.49	-17.08	0.00
The three low performing hospitals (two public and one private)	424	3.13	0.35			

* The difference in mean is significant at the 0.05 level.

4.2.3 Main QMS domains staff consider as major obstacles.

Research Question 2 aimed to find out from staff of hospitals which of the domains of QMS obstacles (as coming from the research literature and the QMSOS) they believed the major obstacles. The domains were: Human Resources, Material Resources, Vision and Change, Leadership and Management, and Communication. The descriptive statistical analysis for the combined high- and low-performing hospitals revealed that participants did not consider any of the main domains as a major obstacle. In high-performing hospitals, all five domains are also not considered major obstacles. However, in low-

performing hospitals, the Human Resources domain ($M= 3.55$, $SD=0.64$) is considered a major obstacle (see Table 4-4).

Table 4-4: Mean and standard deviation for the main domains for combined high-and low-performing, high-performing, and low performing hospitals

Domains	Combined high- and low-performing hospitals			High-performing hospitals		Low-performing hospitals		SD	
	Type of Obstacle	Mean	SD	Type of Obstacle	Mean	SD	Type of Obstacle	Mean	
Human Resources	MoO	3.48	0.69	MoO	3.42	0.73	MO	3.55	0.64
Material Resources	MoO	2.82	0.82	MiO	2.37	0.72	MoO	3.34	0.57
Vision and Change	MoO	2.74	0.98	MoO	2.57	0.80	MoO	2.94	1.11
Communication	MoO	2.71	0.77	MoO	2.65	0.77	MoO	2.92	0.58
Leadership & Management	MoO	2.70	0.70	MoO	2.50	0.74	MoO	2.79	0.76
Total	MoO	2.89	0.47	MoO	2.70	0.47	MoO	3.10	0.37

4.2.4 The major obstacles in each of the five QMS domains (human resources, material resources, vision and change, leadership and management, and communication).

The research question aligned to this section (Research Question 3) was intended to find out which items within the domains or factors of the QMSOS were identified as major obstacles in high- and low-performing hospitals. To answer this question descriptive statistics were run for the responses given by participants in both high- and low-performing hospitals.

4.2.4.1 Summary of the human resources domain

The analysis in Table 4-5 shows mean scores and standard deviation for the human resources domain in combined high- and low- performing, high-performing, and low-performing hospitals. In combined high- and low- performing hospitals, there are two

major obstacles, which are lack of rewards for hospital staff ($M= 3.87$, $SD= 1.12$) and inadequate authority delegation ($M= 3.73$, $SD= 1.15$). In the case of solely high-performing hospitals the results show that there are three major obstacles, which are lack of rewards for hospital staff ($M= 3.74$, $SD= 1.18$), inadequate authority delegation ($M= 3.73$, $SD= 1.20$) and lack of staff ($M= 3.53$, $SD= 1.20$). However, in low-performing hospitals, the results show that the major obstacles are lack of rewards for hospital staff ($M= 4.01$, $SD= 1.03$), lack of training programmes ($M= 3.85$, $SD= 1.09$), and inadequate authority delegation ($M= 3.73$, $SD= 1.09$).

Table 4-5: Mean and standard deviation for the human resources domain in combined high- and low-performing, high-performing, and low-performing hospitals

	Combined high- and low-performing hospitals		High-performing hospitals		Low-performing hospitals		Mean	SD
	Obstacles	Type of Obstacle	Mean	SD	Type of Obstacle	Mean		
Lack of rewards for hospital staff	MO	3.87	1.12	MO	3.74	1.18	MO	4.01
Inadequate authority delegation	MO	3.73	1.15	MO	3.73	1.20	MO	3.73
Lack of training programmes	MoO	3.21	1.28	MoO	2.65	1.17	MO	3.85
Lack of staff	MoO	3.10	1.33	MO	3.53	1.20	MoO	2.61

4.2.4.2 Summary of obstacles in the material resources domain

Table 4-6 shows the analysis for the material resource domain in combined high- and low-performing hospitals. It is clear that all of the obstacles in this domain are moderate. In high-performing hospitals viewed alone, there is one moderate obstacle, and the rest are minor. In solely low-performing hospitals viewed alone, the results show that the major

obstacles are inadequate material resources ($M= 3.88$, $SD= 0.97$) and insufficient budget for a QMS ($M= 3.78$, $SD= 1.00$). The rest of the obstacles are moderate.

Table 4-6: Mean and standard deviation for the material resources domain in combined high- and low-performing, high-performing, and low-performing hospitals

Obstacles	Combined high- and low-performing hospitals			High-performing hospitals			Low-performing hospitals		
	Type of Obstacle	Mean	SD	Type of Obstacle	Mean	SD	Type of Obstacle	Mean	SD
Inadequate material resources	MoO	3.10	1.29	MiO	2.41	1.13	MO	3.88	0.97
Insufficient budget for a QMS	MoO	3.07	1.24	MiO	2.45	1.08	MO	3.78	1.00
Improper data utilisation	MoO	2.69	1.17	MoO	2.50	1.11	MoO	2.91	1.21
Lack of quality procedures support	MoO	2.68	1.37	MiO	2.18	1.10	MoO	3.26	1.42
Lack of costs and benefits analysis	MoO	2.60	1.12	MiO	2.33	1.02	MoO	2.89	1.16

4.2.4.3 Summary of the obstacles in vision and change domain

Table 4-7 shows the analysis for the vision and change domain. In combined high- and low-performing hospitals, the results show that there are no major obstacles. All of the obstacles in this domain are moderate. In the high-performing hospitals, the results show that there is one moderate obstacle and one minor obstacle. In low-performing hospitals viewed alone, the results show that all of the obstacles are moderate.

Table 4-7: Mean and standard deviation for the vision and change domain in combined high- and low-performing, high-performing, and low-performing hospitals

	Combined high- and low-performing hospitals		High-performing hospitals		Low-performing hospitals		SD	SD
Obstacles	Type of Obstacle	Mean	SD	Type of Obstacle	Mean	SD	Type of Obstacle	Mean
Resisting changes	MoO	2.83	1.23	MiO	2.46	1.13	MoO	3.26
Focusing on short-term goals only	MoO	2.65	1.20	MoO	2.68	1.14	MoO	2.62

4.2.4.4 Summary of the communication domain

Table 4-8 shows the analysis for the communication domain. In combined high- and low-performing hospitals, the results show that there are no major obstacles. There are two moderate obstacles and one minor. In high-performing hospitals, the results show one moderate obstacle and two minor obstacles. In the case of solely low-performing hospitals, the results show that all of the obstacles are moderate.

Table 4-8: Mean and standard deviation for the communication domain in combined high- and low-performing, high-performing, and low-performing hospitals

	Combined high- and low-performing hospitals		High-performing hospitals		Low-performing hospitals		SD	SD
Obstacles	Type of Obstacle	Mean	SD	Type of Obstacle	Mean	SD	Type of Obstacle	Mean
Inadequate communication	MoO	3.08	1.22	MoO	3.31	1.22	MoO	2.81
Inability to change the organisation's cultural work towards quality	MoO	2.60	1.22	MiO	2.37	1.17	MoO	2.85
Inaccurate database	MiO	2.48	1.20	MiO	2.28	1.06	MoO	2.70

4.2.4.5 Summary of the leadership and management domain

Table 4-9 shows the analysis for the leadership and management domain. In combined high- and low-performing hospitals, the results show that nearly all of the obstacles are moderate obstacles, and only one is minor. In high-performing hospitals, the results show that half of the obstacles are moderate and the other half are minor. In low-performing hospitals, the results show that there is one major obstacle, which is insufficient staff motivation ($M= 3.78$, $SD= 1.03$). There are also six moderate obstacles and one minor obstacle.

Table 4-9: Mean and standard deviation of the leadership and management domain in combined high- and low-performing, high-performing, and low-performing hospitals

Obstacles	Combined high- and low-performing hospitals			High-performing hospitals		Low-performing hospitals		SD	
	Type of Obstacle	Mean	SD	Type of Obstacle	Mean	SD	Type of Obstacle	Mean	
Insufficient staff motivation	MoO	3.21	1.29	MoO	2.71	1.29	MO	3.78	1.03
Lack of teamwork encouragement	MoO	2.80	1.31	MoO	2.72	1.32	MoO	2.88	1.30
Improper application of human resources policy	MoO	2.76	1.17	MoO	2.65	1.16	MoO	2.89	1.17
Lack of quality lectures	MoO	2.76	1.26	MoO	2.64	1.23	MoO	2.90	1.28
Ineffective ways to measure quality	MoO	2.66	1.18	MiO	2.47	1.04	MoO	2.88	1.28
Inappropriate procedures	MoO	2.62	1.17	MiO	2.44	1.06	MoO	2.84	1.24
Improper quality and patient safety plan	MoO	2.57	1.21	MiO	2.27	1.12	MoO	2.91	1.22
Lack of patient focus	MiO	2.21	1.02	MiO	2.13	1.04	MiO	2.30	0.98

4.2.5 The effects of the demographic characteristics on the participant perception of obstacles to QMSs

In order to answer the research question “*What are the effects of the demographic characteristics (gender, age, profession, education level, department, work experience in the hospital, work experience in the health field) on the participants' perception of obstacles in QMS?*” a series of t-tests, One-way Between Groups ANOVA and General Linear Model (GLM) Univariate Analysis were carried out. The t-tests were carried out for the variables of Sector and Gender because they have two categories. The One-way Between Groups ANOVA and GLM Univariate Analysis Of Variance procedures were carried out for the variables of Age, Education, Profession, Department, Experience in the hospital and Experience in the health field because of unequal numbers in the categories of some of the background variables. The first three variables (Age, Education, and Profession) were run together and then followed by the last three variables (Department, Experience in the hospital and Experience in the health field) because the SPSS programme did not support all six variables in one operation, due (perhaps) to the fact that there are too many categories. The interactions between variables as generated by the GLM analysis are not reported in this chapter, because these are not the focus of the research question of the study.

4.2.5.1 Sector groups (Public /Private) effect on QMSOS

Appendix 7 shows the mean and standard deviation for private and public sector hospitals, which indicates that the public sector has a higher mean score than the private sector on the QMSOS measure. The t-test for sector scores on QMSOS shows that there is no significant difference ($p=0.07$) in the means scores between private sector ($M= 2.84$, $SD= 0.49$) and public sector ($M= 2.94$, $SD= 0.45$) (For more details, see the Appendix 7).

4.2.5.2 Gender groups effect on QMSOS

Appendix 8 shows the mean and standard deviation for males and females in combined high- and low-performing hospitals, which indicates that females have a higher mean score than males on the QMSOS measure. The t-test for gender scores on QMSOS shows that there is no significant difference ($p=0.41$) in the means scores between males ($M= 2.88$, $SD= 0.49$) and females ($M= 2.90$, $SD= 0.46$) (For more details, see the Appendix 8).

Appendix 9 shows the mean, standard deviation, and t-test according to gender in high-performing hospitals. Based on the table, the t-tests shows that there is no significant difference between males and females ($p= 0.15$) (For more details, see the Appendix 9).

However, Table 4-10 shows the mean, standard deviation, and *t*-test according to gender in low-performing hospitals. Based on the table, the *t*-tests show that there is a significant difference ($p=0.05$) in the mean scores between males ($M=3.26$, $SD=0.35$) and females ($M=3.08$, $SD=0.38$). This indicates that males rated more QMSOS items as major obstacles than females (see Table 4-10).

Table 4-10: Gender means, standard deviations, and *t*-tests on the QMS obstacles scale in low-performing hospitals

Gender	Count	Mean	Std. Deviation	T-value	Sig
Male	151	3.16	0.35	2.00	0.05
Female	271	3.08	0.38		

* The difference in mean is significant at the 0.05 level.

4.2.5.3 The effects of age groups, profession, and education on the participant perception of obstacles to QMSs

The descriptive analysis was done for age group, profession and education. In addition both the One-way Between Groups ANOVA and GLM Univariate Analysis Of Variance procedures were carried out.

4.2.5.3.1 Descriptive analyses for the age group, profession, and education.

Table 4-11 shows the mean and standard deviation among age groups in combined high-and low-performing, high-performing, and low-performing hospitals. In combined high-and low-performing hospitals, there is a difference in the mean among age groups. The age group 40-<50 years old has the highest mean score ($M= 2.94$, $SD= 0.48$). This indicates that this age group rated more QMSOS items as major obstacles than the other groups. In high-performing hospitals, there is also a difference in mean scores among age groups. The group 30-<40 years old has the highest mean score ($M= 2.75$, $SD= 0.46$). Further, in low-performing hospitals, there is a difference in mean among age groups. The age groups 20-<30 years old and 40-<50 years old have the highest mean scores ($M= 3.14$, $SD= 0.35$ for both them) (see Table 4-11).

Table 4-11: Age means and standard deviations on the QMS obstacles scale in combined high- and low-performing, high-performing, and low-performing hospitals.

Age Group	Combined high- and low-performing hospitals			High-performing hospitals			Low-performing hospitals		
	No.	Mean	SD	No.	Mean	SD	No.	Mean	SD
20 - <30	306	2.85	0.45	216	2.74	0.43	90	3.14	0.35
30 - <40	328	2.92	0.46	151	2.75	0.46	177	3.07	0.41

40 - <50	209	2.94	0.48	85	2.64	0.50	124	3.14	0.35
50 or more	65	2.76	0.59	32	2.39	0.56	33	3.12	0.34
Total	908	2.89	0.47	484	2.70	0.47	424	3.11	0.37

For the profession variable, the table 4-12 shows the mean and standard deviation among profession variables in combined high- and low-performing, high-performing, and low-performing hospitals. In combined high- and low-performing hospitals, there is a difference in the mean among profession variables. The table shows that the clerks have the highest mean score ($M= 3.04$, $SD= 0.51$). This indicates that clerks rated more QMSOS items as major obstacles than the other professions. In high-performing hospitals, there is a difference in mean among profession variables, with pharmacists having the highest mean scores ($M= 2.90$, $SD= 0.41$). In low-performing hospitals, there is a difference in mean among profession variables, with clerks having the highest mean score ($M= 3.41$, $SD= 0.30$) (see Table 4-12).

Table 4-12: Profession means and standard deviations on the QMS obstacles scale in combined high- and low-performing, high-performing, and low-performing hospitals.

Profession	Combined high- and low-performing hospitals			High-performing hospitals			Low-performing hospitals		
	No.	Mean	SD	No.	Mean	SD	No.	Mean	SD
Clerk	16	3.04	0.51	9	2.76	0.46	7	3.41	0.30
Pharmacist	15	3.01	0.51	6	2.90	0.41	9	3.08	0.57
Dentist	7	2.94	0.28	3	2.71	0.19	4	3.12	0.19
Nurse	458	2.92	0.47	247	2.76	0.47	211	3.10	0.39
Accountant	29	2.91	0.43	14	2.80	0.50	15	3.01	0.34
Doctor	91	2.91	0.49	44	2.62	0.49	47	3.18	0.31
Allied medical professions	163	2.88	0.47	85	2.67	0.45	78	3.10	0.37

Midwife	44	2.86	0.41	20	2.66	0.36	24	3.03	0.38
Others (administrators, nutritionists and maintenance technicians)	85	2.73	0.52	56	2.51	0.47	29	3.14	0.33
Total	908	2.89	0.47	484	2.70	0.47	424	3.11	0.37

For education levels, Table 4-13 shows the mean and standard deviation for education levels in combined high- and low-performing, high-performing, and low-performing hospitals. In combined high- and low-performing hospitals, there is a difference in the mean among education levels. The bachelor holders have the highest mean score ($M= 2.91$, $SD= 0.49$). This indicates that the bachelor holders rated more QMSOS items as major obstacles than other education levels. In high-performing hospitals, there is a difference in mean scores, the diploma holders having the highest mean score ($M= 2.76$, $SD= 0.48$). In low-performing hospitals, where there is a difference in mean among age groups, the bachelor holders have the highest mean score ($M= 3.16$, $SD= 0.41$) (see Table 4-13).

Table 4-13: education level means and standard deviations on the QMS obstacles scale in combined high- and low-performing, high-performing, and low-performing hospitals.

Education level	Combined high- and low-performing hospitals			High-performing hospitals			Low-performing hospitals		
	No.	Mean	SD	No.	Mean	SD	No.	Mean	SD
Diploma	386	2.89	0.45	212	2.76	0.48	174	3.05	0.34
Bachelor	434	2.91	0.49	222	2.68	0.45	212	3.16	0.41
Postgraduate	88	2.78	0.48	50	2.56	0.50	38	3.08	0.25
Total	908	2.89	0.47	484	2.70	0.47	424	3.11	0.37

4.2.5.3.2 One-way Between Groups ANOVA and GLM Univariate Analysis Of Variance for age group, profession, and education

4.2.5.3.2.1 Age group effect on QMSOS

The One-way Between Groups ANOVA for combined high- and low-performing hospitals showed a significant difference between age groups (see Appendix 10). It is possible that the finding was influenced by the unequal cell numbers. Therefore, GLM Univariate Analysis Of Variance procedure was carried out and the result showed no significant difference between the age groups (see Appendix 11).

In high-performing hospitals, the One-way Between Groups ANOVA also showed a significant difference between age groups (see Appendix 12). In order to rule out the confounding effect of unequal cell numbers, the GLM Univariate Analysis of Variance procedure was carried out and the result also showed a significant difference between the age groups (see Table 4-14).

Table 4-14: GLM Univariate Analysis Of Variance table for the study statements depending on age, profession and education in high-performing hospitals

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Age	2.235	3	0.75	3.79	0.01
Profession	1.956	8	0.25	1.24	0.27
Education	0.83	2	0.41	2.10	0.12

The Tukey HSD post hoc test (Table 4-15) showed significant differences between group 1 (20-<30 years) and 4 (50 years or more) ($M_2 = 2.74$ and $M_4 = 2.39$), between group 2 (30-<40 years) and group 4 (50 years or more) ($M_2 = 2.75$ and $M_4 = 2.39$). The difference between means is significant between the 20-<30 and 30-<40 age groups on one hand and the 50 or more age group on the other hand in favour of the 20-<30 and 30-<40 age groups. This indicates that the 20-<30 and 30-<40 age groups refer to the obstacles more than the 50 years or more age group.

Table 4-15: Multiple comparison analysis based on age group in high-performing hospitals

(I) age	(J) age	Mean Difference (I-J)	Significance
20 - <30	30 - <40	-0.02	0.98
	40 - <50	0.09	0.37
	50 or more	0.35*	0.00
30 - <40	20 - <30	0.02	0.97
	40 - <50	0.11	0.25
	50 or more	0.37*	0.00
40 - <50	20 - <30	-0.09	0.37
	30 - <40	-0.11	0.25
	50 or more	0.26*	0.02
50 or more	20 - <30	-0.35*	0.00
	30 - <40	-0.37*	0.00
	40 - <50	-0.26*	0.03

* The difference in mean is significant at the 0.05 level.

In low-performing hospitals, both One-way Between Groups ANOVA and GLM Univariate Analysis Of Variance showed no significant difference between age groups (see Appendix 13 & 14).

4.2.5.3.2.2 Profession groups effect on QMSOS

In combined high- and low-performing hospitals, both One-way Between Groups ANOVA and GLM Univariate Analysis Of Variance showed no significant difference between profession groups (see Appendix 15 & 11).

In high-performing hospitals, the One-way Between Groups ANOVA showed a significant difference between profession groups (see Appendix 16). In order to rule out the

confounding effect of unequal cell numbers, the GLM Univariate Analysis Of Variance procedure was carried out and the result showed no significant difference between profession groups (see Appendix 17).

In low-performing hospitals, both One-way Between Groups ANOVA and GLM Univariate Analysis Of Variance showed no significant difference between the profession groups (see Appendices 18 & 14).

4.2.5.3.2.3 Education level effect on QMSOS

In combined high- and low-performing hospitals, both One-way Between Groups ANOVA and GLM Univariate Analysis Of Variance showed no significant difference between education levels (see Appendix 19 & 11).

In high-performing hospitals, the One-way Between Groups ANOVA showed a significant difference between education levels (see Appendix 20). It is possible that the finding was influenced by the unequal cell numbers. In order to rule out the confounding effect of unequal cell numbers, the GLM Univariate Analysis Of Variance procedure was carried out and the result showed no significant difference between education levels (see Appendix 17).

In low-performing hospitals, the One-way Between Groups ANOVA showed a significant difference between education levels (see Appendix 21). In order to rule out the confounding effect of unequal cell numbers, the GLM Univariate Analysis Of Variance procedure was carried out and the result showed no significant difference between education levels (see Appendix 14).

4.2.5.4 The effects of departments groups, the experience in the hospital, and the experience in the health field on the participant perception of obstacles to QMSs

The descriptive analysis was done for departments groups, the experience in the hospital, and the experience in the health field. In addition both the One-way Between Groups ANOVA and GLM Univariate Analysis Of Variance procedures were carried out.

4.2.5.4.1 Descriptive analyses for the departments, the experience in hospital, and the experience in health field

The descriptive analysis (Table 4-16) shows the mean and standard deviation among departments in combined high- and low-performing, high-performing, and low-performing hospitals. In combined high- and low-performing hospitals, there is a difference in the mean among departments. The dialysis department has the highest mean score ($M= 3.21$, $SD= 0.46$). This indicates that this department rated more QMSOS items as major obstacles than the other departments. In high-performing hospitals, there is a difference in mean among departments. The dermatology department has the highest mean score ($M= 3.00$, $SD= 0.27$). In low-performing hospitals, there is a difference in mean among departments. The bones department has the highest mean scores ($M= 3.32$, $SD= 0.27$) (see Table 4-16).

Table 4-16: Departments' means and standard deviations on the QMS obstacles scale in combined high- and low-performing, high-performing, and low-performing hospitals.

Departments	Combined high- and low-performing hospitals			High-performing hospitals			Low-performing hospitals		
	No.	Mean	SD	No.	Mean	SD	No.	Mean	SD
Emergency	69	2.89	0.40	31	2.67	0.29	38	3.07	0.38
Admission	22	3.00	0.52	15	2.81	0.49	7	3.10	0.32
Cardiology	38	2.73	0.34	29	2.65	0.31	9	3.01	0.28
Intensive care unit (ICU)	45	2.78	0.55	28	2.61	0.60	17	3.07	0.29
Surgery	75	2.97	0.49	37	2.82	0.55	38	3.12	0.37
Gynaecology	112	2.84	0.40	66	2.71	0.37	46	3.02	0.37
Ear, nose and throat (ENT)	27	3.06	0.44	10	2.88	0.58	17	3.16	0.31
Laboratory	66	2.88	0.48	34	2.61	0.41	32	3.16	0.38
Radiology	53	2.71	0.51	34	2.53	0.513	19	3.04	0.30
Medical records	38	3.01	0.43	19	2.91	0.47	19	3.12	0.37
Pharmacy	17	2.99	0.49	6	2.90	0.41	11	3.05	0.53
Paediatric	51	3.08	0.48	19	2.91	0.46	32	3.18	0.47
Internal	34	2.77	0.51	22	2.68	0.56	12	2.94	0.37
Operations	75	3.05	0.41	26	2.75	0.35	49	3.21	0.35
Bones	26	2.94	0.52	20	2.83	0.53	6	3.32	0.27
Dental	5	2.85	0.26	3	2.71	0.19	2	3.06	0.20
Dermatology	12	2.95	0.27	10	3.00	0.27	2	2.71	0.07
Accounting	22	2.91	0.47	11	2.86	0.57	11	2.95	0.38
Nutrition	24	2.78	0.47	15	2.61	0.49	9	3.05	0.26
Maintenance	18	2.76	0.61	12	2.53	0.57	6	3.22	0.39

Administration	36	2.65	0.49	23	2.39	0.37	13	3.10	0.34
Psychiatric	14	2.68	0.61	14	2.68	0.61	-	-	-
Outpatient	13	2.97	0.33	-	-	-	13	2.97	0.33
Dialysis	16	3.21	0.46	-	-	-	16	3.21	0.46
Total	908	2.89	0.47	484	2.70	0.47	424	3.11	0.37

The descriptive analysis (Table 4-17) shows the mean and standard deviation among levels of experience in the hospital in combined high- and low-performing, high-performing, and low-performing hospitals. In combined high- and low-performing hospitals, there is a difference in the mean among levels of experience in the hospital. The group 6 - <11 years has the highest mean score ($M= 2.97$, $SD= 0.45$). This indicates that this group rated more QMSOS items as major obstacles than the other groups. In high-performing hospitals, there is a difference in mean among levels of experience in the hospital. The group 3 - <6 years has the highest mean score ($M= 2.76$, $SD= 0.45$). In low-performing hospitals, there is a difference in mean among levels of experience in the hospital. The group 6 - <11 years has the highest mean scores ($M= 3.15$, $SD= 0.38$) (see Table 4-17).

Table 4-17: The experience in the hospital means and standard deviations on the QMS obstacles scale in combined high- and low-performing, high-performing, and low-performing hospitals.

	Combined high- and low-performing hospitals			High-performing hospitals			Low-performing hospitals		
	No.	Mean	SD	No.	Mean	SD	No.	Mean	SD
levels of experience in the hospital									
3 - <6 years	378	2.88	0.46	261	2.76	0.45	117	3.14	0.38
6 - <11 years	259	2.97	0.45	112	2.74	0.44	147	3.15	0.37

11 - <16 years	152	2.82	0.53	61	2.46	0.54	91	3.06	0.37
16 - <21 years	84	2.85	0.45	35	2.61	0.45	49	3.01	0.37
21 years or more	35	2.91	0.46	15	2.69	0.47	20	3.08	0.39
Total	908	2.89	0.47	484	2.70	0.47	424	3.11	0.37

The descriptive analysis (Table 4-18) shows the mean and standard deviation among levels of experience in the health field in combined high- and low-performing, high-performing, and low-performing hospitals. In combined high- and low-performing hospitals, there is a difference in the mean among levels of experience in the health field. The group 6 - <11 years has the highest mean score ($M= 3.00$, $SD= 0.45$). This indicates that this group rated more QMSOS items as major obstacles than the other groups. In high-performing hospitals, there is a difference in mean among levels of experience in the health field. The group 6 - <11 years has the highest mean score ($M= 2.82$, $SD= 0.45$). In low-performing hospitals, there is a difference in mean among levels of experience in the health field. The group 6 - <11 years has the highest mean scores ($M= 3.18$, $SD= 0.37$) (see Table 4-18).

Table 4-18: The experience in the health field means and standard deviations on the QMS obstacles scale in combined high- and low-performing, high-performing, and low-performing hospitals.

levels of experience in the health field	Combined high- and low-performing hospitals			High-performing hospitals			Low-performing hospitals		
	No.	Mean	SD	No.	Mean	SD	No.	Mean	SD
3 - <6 years	255	2.84	0.45	181	2.72	0.42	74	3.13	0.38
6 - <11 years	261	3.00	0.45	130	2.82	0.45	131	3.18	0.37
11 - <16 years	174	2.89	0.46	71	2.66	0.50	103	3.05	0.35
16 - <21 years	122	2.85	0.48	51	2.61	0.48	71	3.02	0.40

21 years or more	96	2.80	0.57	51	2.50	0.56	45	3.14	0.34
Total	908	2.89	0.47	484	2.70	0.47	424	3.11	0.37

4.2.5.4.2 The One-way Between Groups ANOVA and GLM Univariate Analysis Of Variance for the departments, the experience in hospital, and the experience in health field

4.2.5.4.2.1 Departments group effect on QMSOS

In combined high- and low-performing hospitals, the One-way Between Groups ANOVA showed a significant difference between departments (see Appendix 22). It is possible that the finding was influenced by the unequal cell numbers. Therefore, GLM Univariate Analysis Of Variance procedure was carried out and the result also showed a significant difference between departments (see Table 19).

Table 4-19: GLM Univariate Analysis Of Variance table for the study statements depending on department, the experience in the hospital and the experience in the health field in combined high- and low-performing hospitals

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Department	12.39	23	0.54	2.783	0.00
The experience in the hospital	0.10	4	0.02	.122	0.97
The experience in the health field	1.38	4	0.35	1.782	0.13

The Tukey HSD post hoc test (Table 4-20) shows a multiple comparison analysis among departments in combined high- and low-performing hospitals. The difference in mean scores is significant between paediatric, operations, and dialysis departments on one hand and the radiology department on the other hand in favour of the paediatric, operations, and dialysis departments. It is also significant between paediatric, operations, dialysis and ENT departments on one hand and the administration department on the other hand in favour of

the paediatric, operations, dialysis and ENT departments. This implies that paediatric, operations, and dialysis departments refer to the obstacles more than radiology departments. It also means that paediatric, operations, dialysis and ENT departments refer to the obstacles more than administration departments. The difference between the mean scores of other departments was not significant. (For more details, see the Appendix 23)

Table 4-20: Multiple comparison analysis for departments in combined high- and low-performing hospitals

(I) Department	(J) Department	Mean Difference (I-J)	Sig.
Radiology	Paediatric	-0.36*	0.01
	Operations	-0.34*	0.01
	Dialysis	-0.49*	0.03
Paediatric	Radiology	0.36*	0.01
	Administration	0.43*	0.01
Operations	Radiology	0.34*	0.01
	Administration	0.41*	0.00
Administration	Paediatric	-0.43*	0.01
	Operations	-0.41*	0.00
	Dialysis	-0.56*	0.01
	Ear, nose and throat (ENT)	-0.412*	0.05
Dialysis	Radiology	0.49*	0.03
	Administration	0.56*	0.01
ENT	Administration	0.412*	0.05

In high-performing hospitals, the One-way Between Groups ANOVA showed a significant difference between departments (see Appendix 24). Again, in order to rule out the confounding effect of unequal cell numbers, the GLM Univariate Analysis Of Variance

procedure was carried out and the result showed a significance difference between departments (see Table 4-21).

Table 4-21: GLM Univariate Analysis Of Variance table for the study statements depending on department, the experience in the hospital, and the experience in the health field in high-performing hospitals

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Department	8.025	21	0.38	2.215	0.00
The experience in the hospital	0.813	4	0.20	1.178	0.32
The experience in the health field	1.771	4	0.44	2.567	0.04

The Tukey HSD post hoc test (Table 4-22) shows a multiple comparison analysis among departments in high-performing hospitals. The difference between the mean scores is significant between surgery, paediatric, and dermatology departments on one hand and administration department on the other hand in favour of surgery, paediatric, and dermatology departments. That implies that surgery, paediatric, dermatology departments refer to the obstacles more than the administration department (for more details, see the Appendix 25).

Table 4-22: Multiple comparison analysis for departments in high-performing hospitals

(I) Department	(J) Department	Mean Difference (I-J)	Sig.
Administration	Surgery	-0.426*	0.02
	Paediatric	-0.520*	0.01
	Dermatology	-0.604*	0.02

In low-performing hospitals, the both One-way Between Groups ANOVA and GLM Univariate Analysis Of Variance shows no significant difference between departments (see Appendix 26 & 27).

4.2.5.4.2.2 The experience in the hospital effect on QMSOS

In combined high- and low-performing hospitals, the One-way Between Groups ANOVA showed a significant difference between the experiences in the hospital groups (see Appendix 28). However, the GLM Univariate Analysis Of Variance procedure showed no significant difference between experiences in the hospital groups (see Appendix 29).

In high-performing hospitals, the One-way Between Groups ANOVA showed a significant difference between the experiences in the hospital groups (see Appendix 30). However, the GLM Univariate Analysis Of Variance procedure showed no significant difference between the experiences in the hospital groups (see Appendix 31).

The analysis for low-performing hospitals with both One-way Between Groups ANOVA and GLM Univariate Analysis Of Variance also showed no significant difference between the experiences in the hospital groups (see Appendix 32 & 27).

4.2.5.4.2.3 The experience in the health field effect on QMSOS

In combined high- and low-performing hospitals, the One-way Between Groups ANOVA showed a significant difference between the experiences in the health field groups (see Appendix 33). However, the GLM Univariate Analysis Of Variance procedure showed no significant difference between the experiences in the health field groups (see Appendix 29).

In high-performing hospitals, both One-way Between Groups ANOVA (see Appendix 34) and the GLM Univariate Analysis Of Variance procedures showed a significant difference between the experiences in the health field groups (see Table 4-23).

Table 4-23: GLM Univariate Analysis Of Variance table for the study statements depending on department, the experience in the hospital, and the experience in the health field in high-performing hospitals

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Department	8.03	21	0.38	2.22	0.00
The experience in the hospital	0.81	4	0.20	1.18	0.32
The experience in the health field	1.77	4	0.44	2.57	0.04

The Tukey post hoc test Table 4-24 shows a multiple comparison analysis among levels of experience in high-performing hospitals. The difference between means is significant between the 3-<6 and 6-<11 groups on one hand and the 21 or more group on the other hand in favour of the 3-<6 and 6-<11 groups. In addition, the difference between means is significant between the group 6 - <11 years on one hand and 16 - <21 group on the other hand in favour of the 6-<11 groups. This means the groups that have experience in the hospital of from 3-<6 and 6-<11 years refer to the obstacles more than the group that has experience in the hospital for 21 or more years. Moreover, the group that has experience in the hospital 6-<11 years refer to the obstacles more than the group that has experience in the hospital 16 - <21 years.

Table 4-24: Multiple comparisons for the levels of experience in the health field in high-performing hospitals

(I) Work experience in the health field	(J) Work experience in the health field	(I-J) Mean Difference	Sig.
3 - <6 years	6 - <11	-0.11	0.18
	11 - <16	0.06	0.86
	16 - <21	0.10	0.54
	21 or more	0.22*	0.01
6 - <11 years	3 - <6	0.11	0.18
	11 - <16	0.16	0.06
	16 - <21	0.21*	0.02
	21 or more	0.33*	0.00
11 - <16 years	3 - <6	-0.06	0.86
	6 - <11	-0.16	0.06
	16 - <21	0.05	0.98
	21 or more	0.16	0.20
16 - <21 years	3 - <6	-0.10	0.54
	6 - <11	-0.22*	0.02
	11 - <16	-0.05	0.98
	21 or more	0.12	0.60
21 years or more	3 - <6	-0.22*	0.01
	6 - <11	-0.33*	0.00
	11 - <16	-0.16	0.20
	16 - <21	-0.12	0.60

* The difference in mean is significant at the 0.05 level.

In low-performing hospitals, only the One-way Between Groups ANOVA showed a significant difference between the experiences in the health field groups (see Appendix 35). The GLM Univariate Analysis Of Variance procedure showed no significant difference between the experiences in the health field groups (see Appendix 27).

4.3 The Qualitative analysis

After the results of QMS obstacles had been discussed with the hospital managers without referring to any specific hospitals, the researcher asked them some questions to suggest solutions to address the obstacles. Some prompt questions were asked in some situations. Three main themes and various subthemes emerged. The following are the main themes and subthemes.

Theme 1: Human resources

Subtheme 1: Rewarding talented employees and providing good salaries and benefits.
Subtheme 2: Having effective hospital management specialists.
Subtheme 3: Providing hospital management training.
Subtheme 4: Delegating authority and identification of responsibility and accountability.
Subtheme 5: Building a trusting environment.
Subtheme 6: Employing enough staff members.
Subtheme 7: Establishing training funds and effective training programmes.

Theme 2: Material resources

Subtheme 1: Staff efficiency.
Subtheme 2: Providing the necessary laboratories and radiological services.

Theme 3: Leadership and management

Subtheme 1: Providing sufficient morale incentives to employees.

The following abbreviations refer to the participants and each number next to the participant refers to the participant's number:

MED: Medical Director

MAD: Managing Director

QM: Quality Manager

DN: Directors of nursing

Note: Managers numbers 1, 2 and 3 belong to the high performing hospitals.

Note: Managers numbers 4, 5 and 6 belong to the low performing hospitals.

4.3.1 Theme 1: Human resources

This theme emerged from the respondents' views regarding how hospitals can address QMS obstacles. Many of the participants refer to human resources as one of the QMS obstacles. In most interviews, the participants mentioned that some obstacles that related to the human resources can hinder the QMS. QM 6 said, 'There are different obstacles that can hinder the QMS, such as planning obstacles, material resources obstacles, and human resources obstacles'. MAD 2 said, 'I believe [that] hospitals have different human resources obstacles, and these obstacles should be addressed to improve the QMS'. MED 2 said, 'The human resources can be a factor that hinders hospitals to make changes or achieve their objectives'.

The participants added some information related to the human resources obstacles that could affect hospital performance. Many of the participants referred to poor performance, efficiency, and output. 'I think that human resources obstacles could affect negatively (direct or indirect) on performance, efficiency, and output' (DN 3). QM 3 said, 'If hospitals do not find solutions to the obstacles related to human resources, these obstacles will lead to poor performance and output'.

The participants referred to solutions to human resources obstacles. The following subthemes emerged from the participants' view about addressing the human resources obstacles: rewarding talented employees and providing good salaries and benefits, having effective hospital management specialists, providing hospital management training, delegating authority and identification of responsibility and accountability, building a trusting environment, employing enough staff members, establishing training funds and implementing effective training programmes.

4.3.1.1 Subtheme 1: Rewarding talented employees and providing good salaries and benefits

This subtheme emerged from the participants' views about addressing human resources obstacles. Many of the participants mentioned that hospitals should reward talented employees and the most disciplined employees. QM 5 said, 'Sufficient budgets for talents allow QMSs to recognise each talent in each level of work'. DN 2 said, 'I am sure that if a hospital gives each talent some financial rewards, this will encourage talents to give more effort to the hospital. . . I think it is important to support talents'. MED 3 stated, 'Rewards should be not only for physicians or specialists but also for technicians or anybody working in the hospital. . . Maybe the talent is for a medical record technician or nurse'. MAD 2 said, 'Monetary rewards for employees make them do their best to achieve the hospital goals, and it will increase the staff morale'.

The participants have shown that when appropriately applied, the reward system is an effective method for increasing staff morale. In reality, when hospitals apply appropriate reward systems, the hospital staff members will recognise that they are rewarded for the achievement. MAD 4 said, 'I think that it may seem that making reward criteria to improve

the level of services should be relatively straightforward'. Rewards can provide immediate returns that give an extra morale motivation to employees. It makes them more effective. Similarly, rewards can give an employer additional reasons to put more effort into improving patient services or simply making sure the hospital staff does its best to achieve its tasks.

Regarding providing good salaries and benefits, most of the participants said that hospitals should provide good salaries and benefits for staff. 'I think all the staffs are looking for good salaries and the work benefits; if the hospital pays good salaries and introduces benefits, it can attract the best employees' (MAD 4). The participants declared that the salaries should be enough to cover the cost of living. Employees need to be able to buy food, clothes, pay their bills and necessities, and go out on weekends and holidays. DN 6 said, 'I am sure that most of the staff members have many problems; these problems can be solved by money, but unfortunately, they did not have enough money to solve their problems'. DN 4 stated, 'The [cost of living] rises quickly, but the salaries increase slowly'.

The participants also said that many of the employees are young. These employees need to marry and start families, but they can't afford the cost of marriage. MED 5 declared, 'The marriage cost is the major problem for young employees; therefore, they have to work many years to save enough money for marriage'. QM 5 said, 'We have some employees who have two jobs to earn more money, but these employees do not do a good job because they are the most time-exhausted'.

The majority of the participants believe that the hospital should increase staff salaries to help them solve their problems, and introduce benefits. ‘Increasing salaries and introducing some benefits such as day care, and extra vacation days helps employees to live a comfortable life’ (MAD 2). MED 1 said, ‘If hospitals give their staff good salaries and always think to make their staff satisfied, the staff will do their best to help the hospital to [solve] its problems’.

4.3.1.2 Subtheme 2: Having effective hospital management specialists

This subtheme was often mentioned by the respondents, i.e. that managers should be specialists in hospital management. The participants believed that hospital managers should be effective and qualified to lead their hospital to success, that managers should have clear goals that can be achieved, and that they should create procedures that can help to reach the hospital’s goals. They should be able to change the behaviour and motivate staff to achieve the hospital objectives. Several participants included statements that supported their thoughts. QM 5 said, ‘Maybe a hospital has a paediatrician as a hospital manager. This paediatrician could be successful in his or her area but that does not mean this paediatrician is successful in leadership and management. . . I think the right person who can lead a hospital should be the person who has a high degree in hospital management’. MAD 6 stated that ‘people should do their work based on their knowledge; for example, physician as physician, nurse as nurse, technician as technician, and hospital management as a hospital manager’. MED 3 said, ‘I think hospital managers should be able to direct the staff to the hospital objectives. They should also be able to make achievable goals and use the resource in effective way to reduce the wastage’.

The participants focussed on the notion that hospital managers should be specialists in hospital management. They also stated that hospital managers should be able to achieve the hospital goals and use the resources in effective way. QM 4 said, ‘Hospitals’ managers should be specialists in hospital management to be able to solve the hospital’s problems and achieve the hospital goals’. QM 2 said, ‘Hospital managers should put objectives for hospital departments that can help to achieve the hospital goals. Hospital managers also should set plans for achieving the objectives. The plans’ results should be assessed after each stage. These objectives should be consistent with the hospital goal’. DN 2 stated that ‘hospital managers should use the hospital resources in effective ways to achieve the hospital objectives in lowest cost’.

4.3.1.3 Subtheme 3: Providing hospital management training

Many of the participants declared that it is not easy to replace all hospital managers with specialists in hospital management. However, hospital managers can engage in course training about hospital management. This course can improve hospital managers’ skills in hospital management. Hospital management training was mentioned by several participants. QM 6 said, ‘I think training programmes for managers can improve the managers’ skill in management and leadership’. DN 4 added, ‘I suggest that joining hospital managers in training programmes can improve the level of health services’. MED 5 stated, ‘Training programmes are important for everyone, especially for managers and decision makers’. MED 2 stated that ‘managers should join with training programmes which can make them more effective about the hospital management’.

It can be seen from the quotes that the participants’ comments display clear direction toward training programmes for hospital managers. According to QM 1, when coupled

with performance appraisal and managers, training can increase productivity and improve financial performance. Many participants point to the role that training of managers can play in improving survival and success rates. If the training methods are structured to fit the learning styles and approaches preferred by hospital managers, we would expect a higher level of learning and greater satisfaction with the learning process to occur.

4.3.1.4 Subtheme 4: Delegating authority and identification of responsibility and accountability

Most participants identified that hospital managers should delegate part of their authority to their staff. DN 6 said, ‘I think if hospital managers delegate part of their authority to their staff, the hospital staff will carry the responsibility and they will do their best to improve the quality of health services in the hospital’. QM2 responded, ‘I think delegation of authority makes the staff more flexible to do their duties’. MED 2 said, ‘I believe that quality will improve if the hospital managers delegate some of their authority to their staff’. The participants mentioned that authority should be limited based on the hospital policies, objectives, procedures, and rules. Authority should also be based on the staff specialisation. The MED 4 said, ‘The hospital managers should delegate their authority based on the staff specialisation’. MAD 2 said, ‘Delegation of authority to the hospital staff encourages them to make decisions without reference to supervisors, but the authority should be limited and rely on the hospital policies, objectives, procedures, and rules’.

The participants also say that staff members who have authority should be responsible and accountable for their decisions. MED 1 said, ‘Authority creates responsibility; therefore, the staff members who have authority also have responsibility about their duties’. MAD 1 also said, ‘Hospital managers should connect the authority with responsibility’. The

participants mentioned that hospital managers should have an accountability system. This system can obligate the staff member who has authority to carry out his or her duties. MED 5 said, ‘Accountability systems will make the staff carry out their duties’. MED 3 stated that ‘hospitals should have accountability systems for staff members who have authority’.

Regarding identification of responsibility and accountability, many of the participants state that the hospital should identify employees’ responsibilities and accountability. QM 5 said, ‘Hospitals should organise their work by determining responsibilities and accountability of the hospital staff’. ‘Hospitals should have written job descriptions which have the duties and responsibilities of all the hospital staff and should connect the responsibilities with accountability’ (MED 2). DN 3 said, ‘If the hospital staff knew their responsibilities and accountabilities, the hospital objectives will be achieved smoothly’. The participants also added that the staff should be accountable for what they do or fail to do and that the managers and heads of departments should be responsible for the success or failure of their staff. QM 4 said, ‘I think with responsibility should be accountability; therefore, the staff should be responsible for what they do’. MAD 2 said, ‘I believe that the staff should be responsible and accountable for their duties, but the managers and head of departments should be responsible and accountable for their staff achievement’.

Most of the participants mentioned that the basic responsibilities of the hospital staff members should be related to their jobs and positions, but that the additional duties should not necessarily be related to their jobs and positions. MED 1 said, ‘I think that hospitals should determine the responsibilities of the staff based on their positions or jobs’. MED 3 stated, ‘I think that there are some additional duties that do not relate to the staff job or

position, but the hospital staff have to do them'. The DN 1 said, 'The hospital staff should carry their basic responsibilities and other duties and should [have] accountability related to these responsibilities and duties that can help the hospital to improve the level of services'.

4.3.1.5 Subtheme 5: Building a trusting environment

The majority of the participants mentioned that hospital managers should build a trusting environment in their hospital. MED 2 said, 'Hospitals should have a trusting environment between the hospital managers and their employees'. MAD 3 said, 'I think creating a trusting environment is important to achieve the hospital objectives'. The participants mentioned that hospital managers should always tell the truth and keep promises. DN 5 said, 'If hospital managers tell the truth, I think this will be the first step to build a trusting environment in their hospitals'. The participants said that hospital managers should clarify their methods to achieve their hospital's goals. MED 4 said, 'I think if the hospital manager suggests applicable methods to achieve the hospital objectives, the staff will trust him'. QM 2 said, 'I think that the hospital manager should have a clear method to help the hospital to reach the set goals'.

Most of participants mentioned that the hospital manager should trust and respect all the hospital staff in order to build a trusting environment in the hospital. QM 5 said, 'Trusting and respecting all the hospital staff will help the hospital manager to build a trusting environment'. DN 1 said, 'Hospital managers should not focus on a group and ignore other groups. I think they should focus on all groups, such as physicians, nurses, midwives, technicians, [and] administrators'.

4.3.1.6 Subtheme 6: Employing enough staff members

The majority of participants stated that hospitals should employ enough staff members to achieve their objectives. They also said that the shortage of staff members in hospitals is a risk and could impede hospitals' objectives and put their patients in danger. QM 4 said, 'It is hard for hospitals with [small] numbers of staff to do their work without any defects'. 'I think hospitals that work with a shortage of staff cannot give proper services to their patients, therefore, they cannot achieve their goals to reach the patient satisfaction and attract patients' (MED 2). The participants confirmed that many hospitals suffer from a shortage of staff members, especially of doctors and nurses. MED 3 said, 'There is a high demand on doctors and nurses; therefore, these two groups (doctors and nurses) [make] more effort than other employees'.

The participants stated that the hospitals that have staff shortages should make a concerted effort to solve this problem to avoid medical and nonmedical errors and to reach hospital objectives. MAD 4 declared that 'hospitals that work with sufficient staff can achieve their objectives easier than the hospitals that suffer from shortage of staff'. 'I believe that hospitals should employ a sufficient number of staff to avoid any medical and nonmedical errors. Hospitals work hard with enough staff to reduce their defects to zero to achieve their objectives' (QM 2). QM 1 said that 'hospitals should motivate their staff [to stay] with them and [should] attempt to attract qualified people'.

4.3.1.7 Subtheme 7: Establishing training funds and effective training programmes

The majority of participants said that establishing of training funds for training purposes can help hospitals to improve their level of services. 'I believe that hospitals should initiate training programmes and support them with sufficient funds' (QM 5). DN 6 stated that the

training fund should be sufficient to enable the hospital to train the new and old employees: ‘I think that the funding of the training programme should be adequate for training new and old employees’. QM 2 said, ‘The training programme should focus on the employees who do not have enough experience’.

The participants pointed out that the training programmes can make the hospital employees more qualified than before. The revenue for the hospital will improve, with fewer errors and less resource wastage. ‘I think if the hospitals spend enough money on training programmes, their revenue will have [fewer] errors and less resource wastage’ (QM 4). DN 5 said, ‘Training programmes will upgrade the hospital staff skills’.

The participants stated that the purpose of the training programme fund is to enable trainers and trainees to acquire various kinds of supplementary training materials according to their needs. MED 5 said, ‘Sometimes the training programmes need specific equipment; therefore, the training fund should be enough’. MAD 2 said, ‘I believe that the training fund should be enough to cover the trainees’ needs’. MED 1 said, ‘The hospitals should [give] their employees training incentives to encourage the employees to join the training programmes’.

Effective training programmes were often mentioned by the participants. The participants believed that effective training programmes should use different methods to present the information to the hospital staff. ‘I think using different ways to present ideas and information will make the training programme effective’ (QM 2). M 1 said, ‘Hospitals should use a variety of learning methods in their training programme to do it more effectively’. The participants also said that repetition of information is useful. MAD 3 said,

‘Trainers should illustrate the information by repeating them many times in different ways. I think they should use images, photos, symbols, or posters’. MAD 2 said, ‘Information repetition can help the staff to retain the information’. Many of the participants stated that hospitals should use experts to make their training programme effective. QM 1 said, ‘I believe that experts can make the training programmes more effective and useful’. MED 3 added, ‘I think if hospitals use experts for training, we will make the hospital staff more interested in the training programme’.

The participants also mentioned that effective training programmes can motivate the staff to recall information easily. They mentioned that there are different methods to motivate the staff to recall the information, such as practical, oral, and written quizzes. QM 4 said, ‘The trainers can make practical, oral, or written quizzes to encourage the staff to remember the information’. DN 2 said, ‘I think hospitals should establish effective training programmes that can help the staff recall the information easily’.

4.3.2 Theme 2: Material resources

The participants in this study mentioned that lack of material resources are obstacles to QMS in many hospitals. When participants were asked to give their suggestions for how hospitals can address QMS obstacles, the participants stated that there are some obstacles related to material resources, and hospitals should consider these obstacles and address them. This theme emerged from those statements. QM 4 suggested that hospitals should be aware of obstacles involving material resources, because if hospitals do not address them, the obstacles will get bigger:

'I think many hospitals have obstacles, some of these obstacles belong to the material resource, therefore hospital managers should think about these obstacles and they should address these obstacles because these obstacles will be bigger if they are not addressed'.

The researcher created some prompt questions, such as 'For hospitals that have QMS obstacles, do you think the QMS obstacles are important?' DN 6 said, 'Hospitals should focus on QMSs that belong to the material resources because hospitals should utilise their resources in the best way to reduce the wastage of materials and efforts'. MAD 2 thinks that QMSs are important and that there are many obstacles, some of which are material resources obstacles: 'I think there are many obstacles; some of them are material resources obstacles. I believe that these obstacles are important and need solutions'.

Some prompt questions inquired about how hospitals can address the obstacles. The participants suggested some solutions to address QMS obstacles that are related to this factor. The following subthemes emerged that can increase hospital revenue to address material resource obstacles. These subthemes are staff efficiency and laboratories and radiological services.

4.3.2.1 Subtheme 1: Staff efficiency

The participants discuss increasing hospital staff efficiency. Most managers think that if they put their staff under pressure, the staff will make more mistakes. Working with high pressure or stress could lead the hospital staff to make more mistakes in their work (DN 6). MAD 2 said, 'I think hospitals should increase their staff efficiency by telling the staff the good news about the hospitals because that will increase the staff morale. [Also,] the staff should know the bad news about the hospital, such as the hospital problems, because this

will get the hospital staff involved in the hospital problems and they will participate to solve the problems'.

Many participants mentioned that everyone in the hospital should feel that he or she is important in the hospital and that his or her job serves the hospital. MAD 6 described efficient staff and inefficient staff: 'The efficient staff can do their work with the least amount of resources and time, and inefficient staff use a lot of resources and more time to do the same work'. QM 3 stated, 'Hospital managers should make the hospital staff feel important by telling them positive words; then the staff will serve willingly and intelligently'. MED 1 said, 'The inefficient staff don't know how to be efficient; therefore, the hospital manager should meet them to clarify the best ways to improve the level of services'.

4.3.2.2 Subtheme 2: Providing the necessary laboratories and radiological services

Many of the participants mentioned that hospitals should provide the necessary laboratory testing and radiological examinations that help hospitals to increase their revenue. These are necessary factors that help physicians in treatment and diagnosis. 'Most the time, our doctors rely on laboratory testing to diagnose and treat our patients' problems. It is easy by using laboratory testing to detect urine or blood changes. Therefore, the necessary laboratories and radiological examinations should be available in hospitals' (MED 2). DN 1 stated, 'Hospitals should introduce urine, stool, blood, and body fluid tests because these tests are used most of the time in our work to check certain features that help in diagnosis and treatment'. The participants also stressed the importance of radiological examinations. 'Radiological examinations help us a lot to detect or prevent some diseases; the services of radiology department are, for example, CT (computed tomography) scan, X-ray, MRI

(magnetic resonance imaging), ultrasound, and other tests necessary in most hospitals' (MED 4). MED 2 said, 'Laboratory and radiology departments are important for diagnosis, prevention, and treatment'.

The participants focussed on the two departments (laboratory and radiology) that can increase revenue. QM 1 said, 'Laboratory and radiology departments can help patients to save their time by doing the required tests and find the required medicine in the same place, they can help doctors in diagnosis and treatment, and they also can increase the hospital revenue'. MAD 3 said, 'I think hospitals should provide the necessary laboratory testing and radiological examinations'.

4.3.3 Theme 3: Leadership and management factor

This theme analyses and interprets the participants' view of addressing leadership and management obstacles. This theme emerged from participants' view regarding how hospitals can address QMS obstacles. In most of the narratives, leadership and management are obstacles to QMSs in many hospitals. MED 4 said, 'Our hospitals suffer from some management obstacles. We need to focus our effort and work as a team to address these obstacles'. MAD 1 said, 'Many hospitals have leadership and management obstacles, but some hospitals [overcome] the obstacles and others still suffer from these obstacles'. QM 3 stated, 'Most hospitals have management, leadership, and planning obstacles, therefore hospital's managers should think seriously to address these obstacles'. The majority of participants agreed that leadership and management are considered important factors to address QMS obstacles. Successful leadership and management implementation can improve the level of service. MED 2 said, 'Without successful

direction from hospital managers, hospitals cannot improve the service level and [achieve] patient satisfaction'.

The participants were asked the following prompting questions: 'How do you think hospital managers can support their staff?' and 'How can hospital managers motivate staff members?' These questions allowed the participants to talk about addressing leadership and management obstacles that QMSs face. One subtheme was extracted from the participants' answers.

4.3.3.1 Subtheme 1: Providing sufficient morale incentives to employees

This subtheme was mentioned by the majority of the participants. Employees' motivation is a key success factor; therefore, employees need to be given morale incentives in order to foster creativity and sustain high motivation. Comments made by the participants in this study are consistent with this subtheme. 'Staff likes to have some positive words from the hospital managers when the hospital gets accreditation or any award. They like to hear some words like 'Thank you for your effort', 'Without you, we cannot achieve our goals', or 'You did this achievement' (MAD 2). Morale incentives can create a friendly atmosphere in hospitals. DN 5 said, 'I think morale incentives are [very] important for staff and hospital management. They can create friendly relationships between hospital management and hospital staff'. The morale incentives could include days off for talented employees, or even just simple gifts. MED 1 said, 'I really use morale incentives to encourage my staff to do extra duties in an effective way. I think morale incentives are really working. I give some of my employees days off and others some simple gifts because they [make] extra effort'.

From these comments it can be seen that participants believe that morale incentives are able to motivate hospital staff to do their work in an effective way and can develop a friendly relationship between hospital managers and their staff. Morale incentives could be kind words or simple gifts. DN 6 said, ‘Hospitals need to embrace incentives which can be remembered, such as simple gifts, holidays, or a praise and simple verbal thank you’.

Summary of themes

Three themes were presented in the qualitative analysis. Theme 1 showed the respondents' views about how hospitals can address QMS obstacles related to the human resources. This theme had seven sub-themes related to solutions that can help hospitals address their QMS obstacles and improve human resources in hospitals.

Theme 2 presented participants' perceptions regarding suggestions for how hospitals can address QMS obstacles related to material resources. The theme had two sub-themes. Sub-theme 1 was about increasing hospital staff efficiency; whereas, sub-theme 2 focused on providing the necessary laboratories and radiological services.

Theme 3 was about the participants' view with regard to addressing leadership and management obstacles. This theme had one sub-theme. This sub-theme suggested that hospitals should provide sufficient morale incentives to their employees.

All comments mentioned in all themes indicate that managers in both high- and low-performance hospitals share similar ideas about solutions to the QMS obstacles.

CHAPTER 5

Discussion

5.1 Introduction

This chapter presents a discussion of the results of the study which investigated obstacles to QMS in high- and low-performing hospitals in Jordan. The research questions were as follows:

1. What do hospitals in Jordan consider to be major QMS implementation obstacles?
2. Are there any significant differences in Quality Management System Obstacle Scale (QMSOS) scores between the three high-performing hospitals and the three low-performing hospitals?
3. Which of the QMSOS domains do hospital staff believe are the major obstacles?
4. What are the major obstacles in each of the five domains (human resources, material resources, vision and change, leadership and management, and communication)?
5. What are the effects of the demographic characteristics (gender, age, profession, education level, department, work experience in the hospital and work experience in the health field) on participants' perceptions of obstacles to QMSs?
6. How can hospitals address the QMS obstacles that they experience?

The discussion will be presented in line with the key research questions. First, the quantitative findings are summarised and discussed followed by the discussion of qualitative findings which focus on the possible solutions to the QMS obstacles. In addition, the chapter presents recommendations that flow from the findings of the research, limitations of the study, and contributions of the study.

5.2 Quantitative findings: Summary and discussion

The presentation and analyses of the differences between high- and low-performing hospitals would help to explain differences seen in the obstacles scale (QMSOS) and support the answers to research questions 1-5. The following is a summary and discussion of the QMS obstacles in high- and low-performing hospitals.

5.2.1 QMS obstacles in high- and low-performing hospitals

The study found that high- and low-performing hospitals have some different and some similar obstacles (see Table 4-2). In combined high- and low-performing hospitals, only two of the 23 obstacles in the QMSOS scale are major obstacles common to all hospitals. They are lack of rewards for hospital staff and inadequate authority delegation. These obstacles belong to the human resources domain (see Table 4-5). In high-performing hospitals, there are three major obstacles: lack of rewards for hospital staff, inadequate authority delegation, and lack of staff. These obstacles also belong to the human resources domain (see Table 4-5). On the other hand, the low-performing hospitals share six major obstacles. These are lack of rewards for hospital staff, inadequate material resources, lack of training programmes, insufficient staff motivation, insufficient budget for a QMS, and inadequate authority delegation. These obstacles belong to human resources, material resources and leadership and management domains (see Table 4-5, Table 4-6, & Table 4-

9). It is important to note that the two obstacles, lack of rewards for hospital staff and inadequate authority delegation, are common to both high- and low-performing hospitals. However, the low-performing hospitals had higher mean QMSOS scores than the high-performing hospitals (see Table 4-3), indicating that participants in low-performing hospitals considered these obstacles to be more serious than those in high-performing hospitals.

The findings from this Jordanian study are similar to those of other studies in the United States (Messner, 1998), Switzerland (Hudelson et al., 2008), Thailand (Pongpirul et al., 2006), Iran (Rad, 2005), Poland (Krzemien and Wolniak, 2007) India (Desai, 2010), Indonesia (Amar & Zain, 2002), Taiwan (Lin & Jang), and Yemen (Al-Zamany et al., 2002). These researchers found that some or all of these factors (lack of rewards for hospital staff, inadequate material resources, lack of training programmes, insufficient staff motivation, insufficient budgetary allocation for a QMS, inadequate authority delegation, and lack of staff) were major obstacles.

Overall these findings reflect the fact that to a large extent, human resources, and to a smaller extent, material resources and leadership and management are key factors to QMS in the hospitals under study. Within the framework of systems and organisational theories, which were used to frame this study, these factors (human resources, materials resources, leadership and management) constitute critical elements to quality systems, and would significantly support the realisation of optimum results in hospitals if they were free from obstacles. Indeed, the Jordanian hospital staff at the frontline, the materials required to drive the main system and sub-systems and the overarching management /leadership required to direct the flow and pace of the health care process are equally important in

securing quality. The findings also show that staff of the participating hospitals recognise these obstacles as serious enough to hinder their capacities to provide high quality service. The staff's opinions of the QMS obstacles in their respective hospitals reflect an insider understanding that the elimination of these obstacles would help the system and improve the quality of health care. However, in a weak economy (Jordan) where the allocation of adequate resources is a huge challenge for Government, achieving this objective is going to be arduous. It is therefore essential to devise and deploy both external (through government and private sector) and internal (within hospitals) strategies to ameliorate these obstacles.

5.2.2 The significant differences between the high- and low-performing hospitals in QMSOS

The low-performing hospitals received higher mean QMSOS scores than the high-performing hospitals. This is an indication that low-performing hospitals suffer from QMS obstacles more than high-performing hospitals.

As it is the case in other countries, high-performing hospitals are more likely to be for-profit. They have proportionately more private health insurance and proportionally fewer government health insurance and self-pay patients. High-performing hospitals also use fewer patient-care personnel per admission and have a higher operating margin than low-performing hospitals (McKay & Deily, 2005).

On the other hand, low-performing hospitals differ from other hospitals in that they are less likely to be for-profit, and have more beds. These hospitals have more patient-care personnel per admission and lower payment to patient-care personnel than high-

performing hospitals. Low-performing hospitals are also characterised by higher average costs and a lower operating margin (Popescu, Werner, Vaughan-Sarrazin, & Cram, 2009).

High-performing hospitals use less patient-care labour per admission but paid their workers more while, conversely, patient-care labour per admission is actually higher for low-performing hospitals, and the payment of patient-care personnel is less for low-performing hospitals (McKay & Deily, 2005; Popescu, et al., 2009).

5.2.3 The major obstacles among the main domains of QMSs

The findings in relation to the research question about which of the main QMS domains (factors) are major obstacles showed that only the human resource factor was considered the major obstacle (see Table 4-4) in low-performing hospitals. However, the other major individual obstacles belonged to the material resources, and leadership and management domains (factors). The discussion of the quantitative findings will therefore be framed around each of the obstacles identified in these three domains/factors (human resource, material resources, and leadership and management).

5.2.3.1 Lack of rewards for hospital staff

The results of the study showed that lack of rewards for hospital staff is a major QMS obstacle in both high- and low-performing hospitals (see Table 4-5). Other studies support this study's results on this issue (Desai, 2010; Krzemien & Wolniak, 2007; Tamimi & Sebastianelli, 1998). This finding indicates that the lack of rewards is an obstacle that needs to be given considerable attention. Abualrub and Al-zarus' (2008) recommendation that Jordanian hospital nurses need to be rewarded and recognised appears to support the

fact that hospitals in Jordan do not provide adequate rewards to their employees for their achievements.

Desai (2010) argued that a reward system can affect workers' motivation. In the service sector, such as in hospitals, there is direct contact between the workers and the patient. Consequently, a variety of features of a person's actions—such as demonstrations of kindness, politeness, effective communication, and so on—are necessary in hospitals. Because of this, a reward system is essential to support quality outcomes and if employees in such organisations are not rewarded for their involvement in ensuring quality, this could lead to decreased motivation of employees and hinder the QMS process. These rewards and awards need not be purely financial. To a great extent, employees' behaviour is influenced by rewards and recognition systems. Organisations should reward and recognise employees who carry out their tasks well and assist the organisation in achieving quality improvements which, as a result, make the QMS efforts effective. The systems and policies that guide compensation, rewards, and appraisals in organisations have tremendous potential to affect the quality of services. An incongruent appraisal and reward system can also lead to a lack of trust amongst employees in the organisations (Tamimi & Sebastianelli, 1998).

In successful organisations, the managers' efficiency depends (to a large extent) on their leadership proficiency in addition to their abilities to successfully maintain employees' motivation through rewards. Krzemien and Wolniak (2007) found that lack of rewards for employees negatively affects quality of work and outcomes. They also argued that in any organisation with no proper motivational system, there is no appropriate recognition of leadership; therefore, accurately determining the state in which the staff members make

successful accomplishments is not possible. Thus, an inducement system is vital to apply QMS successfully in an organisation.

5.2.3.2 Inadequate authority delegation

This study found that inadequate authority delegation is a major QMS obstacle in both high- and low-performing hospitals (see Table 4-5). This finding mirrors the conclusion of El-Said and Becker (2001), who concluded that management in Jordan is largely traditional and manifested in specific attributes such as limited future orientation and excessive lack of delegation of authority. Studies of QMS in other countries (Chiu, 1999; Desai, 2010; Dew, 2003; Hudelson et al., 2008) also found lack of authority delegation as an obstacle. For example, Desai (2010) found in India that one of the 22 barriers facing quality implementation was inadequate authority delegation. Similarly, Dew (2003) found in the United States that lack of authority delegation negatively affected quality performance.

Authority delegation is a situation in which non-managerial employees have the ability to perform decision making without consulting their supervisors or directors. Depending upon the extent of authority with which the organisation needs to invest in its employees, these decisions can be little or great. Training is the beginning of employee empowerment, after which the entire organisation may convert to an empowerment model (Murugan, 2007). However, it might only mean giving workers the capability to make a number of decisions on their own. The notion of employee empowerment is to make the employees more satisfied by giving them some power. Hudelson et al. (2008) concluded that employee empowerment can improve the level of performance and service quality of an organisation. Hudelson also believed that an employee will perceive an organisation to be

a positive, rather than a negative environment when he or she does not think that he or she is always being criticised and watched. Employees feel more self-worth as a result of the ability to have choices and make decisions.

In order to make QMS a success, delegation, teamwork, empowerment, and recognition are necessary to support the involvement in quality practices, such as problem solving, decision-making, and quality improvement. In line with this, Bhat and Rajashekhar (2009) asserted that responsibility must be shared by employees regarding the failures or successes in overcoming barriers to achieving high-quality and successful work in the system. This creates meaningful empowerment amongst employees. Jun, Cai, and Shin (2006) argued that employees' negative and passive attitudes towards management lead to inadequate employee involvement. Therefore, the responsibility of managers is to initiate an environment that leads to employee empowerment, and by extension, quality improvement.

Thus this study's finding that Jordanian staff identified the lack of authority delegation as a QMS obstacle could have less positive effects on work culture, practices and quality of services. It points to the possibility that there is not enough trust within these hospital environments between the hospital managers and their staff to encourage delegation. And this means that the benefits of authority delegation on performance and quality of services are lost.

5.2.3.3 Lack of staff

The results showed that the lack of staff is considered a major QMS obstacle in only high-performing hospitals (see Table 4-5). This result is consistent with other studies conducted in different countries (Hudelson et al., 2008; Pongpirul et al., 2006; Rad, 2005).

Inadequacy of staff was ranked as a major obstacle to QMS in hospitals based on health care professionals' views (Pongpirul et al., 2006). The issue of staff shortage is evidenced by the recommendation of Abualrub (2007) in regard to nursing staff that the Ministry of Health needs to adopt new strategies and policies to deal with the nursing shortage in Jordan. Kleynhans and his colleagues (2009) explained that organisations incrementally reduce their number of employees by not replacing employees who leave, as way to cut costs. Perhaps the Jordanian hospitals in the study do not replace the employees who leave in order to reduce their operational costs or because they are looking for staff based on certain standards.

Hospitals with a shortage of staff are bound to experience quality problems. Many medical and non-medical errors happen because hospitals suffer from lack of staff and Hudelson (2008) maintains that inadequate staffing leads to overloading of staff. In such hospitals, staff are not in position to spend enough time with each patient to provide better treatment, due to work overload. Staff overload could also lead to workers' inability to take breaks; they work under pressure, make more mistakes, provide limited care, and neglect patients (Mossé & Harayama, 2010). Overworked health care professionals do not pay attention to their customers, which results in their inability to provide high-quality health care. Inadequate staffing could cause reductions in the overall organisational performance, because it causes, among other things, decreases in levels of efficiency, a low quality of service, lost or angry customers, loss of respect for the organisation's managers, and reduction in workplace morale (Joint Commission Resources, 2006). It is also a factor that can increase workplace stress, which, in turn, is a main factor in staff turnover (Bourgeois & Hickey, 2011).

Undoubtedly, the lack of staff as a human resources issue in the hospitals under study will impede QMS implementation because it is likely to reinforce existing inefficiencies and ineffectiveness of staff members with regard to quality implementation. Rad (2005) recommended, on the basis of his study that the best way to address inadequate staffing is to increase the number of staff. This is something that is required in Jordan if QMS implementation is to succeed and make a difference in the quality of health services.

5.2.3.4 Lack of training programmes

The lack of training is only considered a major QMS obstacle in low-performing hospitals (see Table 4-5). This is certainly a departure from the finding with regard to high-performing hospitals in this study. This result is consistent with previous studies (Desai, 2010; Karaszewski, 2004; Rad, 2005), which found lack of training as a QMS obstacle in some hospitals. This finding indicates that perhaps low-performing hospitals in Jordan, which are mainly public hospitals are not providing enough in-service training programmes to their staff due to declining government spending on health (Jordanian Department of Statistics (JDOS), 2010; Jordanian High Health Council, 2012; WHO, 2006). Abdulla, Qdais, and Rabi (2008) found that training programs about medical management for doctors, nurses and technicians in Jordan were limited in most hospitals, especially in the waste management area. Such limited opportunities for professional development do not bode well for a successful QMS.

Researchers such as Dayton, (2001), Pun, (2001) and Zhang, Waszink, and Wijngaard (2000) have highlighted the critical role of training in the successful implementation of QMS. Training staff as well as top management involved with clients, is one of the most efficient methods of achieving success with QMS implementation, and health care service

organisations in Jordan need to allocate adequate funds for training to improve employees' education as well as to support QMS implementation.

Huq (2005) maintains that continuing training and education of every worker supports the quality of the workforce. QMS efficiency occurs from management efforts regarding the concurrent construction of learning and creating a cooperative organisation to assist in process management implementation (Chambers & Johnston, 2009). Thus all of the participants in the activities leading to quality improvement need to be part of a well-trained and committed workforce to create a successful QMS environment.

More importantly, Soltani, Lai, and Gharneh (2005) suggest that leaders who are involved in quality system implementation should identify the training needs (for example, communication skills, quality circles, effective meeting skills, advanced statistical techniques, empowerment and leadership skills) of employees and be creative in meeting those needs efficiently. Indeed, identifying training needs of hospital staff around QMS is something that is required in Jordanian hospitals in order to successfully implement QMS.

5.2.3.5 Inadequate material resources and insufficient budget for a QMS

Inadequate material resources and an insufficient budget for QMS are major QMS obstacles in low-performing hospitals (see Table 4-6). Other studies (Desai, 2010; Dew, 2003; Pongpirul et al., 2006; Rad, 2005) have found similar results, noting that insufficient resources constitute a barrier to quality improvement. This finding in relation to low-performing hospitals in Jordan supports the fact that they (low-performing hospitals) suffer from limited resources due to declining government funding (Jordanian Department of Statistics (JDOS), 2010; Jordanian High Health Council, 2012; WHO, 2006). In two

separate Jordanian studies Al-Hawajreh (2011) and Mrayyan (2007) found that lack of resources (including finance, equipment and material to perform tasks) were major issues for all sectors in Jordan. Therefore, these hospitals require additional resources either from government or through other internal revenue generation sources, such as introducing more laboratories and radiological services that could assist in the improvement of the hospitals' revenue. In addition, adopting proper resource management processes including those that maximise staff efficiency could help hospitals improve upon the existing budgetary constraints.

The commonly held view regarding the relationship between material resources and output can be best described as 'more is more' or 'you get what you pay for', which illustrates that performance is strongly linked to the presence of adequate material resource input. Applying a QMS requires adequate material resources and sufficient effort (Pongpirul et al., 2006; Tamimi, 1998) and in Jordan, the need to increase resources to hospitals will align with the two main parallel concepts described in the relationship between the adequacy of material resources and performance. The two concepts are resource drivers (the commonly held assumption that high inputs leads to high outputs) and resource victims (the traditional assumption that low input leads to low outputs). They represent the commonly held assumption that resources are key determinants of performance (Morgan, Vorhies, & Schlegelmilch, 2006). This common mind-set sees the material resource performance conundrum as producing two outcomes, one positive and one negative. 'Resource drivers' here stand for teams that successfully achieve the organisation's goals but require adequate material resources. If the team perceives material resources as adequate, it is able to focus on the challenges of the organisation because the team can get or do anything it needs to achieve its objectives (Amabile, Conti, Coon, Lazenby, &

Herron, 1996). But teams who perceive material resources as inadequate are not able to choose to undertake activities that are otherwise considered essential. These teams will lament, and be stifled by perceptions of inadequate material resources and eventually surrender to this situation, becoming ‘resource victims’ (Hoegl, Gibbert, & Mazursky, 2008; Weiss, Hoegl, & Gibbert, 2013).

In addition, limited resources sometimes have more to do with how the resources are managed. Dew (2003) argues that the basic model of the cost of quality, as classified by researchers into quality such as Juran (1988) and Crosby (1979), is not understood by many managers. As a result, organisations experience a broad diversity of dysfunctional performances that challenge quality, safety performance, and environmental health (Dew, 2003). These issues of resource constraint and resource management apply to the Jordanian situation and as this study’s finding suggests, this is a major obstacle, which needs to be addressed in Jordan.

5.2.3.6 Insufficient staff motivation

The result showed that insufficient staff motivation, which belongs to the leadership and management domain (factor), is a major QMS obstacle in only low-performing hospitals (see Table4-9). This result is consistent with other studies’ results (Desai, 2007; Dixon-Woods et al., 2007; Krzemien & Wolniak, 2007). The result suggests that low-performing hospitals’ managers are not motivating their staff enough, a position that is reflected in the conclusion of Franco, Bennett, Kanfer and Stubblebine (2004) that health workers in Jordan need motivation to reflect the interactions between workers and their work environment.

Motivation is a staff's substantial enthusiastic drive to achieve tasks related to the organisation's work. Motivation is that inner force that leads an employee to make a decision to take positive action. The duty for hospital managers is to create staff motivation in their organisations. Creating a motivating environment in any organisation requires commitment from the organisation's managers, and those managers should focus on both extrinsically encouraging factors, such as good salaries and rewards, and intrinsically satisfying factors, such as job satisfaction and job security. Lin and Jang (2008) found that staff motivation leads to improved quality of services. They also pointed out that staff motivation is the integration of the organisation's expectations and the satisfaction of the staff's needs as well as the organisational issues that make the staff motivated.

The organisational issues that lead to staff motivation are challenging. Some managers use simple and effective words to motivate their staff, such as 'thank you', 'good job', or 'well done'. Regrettably, many hospital managers appear to be too busy to realise the effective achievements of their staff; rather, they spend their time solving the hospital's problems and correcting mistakes. Dixon-Woods (2012) stated that it is essential for managers to recognise their staff's effective achievements and contributions; it does not matter if the achievements are big or small. Recognition could be provided in several ways, such as promotions, simple awards, or verbal and physical support. It does not matter what recognition is granted because the reality is that the staff is being acknowledged. In addition, it is necessary to have meetings focussing on employee recognition so that the employees can be awarded in the presence of their colleagues. The employees will be excited when they obtain an award honouring their achievements through a formal awards celebration. This can motivate other employees to achieve effective outcomes so that they,

too, will be rewarded for their achievements in the future. As lack of motivation has emerged from this study as a QMS obstacle, hospitals in Jordan need to find ways to motivate staff in order to support better quality services.

5.2.4 The relationship between demographic data and QMS obstacles

A search of the literature found no study that examined the relationship between demographic data such as gender, age, and education and QMS obstacles. Therefore, this is the first study to examine this relationship.

5.2.4.1 Gender

In combined high- and low-performing hospitals and in high-performing hospitals viewed alone, the results showed that there was no significant difference between males and females in referring to the major QMS obstacles (see Appendix 8 & 9). In low-performing hospitals viewed alone, there was a significant difference between males and females in their perception of major QMS obstacles. Males referred to the major obstacles more frequently than females (see Table 4-10). This finding may be due to cultural issues. In Jordanian culture males assume more public and overt roles than females. Further, many more men are in middle management roles and see the issues that need to be addressed by top managers who are also often males. In other words a staff member who has responsibility and power in his/her job, is more likely to feel more committed to making sure that the system works in an efficient manner. This might explain why males reported more obstacles than females.

5.2.4.2 Age

The study results showed that there were no significant differences among age groups regarding their rating of the QMS obstacles in combined high- and low-performing hospitals and low-performing hospitals viewed alone (see Appendix 11 & 14). However, in high-performing hospitals, there was a significant difference among age groups (see Table 4-14). Participants in the groups 20-<30, 30-<40 and 40-<50 years old had higher mean scores on the QMSOS than those in the age group 50 years old or more (see Table 4-15). It appears that most of the older employees (50 years or more), who are managers or heads of departments (see Table 3-2) do not consider some QMS items as serious obstacles. On the other hand, most of the younger staff members who do not have senior positions perceive many issues as major obstacles. One possible explanation for this difference is that managers and heads of departments in the workplace can cover a realm of duties, most of which are supervisory in nature, and give instructions to their staffs. The front line professionals, however, have to act in a professional manner, obey instructions, avoid conflicts of interest, and put the interests of clients ahead of their own interests (Brandsen, 2009).

There is a clear difference between managers (who are top administrators) and professionals (who are on the frontline). According to Exworthy and Halford (1999), professionals are dependent on ‘cultural assets’ derived from education and embodied in specialist knowledge of a given area of practice. By contrast, managers are dependent on ‘organisational assets’ derived from practical organisational experience and from their positions in the organisational hierarchy. In other words, professionals are people who are qualified to obtain positions in specialised fields after long periods of training and who seek a large degree of autonomy and self-regulation from organisational control on

account of their cultural assets. By comparison, managers are employees who have the hierarchical authority to determine resource allocation and to supervise their subordinates on account of their organisational assets, which they have secured from their knowledge of organisational politics, practice, and experiences. In general, professionals assert their claims to autonomy and status based on their specialised skills and knowledge, which are applied to effective performance that is usually related to an individual's problems. Their actions establish a trusting relationship with clients, and they are restrained by the approval, inspection, and regulation of other professional peers (Haynes, 2003). In Jordan where managers do wield a lot of power and authority in addition to years of experience dealing with many barriers to health care delivery, it is more likely that many QMS obstacles might not be considered very serious, because they have become part of the routine challenges.

5.2.4.3 Department

When the statistics for high- and low-performing hospitals were combined, there was a significant difference between the mean scores of participants in paediatric, operation, and dialysis departments, and those in the radiology and administration departments on the QMSOS measure. In addition, those in the ENT department referred to the obstacles more than in the administration department (see Table 4-20). In low-performing hospitals, the results indicate no significant difference between departments (see Appendix 27). In high-performing hospitals, participants in surgery, paediatric and dermatology departments referred to the obstacles more than those in administration departments (see Table 4-22). It appears that the type of role of the participants may explain some of these differences. Whereas those in the surgery, paediatric, dermatology departments provide direct health care to the patients who are admitted to the department, staff in the administration

department do solely office work. Therefore, those in surgery, paediatric, and dermatology departments might feel the QMS obstacles more than those in the administration departments.

5.2.4.4 Experience in the health field

The results of the analysis for the variable ‘Experience in the health field’ showed no significant difference between mean scores of participants in combined high- and low-performing hospitals and in low-performing hospitals, viewed alone (see Appendix 29 & 27). However, in high-performing hospitals, the staff groups who have 3– <6 and 6– <11 years experience in the health field have significantly higher mean scores than those with experience in the health field of 21 years or more. In addition, those with 6– <11 years have higher mean scores than those with 16– <21 years’ experience (see Table 4-23 & 4-24). This gives an impression that most of the staff members who have been in the health field for 21 years or more, who have dealt with some of these problems over many years and who are also in middle management positions or are managers or heads of departments, do not rate them as major obstacles. The difference between the managers’ duties and professionals’ duties was presented under the discussion about age (section 5.2.4.2) and aligns well with the findings about experience in the health field.

Implementing a QMS has many benefits. Some of them are that a QMS can lead to improved process control; it can lead to the identification of the actual needs of the hospital’s clients; it can define authority and responsibility accurately; it can increase employee morale, reduce wastage and lower costs, and increase market share (Heuvel et al., 2005; Sampaio, Saraiva & Rodrigues, 2009). When hospitals in Jordan overcome QMS obstacles, they should be able to successfully implement QMSs, the advantages of which

could be improvement in the quality of services and increased revenues. The next section focuses on how to overcome major QMS obstacles in both high- and low performing hospitals.

5.3 Qualitative findings: Summary and discussion

The results of the qualitative analysis showed three main themes and a number of subthemes. These themes refer to the participants' views about how to address the QMS obstacles. This discussion will take the form of mentioning the themes and subthemes and then providing an analysis of the issue based on the literature in the field. The human resources theme includes seven subthemes: rewarding talented employees and providing good salaries and benefits; having effective hospital management specialists; providing hospital management training; delegating authority and identification of responsibility and accountability; building a trusting environment; employing enough staff members; establishing training funds; and implementing effective training programmes. The material resources theme includes two subthemes: staff efficiency and providing the necessary laboratories and radiological services. The leadership and management theme includes one subtheme: providing sufficient morale incentives to employees.

5.3.1 The human resources factor

In most interviews, the participants referred to human resources as one of the QMS obstacles. Many of the participants mentioned that hospitals should address QMS obstacles that are related to human resources to improve the quality of services by taking actions to positively affect human resources, maximise hospital profit, keep hold of top talent, and increase patient and staff satisfaction. Hospital managers emphasised that human resource directors need to focus on the hospital staff because hospitals rely heavily on their staff

members to improve the quality of services. That means Jordanian hospitals have some difficulties with respect to human resources. Therefore, hospitals should pay attention to the scope of human resource challenges and how to address them. In addition they should track qualified professionals for specific positions to maintain the skills that uphold the quality of services.

Resources in most hospitals are not equal, especially with regard to human resources, because unique employees with unique skill sets and experiences are keys to the success of hospitals. The literature mentioned that successful hospitals use skills tracking methods for increasingly complicated skills to rapidly discover the best persons for important tasks (Goyal, 2005; Hernandez & O'Connor, 2009).

Skill tracking is a method that helps hospitals of all sizes to improve the work of the human resources department (Hernandez & O'Connor, 2009). This method also helps hospitals to make sure that skills information is tracked to increase the hospital's ability to succeed in ensuring patients' satisfaction. Hospitals need to apply a successful skills tracking method to initiate a skills matrix that contains the necessary information about staff members, such as their functional skills, qualifications, and experience (Goyal, 2005). Most Jordanian hospitals, in fact, do not follow the skills tracking method to identify the best person to achieve a certain/specific task. This kind of situation means that the skill sets of staff are unknown to management and therefore the level of quality of services they provide might also be uncertain. Additionally the lack of knowledge of the skill levels of staff means that no proper training needs assessments can be undertaken in order to better plan future training for staff. The human resource directors should have more training to be able to assess their staff; they should utilise their staff members based on their

qualifications, skills, and experiences and address all problems that relate to the work of the human resources department (Hernandez & O'Connor, 2009).

5.3.1.1 Rewarding talented employees and providing good salaries and benefits

Many of the participants mentioned that hospitals should reward the most talented and disciplined employees and provide good salaries. With regard to rewards, the majority of participants agreed that rewarding talented employees is important because it could improve the level of quality services in hospitals. This suggestion underscores the essence of Jordanian hospitals instituting rewards for talented employees to motivate other employees to be more active in their roles. However, this is not being done, or it is not done enough, because in a rather weak economy, Jordanian hospitals are unable to have adequate budgetary allocations set aside for rewarding talented employees. The participants' view about rewards is consistent with literature, which shows that a rewards programme is a tool to improve job satisfaction and quality of service (Jensen, McMullen, & Stark, 2007; Phillips & Edwards, 2008).

Rewarding talented employees is likely to make hospital staff more creative and improve their performance (Phillips & Edwards, 2008). Lambrou, Kontodimopoulos, and Niakas (2010) pointed out that hospitals' managers were able to see improvement in the health service quality and motivation amongst hospital staff members when they initiated a rewards programme. With an ongoing rewards programme, the performance level will increase more than before and both employees' job satisfaction and patient satisfaction will be achieved (Phillips & Edwards, 2008). Hospitals that apply a rewards programme with a balanced combination of training, recognition, benefits, and rewards have the ability to attract more highly skilled employees than other hospitals (Sarawat, 2012). Rewards

programmes increase the talented employees' morale; as a result, they will come to work with positive feelings. They will also feel happier and healthier in their work environment (Jensen, et al., 2007). Therefore, Jordanian hospitals need to be more effective at recognising and rewarding talented employees.

In implementing a rewards systems in Jordanian hospitals managers could set up criteria that are consistent with the hospitals' objectives and based upon different accomplishments, such as doing an excellent job, coming up with a good idea, illustrating discipline, demonstrating the organisation's values, and exhibiting good communication with clients and employees. Such a programme can increase morale and loyalty, decrease turnover, boost retention, and drive daily employee performance while the organisation improves its performance (Sarawat, 2012).

With regards to providing good salaries and benefits, most of the participants said that hospitals should provide sufficient salaries and benefits for staff. This gives an impression that most hospital employees in Jordan do not receive high salaries that are consistent with the cost of living. It is to be expected that providing low salaries and benefits lead to a high turnover rate in Jordanian hospitals, and many highly skilled staff members voluntarily resign to work in other hospitals outside Jordan. This situation has implications for implementing QMS because skilled staff leave and take with them their knowledge and skills and new staff take some time to build up their skills to the levels that allow them to provide better quality services.

The literature shows that salaries play an effective role in job satisfaction; nevertheless, the association is not as simple as high salaries matching with a high level of job satisfaction

(Chuck, 2011; Jex and Britt, 2008). Jex and Britt (2008) pointed out that employees based their satisfaction on the total amount that other organisations pay their employees and what they feel that they deserve for their work. To guarantee job satisfaction based on these factors, hospitals should initiate a salary range for each job according to the salaries initiated by contestants for a similar job. Hospitals could also impose salaries floor and ceiling to guarantee that staff members receive similar salaries.

Good salaries can allow people to pay for reasonable costs of living. Additionally, paying employees good salaries not only improves job satisfaction but also decreases turnover. Chuck (2011) pointed out that organisations should increase employees' salaries or offer benefits to avoid dysfunctional turnover rates, particularly among highly skilled staff, and so decrease resource allocation used for recruiting new staff members. Gitman and McDaniel (2008) referred to how organisations that offer work-life benefits have happier staff members who stay with the organisation for longer periods of time. Benefits that improve staff satisfaction include health care, day care options for parents, extra vacation days, or membership in a gym. These measures could be adopted in Jordan as a way of improving staff commitment, work efficiency and improved QMS in hospitals.

5.3.1.2 Having effective hospital management specialists

The participants often mentioned that hospital managers should be specialists in hospital management. This gives an indication that Jordanian hospitals do not have qualified employees in hospital management or special training that enables them to improve the quality of health services.

The literature emphasises that hospital managers have many responsibilities, such as managing the hospital staff and making sure that staff follow the hospital's regulations and rules. Part of the hospital managers' job entails spending extensive time with people, both the public and the hospital staff (Rockwell & Alton, 2003). Therefore, hospital managers should be specialists in hospital management, including essential skills to improve the hospital's performance. In health care services, there are many characteristics that are essential for managers to succeed, regardless of the kind of health service organisation that they work for. According to Cole (2004) managers should be well educated and organised and have good leadership and management skills. Another skill that specialists in hospital management should have is a great ability to solve complex problems with excellent tact. Hospitals are stressful workplaces, and managers should employ their management skills to solve any issue in their hospitals. These skills and attributes are essential for managers in Jordanian hospitals if they are to succeed in identifying and resolving QMS obstacles and this can occur through training, a theme that is discussed next.

5.3.1.3 Providing hospital management training

Many of the participants declared that it is not easy to replace all hospital managers with specialists in hospital management because Jordan does not have enough hospital management specialists; however, hospitals managers can undergo training in hospital management. It seems that most hospital managers in Jordan have not received specific training in hospital management. This means that the managers are unlikely to know everything about the structure and functioning of hospitals, which could lead to their inability to identify and resolve QMS obstacles. Therefore, hospital managers should be required to have training in hospital management before they are recruited to the job.

The lack of training can impact on their capacities to deal with other issues relating to QMS and thereby entrench minor obstacles. Pillay (2008) argued that a hospital management training programme is important for hospital managers and those who have to make decisions in the health care system. Management training is intended as an aid in the process of thinking through and planning the skill needs of hospital managers and decision makers in the health sector. It entails considering present and future job roles and responsibilities and the needs of those in the hospital or health service in the face of a changing environment with both external and internal pressures.

Pillay states further that consideration should be given to the particular demands generated by the type, size, and structure of the hospitals concerned. A large hospital with a complex organisational structure may require some additional skills, such as a more systems-based approach as well as skills in written and verbal communication, political understanding, and expertise in committee procedure. However, Bell (2007) argued that whatever the type and structure of the hospital, its needs will affect the manager's training needs. People's perceptions of their training needs may be different from those of the hospital organisation, and these may be in conflict. While individuals' views and wishes should be taken into account, the hospital will have to be satisfied that the training proposed represents good value for the investment made in terms of both time and money. The training for Jordanian hospital managers needs to give serious consideration to the structures and needs of different types of hospitals (public / private, low and high performing). This is essential in order for managers to be able to drive quality improvement and face existing quality challenges.

5.3.1.4 Delegating authority and identification of responsibility and accountability

Most of the participants suggested that hospital managers should delegate part of their authority to their staffs. The participants also explained that a staff that shares authority will demonstrate greater responsibility for decisions than a staff that does not. The quantitative results showed that lack of authority delegation was a major QMS obstacle and this suggests that most hospital managers in Jordan do not delegate authority to their staff. The lack of delegation could affect the relationship between managers and their employees negatively. It could also negatively affect managers' efficiency since they would have little spare time for more visionary ideas around strategic planning, organising, staffing, controlling and directing the organisation's future, including managing possible QMS obstacles.

Colombo and Delmastro (2004) wrote that authority delegation is a procedure in which the powers and authority are shared and divided amongst the employees. When managers have many tasks, duties, meetings, and appointments and do not have enough time to attend to all of them, they need to delegate and share their work with their employees. Therefore, authority delegation becomes a significant instrument in an organisation's function. The delegation helps managers to divide and share some of their work with their employees. Perrot and Roodenbeke (2011) mentioned that there are many advantages to authority delegation. First, managers will be able to divide and allocate the work amongst the organisation's employees. This allows them to decrease their workload so that they can focus on their main duties, such as planning, organising, controlling, staffing, and directing. Second, managers can concentrate their skills on critical and important matters of concern. They also will be able to do their work effectively and prove their skills and abilities in the best way. Third, authority delegation is the ground on which

managers' relationships with their employees stand. The authority of most organisations flows from the top to the bottom. The flow of authority from top to bottom makes the relationship between the managers and employees meaningful, and this flow encourages employees to reach the organisation's goals. Finally, authority delegation creates cooperation between managers and employees. Delegation of authority in Jordanian hospitals could make the managers have enough time to focus on their main duties such as planning, decision-making and strategising, as well as make staff more responsible with respect to achieving organisational goals.

In order for authority delegation to be successful, many of the participants suggested that hospital staff members should have clearly identified responsibilities and accountability systems. They also mentioned that the basic responsibilities of staff members should be related to their jobs and positions. It seems that the responsibility and accountability systems are not clear in the participating hospitals; therefore, hospital managers should review the responsibility and accountability system and make it clear for all hospital staff.

The concept of responsibility is most often referred to a commitment to achieve a certain duty assigned to an employee or employees. Briggs (2008) argued that health care systems should clarify the roles and responsibilities of health care professionals. However, Mukherjee (2005) argued that while clarification of employees' tasks and responsibility towards achieving their tasks are necessary, responsibility with no sufficient authority delegation leads to dissatisfaction and discontent amongst employees. In Jordan the lack of authority delegation in hospitals could lead to limited accountability on the part of staff to focus on their tasks and also work towards overcoming QMS obstacles.

5.3.1.5 Building a trusting environment

The majority of the participants mentioned that hospital managers should build a trusting environment in their hospital. The participants mentioned that hospital managers should always tell the truth and keep their promises. This gives an indication that many of Jordanian hospitals do not have trusting environments between the hospital managers and their staff. The hospital managers likely only lecture their staff; they do not listen to them and this could lead to a decrease in the staff's morale.

Fewings (2008) stated that all relationships between managers and employees should be based on trust. A trusting environment in the workplace assumes that managers and employees have the same goals and interests. If the organisation's employees trust their managers, they will accept any criticism that they receive from their managers. In addition, the employees will feel that their managers will be there to assist them to reach the hospital's goals. In the same vein, Choo, Linderman, and Schroeder (2007) pointed out that without trust in any organisation, teamwork and communication would be eroded, employees' morale will decrease and staff turnover will increase.

Natale, Wilson, and Perry (2002) argued that most employees in organisations come from different backgrounds to work together as a team, and they often do not have information about each other before they work together. Therefore, organisation managers should be creative and proactive to initiate a trusting work environment. To create a trusting environment in any organisation, managers could use the following procedures: first, managers should limit lecturing to employees and should prompt employees to talk and express their skills, experiences, and feelings. Second, managers should listen to, learn and value employees' thoughts and beliefs because doing so can promote the managers' ability

to successfully be in contact with and influence the organisation's employees. Finally, managers need to focus on progress, rather than on perfection. By using these procedures in Jordanian hospitals, managers can build trust and in the long run create trusting work environments, which can contribute to improving QMS in their hospitals.

5.3.1.6 Employing enough staff members

The majority of the participants mentioned that hospitals should have enough staff members to achieve their objectives. They also mentioned that the shortage of staff members in hospitals is a risk that could put the hospital's objectives and its patients in danger. In other words, many Jordanian hospitals do not have adequate staff numbers, as identified in the quantitative results. This kind of situation can negatively affect employees due to workload increases when there are fewer staff members to complete necessary tasks. Nelson (2008) observes that inadequate numbers of staff members, especially nurses, increase the workload for all employees and decrease vigilance and alertness, which could lead to an increase in medical and medication errors. Inadequate staffing levels can also lead to patients receiving unsatisfactory care, raise the risk of aggression and violence from unsatisfied patients, and cause interruptions in much-needed rest and meal breaks (Abele, 2004). All of these issues can affect the quality of services.

Colling and York (2009) argued that some hospitals create new policies that oblige nurses to be on call during their days off. These kinds of procedures lead to nurse fatigue. They also hurt retention rates, lead to exhaustion, and more medical errors. Working for a long period of time under such pressure can also poorly affect nurses' lives because they will not have enough time to attend to their personal needs and responsibilities, which will affect their morale. Employing sufficient number of staff in Jordanian hospitals could

improve patients' services, enhance patient safety (Goyal, 2005) and allow staff more time to focus on applying QMS successfully.

5.3.1.7 Establishing training funds and implementing effective training programmes

The majority of participants mentioned that allocating adequate funds for staff training can help hospitals to improve their quality of services. They added that training funds should be enough to provide training for both new and current employees. It appears that Jordanian hospitals are not allocating enough funds for in-service training.

The rationale of increasing employees' training funds is that it will raise the competitiveness and productivity of organisations by providing beneficial training to employees and increase the occurrence of training within organisations (Williamson, 2007). In most organisations funds for employees' training come from their revenue. Therefore employee training varies considerably across organisations. Low investment in employee training is associated with low organisational productivity and high investment is associated with higher levels of organisational productivity and should eradicate any scepticism about the beneficial effects of training on an organisation's productivity (Aguinis & Kraiger, 2009).

Despite the importance of training in increasing organisational productivity, many organisations under-invest in training because of market failure. This is also the case with health services in Jordan. Ignace and Dastmalchian (2011) argued that organisations might elect to under-invest in employees' training because trained employees are free to move from one organisation to another organisation, so organisations can never be sure that they will recover their investments in employee training. Non-training competitors may seek to

gain advantages by “poaching” trained workers from another organisation, thereby appropriating the benefits of the employees’ training at little or no cost. The fear of poaching reduces the incentives of organisations to train. However, organisations can address this problem by creating a contract with the organisation’s employees before engaging them with the organisation’s training programme. The contract will compel employees to stay at their organisation after they have been trained for a certain time period. Other resources to increase financial incentives for organisations to invest in training include providing payback clauses, which will be utilised if a trained worker leaves the organisation after receiving training (Buseh, 2008).

Regarding training programmes, the participants mentioned that hospitals should implement effective training programmes. The participants believed that an effective training programme should use different methods to present information to hospital staff. This aligns with the established idea that implementing effective training programmes is critical to quality improvement and addressing QMS obstacles. It also gives the impression that training programmes in Jordanian hospitals do not result in skills improvement and hints at the lack of or limited strategies for evaluating the effectiveness of training programmes.

Kempton (1996) observed that an ineffective training programme could lead to undesirable consequences for hospitals. Many hospitals provide training for their staff, but managers find no improvement in the employees’ performance in spite of the staff training. Potentially, the staff might not actually use the skills that the hospital intended them to learn and implement. Hospitals can prevent this situation from occurring by implementing a suitable evaluation mechanism to ensure that training programmes are effective and make a difference in staff skills.

Establishing an effective training programme is important in any organisation, as it will improve the level of performance within the organisation. Briggs (2008) argued that effective training programmes are critical to the success of health care professionals and managers. Krupa and Chan (2005) and Kirkpatrick (2009) explained that effective training assists in optimising the utilisation of hospital staff members, which further aids staff members to reach both the hospital's aims and their own individual aims. It can help to provide an opportunity and broad structure for enhancing staff members' behavioural and technical skills, allows personal growth in staff, expands their horizons, increases staff productivity and assists the hospital to achieve its aims, encourages effective collaboration as well as creates enthusiasm to learn within the staff. More importantly, Leonard and Zeace (2011) have argued that an effective training programme should meet the organisation's objectives and the employees' needs, introduce new skills and knowledge to employees, bring about desirable changes in employees' performance, and produce marked benefits to the organisation. However, in today's organisations, training programmes are in short supply. Organisations are unwilling to spend their valuable resources on employee training programmes. Instead, organisations rely on their employees' existing knowledge, skills, and experience. But that is not enough to improve the organisation's services. Therefore, organisations need to implement effective training programmes that can enhance their employees' skills and bring more overall value to the organisations. This will also ensure staff efficiency, which was a subtheme that emerged under the material resources factor. This subtheme is now discussed below.

5.3.1.8 Staff efficiency

The participants mentioned that hospitals should increase their staff efficiency to achieve desired results. Many of the participants mentioned that everyone in the hospital should feel that he or she is important in the hospital and that his or her job serves the hospital. Based on the respondents, it seems that managers believe that employees are not working efficiently and can do better. They also believe that staff members don't feel valued, which might affect the output, efficiency and quality of services.

Hopp and Lovejoy (2012) argued that all hospitals have to be driven by achievement and efficiency, which appear in the form of real results for the hospital. Demonstrating achievement and efficiency is also rewarding for the employee. Lower efficiency levels and less productive inputs are bound to negatively affect the hospital and put its survival and sustainability at risk. Staff productivity is an important concern for hospital managers, but it is important to note that lower productivity cannot be blamed entirely on the employees. Nolan (2007) argued that hospitals should improve their environment and work conditions. Many changes could be implemented in the hospital system to improve staff productivity. Talented employees are a valuable asset for hospitals and managers should endeavour to keep talented employees, motivate them to perform and deliver the results that they are capable of, and qualified for. Managers often suppose that once they have recruited the necessary staff, the hospital's goals will be easy to achieve. This is not always true because the achievement of goals is also based on the work environment.

Some measures such as ensuring accountability of employees can assist hospital managers to improve staff productivity. All hospital staff members have to be aware that they are accountable for their decisions and actions. This will help them work more carefully, use

resources efficiently and be cautious rather than careless. The second factor involves following up the employees' work progress. Every milestone or target set has to be followed up. Following-up helps managers to be sure that progress is satisfactory and keeps staff on track. In addition, managers should manage their staff and trust them. A large pool of staff members will require assistance and direction, and will certainly need to be managed appropriately. But staff members should also be given freedom and be trusted (Kalb, 2010). In order to improve QMSs in Jordanian hospitals, hospital managers should devise measures to improve efficiency through trust, clear accountability measures and providing them with sufficient opportunities to do their best work in their jobs.

5.3.2 The material resources factor

The participants in this study mentioned that the nature of the material resources that they have access to are obstacles to QMS in many hospitals. The participants' view that most hospitals in Jordan do not have enough materials, or they have low-quality materials confirms the quantitative findings. The participants also mentioned that in many hospitals there is no connection between the information technology department and the materials management department and this makes it difficult to determine the availability of some crucial equipment/resources required in the care process. Thus, hospitals should consider these obstacles and address them through sourcing quality materials and auditing the availability materials as a way to maintain quality of services.

Materials are a necessary element in any hospital and should be utilised in the best way possible to achieve effective results. The efficient and successful performance of departments is primarily based on the availability of materials and their quality (Tanfani & Testi, 2012). Related to the availability of materials is materials management, which plays

a fundamental role in achieving efficient and smooth results and participants suggested that this need to be strengthened. Materials Management refers specifically to purchasing, caring and preserving, storing and taking inventory, accounting for and disposing of scrap, and issuing materials (Griffin, 2011). Materials management departments have special roles. These departments can be big or small, depending on the size of the hospital but are pivotal to quality services. Malhotra (2009) claimed that materials management departments require effective supervisory systems and if QMS implementation is to be successful in Jordan, these departments need to be reformed.

5.3.2.1 Providing the necessary laboratories and radiological services

Many of the participants mentioned that hospitals should provide necessary laboratory testing and radiological examinations, as these will help hospitals to increase their revenue. They mentioned also that these are necessary factors that help physicians in providing accurate treatments and diagnoses. The impression was that many hospitals in Jordan offer only simple laboratory testing and radiological examinations. It is possible that patients in Jordan avoid going to these hospitals because they do not offer full services. Instead, it is likely patients go to hospitals that will address most of their needs, such as providing laboratory testing, radiological examinations, and medicine. While private hospital may be able to establish these facilities, public hospitals in Jordan, which depend on Government, are unlikely to be in position to provide such facilities. However, they remain a crucial part of quality services and long-term health expenditure reduction for the government and should therefore be given more attention in the effort to improve QMS.

Hospitals sometimes overlook the link between internal laboratory services on the one hand and quality services and customer satisfaction on the other. Such hospitals might also

neglect the extra revenue opportunities available by providing basic and necessary laboratory and radiology services to their patients (Bigelow, Fonkych, Fung, & Wang, 2005). Other hospitals suffer from complications as a result of introducing laboratory and radiology services for inpatients and outpatients, the complexity of regulations and conditions with laboratory and radiology services and the high costs of materials, equipment, and machines. These issues are some of the reasons that convince some hospitals to refuse to add some basic and necessary laboratory and radiology services. These issues can be resolved by employing qualified and trained staff who can introduce the new services smoothly and follow the prevailing regulations. The revenue from introducing the basic and necessary laboratory and radiology services will cover the costs of these services and increase the hospital's revenue in the long term (Bishop, Federman, & Ross, 2010; Stolberg, 1999).

Professional health managers, with assistance from consultants, can create a low-cost solution for increasing the hospital revenue by utilising new technology to ensure that the laboratory and radiology directors follow the best procedures for initiating easy and effective laboratory and radiology services. Applying new technology can help hospitals achieve returns on their investments in a short period and enhance their effectiveness while simultaneously maximising the hospital's profits (Buttaro, 1999). Therefore, hospitals in Jordan should focus on applying new technology that provides fast and accurate results in both laboratory testing and radiological examinations as a way to maintain quality.

5.3.3 The leadership and management factor

The participants said that the nature of leadership and management are obstacles to QMS in many hospitals. The majority of participants agreed that effective leadership and

management are important factors in addressing QMS obstacles. They believed that successful leadership and management implementation can improve the quality of services provided. They also mentioned that most hospital managers in Jordan have neither leadership nor management skills because these managers have not received training in management. Therefore, these managers should be given training in hospital management.

Leadership and management are two concepts that are similar to each other, but there is a small distinction between them. Elearn (2012) pointed out that leaders have innovative personalities or are considered experts in their work; these characteristics help them to influence other people. However, managers have positional or legitimate power based on their positions. People can be managers without being leaders, and they can be leaders without being managers. Management and leadership skills complement one another; therefore, the successful manager is one who has solid leadership skills.

Hospital managers should demonstrate strong leadership skills in their hospitals. They should create teams in their hospitals and encourage them to participate in the decision-making process. Rad (2006) mentioned that despite the fact that leaders or managers are the decision makers, the hospital's teams can help these leaders or managers make the best decisions. Successful leaders can guide the organisation's staff to illustrate what they need to perform and how they can perform in the best, most efficient way possible. Leadership and management skills support managers in motivating their staff members. The skills will also help them to establish the priorities of the organisation, delegate authority as necessary, improve employees' communication, and achieve the organisation's goals.

Managers with successful communication skills can persuade their employees to adopt their ideas, opinions, and suggestions. Following this, the managers will receive their

employees' support in achieving their goals. Effective collaboration skills assist managers to build good relationships with their employees, other organisations, and the local community. Critical thinking skills are necessary for managers to solve their hospitals' problems logically, avoid biases, research options, and focus on meaningful data to draw the right conclusions, even under pressure (Moyle, 2006). Such attributes and skills are needed for the hospital manager in Jordan as part of the effort to identify and address QMS obstacles.

5.3.3.1 Providing sufficient morale incentives to employees

The majority of the participants mentioned that hospitals should give their staff morale incentives for their achievement. The participants mentioned that employee motivation is a key factor in their success; hence, they need to be given morale incentives in order to foster creativity and sustain high levels of motivation. It appears that hospital managers in Jordan do not appreciate their staff members' efforts or their achievements. It is likely they believe that employees should do their job successfully without any appreciation because that is part of their job.

Morale incentives encourage people to do the right things all the time. Employees are motivated to take specific actions because of their sense of morality. Stevens and Thevaranjan (2010) explained that in any organisation, there is a need to focus on morale incentives. The incentives should not always be financial or material incentives; they should, at times, provide other types of incentives that the organisation employees can appreciate. Even though money and material things are considered significant requirements for living, they cannot completely satisfy one's being. Each employee has personal psychological needs to meet, and identifying and addressing these needs are

suitable aims for employee rewards. Aside from receiving financial bonuses and material rewards, employees will be thankful to obtain morale incentives, such as thanks letters, gifts, and travel opportunities.

Henderson, Horden and Pastore (2007) argued that morale incentives are often apparent as being split from compensation. Hence, morale incentives tend to stand out as rewards for improving the hospital's performance. Each employee has the need to be appreciated for his or her efforts. Often times, organisations do not have to spend money to reward their employees. Basically, acknowledgment in the form of an appreciative comment or letter and gift cards can let them feel appreciated and recognised. Graafland and Vandeven (2006) argued that rewards do not have to be costly to demonstrate sincere appreciation. Hardworking employees are often happy with only the thought that the managers recognise their efforts. Therefore, hospital managers in Jordan should recognise their staff members' efforts and provide morale incentives to encourage the staff to do their best.

5.4 Conclusion

The integration of the quantitative and qualitative data of this research and interpreting it in light of the literature has brought a number of important issues to the fore.

Firstly, the study has explored the QMS obstacles that face high- and low-performing hospitals in Jordan based on responses from the hospitals' staff members. These QMS obstacles are important because they reflect the views of the hospital staff. Hospital staff members work in the field and, thus, are in direct contact with these obstacles; therefore, staff members are the best people to determine the QMS obstacles. The study divided the obstacles into three categories: major, moderate, and minor obstacles. The study focussed on the major QMS obstacles because these obstacles require immediate attention from hospital managers, as they are serious enough to impact the quality of services that employees provide. If these obstacles are not addressed urgently, they could hinder the QMSs in hospitals and negatively impact their quality of services. In addition, they could cause more problems. The study found that when the performances of high- and low-performing hospitals are combined for analysis, there are only two major obstacles: lack of rewards for hospital staff members and inadequate authority delegation. In high-performing hospitals, the major obstacles are y three: lack of rewards for hospital staff, inadequate authority delegation, and lack of staff. On the other hand, the low-performing hospitals have six major obstacles: lack of rewards for hospital staff, inadequate material resources, lack of training programmes, insufficient staff motivation, insufficient budget for QMSs, and inadequate authority delegation. These obstacles are elements of hospitals as organisations and as systems and in line with organisational and systems theory, their elimination or reduction will support improved QMS in Jordanian hospitals.

Secondly, the study addressed QMS obstacles based on the hospitals' participating managers. The suggested solutions are important because they are collected from the hospital managers (medical directors, managing directors, quality managers, and directors of nursing). These hospital managers are also working in the field, and they have the necessary experience and background in management and quality; therefore, hospital managers are the best people to suggest solutions for addressing QMS obstacles. The study focussed on finding solutions to the major QMS obstacles because these obstacles negatively affect QMSs more than moderate and minor obstacles. Solutions to address the major QMS obstacles were related to three main factors. The first is the human resources factor, which includes rewarding talented employees and providing good salaries and benefits, having effective hospital management specialists, and providing hospital management training, delegating authority and identification of responsibility and accountability, building a trusting environment, employing enough staff members, establishing training funds and implementing effective training programmes. The material resources factor includes staff efficiency and providing laboratory and radiological services. Finally, the leadership and management factor includes providing sufficient morale incentives to employees.

5.5 Recommendations for high- and low-performing hospitals

The recommendations from this research are valuable and timely because Jordanian hospitals face many challenges, including rising health care costs, decreases in government support to hospitals, inefficient financing of health services, and inefficient provision of health services (Jordanian Department of Statistics, 2010; Jordanian High Health Council, 2012; WHO, 2006).

Successful QMS implementation is a step towards reducing the cost of health care services (Heuvel et al., 2005). According to Deming (1993), a high-quality orientation leads to higher productivity and thereby lowers costs. Organisations that have no high-quality orientation will incur more costs than organisations that have a high-quality orientation. Therefore, the recommendations below deriving from this study if implemented can help Jordanian hospitals address challenges related to improving the quality of their services and increasing their revenue. The recommendations for both high- and low-performing hospitals from this research are as follows:

1. Hospitals should reward talented and disciplined employees through good salaries and other benefits. Rewards should not be limited to physicians or specialists only but extended to technicians or any individual who works in the hospital, including medical record technicians and nurses. Hospitals should provide salaries based on what other organisations pay their employees and what they deserve for their jobs. To guarantee job satisfaction based on these factors, hospitals should initiate a salary range for each job according to the salaries initiated by contestants for a similar job. Hospitals could also impose a salary floor and ceiling to guarantee that staff members receive similar salaries. As Jordan is not a very rich country many hospitals may be unable to provide huge

monetary rewards. Therefore, hospitals should consider introducing more non-monetary rewards /benefits such as health care, day care options for parents, extra vacation days, or gym memberships to improve staff satisfaction.

2. Hospitals will require efficient managers in order to achieve their objectives. Therefore decision makers should recruit highly educated specialists in hospital management to run hospitals and /or support existing managers to become specialists in hospital management. Such specialists will be in a position to better plan for the future as well as help hospitals to achieve their QMS goals.

3. Related to efficient management is the need for training managers and other staff. As the study findings suggest, it is essential for Jordanian hospital managers to be given effective hospital management training. Hospital managers should be required to undergo training in hospital management before they are recruited to the job. The training programmes should ensure that hospital managers understand the work of doctors, the issues and the concerns of clinical and other professionals and intricacies of the concept of quality care within the hospital. The programmes should also teach the managers about the structure and function of hospitals as well as necessary management and leadership skills, such as establishing communication with hospital staff and patients, making plans, and making decisions. In order for such comprehensive training regimes to succeed in providing requisite skills, hospitals should set aside specific funds for staff training. Such funds should be sufficient to enable each hospital to provide training to newly recruited and existing employees around the enhancement of quality so that all staff members are able to support quality improvement across the hospital.

4. Hospital managers should delegate part of their authority to their staff and should identify the responsibility and accountability required of each staff member. Delegation of authority in hospitals should flow from the top to the bottom, based on the staff members' areas of specialisation and directed towards creating cooperation between the managers and other hospital staff.

5. A key finding of the study was that building a trusting environment in hospitals would be useful in supporting QMS implementation. Therefore, it is essential hospital managers use their enormous power to build a trusting environment in their hospitals. As the issue of trust rests on telling the truth and keeping their word, there is need for a mechanism for open administration/governance that will ensure that managers are truthful and keep the promises they make. Furthermore, hospital managers should trust and respect all of hospital staff members. They should not focus on one group and ignore other groups; they should focus on all groups, including physicians, nurses, midwives, technicians, and administrators.

6. The adequacy and stability of staff was found to be a mechanism for resolving QMS obstacles. Therefore hospitals should maintain enough staff members through cultivating job satisfaction measures in order to achieve the hospital's goals. Hospital staff should receive respect from the hospital managers, and they should feel that they are valuable and be rewarded for their achievements.

7. Hospitals should provide necessary laboratories and radiological services to patients. Hospitals should introduce laboratory testing services, such as urine, stool, blood, and other body fluid tests for their patients. Radiological examinations, such as computed

tomography (CT) scans, X-rays, magnetic resonance imaging (MRI), and ultrasounds, should also be available. These facilities are fundamental for improving quality of care.

5.6 Contribution

This study found that while there has been valuable research covering many aspects of the factors that hinder quality implementation in organisations, such as leadership and management, resource management, quality improvement, and organisational culture factors, this is the only study conducted to date specifically to explore the QMS obstacles in both high- and low-performing hospitals. For this reason, the study is a valuable source for initiating and supporting future research that may be undertaken to explore the QMS obstacles in other types of hospitals. From an early stage in the study process, it was recognised that the available information published in different journals and databases could be effectively used to develop the study questionnaire and to provide quality information/data, provide an evidence-based context and rationale for exploring the QMS obstacles in high- and low-performing hospitals and provide ways to address these obstacles.

This study has shown new factors (human resources, material resources, vision and change, communication, leadership, and management) that affect efforts to reduce QMS obstacles in hospitals. This study has demonstrated that there are three levels of obstacles: major, moderate, and minor. This study also confirms that the major obstacles are more important than other obstacles and that these obstacles require immediate procedures to be implemented to prevent any negative consequences that may occur as a result of these obstacles. This study draws attention to the health service quality context that the Jordanian character and worldview play in determining subtle interactions among staff

members, which will affect changes in the quality of health services that the hospital provides. The study has given the decision makers and hospital managers in Jordan valuable information about specific obstacles that hinder QMSs in high- and low-performing hospitals. The study also has provided applicable solutions that can help to address these obstacles.

5.7 Study limitations

There are no published objective data in Jordan to rate the hospitals as either high or low performing. The researcher therefore used an expert reference group to categorise the hospitals as either high or low performing. The United Kingdom also uses an expert reference group to determine the high-impact policy changes that are required (Shaw, 2008). Although this was the best way to designate hospitals as high and low performing for this study, this is a limitation because it is possible that some of the categorisations were incorrect.

There is no suitable standard questionnaire to be used for a study like this. Researchers have used questionnaires based on their country's accreditation standards (Pongpirul et al., 2006). Other researchers restricted their studies to some obstacles in organisations, which specifically focussed on applying TQM programmes (Karaszewski, 2004). Therefore, the researcher developed a new questionnaire. The researcher found 74 obstacles to quality in the literature. It was difficult to include all of these obstacles in a single questionnaire. Therefore, the researcher selected the obstacles that more than one study mentioned, resulting in a list of 23 common obstacles. This might not necessarily cover all aspects of QMS.

Furthermore, the use of the self-reporting questionnaire has presented several limitations. For example, this type of questionnaire is inadequate to understand some forms of information—i.e., changes of emotions, behaviour, and feelings; that there is no way to tell how truthful a respondent is being; that the respondent may not be thinking within the full context of the situation; and that respondents may choose to ignore certain questions altogether.

Finally, the selection of only six high- and low-performing hospitals without regard to whether they belonged to the private or public sector could have confounded the comparison between the hospitals in this study. This is a limitation that future research can explore.

5.8 Future work

There has been little research in the Jordanian context that explores and describes the problems that Jordanian hospitals face. This study explored QMS obstacles that both high- and low-performing hospitals in Jordan face. It is suggested that further research in this area is required to improve QMS. Studies are required to explore the QMS obstacles in government hospitals and private hospitals. Studies are also required to examine how QMS obstacles affect the quality of services that the hospital provides and thus help hospitals make the most efficient use of their money. Such studies should include the sequence of QMS obstacles in the treatment process and the hospital's outcomes, in addition to measuring how much the hospital wastes as a result of medical and non-medical errors.

These studies should include full descriptions of the problems, the causes of the problems, and the solutions. The decision makers in the MOH, hospital managers and hospital staff

members could be included to determine the appropriate solutions for a hospital's problems. These studies could be purely quantitative or purely qualitative or contain mixed methods. The importance of such studies is that they will produce reliable information that can help hospitals to implement QMSs successfully, prepare government hospitals and private hospitals in Jordan to get Jordanian accreditation and ISO 9001, provide valuable insight into understanding the obstacles facing QMS implementation, improve the effectiveness and efficiency of hospitals' performance, and meet or exceed patients' needs and expectations. After that the Jordanian health system can move forward with a solid system toward patient safety and measuring the health care outcomes as in the developed countries.

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Appendices

Appendix 1(A): Quality management system obstacles (QMSO) in hospitals questionnaire (English Version)

**Quality management system obstacles (QMSO) in hospitals
questionnaire**

This study entitles ‘Do high- performing and low-performing hospitals in Jordan have different obstacles to overcome?’. The study’s aim is to understand the obstacles facing quality management system (QMS) implementation in high and low performing hospitals in Jordan. QMS in health care is defined as “All the procedures explicitly designed to monitor, assess and improve the quality of care” (Wagner, 2006).

Your answers to this questionnaire will be kept confidential and will be used only for research purposes. The information you give will be combined with the responses of all of the staff who complete the questionnaire, and you will not be identifiable in any way.

The questionnaire has demographic data, 23 statements about quality obstacles and one question. The demographic information about your; gender, age, profession, education level, department, work experience in this hospital and work experience in health field. The statements ask for your opinion about quality management system implementation obstacles in your hospital. The statements were worded both positively and negatively. Mark your answer please by adding a tick (✓) opposite the statement you choose. After the statements there is a question about rating the way quality management is performing in your hospital. Please also tick (✓) your answer opposite to this question.

Quality management system obstacles (QMSO) in hospitals questionnaire

Demographic data:

Gender:	<input type="checkbox"/> Male	<input type="checkbox"/> Female	
Age:	<input type="checkbox"/> 20 to less than 30 years <input type="checkbox"/> 40 to less than 50 years	<input type="checkbox"/> 30 to less than 40 years <input type="checkbox"/> 50 years or more	
Profession:	<input type="checkbox"/> Nurse <input type="checkbox"/> Accountant <input type="checkbox"/> Dentist <input type="checkbox"/> Other (Specify).....	<input type="checkbox"/> Doctor <input type="checkbox"/> Clerk <input type="checkbox"/> Allied medical professions (Radiology, Laboratory, Medical records, Anaesthesia). <input type="checkbox"/> Midwife <input type="checkbox"/> Pharmacist	
Education level:	<input type="checkbox"/> Diploma	<input type="checkbox"/> Bachelor	<input type="checkbox"/> Postgraduate
Department	<input type="checkbox"/> Emergency <input type="checkbox"/> Intensive care unit (ICU) <input type="checkbox"/> Ear, nose and throat (ENT) <input type="checkbox"/> Medical records <input type="checkbox"/> Dermatology	<input type="checkbox"/> Admission <input type="checkbox"/> Surgery <input type="checkbox"/> Laboratory <input type="checkbox"/> Pharmacy <input type="checkbox"/> Accounting	<input type="checkbox"/> Cardiology <input type="checkbox"/> Gynaecology <input type="checkbox"/> Radiology <input type="checkbox"/> Paediatric <input type="checkbox"/> Other (Specify).....
Work Experience In this hospital:	<input type="checkbox"/> 3 to less than 6 years. <input type="checkbox"/> 11 to less than 16 years. <input type="checkbox"/> 21 years or more.	<input type="checkbox"/> 6 to less than 11 years <input type="checkbox"/> 16 to less than 21 years	
Work Experience In health field:	<input type="checkbox"/> 3 to less than 6 years. <input type="checkbox"/> 11 to less than 16 years. <input type="checkbox"/> 21 years or more.	<input type="checkbox"/> 6 to less than 11 years <input type="checkbox"/> 16 to less than 21 years	

Please tick (✓) in front of each of the following statements:

	Statements about Quality Management System Implementation Obstacles	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
1	Hospital management supports the quality procedures.					
2	Hospital has quality and patient safety plan.					
3	Hospital has an effective ways to measure quality.					
4	Hospital plan focuses on short-term goals only.					
5	Hospital staff is rewarded for their achievements in quality improvement.					
6	Hospital has inadequate communication between departments.					
7	Hospital has and applies a human resources policy.					
8	Hospital has adequate material resources.					
9	Hospital allocates sufficient budget for a quality management system.					
10	Hospital analyses the costs and benefits of quality improvement.					
11	Hospital has adequate staff to complete the work.					
12	Hospital has a training program in quality for staff.					
13	Hospital holds lectures for staff about quality.					
14	Hospital motivates staff to participate in quality improvement.					
15	Hospital follows standard procedures.					
16	Hospital has inaccurate database.					
17	Managers utilize the data which is available in the hospital database to make a decision.					
18	Hospital management has given enough authority to the staff to improve the hospital quality.					
19	Hospital managers are unable to change the					

	organisation's cultural perspective regarding quality.				
20	Hospital management focuses on patient service.				
21	Hospital managers encourage staff to work as a team.				
22	Hospital staff resists change.				
23	Frequent changing of the hospital manager				

Thank you

Appendix 1(B): Quality management system obstacles (QMSO) in hospitals questionnaire (Arabic Version)

اسْتَبِّيْ انْ عَوْقَاتِ نَظَامِ اَدْلَةِ الْجُودَةِ الْمُسْتَشْفِيَاتِ

هذا الدرس عقولاً "المستشفيات على الأداء الالتمسوتشفيات" خفضةً ابداعي الأردن لبيها عوقات ملتفة حتى يتم معلميتها؟". الهدف من هذه الدراسة هو فهم عوقات التي تواجه تحقيق نظام إدارة لجودة (QMS) للمستشفيات الخالية الأداء الالتمسوتشفيات خففةً الأبداعي الأردن. ويعرفن نظام إدارة لجودة مجاليه لارعاية الصحى قبلها "جميع الإجراءات لموضوعة بوضوح لرصد تواقيعه توخيين نوعية لارعاية" (Wagner, 2006).

إجاباتك هي هذا الامتحان ستكون سريّة في نتائج خدم إلا لأغراضبحثيّة. سيعتمد جمع لمنهجياتك على ردود كل لموظفيه الذين كانوا الامتحان، فين يتم تحديد شخصياتك بأي شكل من الأشكال.

الامتحان يحتوي على 23 جملة حول عوقات لجودة وسائل واحد حول تقييم طرق أداء إدارة لجودة. للسؤالات خمسة: لجنس، لعمر، لمنطقة، ومستوى التعليم، لقسم، بحرة لعمل في المنشفى الذي تعمليه حالياً، ولآخر قي لصالح الصحي. هذه الجمل تسأل عن رأيك حول عوقات تحقيق نظام إدارة لجودة الالتمسوتشفيات. وقد صرّيغت لجمل طرقاً بسيطة وسلبية هي حدواء. من فعلك ضع علامة (✓) أمام العبارات التي تتحقق أهلاً لجملة ذلك سؤال حول تقييم طرق أداء إدارة لجودة يرجى أيضاً وضع علامة (✓) أمام الإجابة التي تأسّي لذل سؤال.

استبی ان عوقت نظام ادلة الجودية الامستقیمات

ب) انهال الشخريه

الجنس: ذكر ذئب

العمر: من 60 إلى قبل من 30 سنة من 30 إلى قبل من 40 سنة
من 40 إلى قبل من 50 سنة 50 سنة أو أكثر

المهنة: ممرض دكتور
محاسب كثيبي
طبيب أسنان مهنية بطبية من اعدة هيئات خدمة رفقاء
أشغال فنية سجلات فنية مخبرات
غير ذلك (حدد لمنها)

لامسوا ذلك بعيدي: بذل ووسوس واسبت عليه بلوم

قسم: الإسعاف ولطوارئ الإدخال
وحدة عاليه الراهن لجراحه الاعامة سطيفي فينوكليد
أنف وأذن وحنجرة الأشعة
السجلات الطبية صيدليه
الأطفال عالمييات
الباطني اسرية
غير ذلك (حدد قسم)

خبر قللهم تشفي لحال: من 3 إلى قبل من 6 سنوات من 6 إلى قبل من 11 سنة

من 11 إلى قبل من 16 سنة من 16 إلى قبل من 61 سنة
61 سنة أو أكثر

جي عندهم خبرة: من 3 إلى قبل من 6 سنوات من 6 إلى قبل من 11 سنة
من 11 إلى قبل من 16 سنة من 16 إلى قبل من 61 سنة
61 سنة أو أكثر

يرجى وضع ع.م.ة (٧) أمام المثل عبارة ملأ عبارات المثل ية:

					بـقاومـاـلـعـمـلـوـرـفـيـالـقـسـفـىـالـنـيـجـيـرـ.	22
					بـتـهـنـيـجـيـرـمـدـيـرـالـقـسـفـىـبـشـكـلـنـمـكـرـرـ.	23

الـنـيـجـيـرـ	الـنـيـجـيـرـ	الـقـسـفـىـ	الـنـيـجـيـرـ	الـنـيـجـيـرـ	تقـيـيـطـيـقـةـأـدـاءـإـدـلـةـالـجـوـدـةـ	
					الـرـجـاعـيـقـيـمـطـرـيقـةـأـدـاءـإـدـارـةـالـجـوـدـةـفـيـالـقـسـفـىـ.	سـ1

وـشـكـلـاتـعـافـكـمـ

Appendix 2 (A): Interview Instrument (English Version)

Interview Instrument

Dear Sir / Madam

Could I please ask you some personal questions and other questions regarding addressing the QMS obstacles in high –and low-performing hospitals?

Personal data

Gender: Work Experience in this hospital:

Age: Work Experience in the health field:

Education level:

The following four main questions regarding addressing the QMS obstacles in high –and low-performing hospitals:

1. How can hospitals address the QMS obstacles that are related to the leadership and management factor?

Prompt: do you think incentives can help to overcome the QMS?, which kind of incentives is important?

2. How can hospitals address the QMS obstacles that are related to the resource management factor?

Prompt: what do you think about training, or are there other methods to address the QMS obstacles?

3. How can hospitals address the QMS obstacles that are related to the quality improvement factor?

Prompt: Based on your experience, how quality can be improved?

4. How can hospitals address the QMS obstacles that are related to the organisational culture factor?

Prompt: Based on your experience, are there specific procedures for these obstacles?

Appendix 2 (B): Interview Instrument (Arabic Version)

أداة المقابلات

سيد العزيز / سيدتي

هل من الممكن أن أسألك بعض الأسئلة الشخصية وبعض الأسئلة الأخرى بشأن معالجة معوقات نظام إدارة الجودة في المستشفيات عالية ومنخفضة الأداء؟

البيانات الشخصية

خبرة العمل في هذا المستشفى:

الجنس:

خبرة العمل في مجال الصحة:

العمر:

مستوى التعليم:

فيما يلي أربعة أسئلة رئيسية بشأن معالجة معوقات نظام إدارة الجودة في المستشفيات عالية ومنخفضة الأداء:

1. كيف يمكن للمستشفيات معالجة معوقات نظام إدارة الجودة التي ترتبط بعامل القيادة والإدارة؟

تحفيز: هل تعتقد بأن الحوافز يمكن أن تساعد في التغلب على المعوقات؟ أي نوع من الحوافز تعتقد بأنه مهم؟

2. كيف يمكن للمستشفيات معالجة معوقات نظام إدارة الجودة التي ترتبط بعامل إدارة الموارد؟

تحفيز: ما هو اعتقادك تجاه التدريب؟ أو هنالك أنواع أخرى لمعالجة المعوقات؟

3. كيف يمكن للمستشفيات معالجة معوقات نظام إدارة الجودة التي ترتبط بعامل تحسين الجودة؟

تحفيز: بناء على خبرتك كيف يمكن تطوير الجودة؟

4. كيف يمكن للمستشفيات معالجة معوقات نظام إدارة الجودة التي ترتبط بعامل الثقافة التنظيمية؟

تحفيز: بناء على خبرتك، هل هنالك اجراءات خاصة لهذه المعوقات؟

Appendix 3: Distribution the study questionnaire based on the staff's proportion

	Low				High			
	X	Y	Z	Total	A	B	C	Total
	200	200	200	600	200	200	200	600
Nurses (46.8)	94	94	94	282	94	94	94	282
Doctors (16.3%)	33	33	33	99	33	33	33	99
Allied medical professions (15.6%)	31	31	31	93	31	31	31	93
Midwives (3.7%).	8	8	8	24	8	8	8	24
Accountants (3.1%).	6	6	6	18	6	6	6	18
Clerks (1.7%).	3	3	3	9	3	3	3	9
Pharmacists (1.2%).	2	2	2	6	2	2	2	6
Dentists (0.6%).	1	1	1	3	1	1	1	3
Other technical & administrative staff (11%)	22	22	22	66	22	22	22	66
Total	200	200	200	600	200	200	200	600

Appendix 4 (A): Ethical approval from UNE



Ethics Office
Research Development & Integrity
Research Division
Armidale NSW 2351
Australia
Phone 02 6773 3449
Fax 02 6773 3543
jo-ann.sozou@une.edu.au
www.une.edu.au/research-services

HUMAN RESEARCH ETHICS COMMITTEE

MEMORANDUM TO: Prof Steve Campbell, A/Prof Godfrey Isouard, Mr Ashraf

A'aquolah

School of Health

This is to advise you that the Human Research Ethics Committee has approved the following:

PROJECT TITLE: Do high performing and low performing hospitals in Jordan have different obstacles to overcome?

APPROVAL No.: HE12-196

COMMENCEMENT DATE: 25 October, 2012

APPROVAL VALID TO: 25 October, 2013

COMMENTS: Nil. Conditions met in full

The Human Research Ethics Committee may grant approval for up to a maximum of three years. For approval periods greater than 12 months, researchers are required to submit an application for renewal at each twelve-month period. All researchers are required to submit a Final Report at the completion of their project. The Progress/Final Report Form is available at the following web address:
<http://www.une.edu.au/research-services/researchdevelopmentintegrity/ethics/human-ethics/hrecforms.php>

The NHMRC National Statement on Ethical Conduct in Research Involving Humans requires that researchers must report immediately to the Human Research Ethics Committee anything that might affect ethical acceptance of the protocol. This includes adverse reactions of participants, proposed changes in the protocol, and any other unforeseen events that might affect the continued ethical acceptability of the project.

In issuing this approval number, it is required that all data and consent forms are stored in a secure location for a minimum period of five years. These documents may be required for compliance audit processes during that time. If the location at which data and documentation are retained is changed within that five year period, the Research Ethics Officer should be advised of the new location.

A large black rectangular box used to redact a signature.

Jo-Ann Sozou
Secretary/Research Ethics Officer

Appendix 4 (B): Ethical approval from Ministry of health, Jordan



ارقم تطوير / مدير سير / ٨٠٢
التاريخ
المرافق ٨٠٢ / ٩ / ٢٠١٢

مدير علم مستشفى الأمير حمزة

مدير مستشفى -----

تحية طيبة وبعد ،،،

أرفق طبي صورة عن كتاب رئيس لجنة أخلاقيات البحث العلمي رقم
ج ب ١ / لجنة أخلاقيات / ٧٦١٩ / تاريخ ٢٠١٢/٨/١٢ بخصوص السماح لطاب المكوره
في إدارة الخدمات الطبية من جامعة (University of New England) / استراليا
لشرف عبد الرحمن عيسى أبو عقلولة اجراء بحث بعنوان :-

(هل المستشفى عاليه الاداء والمستفيضات منخفضة الاداء في الأردن لديها معوقات
متختلفة حتى يتم معالجتها)

وذلك عن طريق توزيع الإشتباه المرفق صورة عنه على كلير المستفيضات التابعة
لوزارة الصحة وإجراء مقابلات مع مدير ومدير إدارة والمدبر الفني ورئيس وحدة الجودة
ورئيس التمريض وممرض يحمل درجة البكالوريوس في كل مستشفى .
أرجو التكرم بالإيعاز لمن يلزم تسهيل مهمةباحث اعلاه .

وأقينوا الإحترام ،،،

مدير تطوير الموارد البشرية

[REDACTED]
الدكتورة فدوى المطرابكة

نسخة / العدد
عدد المخطفات (١)

Appendix 5 (A): Information sheet (English Version)



School of Health
University of New England
Armidale NSW 2351
Australia
Phone +61 2 6773 2975
Fax +61 2 6773 3666
Email: hoshealth@une.edu.au
www.une.edu.au/health

INFORMATION SHEET for PARTICPANTS

Information Sheet for Interview Participants

I wish to invite you to participate in my research project, described below.

My name is Ashraf A'aqoulah and I am conducting this research as part of my DHSM in the School of heath at the University of New England. My supervisors are Professor Steve Campbell and Associate Professor Godfrey Isouard.

Research Project	Do high performing and low performing hospitals in Jordan have different obstacles to overcome?.
Aim of the research	The research aims to understand the obstacles facing quality management system (QMS) implementation in high and low performing hospitals in Jordan.
Interview	I would like to conduct a face-to-face interview with you at your office at your hospital. The interview will take approximately one hour. With your permission, I will make an audio recording of the interview to ensure that I accurately recall the information you provide. Following the interview, a transcript will be provided to you if you wish to see one.
Confidentiality	Any information or personal details gathered in the course of the study will remain confidential. No individual will be identified by name in any publication of the results. All names will be replaced by pseudonyms; this will ensure that you are not identifiable.
Participation is Voluntary	Please understand that your involvement in this study is voluntary and I respect your right to withdraw from the study at any time. You may discontinue the interview at any time without consequence and you do not need to provide any explanation if you decide not to

	participate or withdraw at any time.
Questions	The interview questions will not be of a sensitive nature: rather they are general, aiming to enable you to enhance my knowledge of the challenges and opportunities for better hospital services.
Use of information	I will use information from the interview as part of my doctoral thesis, which I expect to complete in July 2014. Information from the interview may also be used in journal articles and conference presentations before and after this date. At all time, I will safeguard your identity by presenting the information in way that will not allow you to be identified.
Upsetting issues	It is unlikely that this research will raise any personal or upsetting issues but if it does you may wish to contact your local Community Health Center (4618370).
Storage of information	I will keep hardcopy recordings and notes of the interview in a locked cabinet at the researcher's office at the University of New England's School of Health. Any electronic data will be kept on a password protected computer in the same School. Only the research team will have access to the data.
Disposal of information	All the data collected in this research will be kept for a minimum of five years after successful submission of my thesis, after which it will be disposed of by deleting relevant computer files, and destroying or shredding hardcopy materials.
Approval	This project has been approved by the Human Research Ethics Committee of the University of New England (Approval No: HE12-196, Valid to 25 October, 2013).
Contact details	Feel free to contact me with any questions about this research by email at aaaqoula@une.edu.au or by phone on +61 2 6773 3467. You may also contact my supervisors. My principal supervisor is Prof. Steve Campbell and he can be contacted at scampb44@une.edu.au or +61 2 6773 2975. My co-supervisor is A/Prof Godfrey Isouard and he can be contacted at gisouard@une.edu.au or +61 2 6773 3666.
Complaints	Should you have any complaints concerning the manner in which this research is conducted, please contact the following addresses: local contact: Qasem Amin King Abdullah University Hospital Jordan, Irbid Tel: 027200600 Fax: 027095123 Email: abuaqoula_hope@yahoo.com

International contact:

The Research Ethics Officer at:
Research Services
University of New England
Armidale, NSW 2351
Tel: +61 2 6773 3449 Fax: +61 2 6773 3543
Email: ethics@une.edu.au

Thank you for considering this request and I look forward to further contact with you.

regards,

Ashraf A'qoulah

Appendix 5 (B): Information sheet (Arabic Version)



ورقة معلومات للمشروع في مقاولة

أرجوكم دعوتكم للمشروع وطبعي، الموضع أننا.

اسمي أشرف بن عذوله ولد أعمل بهذا البحث كجزء من بحثات واسعة لدكتوراهي إدارة لخدمات صحية تقييمية هل صحفي جامعوني وإنجليزي المشفيين على الواسطى برفيسور سيف كامبل ولدت في 1982 في زورق.

مشروعي بحث:
مهمات تشفيات عاليه الأداء وففخضة الأداء في الأردن لبعدها معوقتاً مختلفة
تغلب على؟

هدف الدراسة:
هدف بحثي يتوافق مع نظام إدارة كالجودة للبيئات تقوية وففخضة
الأداء في الأردن.

المقدمة:
أرجوكم إجراء فحالة وحال ووجه ملطف يملأكم ببياناته. وسوف
تتغير حالتي حوالياً ساعتين واحدة بعد ذلك، سوف قومي بإجراء فحص جيد
رسوتيفي الأقبال فنتأكد من أن لذكري بدقة المقالة وففخضة المقالة،
يوقفني نسخة لك إلا لفترة ترددكم في رؤي قصبة لفحة.

اللغة:
أرجوكم أوفصلي لشخصي قدمتني بسيراً ذاتياً بالإنجليزية. ولا يزال
سيتم عرضه على شرائح متنوعة من المجتمعات جميع الأسماء باسمها العاردة،
وهي ضد من لا يعلمونها.

المشكلة تطوعية:
يرجى إدراككم أن مشروعكم في هذه الدراسة هو طوعي ولأنه يقتصر
على الأشخاص من الأفراد من دون أي مقابلة. القابلة تقتصر على
ولدت لاتصال إلئي جلساتي إذا قررت عدم المشاركة أو الانسحاب في أي
وقت.

الأسئلة:
أسئلة القياس سوف تكون ذات طبيعة نفسية، تهدف إلى

ات ملھین ک منت عزیز م عفتی لکھی اتالو فرصل سچین خدمات لتمش فی ات.

سٽ خدام
الْمُغَيْرَاتِ:

من غير لام رجح أن هذا حثس وفي عمل أي قضيّة خصيّة أو مزعج في لكن
إذا في تقدّم تردد في الذهن فهي هكذا صحة ظالمة محتملة محل يعي ملئها كـ للأصل
على الواقع مطابق:)4618370(.

مسنیل الاز عاج:

ستيقنیت سجیلات و ملاحظات ال قالقی خزل قهفل قی ملکب الی احثیلکی لیة
لصحه التبعه لجامعة نیو انجلاند. سیتم الاحتفاظ للهیلات الیلت روئیة علی
حه از لکھیتر محممیکلمه مروفین فلائلکلی یقق طرسیت ایققیق الیحث من
الوقص وللابیل ات.

تھیں الگ غیومات:

ستيقى جھی عالييل اتال يتم جعها في مذاالب حث لمدة لائق عن خمس سن وات
ب عذق بم أطروح تجاه، وبعد تفاصيله تخلص منها عن طريق حذف
مُفاتل الكھچو تر ذاتي صلة، وتدرك أورتمني في الـ مواد مطبوعة.

لـتـعـصـ مـنـ
الـمـعـوـمـاتـ:

تمت المفlocة على هذا المشروع مقبلاً لجنة أخلاقيات البحوث البشرية من جامعة نيويورك (رقم المفlocة HE12-196)، صالحة لغاية 65 نوفمبر 2011.)

لـ مـفـاـقـهـ

للاترددي للاصالبي عن أي سؤلة حول هذا الـحـث عن طـيـقـلـبـريـدـ الإلكترونيـيفـيـيـاـaaaqoula@une.edu.auـ أوـ عنـ طـيـقـلـهـاتـفـعـلـىـ3467ـ2ـ6773ـ+61ـ.ـلـكـمـإـيمـكـنـلـفـكـالـاصـالـبـالـعـشـفـيـينـهـمـالـفـسـورـسوـيـفـكـلـاهـلـالمـشـفـيـرـنـالـسـيـرـيـقـيـمـكـنـالـاصـالـبـهـلـهـيـscampb44@une.edu.auـأـوـالمـشـفـيـرـنـالـسـيـرـيـقـيـمـكـنـالـاصـالـبـهـلـهـيـ+61ـ2ـ6975ـ6773ـ،ـلـمـسـاعـدـالـاـتـاـذـلـمـشـارـكـغـوـفـرـيـعـلـزـوـيـمـكـنـانـ+61ـ2ـ6773ـ3666ـأـوـgisouard@une.edu.auـ.

اصل الاصال

شکاوی:

الاتصال المحلي:

اسم اپنے

لشافی لاملاک بعد اللہ ال جمیع

الاردن، اب د

مُثُفٌ: 067600600 | مُكَسٌ: 067095163
بَعْبُودُ الْإِلْكْتَرُونِيُّ: abuaqoula_hope@yahoo.com

الاصل الدولي:

خدمات البحوث

جامعة تقني و إنجلش

أرديال، NSW 2351

الهاتف: (06) 3449 6773 فاكس: (06) 3543 6773

بريد الإلكتروني: ethics@une.edu.au

شلوك لفظ مشنواكة في مذايحة تقابل عالي مني من الاصل المعاكم.

مجالات حيات

أشرفيلو قلوله

Appendix 6 (A): Consent form (English Version)

Consent form for participants

Research Project: Do high performing and low performing hospitals in Jordan have different obstacles to overcome?

I, have read the information contained in the Information Sheet for Participants and any questions I have asked have been answered to my satisfaction. Yes/No

I agree to participate in this activity, realising that I may withdraw at any time. Yes/No

I agree that research data gathered for the study may be published using a pseudonym.

Yes/No

I agree to the interview having my audio recorded and transcribe Yes/No

I would like to receive a copy of the transcription of the interview. Yes/No

I am older than 18 years of age. Yes/No

.....
Participant

.....
Date

.....
Researcher

.....
Date

Appendix 6 (B): Consent form (Arabic Version)

ن موذ جو مفق ة ل لمش ارك ين

ع والب حث : هل تشف ي ات افع ي ة الأداء و هل تشي اتن خفصة الأداء في الأردن ليه ملعوقات
مختلفة بي تم مع لجتها؟

أن ،، ق رأت لامتحن و ماتال و اردقي
ورقم علوم اتل مش ارك ين و أي سؤال سوفي طرح سوف أجيء عل يبائل رضا . نعم / لا

فوق عل لمش ارك ة في هذال شاط، وأدرك أن يق أن س حبفي أي وقت .
نعم / لا

أهلك أن يعين ات ملحث التجمع عت ل دراس تقويم شربلس خدم اسم هت عار .
نعم / لا

أهلك ل قيال ثبت س جل صوت ي و توثيق ه .
نعم / لا

أرغيب اس تلامن س خة من توثيق القيال .
نعم / لا

ألا عمي أكبر من 18 سنة .
نعم / لا

التاريخ

ل المش ارك

التاريخ

الباحث

Appendix 7: Sector classification means, standard deviations, and t-tests on the QMS obstacles scale

Sector	Count	Mean	SD	T-value	Sig
Private	466	2.84	0.49	-3.26	0.07
Public	442	2.94	0.45	-3.27	

* The difference in mean is significant at the 0.05 level.

Appendix 8: Gender means, standard deviations, and t-tests on the QMS obstacles scale in combined high- and low-performing hospitals

Gender	No.	Mean	Std. Deviation	T-test	Sig
Male	354	2.88	0.49	-0.83	0.41
Female	554	2.90	0.46		

* The difference in mean is significant at the 0.05 level.

Appendix 9: Gender means, standard deviations, and t-tests on the QMS obstacles scale in high-performing hospitals

Gender	Count	Mean	Std. Deviation	T-test	Sig
Male	203	2.67	0.47	-1.45	0.15
Female	281	2.73	0.47		

* The difference in mean is significant at the 0.05 level.

Appendix 10: ANOVA table for the study statements depending on age in combined high-and low-performing hospitals

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.38	3	0.80	3.60	0.01
Within Groups	200.13	904	0.22		
Total	202.52	907			

Appendix 11: GLM Univariate Analysis Of Variance table for the study statements depending on age, profession and education in combined high-and low-performing hospitals

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Age	1.20	3	0.40	1.87	0.13
Profession	2.81	8	0.35	1.65	0.11
Education	0.10	2	0.05	0.24	0.79

Appendix 12: ANOVA table for the study statements depending on age in high-performing hospitals

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4.11	3	1.37	6.44	0.00
Within Groups	102.25	480	0.21		
Total	106.37	483			

* The difference in mean is significant at the 0.05 level.

Appendix 13: ANOVA table for the study statements depending on age in low-performing hospitals

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	0.49	3	0.16	1.18	0.37
Within Groups	58.41	420	0.14		
Total	58.90	423			

* The difference in mean is significant at the 0.05 level.

Appendix 14: GLM Univariate Analysis Of Variance table for the study statements depending on age, profession and education in low-performing hospitals

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Age	0.07	3	0.02	0.16	0.92
Profession	0.54	8	0.07	0.49	0.86
Education	0.52	2	0.26	1.88	0.15

Appendix 15: ANOVA table for the study depending on profession in combined high-and low-performing hospitals

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3.30	8	0.41	1.86	0.06
Within Groups	199.22	899	0.22		
Total	202.52	907			

* The difference in mean is significant at the 0.05 level.

Appendix 16: ANOVA table for the study depending on profession in high-performing hospitals

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3.68	8	0.46	2.13	0.03
Within Groups	102.69	475	0.22		
Total	106.37	483			

* The difference in mean is significant at the 0.05 level.

Appendix 17: GLM Univariate Analysis Of Variance table for the study statements depending on age, profession and education in high-performing hospitals

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Age	2.235	3	0.75	3.79	0.01
Profession	1.956	8	0.25	1.24	0.27
Education	0.83	2	0.41	2.10	0.12

Appendix 18: ANOVA table for the study depending on profession in low-performing hospitals

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.25	8	0.16	1.12	0.35
Within Groups	57.66	415	0.14		
Total	58.90	423			

* The difference in mean is significant at the 0.05 level.

Appendix 19: ANOVA table for the study statements depending on education level in combined high- and low-performing hospitals

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.28	2	0.64	2.88	0.06
Within Groups	201.24	905	0.22		
Total	202.52	907			

* The difference in mean is significant at the 0.05 level.

Appendix 20: ANOVA table for the study statements depending on education level in high-performing hospitals

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.92	2	0.96	4.41	0.01
Within Groups	104.45	481	0.22		
Total	106.37	483			

* The difference in mean is significant at the 0.05 level.

Appendix 21: ANOVA table for the study statements depending on education level in low-performing hospitals

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.35	2	0.68	4.94	0.01
Within Groups	57.55	421	0.14		
Total	58.90	423			

* The difference in mean is significant at the 0.05 level.

Appendix 22: ANOVA table for the study statements depending on departments in combined high- and low-performing hospitals

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	15.12	23	0.66	3.10	0.00
Within Groups	187.40	884	0.21		
Total	202.52	907			

* The difference in mean is significant at the 0.05 level.

Appendix 23: Multiple comparison analysis for departments in combined high- and low-performing hospitals

(I) Department	(J) Department	Mean Difference (I-J)	Sig.
Emergency	Admission	-.1073	1.000
	Cardiology	.1309	.999
	Intensive care unit (ICU)	.1087	1.000
	Surgery	-.0814	1.000
	Gynaecology	.0539	1.000
	Ear, nose and throat (ENT)	-.1709	.991
	Laboratory	.0127	1.000
	Radiology	.1759	.875
	Medical records	-.1249	.999
	Pharmacy	-.1048	1.000
	Paediatric	-.1878	.807
	Internal	.1146	1.000
	Operations	-.1644	.849
	Psychiatric	.2046	.997
	Bones	-.0507	1.000
	Dental	.0361	1.000
	Dermatology	-.0594	1.000
	Accounting	-.0159	1.000
	Nutrition	.1512	.999
	Maintenance	.1293	1.000
	Administration	.2412	.544
	Outpatient	-.0814	1.000
	Dialysis	-.3184	.591
Admission	Emergency	.1073	1.000
	Cardiology	.2382	.937
	Intensive care unit (ICU)	.2160	.971
	Surgery	.0259	1.000
	Gynaecology	.1612	.997

	Ear, nose and throat(ENT)	-.0636	1.000
	Laboratory	.1199	1.000
	Radiology	.2832	.646
	Medical records	-.0176	1.000
	Pharmacy	.0025	1.000
	Paediatric	-.0805	1.000
	Internal	.2219	.978
	Operations	-.0571	1.000
	Psychiatric	.3119	.923
	Bones	.0566	1.000
	Dental	.1434	1.000
	Dermatology	.0479	1.000
	Accounting	.0914	1.000
	Nutrition	.2585	.954
	Maintenance	.2366	.992
	Administration	.3485	.346
	Outpatient	.0259	1.000
	Dialysis	-.2111	.999
Cardiology	Emergency	-.1309	.999
	Admission	-.2382	.937
	Intensive care unit (ICU)	-.0222	1.000
	Surgery	-.2123	.717
	Gynaecology	-.0770	1.000
	Ear, nose and throat(ENT)	-.3018	.486
	Laboratory	-.1182	1.000
	Radiology	.0450	1.000
	Medical records	-.2558	.637
	Pharmacy	-.2357	.978
	Paediatric	-.3187	.107
	Internal	-.0163	1.000
	Operations	-.2953	.109
	Psychiatric	.0737	1.000
	Bones	-.1816	.995
	Dental	-.0948	1.000
	Dermatology	-.1903	1.000
	Accounting	-.1468	1.000
	Nutrition	.0203	1.000
	Maintenance	-.0016	1.000
	Administration	.1103	1.000
	Outpatient	-.2123	.998
	Dialysis	-.4493	.097
Intensive care unit	Emergency	-.1087	1.000

(ICU)	Admission	-.2160	.971
	Cardiology	.0222	1.000
	Surgery	-.1901	.819
	Gynaecology	-.0547	1.000
	Ear, nose and throat(ENT)	-.2796	.589
	Laboratory	-.0960	1.000
	Radiology	.0672	1.000
	Medical records	-.2336	.742
	Pharmacy	-.2135	.991
	Paediatric	-.2965	.145
	Internal	.0059	1.000
	Operations	-.2731	.147
	Psychiatric	.0959	1.000
	Bones	-.1593	.999
	Dental	-.0726	1.000
	Dermatology	-.1681	1.000
	Accounting	-.1246	1.000
	Nutrition	.0425	1.000
	Maintenance	.0206	1.000
	Administration	.1325	1.000
	Outpatient	-.1901	1.000
	Dialysis	-.4271	.130
Surgery	Emergency	.0814	1.000
	Admission	-.0259	1.000
	Cardiology	.2123	.717
	Intensive care unit (ICU)	.1901	.819
	Gynaecology	.1354	.927
	Ear, nose and throat(ENT)	-.0895	1.000
	Laboratory	.0941	1.000
	Radiology	.2573	.160
	Medical records	-.0435	1.000
	Pharmacy	-.0234	1.000
	Paediatric	-.1064	1.000
	Internal	.1960	.891
	Operations	-.0830	1.000
	Psychiatric	.2860	.852
	Bones	.0308	1.000
	Dental	.1175	1.000
	Dermatology	.0220	1.000
	Accounting	.0655	1.000
	Nutrition	.2326	.860
	Maintenance	.2107	.980

	Administration	.3226	.056
	Outpatient	.0000	1.000
	Dialysis	-.2370	.957
Gynaecology	Emergency	-.0539	1.000
	Admission	-.1612	.997
	Cardiology	.0770	1.000
	Intensive care unit (ICU)	.0547	1.000
	Surgery	-.1354	.927
	Ear, nose and throat(ENT)	-.2249	.760
	Laboratory	-.0413	1.000
	Radiology	.1220	.994
	Medical records	-.1788	.886
	Pharmacy	-.1587	1.000
	Paediatric	-.2418	.163
	Internal	.0607	1.000
	Operations	-.2183	.134
	Psychiatric	.1507	1.000
	Bones	-.1046	1.000
	Dental	-.0178	1.000
	Dermatology	-.1134	1.000
	Accounting	-.0699	1.000
	Nutrition	.0972	1.000
	Maintenance	.0754	1.000
	Administration	.1873	.858
	Outpatient	-.1353	1.000
	Dialysis	-.3724	.203
Ear, nose and throat(ENT)	Emergency	.1709	.991
	Admission	.0636	1.000
	Cardiology	.3018	.486
	Intensive care unit (ICU)	.2796	.589
	Surgery	.0895	1.000
	Gynaecology	.2249	.760
	Laboratory	.1836	.980
	Radiology	.3469	.131
	Medical records	.0461	1.000
	Pharmacy	.0662	1.000
	Paediatric	-.0169	1.000
	Internal	.2855	.662
	Operations	.0065	1.000
	Psychiatric	.3755	.604
	Bones	.1203	1.000
	Dental	.2070	1.000

	Dermatology	.1115	1.000
	Accounting	.1550	1.000
	Nutrition	.3221	.614
	Maintenance	.3002	.847
	Administration	.4121*	.046
	Outpatient	.0896	1.000
	Dialysis	-.1475	1.000
Laboratory	Emergency	-.0127	1.000
	Admission	-.1199	1.000
	Cardiology	.1182	1.000
	Intensive care unit (ICU)	.0960	1.000
	Surgery	-.0941	1.000
	Gynaecology	.0413	1.000
	Ear, nose and throat(ENT)	-.1836	.980
	Radiology	.1633	.942
	Medical records	-.1375	.998
	Pharmacy	-.1174	1.000
	Paediatric	-.2005	.718
	Internal	.1019	1.000
	Operations	-.1770	.760
	Psychiatric	.1919	.999
	Bones	-.0633	1.000
	Dental	.0234	1.000
	Dermatology	-.0721	1.000
	Accounting	-.0286	1.000
	Nutrition	.1385	1.000
	Maintenance	.1167	1.000
	Administration	.2286	.670
	Outpatient	-.0940	1.000
	Dialysis	-.3311	.517
Radiology	Emergency	-.1759	.875
	Admission	-.2832	.646
	Cardiology	-.0450	1.000
	Intensive care unit (ICU)	-.0672	1.000
	Surgery	-.2573	.160
	Gynaecology	-.1220	.994
	Ear, nose and throat(ENT)	-.3469	.131
	Laboratory	-.1633	.942
	Medical records	-.3008	.179
	Pharmacy	-.2807	.821
	Paediatric	-.3638*	.006
	Internal	-.0613	1.000

	Operations	-.3403*	.004
	Psychiatric	.0287	1.000
	Bones	-.2266	.892
	Dental	-.1398	1.000
	Dermatology	-.2354	.993
	Accounting	-.1919	.990
	Nutrition	-.0248	1.000
	Maintenance	-.0466	1.000
	Administration	.0653	1.000
	Outpatient	-.2573	.970
	Dialysis	-.4944*	.018
Medical records	Emergency	.1249	.999
	Admission	.0176	1.000
	Cardiology	.2558	.637
	Intensive care unit (ICU)	.2336	.742
	Surgery	.0435	1.000
	Gynaecology	.1788	.886
	Ear, nose and throat(ENT)	-.0461	1.000
	Laboratory	.1375	.998
	Radiology	.3008	.179
	Pharmacy	.0201	1.000
	Paediatric	-.0630	1.000
	Internal	.2395	.811
	Operations	-.0395	1.000
	Psychiatric	.3295	.752
	Bones	.0742	1.000
	Dental	.1610	1.000
	Dermatology	.0654	1.000
	Accounting	.1089	1.000
	Nutrition	.2760	.766
	Maintenance	.2542	.940
	Administration	.3661	.064
	Outpatient	.0435	1.000
	Dialysis	-.1935	.999
Pharmacy	Emergency	.1048	1.000
	Admission	-.0025	1.000
	Cardiology	.2357	.978
	Intensive care unit (ICU)	.2135	.991
	Surgery	.0234	1.000
	Gynaecology	.1587	1.000
	Ear, nose and throat(ENT)	-.0662	1.000
	Laboratory	.1174	1.000

	Radiology	.2807	.821
	Medical records	-.0201	1.000
	Paediatric	-.0831	1.000
	Internal	.2194	.993
	Operations	-.0596	1.000
	Psychiatric	.3094	.959
	Bones	.0541	1.000
	Dental	.1409	1.000
	Dermatology	.0453	1.000
	Accounting	.0888	1.000
	Nutrition	.2559	.981
	Maintenance	.2341	.997
	Administration	.3460	.540
	Outpatient	.0234	1.000
	Dialysis	-.2137	1.000
Paediatric	Emergency	.1878	.807
	Admission	.0805	1.000
	Cardiology	.3187	.107
	Intensive care unit (ICU)	.2965	.145
	Surgery	.1064	1.000
	Gynaecology	.2418	.163
	Ear, nose and throat(ENT)	.0169	1.000
	Laboratory	.2005	.718
	Radiology	.3638*	.006
	Medical records	.0630	1.000
	Pharmacy	.0831	1.000
	Internal	.3024	.235
	Operations	.0234	1.000
	Psychiatric	.3924	.326
	Bones	.1372	1.000
	Dental	.2239	1.000
	Dermatology	.1284	1.000
	Accounting	.1719	.998
	Nutrition	.3390	.256
	Maintenance	.3172	.574
	Administration	.4291*	.002
	Outpatient	.1065	1.000
	Dialysis	-.1306	1.000
Internal	Emergency	-.1146	1.000
	Admission	-.2219	.978
	Cardiology	.0163	1.000
	Intensive care unit (ICU)	-.0059	1.000

	Surgery	-.1960	.891
	Gynaecology	-.0607	1.000
	Ear, nose and throat(ENT)	-.2855	.662
	Laboratory	-.1019	1.000
	Radiology	.0613	1.000
	Medical records	-.2395	.811
	Pharmacy	-.2194	.993
	Paediatric	-.3024	.235
	Operations	-.2790	.257
	Psychiatric	.0900	1.000
	Bones	-.1653	.999
	Dental	-.0785	1.000
	Dermatology	-.1740	1.000
	Accounting	-.1305	1.000
	Nutrition	.0366	1.000
	Maintenance	.0147	1.000
	Administration	.1266	1.000
	Outpatient	-.1960	1.000
	Dialysis	-.4330	.166
Operations	Emergency	.1644	.849
	Admission	.0571	1.000
	Cardiology	.2953	.109
	Intensive care unit (ICU)	.2731	.147
	Surgery	.0830	1.000
	Gynaecology	.2183	.134
	Ear, nose and throat(ENT)	-.0065	1.000
	Laboratory	.1770	.760
	Radiology	.3403*	.004
	Medical records	.0395	1.000
	Pharmacy	.0596	1.000
	Paediatric	-.0234	1.000
	Internal	.2790	.257
	Psychiatric	.3690	.379
	Bones	.1137	1.000
	Dental	.2005	1.000
	Dermatology	.1050	1.000
	Accounting	.1485	1.000
	Nutrition	.3155	.292
	Maintenance	.2937	.642
	Administration	.4056*	.002
	Outpatient	.0830	1.000
	Dialysis	-.1540	1.000

Psychiatric	Emergency	-.2046	.997
	Admission	-.3119	.923
	Cardiology	-.0737	1.000
	Intensive care unit (ICU)	-.0959	1.000
	Surgery	-.2860	.852
	Gynaecology	-.1507	1.000
	Ear, nose and throat(ENT)	-.3755	.604
	Laboratory	-.1919	.999
	Radiology	-.0287	1.000
	Medical records	-.3295	.752
	Pharmacy	-.3094	.959
	Paediatric	-.3924	.326
	Internal	-.0900	1.000
	Operations	-.3690	.379
	Bones	-.2553	.988
	Dental	-.1685	1.000
	Dermatology	-.2640	.998
	Accounting	-.2205	.999
	Nutrition	-.0534	1.000
Bones	Maintenance	-.0753	1.000
	Administration	.0366	1.000
	Outpatient	-.2860	.992
	Dialysis	-.5230	.165
	Emergency	.0507	1.000
	Admission	-.0566	1.000
	Cardiology	.1816	.995
	Intensive care unit (ICU)	.1593	.999
	Surgery	-.0308	1.000
	Gynaecology	.1046	1.000
	Ear, nose and throat(ENT)	-.1203	1.000
	Laboratory	.0633	1.000
	Radiology	.2266	.892
	Medical records	-.0742	1.000
	Pharmacy	-.0541	1.000
	Paediatric	-.1372	1.000
	Internal	.1653	.999
	Operations	-.1137	1.000
	Psychiatric	.2553	.988
	Dental	.0868	1.000
	Dermatology	-.0088	1.000
	Accounting	.0347	1.000
	Nutrition	.2018	.996

	Maintenance	.1800	1.000
	Administration	.2919	.615
	Outpatient	-.0307	1.000
	Dialysis	-.2678	.966
Dental	Emergency	-.0361	1.000
	Admission	-.1434	1.000
	Cardiology	.0948	1.000
	Intensive care unit (ICU)	.0726	1.000
	Surgery	-.1175	1.000
	Gynaecology	.0178	1.000
	Ear, nose and throat(ENT)	-.2070	1.000
	Laboratory	-.0234	1.000
	Radiology	.1398	1.000
	Medical records	-.1610	1.000
	Pharmacy	-.1409	1.000
	Paediatric	-.2239	1.000
	Internal	.0785	1.000
	Operations	-.2005	1.000
	Psychiatric	.1685	1.000
	Bones	-.0868	1.000
	Dermatology	-.0955	1.000
	Accounting	-.0520	1.000
	Nutrition	.1151	1.000
	Maintenance	.0932	1.000
	Administration	.2051	1.000
	Outpatient	-.1175	1.000
	Dialysis	-.3545	.997
Dermatology	Emergency	.0594	1.000
	Admission	-.0479	1.000
	Cardiology	.1903	1.000
	Intensive care unit (ICU)	.1681	1.000
	Surgery	-.0220	1.000
	Gynaecology	.1134	1.000
	Ear, nose and throat(ENT)	-.1115	1.000
	Laboratory	.0721	1.000
	Radiology	.2354	.993
	Medical records	-.0654	1.000
	Pharmacy	-.0453	1.000
	Paediatric	-.1284	1.000
	Internal	.1740	1.000
	Operations	-.1050	1.000
	Psychiatric	.2640	.998

	Bones	.0088	1.000
	Dental	.0955	1.000
	Accounting	.0435	1.000
	Nutrition	.2106	1.000
	Maintenance	.1887	1.000
	Administration	.3006	.931
	Outpatient	-.0219	1.000
	Dialysis	-.2590	.998
Accounting	Emergency	.0159	1.000
	Admission	-.0914	1.000
	Cardiology	.1468	1.000
	Intensive care unit (ICU)	.1246	1.000
	Surgery	-.0655	1.000
	Gynaecology	.0699	1.000
	Ear, nose and throat(ENT)	-.1550	1.000
	Laboratory	.0286	1.000
	Radiology	.1919	.990
	Medical records	-.1089	1.000
	Pharmacy	-.0888	1.000
	Paediatric	-.1719	.998
	Internal	.1305	1.000
	Operations	-.1485	1.000
	Psychiatric	.2205	.999
	Bones	-.0347	1.000
	Dental	.0520	1.000
	Dermatology	-.0435	1.000
	Nutrition	.1671	1.000
	Maintenance	.1453	1.000
	Administration	.2572	.888
	Outpatient	-.0654	1.000
	Dialysis	-.3025	.916
Nutrition	Emergency	-.1512	.999
	Admission	-.2585	.954
	Cardiology	-.0203	1.000
	Intensive care unit (ICU)	-.0425	1.000
	Surgery	-.2326	.860
	Gynaecology	-.0972	1.000
	Ear, nose and throat(ENT)	-.3221	.614
	Laboratory	-.1385	1.000
	Radiology	.0248	1.000
	Medical records	-.2760	.766
	Pharmacy	-.2559	.981

	Paediatric	-.3390	.256
	Internal	-.0366	1.000
	Operations	-.3155	.292
	Psychiatric	.0534	1.000
	Bones	-.2018	.996
	Dental	-.1151	1.000
	Dermatology	-.2106	1.000
	Accounting	-.1671	1.000
	Maintenance	-.0218	1.000
	Administration	.0901	1.000
	Outpatient	-.2325	.998
	Dialysis	-.4696	.152
Maintenance	Emergency	-.1293	1.000
	Admission	-.2366	.992
	Cardiology	.0016	1.000
	Intensive care unit (ICU)	-.0206	1.000
	Surgery	-.2107	.980
	Gynaecology	-.0754	1.000
	Ear, nose and throat(ENT)	-.3002	.847
	Laboratory	-.1167	1.000
	Radiology	.0466	1.000
	Medical records	-.2542	.940
	Pharmacy	-.2341	.997
	Paediatric	-.3172	.574
	Internal	-.0147	1.000
	Operations	-.2937	.642
	Psychiatric	.0753	1.000
	Bones	-.1800	1.000
	Dental	-.0932	1.000
	Dermatology	-.1887	1.000
	Accounting	-.1453	1.000
	Nutrition	.0218	1.000
	Administration	.1119	1.000
	Outpatient	-.2107	1.000
	Dialysis	-.4477	.322
Administration	Emergency	-.2412	.544
	Admission	-.3485	.346
	Cardiology	-.1103	1.000
	Intensive care unit (ICU)	-.1325	1.000
	Surgery	-.3226	.056
	Gynaecology	-.1873	.858
	Ear, nose and throat(ENT)	-.4121*	.046

	Laboratory	-.2286	.670
	Radiology	-.0653	1.000
	Medical records	-.3661	.064
	Pharmacy	-.3460	.540
	Paediatric	-.4291*	.002
	Internal	-.1266	1.000
	Operations	-.4056*	.002
	Psychiatric	-.0366	1.000
	Bones	-.2919	.615
	Dental	-.2051	1.000
	Dermatology	-.3006	.931
	Accounting	-.2572	.888
	Nutrition	-.0901	1.000
	Maintenance	-.1119	1.000
	Outpatient	-.3226	.834
	Dialysis	-.5596*	.006
Outpatient	Emergency	.0814	1.000
	Admission	-.0259	1.000
	Cardiology	.2123	.998
	Intensive care unit (ICU)	.1901	1.000
	Surgery	.0000	1.000
	Gynaecology	.1353	1.000
	Ear, nose and throat(ENT)	-.0896	1.000
	Laboratory	.0940	1.000
	Radiology	.2573	.970
	Medical records	-.0435	1.000
	Pharmacy	-.0234	1.000
	Paediatric	-.1065	1.000
	Internal	.1960	1.000
	Operations	-.0830	1.000
	Psychiatric	.2860	.992
	Bones	.0307	1.000
	Dental	.1175	1.000
	Dermatology	.0219	1.000
Dialysis	Accounting	.0654	1.000
	Nutrition	.2325	.998
	Maintenance	.2107	1.000
	Administration	.3226	.834
	Dialysis	-.2371	.999
	Emergency	.3184	.591
	Admission	.2111	.999
	Cardiology	.4493	.097

Intensive care unit (ICU)	.4271	.130
Surgery	.2370	.957
Gynaecology	.3724	.203
Ear, nose and throat(ENT)	.1475	1.000
Laboratory	.3311	.517
Radiology	.4944*	.018
Medical records	.1935	.999
Pharmacy	.2137	1.000
Paediatric	.1306	1.000
Internal	.4330	.166
Operations	.1540	1.000
Psychiatric	.5230	.165
Bones	.2678	.966
Dental	.3545	.997
Dermatology	.2590	.998
Accounting	.3025	.916
Nutrition	.4696	.152
Maintenance	.4477	.322
Administration	.5596*	.006
Outpatient	.2371	.999

Appendix 24: ANOVA table for the study statements depending on departments in high-performing hospitals

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	8.75	21	0.42	1.97	0.01
Within Groups	97.62	462	0.21		
Total	106.37	483			

Appendix 25: Multiple comparison analysis for departments in high-performing hospitals

(I) Department	(J) Department	Mean Difference (I-J)	Sig.
Emergency	Admission	-.1414	1.000
	Cardiology	-.0168	1.000
	Intensive care unit (ICU)	.0612	1.000
	Surgery	-.1515	.997
	Gynaecology	-.0437	1.000
	Ear, nose and throat (ENT)	-.2181	.998

	Laboratory	.0588	1.000
	Radiology	.1343	1.000
	Medical records	-.2403	.930
	Pharmacy	-.2298	1.000
	Paediatric	-.2454	.916
	Internal	-.0177	1.000
	Operations	-.0856	1.000
	Psychiatric	-.0184	1.000
	Bones	-.1602	.999
	Dental	-.0481	1.000
	Dermatology	-.3294	.847
	Accounting	-.1935	.999
	Nutrition	.1305	1.000
	Maintenance	.1370	1.000
	Administration	.2747	.705
Admission	Emergency	.1414	1.000
	Cardiology	.1246	1.000
	Intensive care unit (ICU)	.2026	.996
	Surgery	-.0101	1.000
	Gynaecology	.0977	1.000
	Ear, nose and throat (ENT)	-.0767	1.000
	Laboratory	.2002	.995
	Radiology	.2756	.867
	Medical records	-.0989	1.000
	Pharmacy	-.0884	1.000
	Paediatric	-.1040	1.000
	Internal	.1237	1.000
	Operations	.0558	1.000
	Psychiatric	.1229	1.000
	Bones	-.0189	1.000
	Dental	.0932	1.000
	Dermatology	-.1881	1.000
	Accounting	-.0521	1.000
	Nutrition	.2719	.979
	Maintenance	.2784	.983
	Administration	.4160	.259
Cardiology	Emergency	.0168	1.000
	Admission	-.1246	1.000
	Intensive care unit (ICU)	.0780	1.000
	Surgery	-.1347	1.000
	Gynaecology	-.0269	1.000
	Ear, nose and throat (ENT)	-.2013	.999

	Laboratory	.0756	1.000
	Radiology	.1511	.998
	Medical records	-.2235	.968
	Pharmacy	-.2130	1.000
	Paediatric	-.2286	.959
	Internal	-.0009	1.000
	Operations	-.0688	1.000
	Psychiatric	-.0016	1.000
	Bones	-.1434	1.000
	Dental	-.0313	1.000
	Dermatology	-.3126	.903
	Accounting	-.1767	1.000
	Nutrition	.1473	1.000
	Maintenance	.1538	1.000
	Administration	.2915	.608
Intensive care unit (ICU)	Emergency	-.0612	1.000
	Admission	-.2026	.996
	Cardiology	-.0780	1.000
	Surgery	-.2127	.909
	Gynaecology	-.1049	1.000
	Ear, nose and throat (ENT)	-.2793	.970
	Laboratory	-.0024	1.000
	Radiology	.0731	1.000
	Medical records	-.3015	.676
	Pharmacy	-.2910	.995
	Paediatric	-.3066	.645
	Internal	-.0789	1.000
	Operations	-.1468	1.000
	Psychiatric	-.0796	1.000
	Bones	-.2215	.970
	Dental	-.1094	1.000
	Dermatology	-.3906	.591
	Accounting	-.2547	.984
	Nutrition	.0693	1.000
Surgery	Maintenance	.0758	1.000
	Administration	.2134	.970
	Emergency	.1515	.997
	Admission	.0101	1.000
	Cardiology	.1347	1.000
	Intensive care unit (ICU)	.2127	.909
	Gynaecology	.1078	1.000
	Ear, nose and throat (ENT)	-.0666	1.000

	Laboratory	.2103	.872
	Radiology	.2858	.335
	Medical records	-.0888	1.000
	Pharmacy	-.0783	1.000
	Paediatric	-.0939	1.000
	Internal	.1338	1.000
	Operations	.0659	1.000
	Psychiatric	.1331	1.000
	Bones	-.0087	1.000
	Dental	.1034	1.000
	Dermatology	-.1779	1.000
	Accounting	-.0420	1.000
	Nutrition	.2820	.856
	Maintenance	.2885	.890
	Administration	.4262*	.022
Gynaecology	Emergency	.0437	1.000
	Admission	-.0977	1.000
	Cardiology	.0269	1.000
	Intensive care unit (ICU)	.1049	1.000
	Surgery	-.1078	1.000
	Ear, nose and throat (ENT)	-.1744	1.000
	Laboratory	.1025	1.000
	Radiology	.1779	.915
	Medical records	-.1966	.971
	Pharmacy	-.1861	1.000
	Paediatric	-.2017	.962
	Internal	.0260	1.000
	Operations	-.0419	1.000
	Psychiatric	.0253	1.000
	Bones	-.1166	1.000
	Dental	-.0045	1.000
	Dermatology	-.2857	.916
	Accounting	-.1498	1.000
	Nutrition	.1742	.999
	Maintenance	.1807	.999
	Administration	.3183	.184
Ear, nose and throat (ENT)	Emergency	.2181	.998
	Admission	.0767	1.000
	Cardiology	.2013	.999
	Intensive care unit (ICU)	.2793	.970
	Surgery	.0666	1.000
	Gynaecology	.1744	1.000

	Laboratory	.2769	.964
	Radiology	.3524	.737
	Medical records	-.0222	1.000
	Pharmacy	-.0117	1.000
	Paediatric	-.0273	1.000
	Internal	.2004	1.000
	Operations	.1325	1.000
	Psychiatric	.1997	1.000
	Bones	.0578	1.000
	Dental	.1699	1.000
	Dermatology	-.1113	1.000
	Accounting	.0246	1.000
	Nutrition	.3486	.916
	Maintenance	.3551	.927
	Administration	.4927	.199
Laboratory	Emergency	-.0588	1.000
	Admission	-.2002	.995
	Cardiology	-.0756	1.000
	Intensive care unit (ICU)	.0024	1.000
	Surgery	-.2103	.872
	Gynaecology	-.1025	1.000
	Ear, nose and throat (ENT)	-.2769	.964
	Radiology	.0754	1.000
	Medical records	-.2991	.621
	Pharmacy	-.2886	.995
	Paediatric	-.3042	.588
	Internal	-.0765	1.000
	Operations	-.1444	.999
	Psychiatric	-.0773	1.000
	Bones	-.2191	.961
	Dental	-.1070	1.000
	Dermatology	-.3883	.556
	Accounting	-.2523	.981
	Nutrition	.0717	1.000
	Maintenance	.0782	1.000
	Administration	.2158	.948
Radiology	Emergency	-.1343	1.000
	Admission	-.2756	.867
	Cardiology	-.1511	.998
	Intensive care unit (ICU)	-.0731	1.000
	Surgery	-.2858	.335
	Gynaecology	-.1779	.915

	Ear, nose and throat (ENT)	-.3524	.737
	Laboratory	-.0754	1.000
	Medical records	-.3746	.191
	Pharmacy	-.3641	.932
	Paediatric	-.3797	.172
	Internal	-.1519	.999
	Operations	-.2199	.914
	Psychiatric	-.1527	1.000
	Bones	-.2945	.620
	Dental	-.1824	1.000
	Dermatology	-.4637	.213
	Accounting	-.3278	.792
	Nutrition	-.0038	1.000
	Maintenance	.0027	1.000
	Administration	.1404	1.000
Medical records	Emergency	.2403	.930
	Admission	.0989	1.000
	Cardiology	.2235	.968
	Intensive care unit (ICU)	.3015	.676
	Surgery	.0888	1.000
	Gynaecology	.1966	.971
	Ear, nose and throat (ENT)	.0222	1.000
	Laboratory	.2991	.621
	Radiology	.3746	.191
	Pharmacy	.0105	1.000
	Paediatric	-.0051	1.000
	Internal	.2226	.985
	Operations	.1547	1.000
	Psychiatric	.2219	.997
	Bones	.0801	1.000
	Dental	.1922	1.000
	Dermatology	-.0891	1.000
	Accounting	.0468	1.000
	Nutrition	.3708	.605
	Maintenance	.3773	.660
	Administration	.5150	.064
Pharmacy	Emergency	.2298	1.000
	Admission	.0884	1.000
	Cardiology	.2130	1.000
	Intensive care unit (ICU)	.2910	.995
	Surgery	.0783	1.000
	Gynaecology	.1861	1.000

	Ear, nose and throat (ENT)	.0117	1.000
	Laboratory	.2886	.995
	Radiology	.3641	.932
	Medical records	-.0105	1.000
	Paediatric	-.0156	1.000
	Internal	.2121	1.000
	Operations	.1442	1.000
	Psychiatric	.2114	1.000
	Bones	.0696	1.000
	Dental	.1817	1.000
	Dermatology	-.0996	1.000
	Accounting	.0363	1.000
	Nutrition	.3603	.977
	Maintenance	.3668	.979
	Administration	.5045	.516
Paediatric	Emergency	.2454	.916
	Admission	.1040	1.000
	Cardiology	.2286	.959
	Intensive care unit (ICU)	.3066	.645
	Surgery	.0939	1.000
	Gynaecology	.2017	.962
	Ear, nose and throat (ENT)	.0273	1.000
	Laboratory	.3042	.588
	Radiology	.3797	.172
	Medical records	.0051	1.000
	Pharmacy	.0156	1.000
	Internal	.2277	.981
	Operations	.1598	1.000
	Psychiatric	.2270	.996
	Bones	.0851	1.000
	Dental	.1973	1.000
	Dermatology	-.0840	1.000
	Accounting	.0519	1.000
	Nutrition	.3759	.578
	Maintenance	.3824	.635
	Administration	.5201*	.012
Internal	Emergency	.0177	1.000
	Admission	-.1237	1.000
	Cardiology	.0009	1.000
	Intensive care unit (ICU)	.0789	1.000
	Surgery	-.1338	1.000
	Gynaecology	-.0260	1.000

	Ear, nose and throat (ENT)	-.2004	1.000
	Laboratory	.0765	1.000
	Radiology	.1519	.999
	Medical records	-.2226	.985
	Pharmacy	-.2121	1.000
	Paediatric	-.2277	.981
	Operations	-.0679	1.000
	Psychiatric	-.0008	1.000
	Bones	-.1426	1.000
	Dental	-.0305	1.000
	Dermatology	-.3118	.936
	Accounting	-.1758	1.000
	Nutrition	.1482	1.000
	Maintenance	.1547	1.000
	Administration	.2923	.736
Operations	Emergency	.0856	1.000
	Admission	-.0558	1.000
	Cardiology	.0688	1.000
	Intensive care unit (ICU)	.1468	1.000
	Surgery	-.0659	1.000
	Gynaecology	.0419	1.000
	Ear, nose and throat (ENT)	-.1325	1.000
	Laboratory	.1444	.999
	Radiology	.2199	.914
	Medical records	-.1547	1.000
	Pharmacy	-.1442	1.000
	Paediatric	-.1598	1.000
	Internal	.0679	1.000
	Psychiatric	.0672	1.000
	Bones	-.0747	1.000
	Dental	.0375	1.000
	Dermatology	-.2438	.994
	Accounting	-.1079	1.000
	Nutrition	.2161	.995
	Maintenance	.2226	.996
	Administration	.3603	.252
Psychiatric	Emergency	.0184	1.000
	Admission	-.1229	1.000
	Cardiology	.0016	1.000
	Intensive care unit (ICU)	.0796	1.000
	Surgery	-.1331	1.000
	Gynaecology	-.0253	1.000

	Ear, nose and throat (ENT)	-.1997	1.000
	Laboratory	.0773	1.000
	Radiology	.1527	1.000
	Medical records	-.2219	.997
	Pharmacy	-.2114	1.000
	Paediatric	-.2270	.996
	Internal	.0008	1.000
	Operations	-.0672	1.000
	Bones	-.1418	1.000
	Dental	-.0297	1.000
	Dermatology	-.3110	.972
	Accounting	-.1751	1.000
	Nutrition	.1489	1.000
	Maintenance	.1554	1.000
	Administration	.2931	.894
Bones	Emergency	.1602	.999
	Admission	.0189	1.000
	Cardiology	.1434	1.000
	Intensive care unit (ICU)	.2215	.970
	Surgery	.0087	1.000
	Gynaecology	.1166	1.000
	Ear, nose and throat (ENT)	-.0578	1.000
	Laboratory	.2191	.961
	Radiology	.2945	.620
	Medical records	-.0801	1.000
	Pharmacy	-.0696	1.000
	Paediatric	-.0851	1.000
	Internal	.1426	1.000
	Operations	.0747	1.000
	Psychiatric	.1418	1.000
	Dental	.1121	1.000
	Dermatology	-.1692	1.000
	Accounting	-.0332	1.000
	Nutrition	.2908	.922
	Maintenance	.2973	.938
	Administration	.4349	.091
Dental	Emergency	.0481	1.000
	Admission	-.0932	1.000
	Cardiology	.0313	1.000
	Intensive care unit (ICU)	.1094	1.000
	Surgery	-.1034	1.000
	Gynaecology	.0045	1.000

	Ear, nose and throat (ENT)	-.1699	1.000
	Laboratory	.1070	1.000
	Radiology	.1824	1.000
	Medical records	-.1922	1.000
	Pharmacy	-.1817	1.000
	Paediatric	-.1973	1.000
	Internal	.0305	1.000
	Operations	-.0375	1.000
	Psychiatric	.0297	1.000
	Bones	-.1121	1.000
	Dermatology	-.2813	1.000
	Accounting	-.1454	1.000
	Nutrition	.1787	1.000
	Maintenance	.1851	1.000
	Administration	.3228	1.000
Dermatology	Emergency	.3294	.847
	Admission	.1881	1.000
	Cardiology	.3126	.903
	Intensive care unit (ICU)	.3906	.591
	Surgery	.1779	1.000
	Gynaecology	.2857	.916
	Ear, nose and throat (ENT)	.1113	1.000
	Laboratory	.3883	.556
	Radiology	.4637	.213
	Medical records	.0891	1.000
	Pharmacy	.0996	1.000
	Paediatric	.0840	1.000
	Internal	.3118	.936
	Operations	.2438	.994
	Psychiatric	.3110	.972
	Bones	.1692	1.000
	Dental	.2813	1.000
	Accounting	.1359	1.000
	Nutrition	.4599	.496
	Maintenance	.4664	.537
	Administration	.6041*	.024
Accounting	Emergency	.1935	.999
	Admission	.0521	1.000
	Cardiology	.1767	1.000
	Intensive care unit (ICU)	.2547	.984
	Surgery	.0420	1.000
	Gynaecology	.1498	1.000

	Ear, nose and throat (ENT)	-.0246	1.000
	Laboratory	.2523	.981
	Radiology	.3278	.792
	Medical records	-.0468	1.000
	Pharmacy	-.0363	1.000
	Paediatric	-.0519	1.000
	Internal	.1758	1.000
	Operations	.1079	1.000
	Psychiatric	.1751	1.000
	Bones	.0332	1.000
	Dental	.1454	1.000
	Dermatology	-.1359	1.000
	Nutrition	.3240	.945
	Maintenance	.3305	.953
	Administration	.4682	.228
Nutrition	Emergency	-.1305	1.000
	Admission	-.2719	.979
	Cardiology	-.1473	1.000
	Intensive care unit (ICU)	-.0693	1.000
	Surgery	-.2820	.856
	Gynaecology	-.1742	.999
	Ear, nose and throat (ENT)	-.3486	.916
	Laboratory	-.0717	1.000
	Radiology	.0038	1.000
	Medical records	-.3708	.605
	Pharmacy	-.3603	.977
	Paediatric	-.3759	.578
	Internal	-.1482	1.000
	Operations	-.2161	.995
	Psychiatric	-.1489	1.000
	Bones	-.2908	.922
	Dental	-.1787	1.000
	Dermatology	-.4599	.496
	Accounting	-.3240	.945
	Maintenance	.0065	1.000
	Administration	.1442	1.000
Maintenance	Emergency	-.1370	1.000
	Admission	-.2784	.983
	Cardiology	-.1538	1.000
	Intensive care unit (ICU)	-.0758	1.000
	Surgery	-.2885	.890
	Gynaecology	-.1807	.999

	Ear, nose and throat (ENT)	-.3551	.927
	Laboratory	-.0782	1.000
	Radiology	-.0027	1.000
	Medical records	-.3773	.660
	Pharmacy	-.3668	.979
	Paediatric	-.3824	.635
	Internal	-.1547	1.000
	Operations	-.2226	.996
	Psychiatric	-.1554	1.000
	Bones	-.2973	.938
	Dental	-.1851	1.000
	Dermatology	-.4664	.537
	Accounting	-.3305	.953
	Nutrition	-.0065	1.000
	Administration	.1377	1.000
Administration	Emergency	-.2747	.705
	Admission	-.4160	.259
	Cardiology	-.2915	.608
	Intensive care unit (ICU)	-.2134	.970
	Surgery	-.4262*	.022
	Gynaecology	-.3183	.184
	Ear, nose and throat (ENT)	-.4927	.199
	Laboratory	-.2158	.948
	Radiology	-.1404	1.000
	Medical records	-.5150	.064
	Pharmacy	-.5045	.516
	Paediatric	-.5201*	.012
	Internal	-.2923	.736
	Operations	-.3603	.252
	Psychiatric	-.2931	.894
	Bones	-.4349	.091
	Dental	-.3228	1.000
	Dermatology	-.6041*	.024
	Accounting	-.4682	.228
	Nutrition	-.1442	1.000
	Maintenance	-.1377	1.000

Appendix 26: ANOVA table for the study statements depending on departments in low-performing hospitals

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3.84	22	0.18	1.27	0.19
Within Groups	55.06	401	0.14		
Total	58.90	423			

Appendix 27: GLM Univariate Analysis Of Variance table for the study statements depending on department, the experience in the hospital and the experience in the health field in low-performing hospitals

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
department	3.49	22	0.16	1.14	0.30
The experience in the hospital	0.30	4	0.08	0.54	0.71
The experience in the health field	0.89	4	0.22	1.60	0.17

Appendix 28: ANOVA table for the study depending on experience in the hospital in combined high- and low-performing hospitals

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.90	4	0.73	3.28	0.01
Within Groups	199.62	903	0.22		
Total	202.52	907			

Appendix 29: GLM Univariate Analysis Of Variance table for the study statements depending on department, the experience in the hospital and the experience in the health field in combined high- and low-performing hospitals

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
department	12.39	23	0.54	2.78	0.00
The experience in the hospital	0.10	4	0.02	0.12	0.97
The experience in the health field	1.38	4	0.35	1.78	0.13

Appendix 30: ANOVA table for the study depending on experience in the hospital in high-performing hospitals

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4.91	4	1.23	5.79	0.00
Within Groups	101.46	479	0.21		
Total	106.37	483			

Appendix 31: GLM Univariate Analysis Of Variance table for the study statements depending on department, the experience in the hospital and the experience in the health field in high-performing hospitals

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
department	8.03	21	0.38	2.22	0.00
The experience in the hospital	0.81	4	0.20	1.18	0.32
The experience in the health field	1.77	4	0.44	2.57	0.04

Appendix 32: ANOVA table for the study depending on experience in the hospital in low-performing hospitals

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.14	4	0.29	2.07	0.08
Within Groups	57.76	419	0.14		
Total	58.90	423			

Appendix 33: ANOVA table for the study statements depending on experience in the health field in combined high- and low-performing hospitals

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4.92	4	1.23	5.62	0.00
Within Groups	197.60	903	0.22		
Total	202.52	907			

Appendix 34: ANOVA table for the study statements depending on experience in the health field in high-performing hospitals

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4.59	4	1.15	5.40	0.00
Within Groups	101.77	479	0.21		
Total	106.37	483			

Appendix 35: ANOVA table for the study statements depending on experience in the health field in low-performing hospitals

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.59	4	0.40	2.90	0.02
Within Groups	57.31	419	0.14		
Total	58.90	423			