



Faculty of Graduate Studies: MBA Program

**Measurement of Total Quality Management Critical
Success Factors Implementation Level in the Palestinian
Healthcare Sector**

**قياس مدى تطبيق عوامل نجاح نظام الجودة الشامل في القطاع الصحي
الفلسطيني**

MASTER THESIS

By

Rafiq Tawfiq Nasrallah

Supervised by

Dr. Samir Baidoun

Palestine

May 2009



Faculty of Graduate Studies: MBA Program

**Measurement of Total Quality Management Critical Success
Factors Implementation Level in the Palestinian Healthcare
Sector**

قياس مدى تطبيق عوامل نجاح نظام الجودة الشامل في القطاع الصحي الفلسطيني

This Thesis was submitted in partial fulfillment of the requirements for
the Masters Degree in **Business Administration** from the Graduate
Faculty at Birzeit University, Palestine

By: Rafiq Tawfiq Nasrallah

Date of Discussion: May 30, 2009

Approved by:

Dr. Samir Baidoun – (Chairperson of Supervisory Committee)

Dr. Munzer Najem – (Member of Supervisory Committee)

Dr. Fahoom Shalabi – (Member of Supervisory Committee)



Faculty of Graduate Studies: MBA Program

**Measurement of Total Quality Management Critical Success
Factors Implementation Level in the Palestinian Healthcare
Sector**

قياس مدى تطبيق عوامل نجاح نظام الجودة الشامل في القطاع الصحي الفلسطيني

This Thesis was submitted in partial fulfillment of the requirements for
the Masters Degree in **Business Administration** from the Graduate
Faculty at Birzeit University, Palestine

By: Rafiq Tawfiq Nasrallah

Date of Discussion: May 30, 2009

Approved by:

Dr. Samir Baidoun (Chairperson of Supervisory Committee).....

Dr. Munzer Najem (Member of Supervisory Committee)

Dr. Fahoom Shalabi (Member of Supervisor Committee).....

Acknowledgement

This thesis would not have been possible without the endless support and concern of Dr. Samir Baidoon who has been my supervisor since the beginning of my study. He provided me with many helpful suggestions, important advice, and constant encouragement during the course of this work. Therefore, I would like to thank him for all his efforts and contributions made to get out with this thesis.

Definitely, I am forever indebted to my parents, my family, and my fiancé for their understanding, endless patience and encouragement when it was most required. Also, I would like to express my gratitude to my cousin, Mr. Johnny Zeidan, who played a key role in supporting me to join the MBA program in Birzeit University. Furthermore, I would like to take this opportunity to thank all the staff members of the MBA program and all the doctors from whom I have learned a lot.

This thesis is considered as the fruit of a long and successful academic journey, so thank you all because without your help and support I wouldn't have reached this far.

Table of Contents

Abstract	VII
-----------------------	------------

Chapter One: Research Problem

1.1	Statement of the problem	1
1.2	Study Objectives	4
1.3	Research Questions	5
1.4	Scope and Limitations of the Study	5
1.5	Literature Review	6
1.5.1	Introduction	6
1.5.2	Components of Successful TQM.....	9
1.5.3	TQM in Service Industry.....	17
1.5.4	TQM in Healthcare.....	23
1.5.5	TQM Studies in Healthcare.....	29
1.6	Theoretical Framework	44
1.7	Study Context: Palestinian Healthcare.....	45

Chapter Two: Research Methodology

2.1	Type and nature of the study.....	50
2.2	Sampling Design.....	50
2.3	Data Collection.....	52
2.3.1	Data Collection Method	52
2.3.2	Questionnaire Design	53
2.4	Goodness of Measures	54
2.4.1	Validity.....	54
2.4.2	Reliability.....	55
2.5	Data Checking and Data Entry.....	56

Chapter Three: Findings & Conclusions

3.1	Analysis of Results.....	58
3.1.1	Overall Results.....	58
3.1.2	Each Hospital Results by Respondent.....	60
3.1.3	Results by Hospitals.....	63
3.1.4	Aggregate Results by Resp. Position	68
3.2	Comparison against Regional Studies.....	70
3.3	Conclusions & Recommendations.....	73
	References	76
	Appendices	
	<hr/>	
	Appendix-1 Questionnaire Form	86
	Appendix-2 Tables of Results	96

List of Figures

Figure 1: A Generic Framework for TQM Implementation.....	45
Figure 2: Sampling Design Process.....	52
Figure 3: Augusta Victoria Hospital scores compared to benchmarks.....	65
Figure 4: Saint Josef Hospital scores compared to benchmarks.....	65
Figure 5: Al-Makassed Hospital scores compared to benchmarks.....	66
Figure 6: Saint John Eye Hospital scores compared to benchmarks.....	66
Figure 7: Princess Basma Hospital scores compared to benchmarks.....	67
Figure 8: Arab Specialized Hospital scores compared to benchmarks.....	67
Figure 9: Red Crescent Hospital scores compared to benchmarks.....	68
Figure 10: Average Scores of the Seven Surveyed Hospitals.....	74

List of Tables

Table 1: Cronbach's alpha coefficients for Reliability.....	97
Table 2: Means and Standard Deviations of the 13 Quality Dimensions.....	98
Table 3: Augusta Victoria Hospital Results by Respondent Position.....	99
Table 4: Saint Josef Hospital Results by Respondent Position.....	99
Table 5: Al-Makassed Hospital Results by Respondent Position.....	100
Table 6: Saint John Eye Hospital Results by Respondent Position.....	100
Table 7: Princess Basma Hospital Results by Respondent Position.....	101
Table 8: Arab Specialized Hospital Results by Respondent Position.....	101
Table 9: Red Crescent Hospital Results by Respondent Position.....	102
Table 10: Aggregate Results by Hospitals.....	103
Table 11: Aggregate Results by Medical Director.....	104
Table 12: Aggregate Results by Administration Director.....	105
Table 13: Aggregate Results by QMR.....	106
Table 14: Aggregate Results by Head of Nursing Unit.....	107

Table 15: Comparison against the Indian Study Results.....108

Table 16: Comparison against the Iranian Study Results.....108

Abstract

Background Among all the philosophies being implemented by the organizations recently, TQM has gained much attention. During the 1980s and 1990s, TQM began to influence national business systems and was widely seen as a “revolution” in management. In recent years, one of the fastest growing industries in the service sector is the healthcare industry. The rapid growth of the healthcare sector has been accompanied by other dramatic changes. These forces of change have begun to exert significant pressures on healthcare providers to reassess their strategies. Therefore, many health care organizations have decided to implement TQM in order to solve most of the problems they are currently facing. Definitely, the Palestinian healthcare system is still far away behind its counterparts in other countries. Thus, striving to establish a framework for implementing TQM in this system would contribute to start the recovering process.

Purpose The purpose of this paper is to measure the implementation level of the TQM critical success factors in the Palestinian healthcare sector.

Results The results obtained from this study revealed that all the TQM critical success factors are being implemented very well in the ISO Palestinian hospitals. Analyzing the results more deeply showed the closeness of the responses provided

by the four persons surveyed within the same hospital (except for Al-Makassed Hospital). This finding generated a kind of authenticity and reliability of the results being acquired. A comparison based on the measured quality practices among the hospitals resulted in ranking Saint John Eye hospital as the best performing hospital and the Arab Specialized Hospital at the end of the scale. Another comparison of hospitals dimensions' scores against benchmarks would help the hospitals to focus more on certain quality dimensions that they are defaulting in.

Conclusions The main conclusion drawn from this study states that all the quality dimensions measured were found to be highly implemented in the Palestinian ISO hospitals. Among the seven hospitals, Saint John Eye hospital was considered to be the best in implementing TQM critical success factors and the Arab Specialized Hospital was ranked to be the last. Also, some recommendations were provided to certain hospitals in order to improve their weaknesses in respect to the implementation of TQM dimensions. Finally, a comparison of our study results against other similar studies in developing countries showed that we are implementing the TQM critical success factors at the same level and we are not so far from adopting this management system in our healthcare sector.

الملخص باللغة العربية

مقدمة من بين الفلسفات المختلفة التي تم تطبيقها مؤخراً في المؤسسات، لقد أكتسب نظام الجودة الشامل أهمية كبيرة. خلال فترة الثمانينيات و التسعينيات، بدأ نظام الجودة الشامل بالتأثير على نظام الأعمال العالمي وأصبح يُنظر إليه بشكل واسع على أنه ثورة في عالم الإدارة. يعد القطاع الصحي من أكثر القطاعات الخدماتية نمواً في الآونة الأخيرة. رافق هذا النمو السريع بعض التغييرات المثيرة التي شكلت ضغطاً كبيراً على مانحي الخدمات الصحية لإعادة تقييم إستراتيجيات عملهم. لذلك فقد قررت الكثير من المؤسسات الصحية تطبيق نظام الجودة الشامل لكي يتمكنوا من حل معظم المشاكل التي تواجههم في الوقت الحالي. بكل تأكيد فإن النظام الصحي الفلسطيني ما زال بعيداً كل البعد عن نظرائه في الدول الأخرى. لذلك فإن السعي لإنشاء إطار عمل لتطبيق نظام الجودة الشامل في هذا القطاع سيساهم في البدء في عملية المعالجة.

هدف الدراسة إن الهدف من وراء هذه الدراسة هو قياس مدى تطبيق عوامل نجاح نظام الجودة الشامل في القطاع الصحي الفلسطيني.

النتائج إن النتائج المكتسبة من هذه الدراسة كشفت أن جميع عوامل نجاح نظام الجودة الشامل مطبقة بشكل جيد في المستشفيات الفلسطينية الحاصلة على شهادة ISO. كما أظهر تحليل النتائج بشكل معمق أكثر بأن إجابات الأشخاص الأربعة الذين قاموا بتعبئة نماذج الإستمارات في كل مستشفى متقاربة إلى حد كبير (باستثناء مستشفى المقاصد). هذا التقارب في الآراء أعطى نوعاً من المصدقية لنتائج الدراسة. المقارنة بين مستويات تطبيق عوامل نجاح نظام الجودة الشامل في كل مستشفى أدت إلى تصنيف مستشفى القديس يوحنا للعيون في المرتبة الأولى بينما جاء المستشفى العربي التخصصي في أسفل الترتيب. إضافة إلى ذلك، فإن هذه المقارنة ستساعد المستشفيات على التركيز أكثر على نقاط ضعفهم.

الإستنتاجات الإستنتاج الرئيسي الذي يمكن إستخراجه من هذه الدراسة هو أن العوامل الجودة التي تم قياسها مطبقة بشكل كبير في المستشفيات الفلسطينية الحاصلة على شهادة ISO. كما تم تقديم التوصيات لبعض المستشفيات من أجل تحسين نقاط الضعف فيما يتعلق بتطبيق أبعاد نظام الجودة الشامل. في النهاية، مقارنة نتائج الدراسة بدراسات مشابهة في الدول النامية أظهرت أننا نطبق نظام الجودة الشامل على نفس المستوى و أننا لسنا بعيدين عن تبني هذا النظام في قطاعنا الصحي.

Chapter One

Research Problem

1.1 Statement of the problem

The “Industrial Revolution” took place in the last century. Perhaps the “Computer Revolution” happened in the early 1980s. But we are now, without doubt, in the midst of the “Quality Revolution” – a period of change affecting every type of business, enterprise, organization, and person. Total quality management (TQM) was initially developed in Japan, and its origins can be traced in the work of the – so-called – quality gurus, Deming, Juran, Feigenbaum, Ishikawa and Crosby and on the rise and dominance of the Japanese automobile industry in the world markets. During the 1980s and 1990s, TQM began to influence national business systems and was widely seen as a “revolution” in management (Vouzas and Psychogios, 2007).

The literature contains reports of several cases in which the implementation of TQM has failed. Many organizations and companies have difficulties in implementing TQM. While TQM has been widely applied in the management of change, and is likely to remain a priority into the next century, failure rates at times above 75 per cent according to Guangming *et al.* (2000), give cause for concern (Rad, 2005). Some people such as Becker, 1993; Ghobadian and Gallear,

1996 see TQM as something necessary to reach competitiveness and they emphasize the relation between TQM and success. Others like Binney, 1992; Harari, 1993; Fuchsberg, 1993; Kendrick, 1993 claim that TQM is merely a management fad and point out that many companies have failed to implement TQM. Accordingly, empirical TQM studies started to increase after 1989 when the critical success factors (CSFs) of TQM were first operationalized by Saraph *et al.* (1989). Similar survey studies were also conducted by Flynn *et al.* (1994), Ahire *et al.* (1996), Anderson *et al.* (1995), Badri *et al.* (1995); Black and Porter (1995, 1996); Grandzol and Gershon (1998); Quazi *et al.* (1998); Wilson and Collier (2000); Wali *et al.* (2003). These studies constructed TQM frameworks with an identification of critical success factors.

In recent years, one of the fastest growing industries in the service sector is the healthcare industry. The rapid growth of the healthcare sector has been accompanied by other dramatic changes. These forces of change that have begun to exert significant pressures on healthcare providers to reassess their strategies, include: rising standards of living and education, competitive pressures, advancement in medical breakthroughs, alternate healthcare delivery mechanisms, changing cost structures,...etc. Maybe the most critical issue is that the operating costs keep increasing while the business is decreasing. The healthcare industry is, therefore, facing a challenging task (Clements, 1993). The future is full of challenges for health care managers. Although there is no agreement on how to cure the ills of the healthcare industry, some researchers argue that the application

of total quality management (TQM) may offer a partial cure (Geber, 1992; Anderson, 1992; Fried, 1992; Lawrence and Early, 1992; Bergman, 1994).

The integration of Total Quality Management (TQM) principles within the healthcare system management (HSCM) framework is a key enabler for healthcare excellence. It is critical that healthcare service providers should realize that the long-term sustainability of quality healthcare services requires the adoption of innovative quality management practices, theories and techniques, not only in patient contact areas but in the overall system of healthcare delivery. (Lee and Khong, 2006). Several researchers have asserted that successful implementation of TQM in healthcare organizations can result in significantly superior outcomes such as: upgrade service quality, improve health care quality and productivity, prevent costly or fatal mistakes in medical treatment, reduce the cost of medical treatment, satisfy both external and internal customers. (Short and Rahim; Zabada *et al.*, 1998). Therefore, adopting TQM practices will not only help the financial crisis of the health care organizations, but also overcome many critical problems that they are currently facing (Short and Rahim, 1995).

The state of quality management in developing countries cannot be separated from their mainstream economic and industrial development. Sandholm (1999) refers to certain inhibiting factors as low purchasing power, a shortage of goods, foreign exchange constraints, an incomplete infrastructure, inadequate leadership and insufficient knowledge. Bruun and Mefford (1996) believe that customer expectations of quality in these countries tend to be low, thus causing further

problems in terms of exporting and competition in general. Aly (1995) further refers to TQM not spreading fast enough in the Middle East, claiming the reasons for this as bureaucracy, traditional cultures and a lack of sufficient training and education.

Therefore, the focus of this empirical research is the identification of TQM CSFs in the healthcare industry in Palestine, a developing and recently established country. The main purpose is to help the Palestinian healthcare organizations to set a generic framework for TQM implementation.

1.2 Study Objectives

The main objectives for conducting this research can be summarized as follows:

- Measuring the perceived implementation level of TQM critical success factors in the Palestinian Healthcare Sector and specifically ISO certified healthcare organizations.
- Assessing the Palestinian Healthcare Sector awareness and implementation levels of TQM approach in comparison to its counterparts in other developing countries.
- Providing the Palestinian ISO hospitals with important findings to start a long TQM journey.

1.3 Research Questions

Further to the previous stated objectives, this study should come out with answers to the following questions:

- What is the level of awareness and implementation of TQM critical success factors in the Palestinian Healthcare Sector?
- Where does the Palestinian Healthcare System stand in comparison to its counterparts in the developing countries in respect of TQM?
- What are the actions that should be taken by the Palestinian Healthcare organizations in order to apply the TQM soft aspects?

1.4 Scope and Limitations of the Study

This study is considered as the first step in an overall process aiming to successfully implementing TQM in the Palestinian Healthcare System. There are mainly two limitations that need to be acknowledged and addressed regarding the present study. The first limitation is that the results obtained from this study cannot be generalized to all the Palestinian healthcare organizations as there is a significant variation in quality levels between these organizations and the surveyed ISO hospitals. The second limitation that should be acknowledged is that the results are based on the quality perceptions of the medical director, administration director, quality management representative, and head of nursing unit in each of the surveyed hospitals. Therefore, the actual implementation level of TQM critical success factors in the ISO certified hospitals is not measured in this study.

1.5 Literature Review

1.5.1 Introduction

Recent changes in the competitive environment have forced organizations in many industries to formulate new strategic responses. These responses capitalize on proven strategic and operational philosophies aimed at improving internal efficiency and external effectiveness. These philosophies include quality improvement initiatives such as, total quality management (TQM), just in time (JIT), continuous improvement (CI), job reengineering (JR), process reengineering (PR), organizational restructuring (OR), benchmarking (BM), among others (Alavi and Yasin, 2008).

Total quality management (TQM) is one such philosophy which aims to provide organizations with a template for success through customer satisfaction. Through the literature, TQM has so many definitions and descriptions. Ross and Brown (1993) described TQM as an integrated management philosophy and set of practices that emphasize increased employee involvement and teamwork, continuous improvement, meeting customers' requirements, management by facts, team-based problem solving, constant measurement of results, closer relationship with suppliers, and so on. Others defined TQM as the culture of an organization committed to total customer satisfaction through continuous improvement. In such a culture, resources, material, equipment and quality management systems are cost effectively implemented and fully utilized (Rad, 2005). Oakland (1993) stated that TQM is an attempt to improve the whole organization's

competitiveness, effectiveness and structure. For Dale (2003) “TQM is the mutual co-operation of everyone in an organization and associated business processes to produce products and services which meet and, hopefully, exceed the needs and expectations of customers. A baseline technical definition of what TQM is all about has been given by the American Federal Office of Management Budget Circular: “TQM is a total organizational approach for meeting customer needs and expectations that involves all managers and employees in using quantitative methods to improve continuously the organization's processes, products and services” (Vouzas and Psychogios, 2007).

Total quality management (TQM) was initially developed in Japan, and its origins can be traced in the work of the – so-called – quality gurus, Deming, Juran, Feigenbaum, Ishikawa and Crosby and on the rise and dominance of the Japanese automobile industry in the world markets. During the 1980s and 1990s, TQM began to influence national business systems and was widely seen as a “revolution” in management. In the literature, TQM is often referred as a “social movement” by Hackman and Wageman (1995), a “comprehensive way to improve total organizational performance and quality” by Hunt (1993) and as a “new paradigm in management” by a series of authors such as Spencer (1994) and Grant *et al.* (1994) (Vouzas and Psychogios, 2007). However, very often TQM has gone from buzzword to fad in many people's opinion (Bergquist *et al.*, 2005).

TQM has enjoyed great popularity in industries of all types since its development in the mid-1980s and institutions have incorporated it into their daily management

activities. Tobin (1990) has stated that TQM is a totally integrated program for gaining competitive advantages by continuously improving every facet of organizational culture. Studies showed that TQM was positively associated with performance outcome, such as financial performance and profitability as well as with human outcomes, such as employee satisfaction, employee relations, and customer satisfaction (Rad, 2005).

The goals of TQM are to satisfy the needs of customers, prevent poor quality rather than correcting problems after the fact, develop an attitude of continuous improvement, understand the value of measuring performance to identify opportunities and maintain improvements, and eliminate chronic sources of inefficiencies and costs. However, in practice, these TQM benefits are not easy to achieve. Despite its theoretical promise and the enthusiastic response to TQM, recent evidence suggests that attempts to implement it are often unsuccessful. As a result, the literature contains reports of several cases in which the implementation of TQM has failed. Many organizations and companies have difficulties in implementing TQM. While TQM has been widely applied in the management of change, and is likely to remain a priority into the next century, failure rates at times above 75 per cent according to Guangming *et al.* (2000), give cause for concern (Rad, 2005).

Through the literature, various reasons have been given for this failure, majority of the cited reasons boil down to management's inability to implement a total system. TQM implementation requires changes in structure, system, and process

as a necessary precondition to achieve improved business performance and changes in employee behavior (Huq, 2005).

In order to achieve the above stated goals of TQM, as well as to gain the competitive advantages, principles of TQM should be fully understood and committed by the entire organization workforce before implementing TQM (Rad, 2005). In almost all definitions of TQM, two substantial aspects can be identified: the “hard” side and the “soft” side. The “hard” (or technical) side refers to management tools, techniques and practices, while the “soft” (or “philosophical”) is associated with management concepts and principles. Whilst the “hard” aspects of TQM include clear and well-documented methods of achieving quality results, at the same time the “soft” aspects synthesize its whole theory, composing its background and philosophical elements. . Therefore, TQM needs to be put in a theoretical context that will analyze in-depth the implications of its “soft” side (Vouzias and Psychogios, 2007).

1.5.2 Components of successful TQM

1.5.2.1 Critical Success Factors (Soft Aspects)

Over the past few decades, the quality gurus Crosby (1979), Deming (1986), Feigenbaum (1983), Juran (1986) and others have developed and advocated certain prescriptions in the area of quality management. Crosby (1979) defined 14 steps for quality improvement, including top and intermediate management commitment, quality measurement, evaluation of quality costs, corrective action,

training, a zero-defect philosophy, objective setting and employee recognition. Afterwards, Deming (1982, 1986) proposed his 14 principles to improve quality in organizations, based on the following ideas: leadership, an improvement philosophy, the right production from the beginning, training for managers and employees, internal communication aimed at the elimination of obstacles for cooperation and the suppression of quantitative objectives. Also, Juran (1986) pointed out the importance of both technical and managerial aspects, and identified the three basic functions of the quality management process: planning, organization and control, as the stages for quality improvement. The philosophies of Crosby, Deming, and Juran provided fundamental principles on which total quality is based. While these principles are seldom accompanied by rigorous supporting evidence, they do not have some degree of face validity (Tari, 2005).

Empirical TQM studies started to increase after 1989 when the critical success factors (CSFs) of TQM were first operationalized by Saraph *et al.* (1989). Similar survey studies were also conducted by Flynn *et al.* (1994), Ahire *et al.* (1996), Anderson *et al.* (1994), Badri *et al.* (1995); Black and Porter (1995, 1996); Grandzol and Gershon (1998); Quazi *et al.* (1998); Wilson and Collier (2000); Wali *et al.* (2003). These studies identified TQM frameworks with CSFs ranging between four and twelve.

The critical factors of TQM found in the literature vary from one author to another, although there is a common core, formed by the following requirements (Claver *et al.*, 2003):

- Customer focus
- Top management commitment (leadership)
- Quality planning
- Continuous improvement
- Human resource management (employees empowerment and training)
- Process management.
- Cooperation with suppliers
- Organizational awareness and concern for the social and environmental context.

1.5.2.2 International Quality Models

Alongside these factors, identified both in theoretical and empirical studies, there are standardized quality models used by firms in practice as a guide for their implementation, or in order to carry out self-evaluations of their quality practices. The main models are the Malcolm Baldrige National Quality Award model in the USA, the European Foundation for Quality Management (EFQM) excellence model in Europe and the Deming Application Prize model in Japan. The USA model lists in seven categories the main concepts and values in quality management: leadership, strategic planning, human resources orientation, process management, information and analysis, customer and market focus and business results (Tari, 2005). The EFQM excellence model defines truly excellent organizations as those that strive to satisfy their stakeholders by what they achieve, how they achieve it, what they are likely to achieve and the confidence

they have that the results will be sustained in the future (EFQM, 2000). The model consists of the following principles: leadership, employee management, policy and strategy, alliances and resources, process management, people results, customer results, society results and key results. The Japanese model is grouped into ten chapters, which are in turn divided, as in the two previous models, into a number of sub-criteria, in the following way: policies, organization, information, standardization, development and usage of human resources, activities ensuring quality, activities for maintenance and control, activities for improvement, results and future plans (Tari, 2005).

1.5.2.3 Tools & Techniques (Hard Aspects)

As stated before, TQM can be divided into two dimensions: the management system – “soft side” – referring to the critical success factors, and the technical system – “hard side” – referring to a set of tools and techniques. A single tool is a device with a clear function, and is usually applied on its own, whereas a technique has a wider application and is understood as a set of tools (McQuater *et al.*, 1995).

Through literature, Ishikawa (1985) and McConnell (1989) identified a list of seven basic quality control tools (QC tools), which are used in problem identification: *Process flowcharting* – what is done? *Pareto analysis* – which are the big problems? *Cause and effect analysis* – what causes the problem? *Histograms* – what does the variation look like? *Check sheets/tally sheets* – how often does it occur? *Scatter diagrams* – what are the relationships between

factors? *Control charts* – which variations are to be controlled and how? Also, Imai (1986), Dean and Evans (1994), Goetsch and Davis (1997), Dale (1999), Evans and Lindsay (1999) and many other authors offered a list of tools and techniques for quality improvement including seven management tools - affinity diagram, arrow diagram, matrix diagram, matrix data analysis method, process decision program chart, relations diagram, systematic diagram - and other tools such as brainstorming, control plan, flowchart.... On the other hand, the hard part of the technical system, according to Wilkinson *et al.* (1998), includes production and work process control techniques which ensure the correct functioning of such processes. These techniques include benchmarking, statistical process control, quality costing, quality function....

Therefore, the implementation of TQM cannot succeed without the use of quality management methods (Zhang, 2000). These methods are a set of practices, tools and techniques deriving from the critical factors, and are the basic elements required to implement such factors.

1.5.2.4 TQM survey in ISO 9000 certified firms

Methodology

The purpose of the study conducted by Juan José Tarí (2005), is to measure the degree of implementation of TQM elements in ISO 9000 certified firms. The population selected was those firms carrying out their activity in the Alicante area (eastern Spain) which have received the ISO 9000 certificate.

The questionnaire was designed based on the EFQM model and on a review of the literature, in order to measure the degree of implementation of TQM elements in ISO 9000 certified firms. The data were collected by means of a structured personal interview, carried out face to face, based on a closed questionnaire, plus a set of open questions which helped to clarify certain points. Finally, 106 firms were interviewed.

Eight critical factors and five results were selected, considering the enablers defined by the EFQM model and a review of the literature. Alongside these factors, other questions were used to measure empowerment, the use of personnel policies and the use of quality improvement techniques and tools. The quality manager was asked about the percentage of employees who: participated in teams; contributed suggestions; received information; enjoyed decision-making autonomy; received training; and interacted with customers and/or suppliers. Together with this question, another one asked about the percentage of employees that was rewarded (employee recognition) in any of the following ways (other than their wages): an individual monetary bonus; a collective monetary bonus; a share in the profits; a non-monetary reward; and a share in the firm's stock. Finally, a question was asked in order to study the most frequent techniques and tools, by means of nominal qualitative variables. A total of 12 tools and techniques were identified, based on the research by Ishikawa (1985), Imai (1986), McConnell (1989), Dean and Evans (1994), Goetsch and Davis (1997), Dale and McQuater (1998), Dale (1999), and Evans and Lindsay (1999).

Results & Conclusions

Regarding the *critical factors and results*, customer-related issues and process management are the most important. Human issues and continuous improvement activities are found to be the least implemented components. These results show that ISO 9000 certified firms implement human aspects to a lower extent than technical ones, and that alongside with improvement, social concerns and quality planning are the weakest areas. The literature has pointed out that TQM and human resource management go hand in hand, the latter being the basis for part of the important success of TQM (Hill and Wilkinson, 1995; Briggs and Keogh, 1999). At times, it has been found that TQM success depends critically on human aspects (Powell, 1995). The *employee participation* can be represented by the average participation in the six activities studied. The results show that the most common one is the training given to employees and, to a lower extent, information transmission, communication with suppliers and/or customers and decision-making power. The least usual ones are involvement through work teams and suggestions schemes.

Although *employee recognition* is a crucial issue in any TQM context, it appears as a very weak area in the firms studied as the results showed a very low interest in such aspects, and in most cases it was already in place before the quality system was implemented. As regards *personnel policies*, the one that is most frequently used by firms is training, whereas evaluation and recognition and career development are the least usual ones. These elements are essential for full TQM

implementation, as they create the culture within which the TQM tools and techniques can work. Finally, it was revealed that the most used *quality improvement techniques and tools* in ISO 9000 certified firms are internal audits, graphics, and SPC, and the least used are pareto diagrams, cause and effect diagrams, and scatter diagrams. These results indicate that weaknesses in ISO 9000 certified firms are: human aspects, such as work teams, suggestions schemes, recognition models, etc...

1.5.2.5 Pareto analysis of critical success factors

Methodology

The objectives of the study conducted by Karuppusami and Gandhinathan (2006) are:

- Application of Pareto concept and sorting of the CSFs in the descending order according to the frequencies of their occurrences.
- Compilation and final reporting of the few vital CSFs.

A total of 76 of the 347 studies analyzed contained CSFs that were mostly extracted by factor analysis. Of these 76 studies, only 37 were selected for research as they reported CSFs only after systematic reliability and validity tests were selected. The total number of CSFs extracted and grouped from these studies was 56 and the total frequency of occurrences was 306.

Results

According to the pareto analysis conducted for the 56 CSFs, 14 CSFs accounted for 80 per cent of occurrences and they are considered as “vital few” groups. The remaining 42 CSFs accounted for only 20 per cent of occurrences frequency and were reported as “useful many” groups. According to the descending order of occurrences, the 14 vital few CSFs are: The role of management leadership and quality policy, supplier management, process management, customer focus, training, employee relations, product design, quality data, role of quality department, human resource management and development, design and conformance, cross functional quality teams, benchmarking, information and analysis.

1.5.3 TQM in Service Industry

Manufacturing organizations have successfully deployed total quality management (TQM) and other quality improvement initiatives in support of well-defined strategic options. However, service organizations are still lagging behind their manufacturing counterparts in terms of their strategic commitment to TQM and other quality improvement initiatives. Service quality is a multi-dimensional construct. Thus, service quality may be viewed based on the different attributes of the service delivery system in different operational context, the extent of customer satisfaction, and/or the interactions among the different elements of the service operational system, which define the service encounter experienced by the

consumer. As such, it is difficult to emphasize one certain aspect of service quality, as most of these aspects are intangible and interrelated in nature (Alavi and Yasin, 2008).

In recent years, some service organizations in different service industries, such as healthcare, insurance and hospitality among others, have shown increasing interest in developing quality improvement initiatives. This interest may be attributed to the positive operational and strategic benefits of these initiatives (Hasan and Kerr, 2003). In general, however, according to the literature review of Alavi and Yasin (2008), the effective implementation of quality improvement initiatives in service operational environments is still lagging behind that of manufacturing. This may be attributed to the common misconception that quality improvement initiatives are, either inapplicable or at best, very difficult to implement in service operational settings.

TQM implementation requires changes in structure, system, and process as a necessary precondition to achieve improved business performance and changes in employee behavior. For service operations, it is even more difficult to implement it because of its preoccupation with internal performance dimensions that cannot keep-up with the constantly changing perceptions and preferences of the customers (Huq, 2005). According to the latter's review, there are evidences from literature that many service managers prefer a developmental orientation in TQM adoption. These managers regarded TQM primarily as a tool for growing the firm's business, not as a strategic and tactical instrument that permeates every

segment of the company. Many service operations are applying the TQM concepts selectively. In service operations managers are influenced by strategies to add value to customer service processes, and many fail to see how TQM addresses this issue. Although, TQM is preoccupied with internal excellence, it translates into better external performance because the whole principle is based on customer satisfaction. Many service managers fail to see that the principles of TQM can create an environment that addresses the needs and aspirations of their customers.

1.5.3.1 Research Study

Based on six change management issues, Ziaul Huq (2005) conducted a research to achieve the following purposes:

- To investigate these management principles based on a quasi-qualitative study of 20 service companies that attempted TQM.
- To determine which of these six principles have the most profound impact on moving toward successful versus failed TQM implementation; and
- To recommend a managerial perspective and a course of action that enhances successful implementation of TQM.

The six change management issues are leadership, implementation of change and control, barriers to change, communications, people culture factor, and change review. The following is a description of the six change management issues and the results of each dimension for the 20 companies:

1- Leadership: Successful change requires a large commitment from top management, whether the change is occurring in a single department or in the entire organization. Leadership sets the stage for successful implementation and issues like how top-management buy-in was obtained, who is leading the change efforts, whether a solid business case was developed for the change... On leadership issues, performances of the studied companies were better than any other change management dimension. The average score came out to be 4.6 (on a scale of 1-7) with low coefficient of variation (16 percent).

2- In implementation of change and control hierarchy of decisions, dissemination of the change concepts, time scales and major checkpoints of the project, progress review, interventions to overcome obstacles, etc... are the issues of importance. Only two companies were rated as high performers in the implementation of change and control, one of them is a hospital and the other is a consulting company. The average score on this dimension is 3.2, but it reduces to 2.5 if the best two are deleted; the high CV (36 percent) reflects this wide variation.

3- Barriers to change: Next comes, how the company has removed the barriers to change; by barrier we mean barriers to reaching consensus, barriers to learning, barriers to employee motivation, operational risks, etc. Performance on barrier to change dimension ranged from average to low, with only two companies (a consulting company and a hospital) scoring high. The average score (3.10) and high coefficient of variation (33 percent) reflect this. Activities to remove barriers

for consensus encompass a wide range of activities including leadership, decision-making tools, and other tools or tactics to restructure culture and/or to re-motivate employees to the TQM paradigm.

4- Communications: Need for communication is of paramount importance in any such project, company has to obtain support from employees, suppliers, and customers, develop end user documentation and technical manuals, determine the training needs of the employees involved, and develop a single point of contact for all employees. This dimension communications involves dissemination of the principles of TQM and its importance for the company. More successful companies created awareness through development of information systems, fliers, bulletins, notices, and, of course, through education and training. The high performers in this category provided a single point of contact for their employees through the company intranet, and in case of absence of an intranet through a project champion, they also developed project user manuals and technical documentations. Performance on this dimension was average (3.83), but some low performers caused the coefficient of variation (27 percent) to be high.

5- Culture: The fifth change management issue is the people culture factor; overcoming cultural obstacles can be a challenge in many companies, in many cases a contingency plan is needed. TQM practices represent a change from the way things were done in the past. If the company's culture refuses to accept the changes required by TQM usage, then these initiatives will fail regardless of the desires and efforts of top management. Successful implementation of these

practices requires making them a permanent part of how things are to be done in the company. Only one company scored high on this dimension, the average for the dimension was only 2.55 with a CV of 18 percent.

6- Change Review: Finally, there has to be periodic change reviews, company has to ask whether proper steps were followed, an effective control system was used, all types of risks were managed, communications was effective, documentation was produced, and agreed deliverable benefits were realized. Change review measured whether the studied companies had followed the proper documentation procedures, had developed measurable critical success factors, and had a system to ascertain whether the deliverable benefits were realized at the appropriate times. Performance was reasonably good at the more successful companies, with majority falling in the average category. The average score for this dimension was 3.90 with a CV of 23 percent.

The qualitative and quantitative results of the study indicate that all too often, service companies that adopt TQM attempt to identify concepts that apply only to service organizations, looking for the “short cut” to success without investing the time and costs associated with full-fledged TQM, insisting on viewing TQM from a limited, industry specific perspective rather than a generic perspective. It was also apparent there was resistance to change in many of the studied organizations.

1.5.4 TQM in Healthcare

1.5.4.1 Healthcare Industry: Reality & Challenges

In recent years, one of the fastest growing industries in the service sector is the healthcare industry. Public spending on healthcare in Germany, France, Canada, the UK, the USA, Australia, and Japan is at least 5 percent of their respective Gross Domestic Products (GDPs). The total spending (public and private) in the healthcare sector in the US accounts for roughly 14 percent of its national income. The last decade has witnessed increasing attention to the healthcare related issues such as widening coverage for access to healthcare, cost containment, quality of care, and regulation (Natarajan, 2006).

Healthcare industry is undergoing fundamental changes. The current health care environment changes on a daily basis. The influence of rising costs of health care and consumerism has resulted in significant changes in health care delivery. Changes in health care are apparent as healthcare organizations continue to redesign or restructure systems to survive in a highly competitive marketplace. It is dynamic and difficult to manage competition and consumer expectations. The future is full of challenges for health care managers. Consumers and payers demand high quality health care services at reasonable and affordable costs. Health care managers must find new ways to provide services to meet these requirements. Quality management constitutes an appropriate response to this challenge. It is a way to organize work flows in health care organizations as usefully as possible and to achieve an optimum outcome quality (Rad, 2005).

1.5.4.2 Adopting TQM

The quality of healthcare has been a major problem in many countries for over half a century and its origins go back much further. Finding a definition, methods of evaluation, monitoring and quality improvement have been key issues for both researchers and healthcare professionals. Based on a definition offered by Lee and Jones (1993), Donabedian (1966) concludes that the criteria of quality of care are mere value judgements that are applied to varying aspects of a process called healthcare (Komashie *et al.*, 2007).

Quality systems in the domain of health care have one primary aim. This aim is to improve quality and to build up the confidence of patients, professionals and cost payers in the quality of the context, the structures, the process, and the outcomes. The existence of this desire for quality has caused health care organizations throughout the world to attempt to develop a philosophy which can deliver customers the quality they require. There are several reasons for health care organizations looking for quality. These include: increasing demand for appropriate, effective and efficient health care services, need for standardization and reducing variations that increase the cost of services, reduction of increasing costs, pressure from markets, and developing markets (Rad, 2005).

Quality healthcare encompasses two major aspects of healthcare: clinical quality and service delivery quality. While clinical quality is always the major priority of customers in the healthcare industry, good service delivery quality is equally important in supporting patient care and contributing to affordability of

healthcare. The integration of Total Quality Management (TQM) principles within the healthcare system management (HSCM) framework is a key enabler for healthcare excellence. It is critical that healthcare service providers should realize that the long-term sustainability of quality healthcare services requires the adoption of innovative quality management practices, theories and techniques, not only in patient contact areas but in the overall system of healthcare delivery (Lee, P.M. 2006).

In the last 15 years or so, there have been many instances of healthcare organizations having applied the principles of total quality management (TQM) and continuous quality improvements (CQI). However, the concepts and tools of CQI did not always find acceptance among healthcare administrators and providers. Doubts such as: “How do we define and measure quality, which is a more subtle concept in healthcare?”; “Isn't quality mainly a matter of the physician making the correct decision?”; “Where is the uniform product in medical care when every patient is different?” were expressed.

According to Natarajan (2006), the National Demonstration Project (NDP) on Quality Improvement in Healthcare provides a collection of experimental projects whose purpose was to study if the TQM model will work in the healthcare setting. The NDP brought together 21 experts in quality management to work with a leadership team in 21 healthcare organizations represented by health maintenance organizations (HMOs), hospitals, and group practices in the US. The experiences

of the participating organizations contributed to the following important lessons learned:

- Quality improvement tools can work in healthcare.
- Cross-functional teams are valuable in improving healthcare processes.
- Data useful for quality improvement abound in healthcare.
- Costs of poor quality are high, and savings are within reach.
- Involving physicians is difficult.
- Training needs arise early.
- Non-clinical processes draw early attention.
- Healthcare organizations may need a broader definition of quality.
- In healthcare, as in other industries, the fate of quality improvement is first of all in the hands of leaders.

Despite these important insights that were gleaned from these projects, as acknowledged by the initiators of the project, there were two major gaps that were associated with these projects. First, only a few project teams addressed core clinical processes. Most teams worked on business and service support processes such as appointment waiting times, Medicare billing, patient discharge processes, and the hiring and training of nurses. Interestingly enough, not even one of the teams measured success in terms of improved health status of the patient! Another gap was that the projects did not try to change the organizational cultures.

1.5.4.3 Reasons of Failure

It is not as smooth or successful as in the manufacturing or service industries to adopt TQM in the health care industry. To the health care organizations, there are barriers from the cultural background and the traditional professional/powerful style of leadership among physicians during the implementation of TQM.

According to many researchers: Short and Rahim, 1995; Lin and Glouising, 1995; Zabada *et al.*, 1998; Geber, 1992; Morrison and Heineke, 1992; Boerstler *et al.*, 1996, the reasons for TQM failure in healthcare industry can be summarized as follows:

- **Organizational structure:** Traditionally, the health care organizations use “functional-hierarchical structure” as the base. It will cause poor communication between sections.
- **Leadership style:** Most leaders of health care organizations are specialized in their professionalism with authority. The “unchallengeable” leadership cannot allow them to accept the opinions from their subordinates.
- **Organization culture:** The health care organizational structure and leadership style create a highly hierarchical, bureaucratic, and authoritarian culture. It conflicts with the ideal of empowerment.
- **Professional autonomy:** The physicians, medical technicians, and clinical professionals work independently in their fields. The whole process is also very sectionalized. It is difficult to coordinate mutually with others as a

team. Furthermore, different departments might have different points of view on TQM.

- ***Lack of consensus:*** This is because the physicians might misunderstand that TQM practices are just helpful for the administrative efficiency and the service quality, but not be applicable for medical treatment. Thus, they do not have strong enthusiasm for the adoption of TQM.
- ***Internal requirements domination:*** The health care organizations tend to focus on their internal requirements for medical treatment rather than the customers' needs. To them, the medical treatment processes and the requirements from their profession are always given priority over others.
- ***Efficiency-oriented:*** The major income for the medical professionals is based on the numbers of surgeries and clinical treatments. The medical professionals are aiming at the quantitative performance instead of the qualitative performance. Such bias tends to affect their understanding about patients' conditions and leads to some improper judgments, resulting in poor quality of medical treatment.
- ***Short-term orientation of administrators:*** Adopting a piecemeal, rather than a systematic approach to the implementation process of quality improvement efforts and initiatives.
- ***Resistance to change and short-term thinking:*** Staff and especially doctors either did not understand these initiatives or were not involved throughout the implementation process. Therefore, they resisted these initiatives.

- ***Short-term rather thinking to dictate strategic decisions and actions:***

Healthcare administrators allowed short-term rather than long-term thinking to dictate their strategic decisions and actions. They simply allowed the myth that quality leads to increased cost to shape their commitment to quality improvement and TQM. In this context, many healthcare administrators did not believe that TQM adoption can translate into a better organizational performance in terms of dollars and cents and a strategic advantage.

1.5.5 TQM Studies in Healthcare

1.5.5.1 A Case of a South Indian Hospital

The Malcolm Bridge National Quality Award (MBNQA) has evolved from a means of recognizing and promoting exemplary quality management practices to a comprehensive framework for world-class performance, widely used as a model for improvement. Meyer and Collier (2001) empirically tested the Baldrige Model of quality management for the health care industry using data from 220 US hospitals and determined the causal relationships among the Baldrige Health Care pilot criteria. The six criteria are: leadership, strategic planning, customer and market focus, measurement, analysis and knowledge management, human resource focus, process management and business results. Therefore Manjunath *et al.* (2007) judged that the MBNQA health care criteria would provide a good framework to analyze quality management practices in a 300-bed hospital in

South India that has obtained ISO certification and strives for continuous improvement based on TQM principles.

Method & Data analysis

The Question items from the criteria of MBNQA were used as a tool to evaluate quality at the Hospital. Top-level management, senior consultants, clinical and non-clinical heads of departments were part of the study as they are responsible for guidance, implementation of quality initiatives and achievement of results. A Likert scale of 1 to 10 was used to rate each question with 1 being “no quality program in place” to 10 being “completion of the project”. Respondents' ratings were averaged for each sub criteria (R) of MBNQA. The average rating was converted to MBNQA points with reference to its maximum points. $R = \text{average rating for each sub criteria (ratings from all respondents were considered)}$. $\text{MBNQA points for case hospital} = R/10 \times \text{Max MBNQA points}$. The hospital scoring more than 750 MBNQA points (out of 1,000) is judged to be performing at golden level.

Analysis of Results

1- Overall “*leadership*” criterion points were found to be high (103 out of 120 MBNQA points). The hospital has effectively implemented the leadership's vision even though it has a top-down structure at the outset. Leadership vision is “to make the hospital a Mayo Clinic of India” and one senior consultant noted “... the chairman is a man with great foresight and intellect”.

2- *Strategic planning* areas include setting up of high quality standards, improving organ transplant/donor availability, education of Insurance companies for customizing medical insurance schemes and tapping the international market. This is clearly reflected in its MBNQA points of 68 out of 85.

3- *Focus on patients, other customers and markets* is highlighted in the use of patient satisfaction survey and feedback forms effectively. Score for patient/market focus is quite high with 68 MBNQA points (out of 85).

4- *Measurement, analysis and knowledge management* of medical care procedures and outcomes are given primary importance. This is one area where the hospital is presently rated rather low with 54 MBNQA points out of 90.

5- *Human resource development* is judged to be highly effective based on training, continuous learning and professional development activities carried out in this hospital. This is one of the best-reported areas of hospital performance and highlights the importance of human resource development in quality management. The MBNQA score on staff focus is 78 out of 85.

6- *Health care process management* involves department procedure/protocols written (and documented) and key processes monitoring. Standard operating procedures (SOPs) for emergency, laboratory, routine admissions and registrations, etc., are in place. Overall process management is judged to be good (68 out of 85 MBNQA points), however, improvements such as incorporating

data analysis into improving care processes are needed which the senior managers felt would improve with computerized information system.

Organizational performance results as per the reporting of the managers are comparable to any multi-specialty hospital in India. The hospital obtained 314 out of 450 MBNQA points, which reflects good performance. The customers including patients, employees and others like suppliers are highly satisfied as understood from loyalty and work performance results. The hospital's reputation and good quality services have been a major attraction to different groups of customers. Overall, this case hospital 753 MBNQA points (out of 1,000) is judged to be performing at golden level.

1.5.5.2 A Survey of TQM in Iran

Methodology

The purpose of the descriptive and cross-sectional study conducted by Ali Mohammad Mosadegh (2005) was to investigate the success of TQM and barriers to its successful implementation in health care organizations in Isfahan province, Iran, 2005. The health care settings for this study included 90 health care organizations which implemented TQM within Isfahan province.

Eight most common principles of TQM were chosen for inclusion in the questionnaire. These included: leadership and management, strategic planning, focus on customer and market, focus on employees, focus on suppliers, focus on material resources, process management, and performance results. It was decided

to use six point Likert scales to measure the responses to each item (5=very high, 4=high, 3=medium, 2=low, 1=very low and 0=no effect). A total of 52 items were retained in the final version of the questionnaire.

In total, five domains of TQM barriers were defined. These included:

1. Human resource problems;
2. Performance appraisal problems;
3. Strategic problems;
4. Structural problems; and
5. Process problems.

It was decided to use six point Likert scales to measure the responses to each item (5=very high, 4=high, 3=medium, 2=low, 1=very low and 0=no effect). A total of 30 items were retained in the final version of the questionnaire.

Results

The mean score of TQM success in health care organizations was 3.50 ± 0.68 . The following table displays the results of the TQM principles questionnaire:

<i>TQM Principles</i>	<i>Mean(SD)</i>	<i>Implementation (%)</i>				
		<i>Very Low</i>	<i>Low</i>	<i>Medium</i>	<i>High</i>	<i>Very High</i>
Process Management	3.74 (0.74)	3.6	7.3	23.6	47.3	18.2
Focus on Customers& Market	3.68 (0.79)	3.6	5.5	27.3	45.4	18.2
Focus on Employees	3.66 (0.69)	3.6	7.3	23.6	49.1	16.4
Leadership& Management	3.59 (0.74)	3.6	7.3	23.6	54.6	10.9
Strategic Planning	3.51 (0.77)	3.6	10.9	36.4	38.2	10.9
Focus on Material Resources	3.44 (0.72)	3.6	18.2	36.4	32.7	9.1

Performance Results	3.32 (0.76)	7.3	10.9	36.4	38.1	7.3
Focus on Suppliers	3.27 (0.76)	12.7	14.6	23.6	41.8	7.3
<i>Total</i>	3.50 (0.68)	3.6	10.9	21.8	56.4	7.3

In correlation analysis between success of TQM and TQM principles, process management ($r=0.966$), and focus on employees ($r=0.962$) had positive and most effect, and focus on material resources ($r=0.886$), and focus on suppliers ($r=0.880$) had less effect respectively. This relationship was statistically significant in all of cases ($p=0.00$).

The mean score of TQM implementation problems in health care organizations was 3.01 ± 0.83 (medium) on a five scale. The following table summarizes the results of the TQM barriers questionnaire:

<i>TQM Barriers</i>	<i>Mean(SD)</i>	<i>Implementation (%)</i>				
		<i>Very Low</i>	<i>Low</i>	<i>Medium</i>	<i>High</i>	<i>Very High</i>
Human Resource Problems	3.37 (0.92)	10.9	12.7	30.9	29.1	16.4
Performance Appraisal	3.05 (0.94)	14.5	16.4	32.7	29.1	7.3
Strategic Problems	2.97 (0.69)	20	16.4	38.1	16.4	9.1
Structural Problems	2.87 (0.88)	20	20	45.4	9.1	5.5
Process Problems	2.80 (0.86)	20	23	40.7	14.5	1.8
<i>Total</i>	3.01 (0.83)	16.4	18.2	34.5	25.4	5.5

In correlation analysis between barriers of TQM Implementation and its problems dimensions, human resource problems ($r=0.960$), strategic problems ($r=0.951$), and structural problems ($r=0.940$) had positive and most effect, and performance

appraisal ($r=0.930$), and process problems ($r=0.911$) had less effect respectively.

This relationship was statistically significant in all of cases ($p=0.00$).

Discussion

The results have shown that the overall success of TQM from the viewpoints of managers of Isfahan health care organizations was medium. TQM had the most effects on process management, focus on customers and focus on employees.

TQM leads to improvements in some area such as senior management commitment to quality and customer satisfaction, managers' direct participation in improving organization management system, clarity of process and activities procedure, measuring customer satisfaction, improving the relationship between employees and organization, development of knowledge and merits of employees, determining personnel performance criteria and measuring it as personal and group work performance.

The failure of TQM can be due to two main reasons: methodology and implementation. Some times the techniques and tools which are used is not suitable or enough for improvement of processes. So, this TQM model and strategy can not succeed. On the other hand, the failure may be because of inappropriate implementation of a good model of TQM. The failed implementation of TQM is due to several factors. Besides the difficult achievement of TQM practices, one of them is that TQM has been a rather diffuse concept, with many vague descriptions, and that management does not have a complete picture of what TQM really means.

Human resources problems were the most important barriers to successful TQM implementation. Human resources barriers in these organizations included lack of effective and efficient employees for implementation of TQM, lack of non-monetary motivation mechanisms for developing employees' participation in TQM activities, low wages and salaries and cultural problems. Also as revealed in several studies, training, education, and teamwork are critical factors to successful TQM implementation.

1.5.5.3 Provider-perceived dimensions of TQM in healthcare

Methodology

The study was conducted by Mayuri Duggirala, Chandrasekharan Rajendran, R.N. Anantharaman (2008). The purpose of the study is to highlight the key dimensions of provider-perceived total quality management in the healthcare sector in India. Further, the impact of the dimensions of provider perceived TQM on hospital performance is examined.

The literature review has revealed key constructs of quality in health care as viewed by the providers of care, namely the doctors, nurses, paramedical and support staff of a hospital. On the basis of the identification of critical factors of health-care quality, a questionnaire is framed to bring out the key operating elements of TQM in health care. This questionnaire has been administered to a small sample of respondents involved in healthcare management, who have tested the questionnaire for its validity. Based on the responses obtained from the pilot

survey, changes have been made to the questionnaire, as considered appropriate, and the final questionnaire has been framed. The final and complete questionnaire with the 107 items represents the following 14 dimensions of TQM in healthcare:

1. Top management commitment and leadership (TM).
2. Human resource management in the hospital (HR).
 - Selection (HRS).
 - Training (HRT).
 - Employee involvement (HRE).
3. Process management (PM).
 - Ease of access to the hospital, and ease of admission processes and procedures (PME).
 - Administrative services (PMR).
 - Processes: administrative and clinical (PMA).
 - Exit (PMX).
 - Clinical outcomes of medical care (PMC).
4. Hospital facilities and infrastructure (HF).
5. Patient focus (PF).
6. Employee focus (EF).
7. Measurement of hospital performance (MH).
8. Hospital information system (HIS).
9. Errors, safety and risk management (EM).
10. Service culture (SC).
11. Continuous improvement (CI).

12. Benchmarking (BM).
13. Union influence (UI).
14. Governance and social responsibility (GS).

The designed questionnaire has administered to the respondents in government and private hospitals located in major cities in the states of Tamil Nadu and Gujarat in India. The states have been chosen for the sake of operational ease and viability, from the standpoint of the researcher. The respondents included medical, nursing, and paramedical and support staff of the hospitals surveyed. A total of 100 responses have been obtained after sending out 300 questionnaires to different hospitals across India. This yielded a response rate of 33 percent. The questionnaires have been sent to more than one person in a hospital to get a more comprehensive perspective of quality practices in the hospital. Questionnaires have also been sent out by post to a few of the hospitals, especially those located in areas distant from the capital cities of Tamil Nadu and Gujarat, which would have been otherwise been time consuming for the researcher for data collection.

Goodness of measures

Reliability refers to the extent to which a variable or a set of variables is consistent in what it is intended to measure. The rationale for internal consistency is that the individual items or indicators of the scale should all be measuring the same construct and thus highly intercorrelated. The Cronbach's alpha measure is a widely used reliability coefficient that assesses the internal consistency of the entire scale. In the Indian study, TQM in health care is measured using different

dimensions of TQM, each of which is measured by several items, and hence computing the Cronbach's alpha or the coefficient alpha to measure the internal consistency of each dimension is justified. The generally agreed-upon lower limit for Cronbach's alpha is 0.70 (Hair *et al.*, 1998). The Cronbach's alpha values for each of the 14 provider-perceived TQM dimensions in hospitals turned out to be above 0.75, indicating a strong reliability of the questionnaire.

Validity refers to the degree to which a scale measures what it purports to measure. Different forms of validity testing are available to ensure that the instrument actually measures what it purports to measure.

Content validity subjectively assesses the correspondence between the individual items and the concept through ratings by expert judges, pretests with multiple subpopulations, or other means. The content validity of the questionnaire used has been ascertained through a pilot survey among doctors and health administrators, who have offered their views and suggestions with regard to the content of each of the dimensions included in the questionnaire. Changes based on their feedback have been made, as appropriate.

Convergent validity assesses the degree to which two measures of the same concept are correlated. The Bentler-Bonett indices are computed for each of the 14 dimensions of provider-perceived TQM in hospitals, and it is found that they are 0.90 and above, indicating a strong convergent validity of the questionnaire (Bentler and Bonett, 1980).

Criterion validity reflects whether a scale performs as expected in relation to other variables selected as meaningful criteria (criterion variables) (Malhotra, 2004).

One form of criterion validity is concurrent validity. Patient Focus and Employee Focus are chosen as the outcomes of TQM implementation in health care. A multiple correlation is carried out among all the constructs and it is seen that all the dimensions have significant positive correlations with the two criteria chosen, namely, patient focus and employee focus. All the bivariate correlations of the dimensions with the criteria chosen are significant at the 0.01 level. Thus, the concurrent validity, and consequently the criterion validity of the questionnaire, is established.

Results

The bivariate correlations examined among the 14 dimensions highlight the fact that TQM is a holistic philosophy and that all the dimensions of TQM are relevant in successfully implementing a TQM program in a hospital. TQM has been found to be an integrated approach with a lot of interdependence among its dimensions. This interdependence is reflected clearly in the bivariate correlation analysis done.

The correlations revealed that TM is significantly highly correlated with HR, PM and CI. This finding highlights the importance of the role of the top management in managing human resources effectively in an organization. This is especially critical in a sector like health care, where the number of cases handled per day is very high, and also of a varied nature. This characteristic of the health-care sector makes it important for teamwork among the medical and support staff of a

hospital. In order to create an atmosphere of teamwork and cooperation among the hospital employees, it is the responsibility of the top management to reward teamwork among clinical and non-clinical staff. This relationship between the top management and staff in a hospital is reflected in the high bivariate correlations between TM and HR (0.886). It also indicates that the top management has been successful in selection, recruitment of the right personnel for the right job; offers appropriate training for different medical and non-medical staff, and has been able to create an atmosphere of involvement among employees. TM is also significantly highly correlated with PM which is a crucial dimension in the evaluation of a service (Leer *et al.*, 1995). Effective process management is critical to the functioning of any organization. A complex and multi-faceted environment like health care has numerous interdependent processes, which are both clinical and administrative in nature. These processes need to be managed effectively in order to deliver quality medical care to the patients. The correlation between TM and PM has found to be fairly high at 0.859, indicating that the top management has been effective in hospitals in being able to manage the hospital processes efficiently, and in a patient-friendly manner.

High correlations are also noted between HR and PM (0.878), HR and HIS (0.833) and HR and CI (0.812). Other high correlations are found between PM and HIS (0.854), PM and CI (0.817), PM and MH (0.823) and PM and PF (0.846). HF is highly correlated with PF (0.809); PF is highly correlated with MH (0.815) and with CI (0.832). MH and CI are highly correlated at 0.863, showing that the philosophy behind a hospital collecting measures of its performance is

continuous improvement. The study underlines the high correlations between PF and PM (0.846), PF and CI (0.832), PF and MH (0.815), PF and CI (0.832) and PF and HF (0.809). This shows that the patient is the main focus in functioning of core areas such as process management, continuous improvement, measurement of hospital performance and hospital facilities and infrastructure. This is to be expected, and is an encouraging finding, since it reflects the patient-friendly attitude of hospitals covered as part of this study. All the bivariate correlations among the 14 dimensions are significant at the 0.01 level (2-tailed) (except for the one between UI and GS). It is rather unexpected that the correlation between UI and GS is not significant. This is possibly due to the reason that in government hospitals, unions are seen to be following the philosophy of societal responsibility in their functioning, and that in private hospitals, the unions do not seem to play a dominant role in hospital functioning, compared to their counterparts in the government sector.

Impact of the 14 provider-perceived dimensions of TQM in healthcare on hospital performance was examined. In order to analyze the impact on hospital performance, the 14 dimensions are taken as predictors and the level of performance of the hospital is considered as the dependent variable. The level of hospital performance is operationalized in terms of seven dependent variables: patient satisfaction with overall quality of healthcare provided by the hospital to the patients over the last 1 year (PTSATIS), satisfaction of doctors with respect to overall hospital functioning (DOCSAT), satisfaction of nurses with respect to overall hospital functioning (NURSESAT), satisfaction of paramedical and

support staff with respect to overall hospital functioning (PARASAT), level of overall financial performance of the hospital (FINPERF), level of medico-legal cases against the hospital (MEDILEG), and level of recognition of the hospital in society (RECOG) (all these variables have been rated in the seven-point Likert scale). These performance indicators emerged after an extensive literature review and during the pilot survey among experts in the field of healthcare to identify critical dimensions of hospital performance.

Keeping in mind several studies in the literature done on TQM and operational and organizational performance, the following are examined:

- impact of the provider-perceived dimensions of TQM in hospitals on the performance of the hospital; and
- identification of the dimensions that have a significant impact on the hospital performance.

The dependent variables of level of medico-legal cases (MEDILEG) against the hospital and the level of recognition of the hospital in society (RECOG) emerged as indicators of hospital performance, during interviews with experts carried out to establish the content validity of the 14 dimensions of TQM in hospitals. To summarize, the performance of the hospital is operationalized in terms of its patient satisfaction with overall quality of care, satisfaction of doctors, nurses and paramedical staff with overall hospital functioning, level of financial performance, level of medico-legal cases and level of recognition and reputation of the hospital in society.

In order to examine the influence of the dimensions of TQM on hospital performance, it is first essential to examine if any multicollinearity exists among the variables under study. Multicollinearity is assessed by computing the “Variance Inflation Factor” or VIF for each construct. Multicollinearity is said to exist if the VIF exceeds 10 (the threshold value), which means that collinearity does not explain more than 10 percent of any independent variable's variance (Hair *et al.*, 1998). It is found that the VIF values of none of the 14 dimensions exceed 10, which means that the level of multicollinearity of the independent variables is not very high.

A multiple regression analysis has been performed by considering each of the seven dependent dimensions of hospital performance as dependent variables with all the 14 dimensions of provider perceived TQM in hospitals taken as predictors or independent variables. Thus, seven hypothesis statements were proposed testing the existence of a significant relationship between the 14 dimensions of provider-perceived TQM in hospitals and each one of the identified seven dependent variables representing the level of hospital performance. The overall regression models are found to be significant and the dimensions of TQM in hospitals have emerged as significant predictors of the seven dependent variables of hospital performance.

1.6 Theoretical Framework (Conceptual Model)

The purpose of this study is to identify the critical success factors for TQM implementation in the Palestinian healthcare organizations. By identifying the

CSFs, a substantial block of the generic framework for TQM implementation in the Palestinian healthcare is being set. Figure 1 (Baidoon, 2001) is an illustration of the generic framework for TQM implementation in the Palestinian healthcare system.

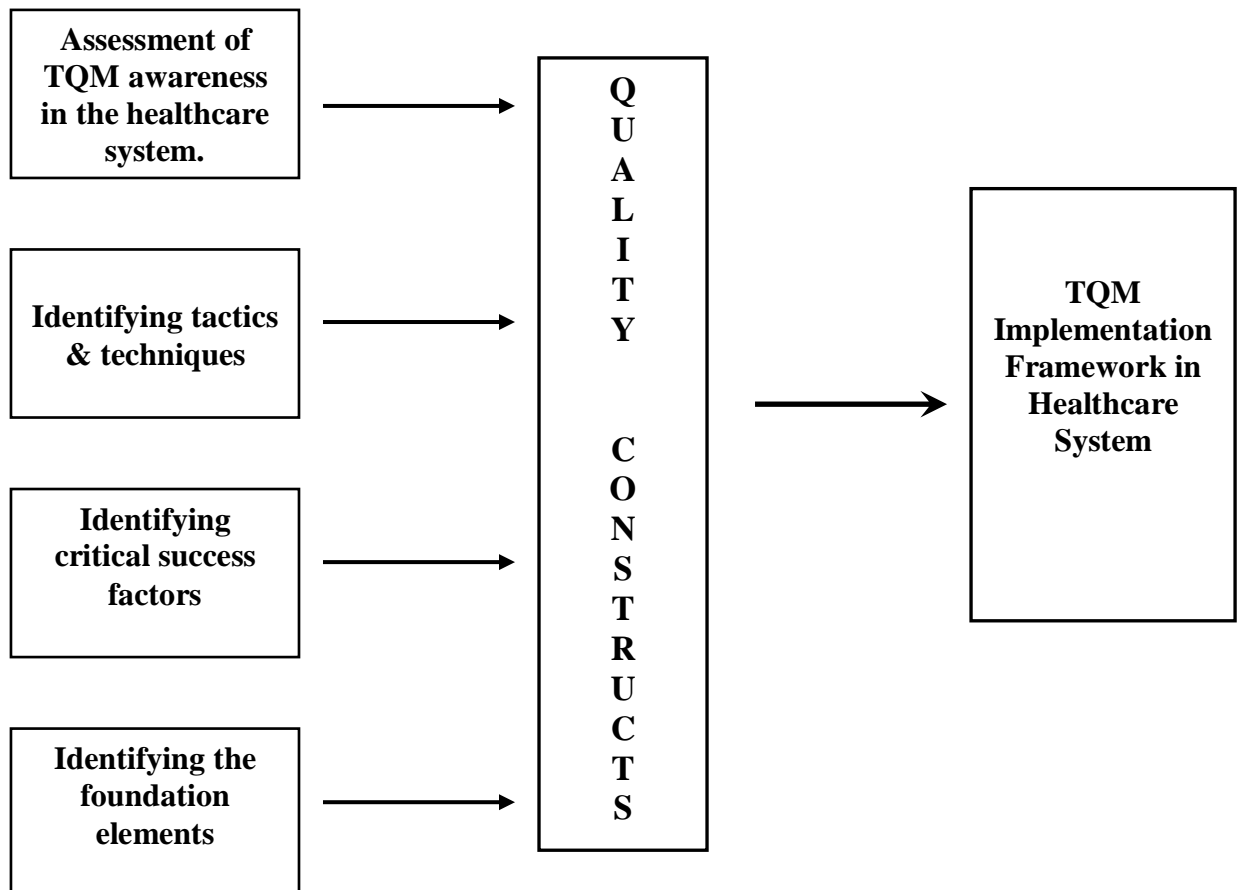


Figure 1: A generic framework for TQM implementation in the Palestinian Healthcare Sector.

1.7 Study Context: Palestinian Healthcare

As the Palestinian healthcare system is considered to be our research focus, an overview about this system would be essential. According to the Palestinian

Central Bureau of Statistics (2003) the total number of hospitals in the Palestinian territories was 73 hospitals, involving 4,979 beds, in year 2003. Nearly ninety percent of the hospitals are fully equipped and cater to the needs of the patients.

Definitely, the Palestinian healthcare system cannot be separated from the political and economical circumstances in Palestine. The health conditions in the Palestinian areas are still poor due to certain problems and difficulties which prevent giving appropriate medical care. The Palestinian healthcare system suffers from many problems and obstacles that hinder the process of development. These problems and obstacles can be summarized in the following points (Patients Friends Society, 2000):

- The available hospitals are so antiquated that they could not possibly offer appropriate medical care .For example, Alwatani hospital in Nablus is 100 years old.
- An extreme shortage in medication, equipment and ambulances.
- Very little cleanliness.
- Lack of certain medical services, such as chest surgery, nerves and radioactivity treatment.
- Lack of some medication for chronic diseases, such as heart problems.
- Inability to cope with any case of emergency.
- Medical insurance in the Palestinian areas is invalid. Many hospitals in the Palestinian areas refuse to admit people who have medical insurance because the ministry of health owes these hospitals large sums of money.

- Problems of medical staff and personnel.

The low salaries paid to medical staff in government hospitals and clinics in the Palestinian areas force many of them to leave their jobs seeking better conditions. Carelessness and bad treatment is another problem in these public health institutions.

Further to the above stated problems, it is not so amazing to tell that the health services delivered in the Palestinian healthcare is without quality and in less than the standards of the World Health Organizations. This can be attributed to the following reasons (Nasser Abu Khader, 2000):

- The factors affecting drawing policies and legislations:
 - ✓ Difficulty in the planning process and the changes in the structure of the systems of health care for the Palestinian society due to difficulty of the economic and political situation. The situation complicates the process of estimating the financial and non financial resources in anticipation of the health requirements and needs.
 - ✓ Lack of ability in strategic planning and drawing these policies.
 - ✓ Weakness in the connection between the planning departments as a national resource for drawing policies and the decision-makers in all stages for the improvement of the health sector in the Palestinian territories.

- ✓ Duplication of the main sections in the West Bank and Gaza Strip due to the separation and the difficult measures which are caused by: Deficiency of the informative, administrative and health systems historically, lack of researchers in the health sphere (it is very limited in Palestine), weakness and limitation in the health services themselves, international aid decreasing continuously and affecting several NGOs and those providing health services.
- The insufficiency and sometimes lack of experience of the health staff working in management of international projects.
- Misdistribution of services.
- Insufficiency of infrastructure.
- Insufficient training in this sphere.
- Disconnection between some projects operations and the work of the ministry of health (MOH)
- Other factors include the political, economic and social effects.

According to the above discussion, it is clear that the Palestinian healthcare system is in a crucial situation and the quality it delivers is considered to be below the standards and requirements. Therefore, some corrective actions should be taken in order to rescue the healthcare system and improve its quality of services:

- Increasing the human resources operating and working in the health sector and fostering better experience.
- Application of regulations and legislations.

- Creating educational programs and better training.
- Increasing the investments in the health care system.
- Creating and generating health policies and alternatives.
- Controlling, monitoring, and reevaluating the services.
- Application of the administrative policies and procedures.
- Rewarding and motivating the workers and employees in this sphere.
- Teamwork (encouragement of team work spirit and enhancing coordination).

Chapter Two

Research Methodology

In this chapter, the methodology followed in this study will be discussed in an elaborated manner. The study design constitutes mainly of identifying the nature and type of the research, demonstrating a sampling design process, discussing data collection method, determining the goodness of measures, and finally checking and inputting the data into the software so that to be analyzed.

2.1 Type and Nature of the Study

The purpose of our study is to measure the TQM critical success factors implementation level in the Palestinian healthcare in order to contribute to developing a viable theoretical framework for TQM implementation in that sector. Therefore, since no studies have been conducted in that area, then we are actually conducting an exploratory study in which we are obtaining a good grasp of the TQM concept through demonstrating its basic principles.

2.2 Sampling Design

According to the exploratory nature of our study, we are actually seeking a sampling design that provides us with the information sought from the right people having this information. Therefore, we have decided to consider the ISO

certification as the determinant of our sample population in order to assure a certain level of quality practices in the organization. Accordingly, our sample population consists of the 7 ISO certified hospitals in Palestine. In such a case, the only viable method for obtaining the required type of information is the non-probability multistage sampling.

In the first stage of the sampling process, we decided to consider the sample to be the same as the sample population of the study. In the second stage, four persons in certain positions within each hospital were selected purposively to be the units of analysis. These four persons are: the medical director, administration director, quality management representative (QMR), and the head of nursing unit. People filling those positions were targeted in order to get a more comprehensive perspective of quality practices in that hospital from different views and perceptions.

Among the 73 hospitals operating in Palestine, only 7 have obtained the ISO certification and consequently they comprise our sample and sample population.

These healthcare organizations are:

1. *Augusta Victoria Hospital, Jerusalem.*
2. *Saint Joseph Hospital, Jerusalem*
3. *Al-Makassed Islamic Charitable Society Hospital, Jerusalem*
4. *Saint John Eye Hospital, Jerusalem*
5. *Princess Basma Hospital for Special Needs, Jerusalem*
6. *Arab Specialist Hospital, Nablus*

7. Red Crescent Hospital, Jerusalem

The sampling design process is simplified in the below diagram.

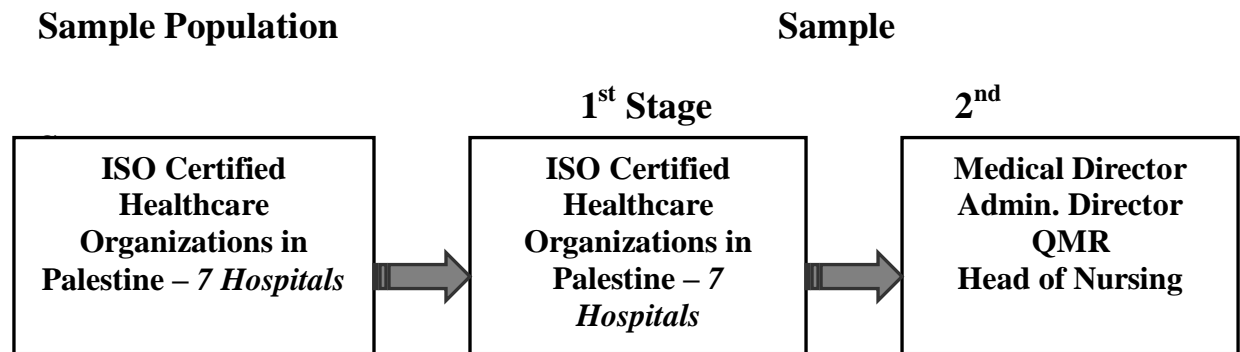


Figure 2: Sampling Design Process

2.3 Data Collection

2.3.1 Data Collection Method

Further to the literature review concerning the TQM in healthcare industry, we focused on a study conducted in India in 2008. The study highlighted the key dimensions of provider-perceived total quality management (TQM) in the healthcare sector in India. Furthermore, the impact of the dimensions of provider perceived TQM on hospital performance was examined in the study. The questionnaire designed in that study was used as the questionnaire for measuring the TQM critical success factors implementation level in the Palestinian healthcare. The reason for accrediting this questionnaire is that it was constructed based on a comprehensive survey of theoretical, practitioner and empirical research in this area. Moreover, it consists of some key constructs of quality in

healthcare that were not discussed or even considered in other researches.

Definitely as it is stated in the literature review, the questionnaire was tested for its validity and reliability.

The questionnaires have been sent to the administration director, medical director, quality management representative, and the head of nursing unit in each of the seven hospitals.

2.3.2 Questionnaire Design

The questionnaire is framed to measure the extent to which the following 13 quality dimensions are practiced in the Palestinian ISO hospitals using a seven point numerical rating scale (from 1 indicating very low, to 7 indicating very high):

1. Top management commitment and leadership (TM).

2. Human resource management in the hospital (HR).

- *Selection (HRS).*
- *Training (HRT).*
- *Employee involvement (HRE).*

3. Process management (PM).

- *Ease of access to the hospital, and ease of admission processes and procedures (PME).*
- *Administrative services (PMR).*

- *Processes: administrative and clinical (PMA).*
- *Exit (PMX).*
- *Clinical outcomes of medical care (PMC).*

4. Patient focus (PF).

5. Employee focus (EF).

6. Measurement of hospital performance (MHP).

7. Hospital facilities and infrastructure (HF).

8. Continuous improvement (CI).

9. Benchmarking (BNCH).

10. Service culture (SC).

11. Errors, safety and risk management (ESRM).

12. Hospital information system (HIS).

13. Governance and social responsibility (GSR).

2.4 Goodness of Measures

2.4.1 Validity

Validity tests are used to test the goodness of measures used. In other words, they test whether the measure is indeed measuring the concept it is supposed to

measure. Different forms of validity testing are available to ensure that the instrument actually measures what it purports to measure.

2.4.1.1 Content Validity

Content validity ensures that the measure includes an adequate and representative set of items that tap the concept. To put it differently, content validity is a function of how well the dimensions and elements of a concept have been delineated. *Face Validity* is considered to be a basic and a very minimum index of content validity. The content validity of the questionnaire used in our study has been ascertained by Dr. Samir Baidon and Dr. Fahoom Shalabi, who have offered their views and suggestions with regard to the content of each of the dimensions included in the questionnaire. Changes based on their feedback have been made, as appropriate.

2.4.2 Reliability

The reliability of a measure indicates the extent to which it is without bias and hence ensures consistent measurement across time and across the various items in the instrument. In other words, the reliability of a measure is an indication of the stability and consistency with which the instrument measures the concept and helps to assess the “goodness” of a measure. In our study, we are actually concerned with the internal consistency of measures which is an indicative of the homogeneity of the items in the measure that tap the construct. One popular form of examining the internal consistency is the inter-item consistency reliability.

2.4.2.1 Inter-item Consistency Reliability

This is a test of the consistency of respondents' answers to all items in a measure. To the degree that items are independent measures of the same concept, they will be correlated with one another. The most popular test of inter-item consistency reliability is the Cronbach's Alpha coefficient. Therefore, using the SPSS software cronbach's alpha coefficient was calculated for each of the 13 dimensions. The generally agreed-upon lower limit for Cronbach's alpha is 0.70 (Hair *et al.*, 1998). Table 1 shows all the cronbach's alpha values for all 13 dimensions. Most of the values are above 0.70, indicating that all the 13 measures are highly consistent.

2.5 Data Checking and Data Entry

After about three weeks of administering the questionnaire forms, responses from the seven hospitals were received. A total of 28 responses were obtained after sending 28 questionnaires to the seven hospitals. This yielded a response rate of 100 percent. Actually, all the hospitals were cooperative and showed a great interest in the topic being studied. Also, many of the quality management representatives asked to send them the results of the research as soon as it is accomplished.

The questionnaires were carefully checked and reviewed in order to ensure that all the dimensions have been fully answered and there are no missing items. Before inputting the data into the SPSS software, the items measuring each of the 13

dimensions were defined in the software. Afterwards, the data was introduced to the SPSS software application in order to be analyzed. Finally, each of the 13 quality dimensions was computed as the average of its measured items. For example, TM was computed as the average of TM1 to TM10.

Chapter Three

Findings & Conclusions

The third and final chapter would present the results achieved through conducting this study. Generally, this section will discuss the results based on four main axes: overall results by dimensions, results by respondent position within each hospital, aggregate results by hospitals, and aggregate results by respondent position. After analysis, the results will be compared to the results of other previous similar studies. Finally, the study will be ending up by drawing conclusions and providing some recommendations which are considered to be the most meaningful part of our research.

3.1 Analysis of Results

3.1.1 Overall Results

Using the 28 scores obtained for each of the 13 dimensions, a mean score was calculated for each dimension. This score indicates the degree to which the dimension is being implemented in the surveyed hospitals according to the respondents' perceptions. As shown in table 2, the most implemented dimensions were patient focus (PF) and service culture (SC) with a score of 5.88 for each. This is considered to be a high score indicating that these two quality dimensions are being very well implemented in the Palestinian ISO hospitals. Going down on

the score scale, we find a group of dimensions including HF, ESRM, GSR, and CI scoring close figures of 5.54, 5.51, 5.48, and 5.48 respectively. Still these are considered as high scores reflecting the good implementation of these dimensions in the sample. In the third tier, comes dimensions such as TM (5.38), PM (5.32), HRM (5.31), and BNCH (5.31). Slightly above the middle of the scale, HIS is found with a score of 4.63.

The standard deviations of the 28 scores from their means were also measured for each dimension. This is important in order to take an overview of the variability of the scores provided by different people in different hospitals. A standard deviation of more than 1 is considered to indicate a wide range of scores for a single dimension. As shown in table 2, measurement of hospital performance (MHP) has the highest standard deviation of 1.33. Actually, this reflects the dispersion of the 28 scores of MHP by 1.33 from their mean which is considered to be quite unreliable. Thus, the respondents from the 7 hospitals have different perceptions regarding this dimension. Less dispersed than MHP scores, employee focus (EF) and hospital information system (HIS) have standard deviations of 1.16 and 1.18 respectively. Otherwise, all the other dimensions have standard deviations of less than 1 making their calculated means more reliable and meaningful. An interesting point to notice is that the highest mean scores dimensions, PF and SC, have the lowest standard deviations of 0.57, and 0.65, emphasizing that they are actually the most agreed on quality dimensions implemented in the Palestinian healthcare.

3.1.2 Results by Respondent Position for Each Hospital

As stated earlier, the questionnaire forms have been filled by the medical director, administration director, quality management representative, and the head of nursing unit of each hospital. This diversification of respondents places the degree of the responses variability into investigation. Mean values and standard deviations of the quality dimensions have been calculated for each hospital. The results are shown through tables 3 to 9.

Augusta Victoria Hospital

According to the results in table 3, it is clear that the dimensions' scores provided by the four respondents are close to each other within a standard deviation of less than 0.5, except for HIS which has a standard deviation of 0.84 but it is still considered to be acceptable. These results show that the four respondents have quite similar perceptions of the quality practices in the hospital.

Saint Josef Hospital

As shown in table 4, the standard deviations of the respondents' quality dimensions' scores are much higher than those found in the previous hospital. Most of the standard deviations are ranging between 0.5 -1.0, which is an acceptable range but somehow indicating a slight variance in the respondents' perceptions of quality practices in the hospital.

Al-Makassed Hospital

Al-Makassed Islamic Charitable Society Hospital has the highest standard deviations of respondents' scores among all the seven surveyed hospitals. As it can be seen in table 5, the lowest standard deviation is 0.32 and the highest one is 1.81. Several dimensions including EF, MHP, BNCH, and SC have standard deviations between 1.00 and 1.81. These relatively high standard deviations reveal the extremely different respondents' views of those dimensions. This variability is the result of the low scores provided by the administration director and to a lesser extent by the QMR in relative to the high scores given by the medical director and the head of nursing unit. This can be explained either by the administration director and QMR limited awareness of the quality practices in the hospital or by the unauthentic data provided by the respondents. From my point of view, as the QMR is the best person to assess the quality issues in the hospital, the medical director and head of nursing scores are exaggerated and meanwhile the administration director scores are underrated. For the other dimensions, the standard deviations ranging between 0.5 and 1.0 are reasonable.

Saint John Eye Hospital – Jerusalem

Table 6 reveals that the standard deviations of the respondents' scores are not exceeding 1.00, except for hospital facilities (HF) which has a standard deviation of 1.28. The fact that only one dimension has a standard deviation of more than

one and the rest are ranging between 0.31 and 0.96, assures that the respondents have similar perceptions of the quality dimensions in the hospital emphasizing the authenticity of their responses.

Princess Basma Hospital for Special Needs – Jerusalem

The scores provided by the hospital's respondents are considered to be quite close to each other. As table 7 illustrates, only two dimensions have standard deviations of more than one, otherwise the remaining 11 dimensions have standard deviations of less than 1. Measurement of hospital performance (MRP) and error, safety and risk management dimensions (ESRM) have standard deviations of 1.13 each. This can be attributed to the relative low scores given by the head of nursing unit regarding these dimensions. But overall, the dimensions' scores are clustered around their means ensuring the latter's reliability.

Arab Specialized Hospital – Nablus

Based on the results presented in table 8, the Arab Specialized Hospital is definitely the most convenient hospital regarding the respondents' scores means of all dimensions. Having standard deviations of 0.12 up to 0.55, shows how clustered are the scores around their means and ensures the similar perceptions of the respondents.

Red Crescent Hospital

After the Arab Specialized Hospital, the Red Crescent Hospital is considered to be in the second place among the hospitals' respondents' lowest standard deviations. Table 9, approves this fact by standard deviations ranging between 0.10 and 0.67. These low figures indicate the close quality perceptions of the respondents and provide some convenience in accrediting the dimensions' means.

3.1.3 Results by Hospitals

The previous conducted analysis of results by respondent position in each hospital revealed that most of the dimensions' scores in most of the hospitals are slightly deviated from their means indicating respondents' similar perceptions of quality practices within their hospitals, thus ensuring the authenticity of the mean scores calculated for each dimension in each hospital. Consequently, comparing the seven hospitals scores against each other and against certain benchmarks in respect of the TQM dimensions will be of high reliability and use.

Table 10 presents a clear comparison among the degree of quality dimensions implementation in the seven hospitals. Some hospitals have an advantage over other hospitals in some dimensions and are below them in other dimensions. For example, according to the results, Saint Josef Eye Hospital is considered to be better in top management commitment (TM) than Al-Makassed Hospital, but the latter is better than the former in HRM. Therefore, it is most feasible to compare among hospitals on overall dimensions scores average basis calculated. In other

words, the compared figures should be reflecting the overall performance of the hospitals according to their respondents' perceptions. But before comparing overall hospitals averages, the deviations of each dimension from the average should be examined for each hospital in order to test how much the hospital calculated average is representative of the dimensions' scores.

As it is shown in the table, the hospitals' standard deviations are relatively low except for Princess Basma and Arab Specialized Hospitals which have standard deviations of 0.84 and 0.90 respectively, but still considered acceptable figures. Accordingly, based on quality dimensions average basis, Saint John Eye Hospital is perceived by its surveyed staff as the best performing hospital with an average score of 5.95 followed by Red Crescent Hospital scoring an average of 5.91 provided by the hospitals' respondents. In the third place comes the Augusta Victoria hospital with an average score of 5.61 and then moving downwards the hospitals are ranked as following: Saint Josef Hospital (5.37), Princess Basma Hospital (5.32), Al-Makassed Hospital (5.24), and finally Arab Specialized Hospital (4.21).

By considering the overall mean of each dimension as its benchmark, the hospitals performances in each of the 13 quality practices are illustrated in the following figures. The figure heading each pair of columns is the difference between the two scores: *Hospital Score – Benchmark* (Note: *The dark column represents the hospital score while the light one is for the benchmark*)

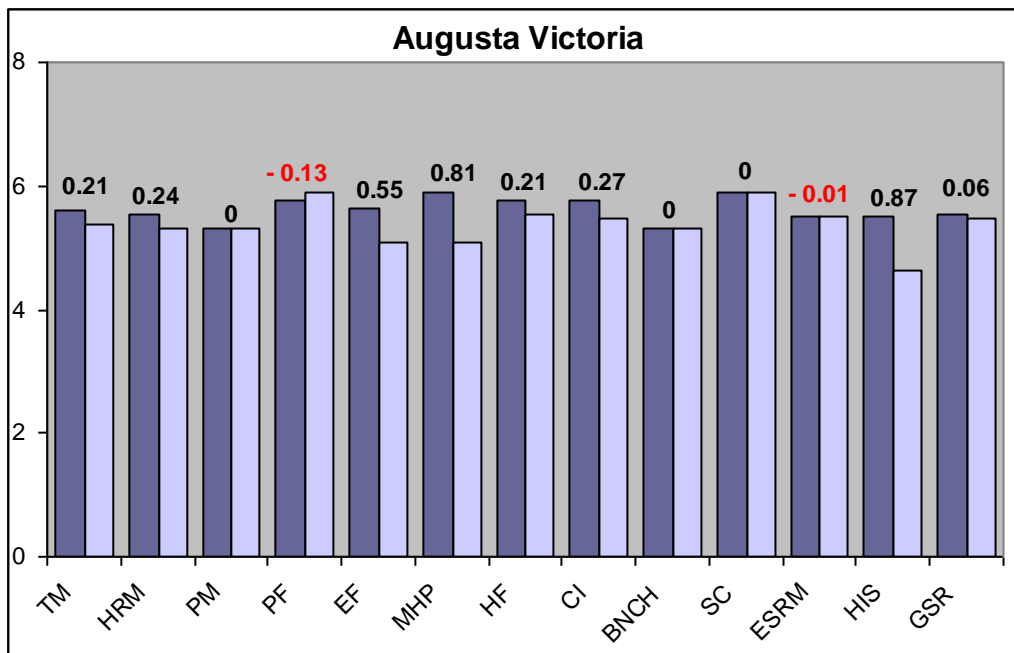


Figure 3: Augusta Victoria Hospital scores compared to benchmarks

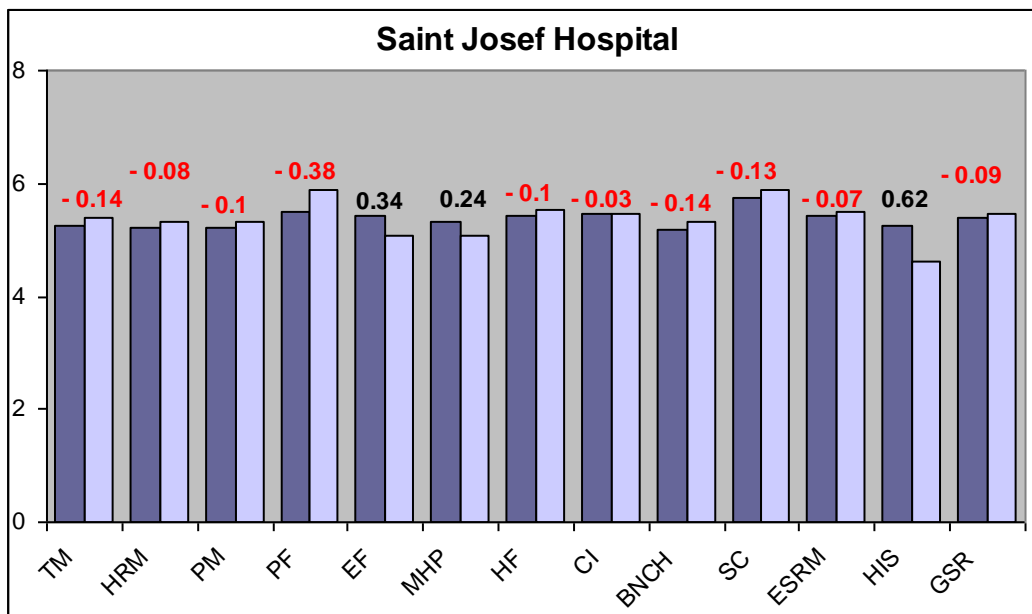


Figure 4: Saint Josef Hospital scores compared to benchmarks

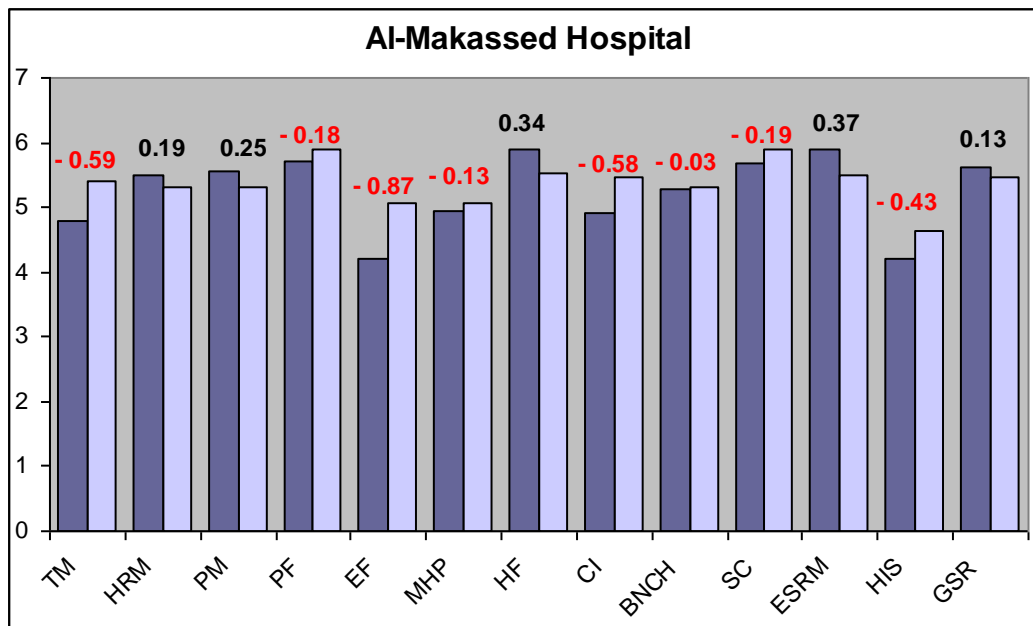


Figure 5: Al-Makassed Hospital scores compared to benchmarks

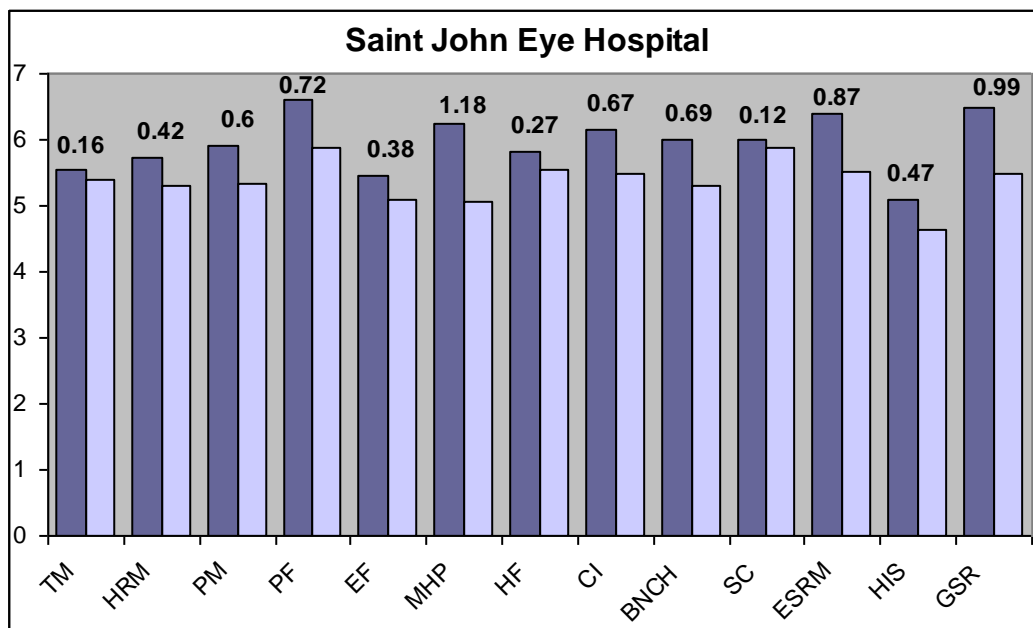


Figure 6: Saint John Eye Hospital scores compared to benchmarks

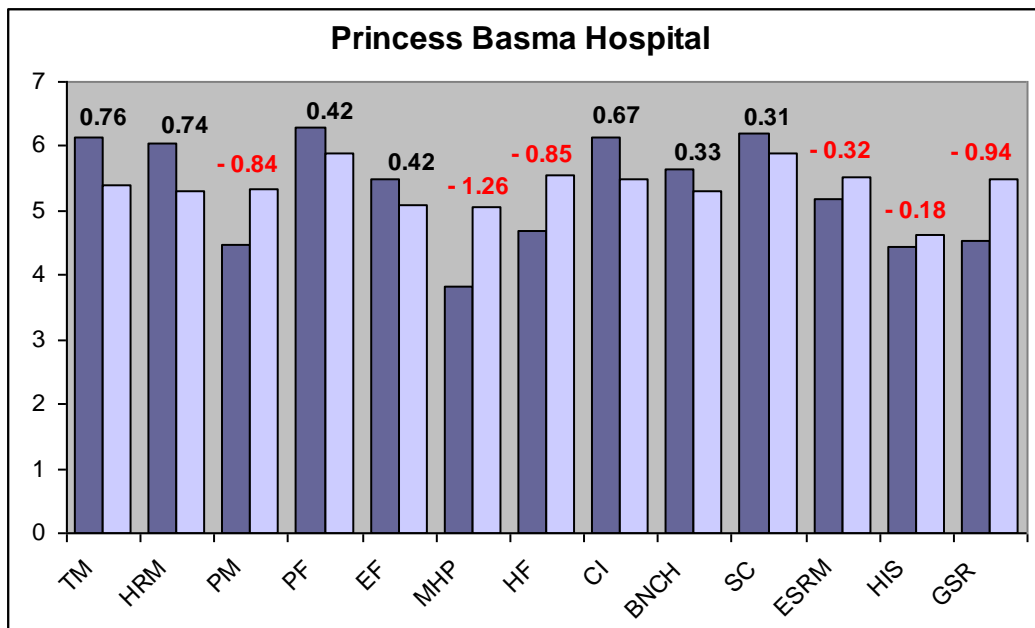


Figure 7: Princess Basma Hospital scores compared to benchmarks

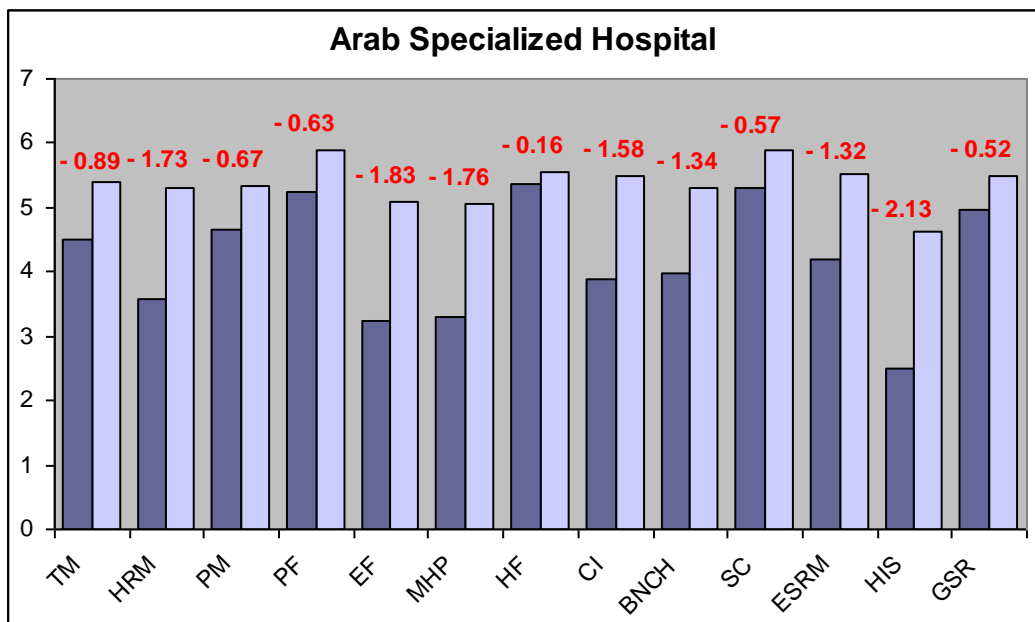


Figure 8: Arab Specialized Hospital scores compared to benchmarks

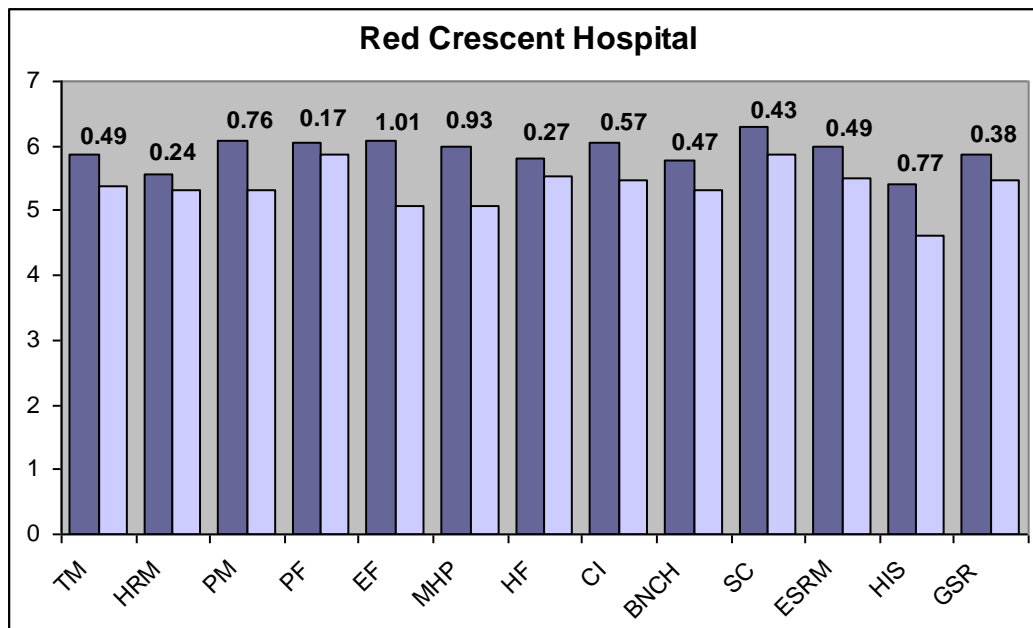


Figure 9: Red Crescent Hospital scores compared to benchmarks

3.1.4 Aggregate Results by Respondent Position

The respondent position may have an impact on the responses acquired.

Therefore, testing the correlation between the respondent position and the results would be of significant importance for the study. Tables 11 to 14 illustrate the variance between the respondent scores and the overall means for each position.

Medical Director

Table 11 illustrates the medical directors' responses in each hospital. Apparently, the mean of medical directors' responses for most of the dimensions are below the overall means, except for SC and ESRM which are above the overall mean by 0.05 and 0.10 respectively. Generally, the variance between the average of medical directors' responses means and the average of overall means is estimated

to be -0.10, indicating that the average responses of medical directors is below the average of the overall means by 0.10.

Administration Director

As shown in table 12, according to the administration directors' responses, some of the dimensions' means are over the overall means and some others are below. As a result, the variance between the average of administration directors' responses means and the average of overall means is found to be -0.02. Although this variance sounds to be small indicating the closeness of the administration directors' responses to the overall means, it is really not as it seems to be. By going through the table, it can be easily noticed that there are significant variances between the administration directors' means and the overall means for many dimensions. These negative and positive variances resulted in the small net variance.

Quality Management Representative

Regarding the QMR responses, a variance of 0.01 is estimated to be between the two averages as shown in table 13. As in the administration director case, this figure does not truly reflect the variance between the dimensions' means. As it can be seen from the table, there are significant positive and negative variances between the QMR responses means and the overall means for dimensions such as HRM, PM, CI, and HIS.

Head of Nursing Unit

As shown in table 14, there are significant positive and negative variances between the head of nursing unit responses' means and the overall means for some dimensions including EF, MHP, HIS, GSR. The variance between the averages of the two means is estimated to be 0.09.

3.2 Comparison against Regional Studies

After analyzing the results acquired from the study, an important and insistent question comes up: ***“Where does the Palestinian Healthcare Sector stand in comparison to its counterparts in other developing countries?”***

The comparison against healthcare sectors in developed countries is not taken into consideration due to the extreme gap between the awareness of total quality management in those countries and its state in our developing countries. This gap is due to the difference in the economical, industrial, political, and cultural situations between the two sides. Since 1990, TQM methods have been applied in a number of hospitals, clinics and health organizations in Europe and towards the end of the 1990s the approach has become more widespread, while in the developing countries and particularly in the Middle East Region, the concept has been recently known and it is still in its very early stages. Therefore, the findings of our study will be compared to the results of three studies previously discussed in the literature review.

I – A Case of a South Indian Hospital

The MBNQA health care criteria was used in the Indian study as the framework to analyze quality management practices in a 300-bed hospital in South India that has obtained ISO certification and strives for continuous improvement based on TQM principles. The average rating of each practice obtained from a Likert scale of 1 to 10 was converted to MBNQA points with reference to its maximum points. The hospital scoring more than 750 points (out of 1,000) is judged to be performing at golden level. In order to get out with a meaningful comparison, the overall results of our study were also converted to MBNQA points using the following formula:

(Dimension Score / 7) x Max. MBNQA points.

Only shared quality practices between the two studies are involved in the comparison process.

As it is shown in table 15, the five compared quality practices are almost implemented to a similar degree in the two studies. Out of 465 points, the Indian hospital has a total score of 371 points, while the surveyed hospitals in our study scored a total of 358 points. This convergence of results indicates that the level of implementation of the measured five TQM practices in the Palestinian ISO hospitals as perceived by the respondents is so close to that in the Indian ISO hospitals.

II – A Survey of TQM in Iran

One of the purposes of the Iranian study conducted in 2005 was to investigate the success of TQM implementation in health care organizations in Isfahan province, Iran. The health care settings for the study included 90 health care organizations which implemented TQM within the province. A five point Likert scale was used to measure the responses to each quality item (1 very low to 5 very high).

Therefore, the results of both our study and the Iranian study were converted to percentage grades (out of 100). Also, as in the previous comparison, only shared quality practices between the two studies are involved in the comparison process.

As it can be seen in table 16, the quality dimensions' scores obtained from the Palestinian study are higher than the scores of the Iranian study except for employee focus practice with a slight difference of 0.6%. On average basis, the Palestinian ISO hospitals achieved a grade of 76.4 out of 100, while the hospitals which implemented TQM in Isfahan province scored 71.96 out of 100. These figures reveal that according to the respondents' perceptions, the ISO Palestinian hospitals are implementing the TQM practices at a higher level than the Iranian hospitals which are actually implementing the TQM approach.

3.3 Conclusions & Recommendations

According to the results and comparisons discussed above, certain number of conclusions can be drawn from this study. Afterwards, recommendations should be provided in order to benefit from these findings practically.

Generally, all the quality dimensions measured were found to be highly implemented in the surveyed hospitals. These findings indicate that the Palestinian ISO hospitals are not so far from having continuous improvement based on the TQM principles. Definitely, there are certain variations among the hospitals that should be considered. According to the results analyzed for each hospital, it was clear that the responses of the four respondents were similar to a high extent except those for Al-Makassed hospital which were somehow dispersed. This gives an accreditation to the information obtained and consequently to the results achieved. Also, no significant correlation was observed between the responses and the respondents' position.

Comparison among the seven hospitals on scores average basis obtained from the four respondents, resulted in the following descending order:

- 1- Saint John Eye Hospital (5.95)
- 2- Red Crescent Hospital (5.91)
- 3- Augusta Victoria Hospital (5.61)
- 4- Saint Josef Hospital (5.37)
- 5- Princess Basma Hospital (5.32)

6- Al-Makassed Hospital (5.24)

7- Arab Specialized Hospital (4.21)

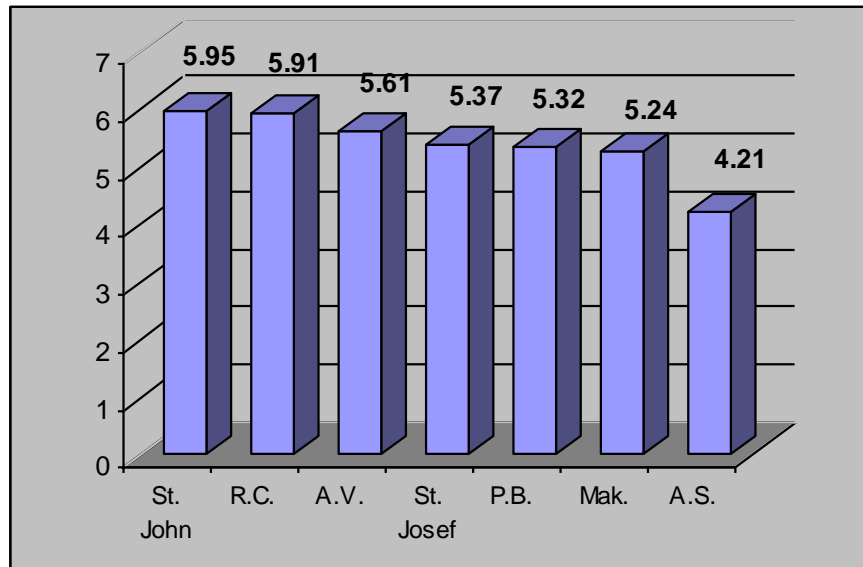


Figure 10: Average Scores of the Seven Surveyed Hospitals.

According to the comparisons with two similar studies in India and Iran, we may be able to say that our Palestinian ISO hospitals are implementing the TQM critical success factors at the same level of its counterparts' implementation. Therefore, the Palestinian Healthcare Sector is not so far from adopting the TQM system as the critical success factors which are considered to be the base of this approach are perceived to be implemented in the Palestinian ISO hospitals.

Based on the hospitals' scores comparison against quality dimensions' benchmarks (figures 3 to 9), some hospitals should focus more on certain quality practices in order to improve the current weaknesses in implementing these

dimensions as perceived by their surveyed staff members. The recommendations that could be provided to the hospitals are as follows:

- Al-Makassed Hospital should enhance its practices in the TM, EF, MHP, CI, and HIS dimensions.
- Princess Basma Hospital should develop the PM, MHP, HF, HIS, GSR dimensions.
- The Arab Specialized Hospital should improve its performance in all the quality dimensions.

References

- Ahire, S.L., Golhar, D.Y., Waller, M.A. (1996), "Development and validation of TQM implementation constructs", *Decision Sciences*, Vol. 27 No.1, pp.23-56.
- Alavi, J., Yasin, M. (2008). *The role of quality improvement initiatives in healthcare operational environments*. www.emeraldinsight.com
- Aly, M. (1995), "Developing a culture for benchmarking in the Middle East: what are the most critical factors?", in Kanji, G. (Eds). *Total Quality Management, Proceedings of the First World Congress*, Chapman & Hall, London, pp.513-16.
- Anderson, C.A. (1992), "Curing what ails US healthcare", *Quality Progress*, Vol. 25 No. 4, pp.35-8..
- Anderson, J.C., Rungtusanatham, M. Schroeder, R.G. (1994), "A theory of quality management underlying the Deming management method", *Academy of Management Review*, Vol. 19 No.3, pp 472-509.
- Babbar, S., Aspelin, D. (1994). *TQM? It's as Easy as ABC*. www.emeraldinsight.com
- Badri, M.A., Davis, D., (1995), " A study of measuring the critical factors of quality management", *International Journal of Quality & Reliability Management*, Vol. 12 No. 2, pp.36-53.
- Baidoon, S. (2001). *An empirical study of Total Quality Management (TQM): A generic framework of implementation in Palestine*. Bradford University.
- Bergman, R. (1994), "Non-for-profits may get a shot at prestigious quality award", *Hospitals & Health Networks*, Vol. 68 No. 7, pp.82.

- Becker, S.W. (1993), "TQM does work; ten reasons why misguided attempts fail", *Management Review*, pp.32-33.
- Bentler, P.M., Bonett, D.G. (1980), "Significance tests and goodness of fit in the analysis of covariance structures", *Psychological Bulletin*, Vol. 88 pp.588-606.
- Binney, G. (1992), *Making Quality work. Lessons from European's Leading Companies*, The Economist's Intelligence Unit, London.
- Black, S., Porter, L.J. (1995), "An empirical model for total quality management", *Total Quality Management*, Vol. 6 No. 2, pp 149-64.
- Boerstler, H., Foster, R.W., O'Connor, E.J., O'Brien, J.L., Shortell, S.M., Carman, J.M., Hughes, E.F.X (1996), "Implementation of total quality management conventional wisdom versus reality", *Hospital & Health Services Administration*, Vol. 41 pp. 143-59.
- Brashier, L., Sower, V., Motwani, J., and Savoie, M. (1996). *Implementation of TQM/CQI in the health-care industry*. www.emeraldinsight.com
- Briggs, S., Keogh, W. (1999), "Integrating human resource strategy and strategic planning to archive business excellence", *Total Quality Management*, Vol. 10 No. 4/5, pp.S447-53.
- Bruun, P., Hefford, R. (1996), "A framework of selecting and introducing appropriate production technology in developing countries", *International Journal of Production Economics*, Vol. 46-7 pp. 197-209.
- Byrne, B.M. (1994), *Structural Equation Modelling with EQS and EQS/Windows-Basic Concepts, Applications and Programming*, Sage, Thousand Oaks, CA, .
- Chattopadhyay, S., Szydlowski, S. (1999). *TQM implementation for competitive advantage in healthcare delivery*. www.emeraldinsight.com

- Claver, E., Tari, J.J., Molina, J.F. (2003), "Critical factors and results of quality management: an empirical study", *Total Quality Management*, Vol. 14 No.11, pp.91-118.
- Clements, M. (1993), "The growing crisis in healthcare", *Parade*, pp.4-6
- Crosby, P.B. (1979), *Quality is Free: The Art of Making Quality Certain*, Hodder & Stoughton, New York, NY, .
- Curry, A., Kadasah, N. (2002). *Focusing on key elements of TQM – evaluation for sustainability*. www.emeraldinsight.com
- Dale, B.G. (1999), *Managing Quality*, Blackwell Business, Oxford, .
- Dale, B.G. (1999), "TQM: an overview", in Dale, B.G. (Eds), *Managing Quality*, Blackwell Business, Oxford, .
- Dayton, N.A. (2003). *The demise of total quality management (TQM)*. www.emeraldinsight.com
- Dean, J.W., Evans, J.R. (1994), *Total Quality, Management, Organization and Strategy*, West Publishing Company, Minneapolis, MN, .
- Deming, W.E. (1982), *Quality, Productivity and Competitive Position*, MIT Center for Advanced Engineering, Cambridge, MA, .
- Deming, W.E. (1986), *Out of the Crisis*, MIT Center for Advanced Engineering, Cambridge, MA, .
- Donabedian, A. (1966), "Evaluating the quality of medical care", *Milbank Quarterly*, Vol. 44 No.3, pp.166-206.

Duggirala, M., Rajendran, C., and Anantharaman, R.N. (2008). *Provider-perceived dimensions of total quality management in healthcare*.
www.emeraldinsight.com

EFQM (2000), *EFQM Excellence Model*, European Foundation for Quality Management, Brussels, .

Ennis, K., Harrington, D. (1999). *Factors to consider in the implementation of quality within Irish healthcare*. www.emeraldinsight.com

Evans, J.R., LINDSAY, W.M. (1999), *The Management and Control of Quality*, South-Western College Publishing, Cincinnati, OH, .

Feigenbaum, A.V. (1991), *Total Quality Control*, McGraw-Hill, New York, NY, .

Flynn, B.B., Schroeder, R.G. Sakakibara, S. (1994), "A framework for quality management research and associated measurement instrument", *Journal of Operations Management*, Vol. 11 No. 4, pp. 339-66.

Fried, R.A. (1992), "A crisis in healthcare", *Quality Progress*, Vol. 25 No.4, pp.67-9.

Fuchsberg, G. (1993), "Total quality is termed only partial success", *The Wall Street Journal*, No.1 October, pp.B1.

Geber, B. (1992), "Can TQM cure health care?", *Training*, Vol. 29 No. 8, pp.25-34.

Ghobadian, A., Gallear, D.N. (1996), "Total quality management in SMEs", *Omega*, Vol. 24 No. 1, pp. 83-106.

Goetsch, D.L., Davis, S.B. (1997), *Introduction to Total Quality, Quality Management for Production, Processing, and Services*, Prentice Hall, Englewood Cliffs, NJ, .

Grandzol, J.R., Gershon, M. (1998), "A survey instrument for standardizing TQM modelling research", *International Journal of Quality Service*, Vol. 3 No. 1, pp. 80-105.

Grant, M.R., Shani, R., Krishnan, R. (1994), "TQM's challenge to management theory and practice", *Sloan Management Review*, Vol. 35 No.2, pp.25-35.

Guangming, C., Clarke, S., Lehaney, B. (2000), "A systematic view of organizational change and TQM", *The TQM Magazine*, Vol. 12 No. 3, pp. 186-93

Hackman, J.R., Wageman, R. (1995), "Total quality management: empirical, conceptual, and practical issues", *Administrative Science Quarterly*, Vol. 40 No. June, pp. 309-42.

Hair, J.F., Anderson, R.E., Tatham, R.L., Black, W.C. (1998), *Multivariate Data Analysis*, Prentice Hall of India Private Limited, New Delhi, .

Harari, O. (1993), "Ten reasons why TQM doesn't works", *Management Review*, pp.33-8.

Hasan, M., Kerr, R.M. (2003), "The relationship between total quality management practices and organizational performance in service organizations", *The TQM Magazine*, Vol. 15 No.4, pp.286-91.

Hellsten, U., Klefsjö, B. (2000). *TQM as a management system consisting of values, techniques and tools*. www.emeraldinsight.com

Hill, S., Wilkinson, A. (1995), "In Search of TQM", *Employee Relations*, Vol. 17 No. 3, pp. 8-25.

Ho, S., Fung, C. (1994). *Developing a TQM Excellence Model*.

www.emeraldinsight.com

Hunt, V.D. (1993), *Managing Quality: Integrating Quality and Business Strategy*,

Irwin, Homewood, IL, .

Huq, Z. (2005). *Managing change: a barrier to TQM implementation in service*

industries. www.emeraldinsight.com

Imai, M. (1986), *Kaizen, the Key to Japan's Competitive Success*, McGraw-Hill,

New York, NY, .

Ishikawa, K. (1976), *Guide to Quality Control*, Asian Productivity Organization,

Tokyo, .

Jabnoun, N. (2000). *Restructuring for TQM: a review*. www.emeraldinsight.com

Juran, J.M. (1986), "Quality trilogy", *Quality Progress*, No.August, pp.14-24.

Karuppusami, G., Gandhinathan, R. (2006). *Pareto analysis of critical success*

factors of total quality management. www.emeraldinsight.com

Kendrick, J.J. (1993), "TQM: Is it forging ahead or falling behind quality?",

Quality, Vol. 32 No.5, pp.13.

Komashie, A., Mousavi, A., and Gore, J. (2007). *Quality management in*

healthcare and industry. www.emeraldinsight.com

Lawrence, E.M., Early, J.F. (1992), "Strategic leadership for quality in

healthcare", *Quarterly Progress*, Vol. 25 No. 4, pp.45-8..

Lee, P.M. (2006). *Sustainable quality services in the healthcare industry*.

www.emeraldinsight.com

Lee, P.M., Khong, P.W., and Ghista, D.N. (2006). *Impact of deficient healthcare service quality*. www.emeraldinsight.com

Lee, R.I., Jones, L.W. (1933), *The Fundamentals of Good Medical Care*, University of Chicago Press, Chicago, IL, .

Leer, J.W.H., Corver, R., Kraus, J.J.A.M., Togh, J.C., Buruma, O.J.S. (1995), "A quality assurance system based on ISO standards: experience in a radiotherapy department", *Radiotherapy and Oncology*, Vol. 35 pp.75-81.

Leonard, D., McAdam, R. (2002). *The strategic impact and implementation of TQM*. www.emeraldinsight.com

Lim, P.C., Tang, N. (2000). *The development of a model for total quality healthcare*. www.emeraldinsight.com

Lin, B., Glouing, J. (1995), "Total quality management in health care: a survey of current practices", *Total Quality Management*, Vol. 6 No. 1, pp.69-78.

Malhotra, N. (2004), *Marketing Research*, 4th ed., Pearson Education, India, .

Manjunath, U., Metri, B., and Ramachandran, S. (2007). *Quality management in a healthcare organization: a case of South Indian hospital*. www.emeraldinsight.com

McConnell, J. (1989), *The Seven Tools of TQC*, 3rd ed., The Delaware Group, Manly Vale, .

McQuater, R.E., Scurr, C.H., Dale, B.G., Hillman, P.G. (1995), "Using quality tools and techniques successfully", *The TQM Magazine*, Vol. 7 No. 6, pp.37-42.

Meyer, S.M. Collier, D.A. (2001), "An empirical test of the causal relationships in the Baldrige health care pilot criteria", *Journal of Operations Management*, Vol. 19 pp.403-25.

- Morrison, P.E., Heineke, H (1992), "Why do health care practitioners resist quality management?", *Quality Progress*, Vol. 25 No. 4, pp.51-5.
- Motwani, J. (2001). Critical factors and performance measures of TQM. www.emeraldinsight.com
- Nasser Abu Khader (2000). *Public Health*. Arab American University in Jenin.
- Natarajan, R.N. (2006). *Transferring best practices to healthcare: opportunities and challenges*. www.emeraldinsight.com
- Nwabueze, U. (2001). Chief executives – hear thyself: leadership requirements for 5-S/TQM implementation in healthcare. www.emeraldinsight.com
- Oakland, J. (1993), *Total Quality Management: The Route to Improving Performance*, Butterworth Heinemann, London, .
- Palestinian Central Bureau of Statistics (2003). www.pcbs.gov.ps
- Patients friends society (2000), Annual Report, Jenin.
- Powell, T.C. (1995), "Total quality management as competitive advantage, a review and empirical study", *Strategic Management Journal*, Vol. 16 No.1, pp.15-37.
- Quazi, H.A., Jemangin, J., Kit, L.W., Kian, C.L. (1998), "Critical factors in quality management and guidelines for self-assessment, the case of Singapore", *Total Quality Management*, Vol. 9 No. 1, pp. 35-55.
- Rad, A.M. (2005). *A survey of total quality management in Iran*. www.emeraldinsight.com
- Ross, J. (1993), *Total Quality Management: Text Cases and Readings*, St Lucie Press, Delray Beach, FL, .

Sandholm, L. (1999), "Becoming customer oriented", in Costin, H. (Eds), *Strategies for Quality Improvement*, 2nd ed., Dryden Press, Reading, pp.459-73.

Saraph, J.V., Benson, P.G., Schroeder, R.G. (1989), "An instrument for measuring the critical factors of quality management", *Decision Sciences*, Vol. 20 No.4, pp.810-29.

Short, P.J., Rahim, M.A. (1995), "Total quality management in hospitals", Vol. 6 No. 3, pp.255-63.

Spencer, B. (1994), "Models of organization and TQM: a comparison and a critical evaluation", *Academy of Management Review*, Vol. 19 No. 3, pp. 446-71.

Tarí, J.J. (2005). *Components of successful total quality management*.
www.emeraldinsight.com

Tobin, L.M. (1990), "The new quality landscape: total quality management", *Journal of System Management*, Vol. 41 pp.10-14.

Vouzas, F., Psychogios, A.G. (2007). *Assessing managers' awareness of TQM*.
www.emeraldinsight.com

Wali, A.A., Deshmukh, S.G., Gupta, A.D. (2003), "Critical success factors of TQM: a select study of Indian organizations", *Production Planning & Control*, Vol. 14 No. 1, pp. 3-14.

Wilkinson, A., Redman, T., Snape, E., Marchington, M. (1998), *Managing with Total Quality Management: Theory and Practice*, Macmillan, London, .

Yang, C.C. (2003). *The establishment of a TQM system for the health care industry*. www.emeraldinsight.com

Yasin, M., Alavi, J. (1999). *An analytical approach to determining the competitive advantage of TQM in health care*. www.emeraldinsight.com

Yusof, S., Aspinwall E. (2000). *A conceptual framework for TQM implementation for SMEs*. www.emeraldinsight.com

Zabada, C., Rivers, P.A., Munchus, G. (1998), "Obstacles to the application of total quality management in health care organizations", *Total Quality Management*, Vol. 9 No. 1, pp.57-66.

Zhang, Z. (2000), "Developing a model of quality management methods and evidence their effects on business performance", *Total Quality Management*, Vol. 11 No. 1, pp.129-37.

Appendix –I

Questionnaire Form

Date: 27/03/2009

Dear,

This questionnaire is designed to identify the critical success factors for implementing TQM (Total Quality Management) in the Palestinian hospitals that have obtained the ISO certification. I hopefully request you to answer this questionnaire honestly and completely.

Your response will be kept strictly confidential. Only members of the research team will have access to the information you give, and make sure that your responses will be only used for scientific purposes.

Thank you very much for your time and cooperation in filling this questionnaire.

Sincerely,
Rafiq Nasrallah
MBA Student

Questionnaire: “TQM Critical Success Factors”

Hospital:

Person:

Position:

Please put an "X" sign in the place that represents your opinion, on the scale from 1 “very low” to 7 “very high”:

1. Top Management Commitment & Leadership

Item Description	VL 1	2	3	4	5	6	VH 7
1- Commitment of the hospital to the quality initiative.							
2- Extent to which the hospital management allocates adequate resources and time for implementation of quality.							
3- Level to which the hospital management emphasizes on providing the best-quality and cost-effective medical care.							
4- Degree to which hospital management encourages and involves all doctors, nurses, paramedical and support staff in long-term planning and decision-making with respect to quality improvement.							
5- Level to which hospital administration helps in simplifying the processes (for example: patient admission and discharge; procurement of drugs and hospital equipments; allocation of operation theatres and beds; and so on).							
6- Degree to which hospital management ensures that medical, nursing and paramedical staff stick to their commitments (in terms of providing quality health care with ethical standards) to patients.							
7- Level to which hospital management keeps up its commitment (in terms of providing facilities such as operation theatres, medicines and equipments, career growth and financial rewards) to medical, nursing and paramedical staff.							
8- Level to which top management clearly indicates what is expected of its medical, nursing, paramedical and administrative staff with respect to providing quality health care.							
9- Degree to which top management gives rewards and incentives to medical, nursing, paramedical and administrative staff in respect of their quality improvement efforts or initiatives.							
10- Focus on developing a continuously evolving patient-focused hospital-quality policy with clearly specified quality vision, mission and goals.							

2. Human Resource Management

I - Selection

Item Description	VL 1	2	3	4	5	6	VH 7
1- Level to which selection of new staff/personnel with a positive attitude to providing health care is done.							
2- Degree to which it is ensured that the right person is placed on the right job (for example, making a doctor undertake the duty in the ward of his/her specialty).							
3- Importance given to having an adequate number of doctors of appropriate specialties and support staff for an effective hospital functioning.							

II - Training

Item Description	VL 1	2	3	4	5	6	VH 7
1- Level to which job training and development, with an emphasis on health-care quality, is periodically given to doctors, nurses, paramedical and administrative staff.							
2- Degree to which the contents of the training programs for doctors and other hospital staff are based on the current medical practices.							
3- Efficiency of an organization-wide training and development process, including career path planning, for all doctors, nurses, paramedical, and administrative staff.							
4- Effectiveness of training of doctors, nurses, paramedical, and administrative staff in problem-identification and problem-solving skills such as cause and effect analysis, Pareto analysis, brainstorming, quality-control circles and quality management systems such as ISO 9000.							

III – Employee Involvement

Item Description	V.L 1	2	3	4	5	6	VH 7
1- Degree of sincerity and regularity of medical, nursing and paramedical staff.							
2- Level to which professionals are motivated to develop themselves in their profession.							
3- Level to which hospital doctors, nurses, paramedical and support staff involve themselves in quality improvement activities.							

3. Process Management

I- Ease of access to the hospital and admission process and procedures

Item Description	VL 1	2	3	4	5	6	VH 7
1- Level to which the acceptance of emergency cases is made easy and simple.							
2- Extent of delay before being seen by the junior doctors/consultants is kept minimum.							
3- Level of availability of competent doctors and nurses, and clinical facilities such as scans, labs and beds to attend to and manage emergency cases immediately.							
4- Extent to which the waiting time for patients (before being seen by doctors) is kept minimum in the Out-Patient Department.							

II - Administrative services

Item Description	V.L 1	2	3	4	5	6	VH 7
1- Availability of competent persons with a background in medical science to manage the patient records.							
2- Extent of proper maintenance, storage and retrieval of patient and other hospital records.							

III - Processes: Administrative and Clinical

Item Description	VL 1	2	3	4	5	6	VH 7
1- Extent to which a daily examination of each case is done by the attending physician/surgeon.							
2- Level of effectiveness of the system at the hospital level (such as Case Conference) that monitors and critically examines the medical treatments given to critical or serious patients, or to patients with rare ailments, or to patients who have died.							
3- Extent to which overall administrative procedures in the hospital (in terms of admission, stay and discharge) are kept short and simple.							
4- Very low frequency in delays or cancellation of scheduled surgeries due to reasons such as non-availability of operation theatres or surgeons, or lack of preparation of patients for surgery.							

IV- Exit

Item Description	V.L 1	2	3	4	5	6	VH 7
1- Frequency of discussions regarding the patients' illness, treatment given, recovery and post-operative patient management, among doctors of different and appropriate specialties.							
2- Extent to which patients are advised upon discharge on the medical care to be taken after leaving the hospital.							

V - Clinical outcomes of medical care

Item Description	V.L 1	2	3	4	5	6	VH 7
1- Degree of effectiveness of medical treatment given to patients is assessed regularly for improving the quality of treatment.							
2- Extent to which the correct clinical diagnosis is made in minimal time.							
3- Level to which patients are continuously apprised of their ailment, details of medical/surgical treatment given and the outcome, including possible complications.							

4. Patient Focus

Item Description	V.L 1	2	3	4	5	6	VH 7
1- Extent to which the quality of health care provided at this hospital is perceived to be good by the patients, in comparison with other competitive hospitals.							
2- Level of analysis of feedback/complaints from patients as a means to initiate continuous improvement in the hospital.							
3- Extent to which the cost of health care provided in your hospital is perceived to be reasonable by the patients, in comparison with other competitive hospitals.							
4- Level of providing right patient services the first time.							
5-Efficiency in functioning of a grievance system for patients in the hospital. (نظام شكاوي للمرضى)							

5. Employee Focus

Item Description	V.L 1	2	3	4	5	6	VH 7
1- Level of functioning of a mechanism to measure the satisfaction of all hospital staff with respect to their salary, perks and other financial incentives.							

2- Level of functioning of a mechanism for systematic and regular measurement of health-care quality awareness of doctors, nurses, paramedical staff and other employees.							
3- Extent to which a regular and systematic feedback is given to all hospital staff, including doctors, regarding their performance on the job.							
4- Extent to which it is ensured that hospital personnel spend their time on the job of their specialization and not on other work (for example, nurses being used for administrative purpose).							
5- Degree to which the interests of doctors, nurses, paramedical and administrative staff are considered, while evolving the long term and short term plans of the hospital.							
6- Efficiency in functioning of a grievance system for all hospital staff. (نظام شكاي للموظفين)							

6. Measurement of Hospital Performance

Item Description	V.L 1	2	3	4	5	6	VH 7
1- Extent to which the hospital management collects analyses and makes use of the statistics related to hospitalization deaths or treatment failures per year with the aim of improving the performance of the hospital.							
2- Degree to which the hospital management collects and makes use of statistics related to patient admissions and discharges, surgeries done, medical cases handled, and bed occupancy rates per year with the aim of improving the overall performance of the hospital.							
3- Level to which hospital management analyses financial statistics related to hospital functioning.							
4- Level to which the hospital's recognition and reputation in the society are assessed periodically.							

7. Hospital Facilities

Item Description	VL 1	2	3	4	5	6	VH 7
1- Effective layout and adequacy of different facilities in the hospital (e.g. wards, beds, operation theatres, intensive/post-operative care units, reception lounge, administrative departments, vehicular parking, etc).							
2- Availability of adequate diagnostic facilities such as labs, and X-ray and CT/ultrasonic scans.							
3- Extent to which guidance signs, symbols, boards, pamphlets and other artifacts in the hospital are appealing and useful to patients in reaching different wards/places in the hospital.							

4- Extent of availability of amenities (such as continuous electricity and water supply, housekeeping, sanitation facilities and pharmacy) at comfortable ambient conditions (such as temperature, ventilation, noise and odor) to patients and their attendants.							
---	--	--	--	--	--	--	--

8. Continuous Improvement

Item Description	VL 1	2	3	4	5	6	VH 7
1- Level of emphasis laid on continuously improving hospital facilities such as operation theatres, laboratories, equipments and wards.							
2- Extent to which senior hospital management encourages and rewards ideas aimed at improving the quality of medical care provided in your hospital.							
3- Effectiveness of continuous improvement in hospital functioning (both long-term and short-term operations) among hospital personnel at different levels.							
4- Assessment of continuous health-care quality improvement strategies on the basis of factors such as cost of health care, time and overall hospital performance.							
5- Extent to which the hospital management continuously improves its health care and administrative processes to achieve better overall performance of the hospital.							

9. Benchmarking

Item Description	VL 1	2	3	4	5	6	VH 7
1- Emphasis on benchmarking the processes related to patients (in terms of admission, stay and discharge) with those of other hospitals.							
2- Emphasis on benchmarking the administrative processes (related to doctors, nurses and paramedical staff) of this hospital with respect to those of other hospitals.							
3- Importance given to benchmarking the training and development programs for doctors, nurses and paramedical staff with those of other hospitals.							
4- Emphasis on benchmarking the level of patient medical care and treatment with those of other hospitals.							
5- Importance given to benchmarking the effectiveness of managing doctors, nurses and paramedical staff with that of other hospitals.							
6- Emphasis on benchmarking the quality and adequacy of medical and surgical equipment, and physical facilities (such as operation theatres, beds and wards) with that of other hospitals.							

7- Emphasis on benchmarking the level of commitment of the hospital to the society in terms of providing cost-effective and quality health care, with that of other hospitals.							
8- Extent of benchmarking the proficiency of doctors and nurses with that of other hospitals.							
9- Extent to which your hospital benchmarks your professional ethical practices with those of other hospitals.							

10. Service Culture

Item Description	VL 1	2	3	4	5	6	VH 7
1- Extent of overall health care and concern shown by the hospital management in respect of its patients.							
2- Effectiveness of overall health care and concern shown by the hospital management in respect of its hospital staff.							
3- Extent to which the doctors and hospital staff at all levels realize that the core purpose of their presence in the hospital is "Service to Patients".							
4- Degree to which the functioning and administrative structure of the hospital facilitate prompt and good decision-making and response to patients' requirements.							

11. Error, safety, and risk management

Item Description	VL 1	2	3	4	5	6	VH 7
1- Extent to which the hospital management and doctors are willing to be accountable for possible lapses in the treatment given to patients.							
2- Level of willingness of doctors to learn from mistakes.							
3- Effectiveness of the use of proactive measures by hospital management to prevent errors in diagnosis, operations and treatment.							
4- Emphasis laid on monitoring and adhering to rules and regulations laid down by Government regarding hospital functioning.							

12. Hospital Information System

Item Description	VL 1	2	3	4	5	6	VH 7
1- Extent to which research results and current techniques such as telemedicine and evidence-based medicine are used for patient treatment.							
2- Effectiveness of the functioning of Hospital Information System, in terms of user-friendly data feeding process, analysis of data and good report generation.							

3- Efficiency of Information and Computer System Staff in ensuring the proper functioning of computers and Hospital Information System.							
4- Extent to which systematic feedback is given to doctors, nurses and hospital staff about quality improvement processes and their outcomes.							
5- Degree to which the Patient Information System is operational and efficient, in terms of having relevant patient records over years.							

13. Governance and Social Responsibility

Item Description	VL 1	2	3	4	5	6	VH 7
1- Degree of monitoring of doctors by the hospital management with respect to adherence to medical ethics.							
2- Extent to which hospitalization expenses are commensurate with the patient's economic background.							
3- Low level of medico-legal cases per year due to hospital's negligence or inadequate medical care rendered.							
4- Level of hospital concern regarding the impact on environment and society such as disposal of hospital wastes, maintenance of hygiene inside the hospital and in the surrounding.							
5- Adequacy of disciplinary action against erring doctors, nurses and paramedical staff.							
6- Contribution of your hospital to the overall health of your community by organizing health programs, immunization programs, etc.							
7- Extent to which patient privacy and confidentiality are assured.							

Appendix –II

Tables of Results

<i>Dimension</i>	<i>Cronbach's Alpha (α)</i>
<i>TM</i>	0.869
<i>HRM</i>	0.904
<i>PM</i>	0.740
<i>PF</i>	0.780
<i>EF</i>	0.856
<i>MHP</i>	0.889
<i>HF</i>	0.522
<i>CI</i>	0.945
<i>BNCH</i>	0.936
<i>SC</i>	0.822
<i>ESRM</i>	0.700
<i>HIS</i>	0.786
<i>GSR</i>	0.562

Table 1: Cronbach's Alpha Coefficients for the 13 measured quality dimensions

I- Overall Results

<i>Dimension</i>	<i>Min.</i>	<i>Max.</i>	<i>Mean</i>	<i>St. Dev.</i>	<i>Variance</i>
<i>TM</i>	4.1	6.9	5.39	0.73	0.54
<i>HRM</i>	3.1	6.6	5.31	0.92	0.85
<i>PM</i>	4.07	6.47	5.32	0.7	0.5
<i>PF</i>	4.8	7	5.88	0.57	0.32
<i>EF</i>	2	6.33	5.08	1.16	1.34
<i>MHP</i>	2.75	7	5.07	1.33	1.78
<i>HF</i>	4	7	5.54	0.75	0.57
<i>CI</i>	3.6	7	5.48	0.92	0.85
<i>BNCH</i>	3.78	6.44	5.31	0.81	0.66
<i>SC</i>	4.5	7	5.88	0.65	0.43
<i>ESRM</i>	3.75	6.75	5.51	0.85	0.72
<i>HIS</i>	2.4	6.4	4.63	1.18	1.4
<i>GSR</i>	4.14	6.86	5.48	0.68	0.46

Table 2: Means and standard deviations of the 13 measured quality dimensions

II- Each Hospital Results by Respondent Position

1- Augusta Victoria Hospital - Jerusalem

<i>Dimension</i>	<i>M.D.</i>	<i>A.D.</i>	<i>Q.M.R</i>	<i>H.N.U.</i>	<i>Mean</i>	<i>St. Dev.</i>
<i>TM</i>	5.3	6.1	5	6	5.6	0.54
<i>HRM</i>	5.6	5.7	5.3	5.6	5.55	0.17
<i>PM</i>	5.6	5.4	5.47	4.8	5.32	0.35
<i>PF</i>	5.4	5.8	5.6	6.2	5.75	0.34
<i>EF</i>	5.67	5.5	5.5	5.83	5.63	0.16
<i>MHP</i>	6	5.75	5.5	6.25	5.88	0.32
<i>HF</i>	5.5	6	5.75	5.75	5.75	0.2
<i>CI</i>	6	6.2	5.6	5.2	5.75	0.44
<i>BNCH</i>	5.56	4.56	5.56	5.56	5.31	0.5
<i>SC</i>	6	5.75	5.5	6.25	5.88	0.32
<i>ESRM</i>	5.25	5.5	5.75	5.5	5.5	0.2
<i>HIS</i>	5.4	5.8	4.4	6.4	5.5	0.84
<i>GSR</i>	5.29	5.71	5.86	5.29	5.54	0.29

Table 3: Augusta Victoria Hospital results by respondent position

2- Saint Josef Hospital - Jerusalem

<i>Dimension</i>	<i>M.D.</i>	<i>A.D.</i>	<i>Q.M.R</i>	<i>H.N.U.</i>	<i>Mean</i>	<i>St. Dev.</i>
<i>TM</i>	4.90	5.50	6.20	4.40	5.25	0.78
<i>HRM</i>	4.50	5.70	6.10	4.60	5.23	0.80
<i>PM</i>	4.80	5.27	6.13	4.67	5.22	0.66
<i>PF</i>	5.20	5.80	6.20	4.80	5.50	0.62
<i>EF</i>	5.00	5.83	5.83	5.00	5.42	0.48
<i>MHP</i>	4.50	6.00	6.25	4.50	5.31	0.94
<i>HF</i>	4.75	6.00	6.25	4.75	5.44	0.80
<i>CI</i>	5.40	5.40	6.00	5.00	5.45	0.41
<i>BNCH</i>	4.22	5.44	6.00	5.00	5.17	0.75
<i>SC</i>	6.00	6.00	6.00	5.00	5.75	0.50
<i>ESRM</i>	5.25	5.75	5.75	5.00	5.44	0.38
<i>HIS</i>	4.60	6.00	5.40	5.00	5.25	0.60
<i>GSR</i>	4.86	5.71	5.86	5.14	5.39	0.47

Table 4: Saint Josef Hospital results by respondent position

3- Al-Makassed Hospital - Jerusalem

<i>Dimension</i>	<i>M.D.</i>	<i>A.D.</i>	<i>Q.M.R</i>	<i>H.N.U.</i>	<i>Mean</i>	<i>St. Dev.</i>
TM	5.30	4.10	4.80	5.00	4.80	0.51
HRM	5.90	4.80	4.70	6.60	5.50	0.91
PM	6.13	4.53	6.00	5.60	5.57	0.73
PF	5.80	5.60	5.20	6.20	5.70	0.42
EF	5.33	2.00	3.50	6.00	4.21	1.81
MHP	5.50	3.00	4.75	6.50	4.94	1.48
HF	6.00	6.00	4.75	6.75	5.88	0.83
CI	5.00	3.80	5.00	5.80	4.90	0.82
BNCH	6.11	4.11	4.78	6.11	5.28	1.00
SC	7.00	4.50	4.50	6.75	5.69	1.38
ESRM	6.25	6.00	5.75	5.50	5.88	0.32
HIS	4.40	4.20	3.00	5.20	4.20	0.91
GSR	5.71	5.00	5.71	6.00	5.61	0.43

Table 5: Al-Makassed Hospital results by respondent position

4- Saint John Eye Hospital - Jerusalem

<i>Dimension</i>	<i>M.D.</i>	<i>A.D.</i>	<i>Q.M.R</i>	<i>H.N.U.</i>	<i>Mean</i>	<i>St. Dev.</i>
TM	5.30	6.50	4.90	5.50	5.55	0.68
HRM	5.70	6.60	5.10	5.50	5.73	0.63
PM	5.27	6.47	6.40	5.53	5.92	0.61
PF	6.00	7.00	6.80	6.60	6.60	0.43
EF	5.17	6.17	5.33	5.17	5.46	0.48
MHP	5.00	7.00	7.00	6.00	6.25	0.96
HF	6.00	6.25	7.00	4.00	5.81	1.28
CI	5.80	7.00	6.60	5.20	6.15	0.81
BNCH	5.56	6.22	6.22	6.00	6.00	0.31
SC	5.50	6.50	6.25	5.75	6.00	0.46
ESRM	6.00	6.75	6.75	6.00	6.38	0.43
HIS	5.40	5.80	5.00	4.20	5.10	0.68
GSR	6.14	6.86	6.86	6.00	6.47	0.46

Table 6: Saint John Eye Hospital results by respondent position

5- Princess Basma Hospital for Special Needs – Jerusalem

<i>Dimension</i>	<i>M.D.</i>	<i>A.D.</i>	<i>Q.M.R</i>	<i>H.N.U.</i>	<i>Mean</i>	<i>St. Dev.</i>
TM	5.70	6.00	6.00	6.90	6.15	0.52
HRM	5.80	6.00	6.00	6.40	6.05	0.25
PM	4.07	4.53	4.53	4.80	4.48	0.30
PF	6.20	6.00	6.00	7.00	6.30	0.48
EF	5.33	5.17	5.17	6.33	5.50	0.56
MHP	3.25	3.25	3.25	5.50	3.81	1.13
HF	4.00	4.50	4.50	5.75	4.69	0.75
CI	5.80	6.00	6.00	6.80	6.15	0.44
BNCH	5.44	5.33	5.33	6.44	5.64	0.54
SC	5.75	6.00	6.00	7.00	6.19	0.55
ESRM	5.75	4.25	4.25	6.50	5.19	1.13
HIS	4.00	4.00	4.00	5.80	4.45	0.90
GSR	5.14	4.43	4.43	4.14	4.54	0.43

Table 7: Princess Basma Hospital results by responden position

6- Arab Specialized Hospital - Nablus

<i>Dimension</i>	<i>M.D.</i>	<i>A.D.</i>	<i>Q.M.R</i>	<i>H.N.U.</i>	<i>Mean</i>	<i>St. Dev.</i>
TM	4.10	5.00	4.60	4.30	4.50	0.39
HRM	3.20	4.30	3.10	3.70	3.58	0.55
PM	4.67	4.80	4.67	4.47	4.65	0.14
PF	5.20	5.00	5.40	5.40	5.25	0.19
EF	2.83	3.33	3.17	3.67	3.25	0.35
MHP	3.50	2.75	3.00	4.00	3.31	0.55
HF	5.25	5.50	5.25	5.50	5.38	0.14
CI	3.60	4.20	4.20	3.60	3.90	0.35
BNCH	4.22	3.89	4.00	3.78	3.97	0.19
SC	5.00	5.75	5.25	5.25	5.31	0.31
ESRM	4.25	3.75	5.00	3.75	4.19	0.59
HIS	2.60	2.40	2.60	2.40	2.50	0.12
GSR	5.43	5.00	4.71	4.71	4.96	0.34

Table 8: Arab Specialized Hospital results by respondent position

7- Red Crescent Hospital - Jerusalem

<i>Dimension</i>	<i>M.D.</i>	<i>A.D.</i>	<i>Q.M.R</i>	<i>H.N.U.</i>	<i>Mean</i>	<i>St. Dev.</i>
<i>TM</i>	5.60	6.10	6.10	5.70	5.88	0.26
<i>HRM</i>	5.30	6.20	5.30	5.40	5.55	0.44
<i>PM</i>	6.00	6.00	6.20	6.13	6.08	0.10
<i>PF</i>	5.80	6.20	6.20	6.00	6.05	0.19
<i>EF</i>	6.17	5.67	6.33	6.17	6.09	0.29
<i>MHP</i>	6.00	5.50	6.25	6.25	6.00	0.35
<i>HF</i>	5.75	5.50	6.25	5.75	5.81	0.31
<i>CI</i>	6.00	5.60	6.40	6.20	6.05	0.34
<i>BNCH</i>	5.78	5.22	6.33	5.78	5.78	0.45
<i>SC</i>	6.25	6.00	6.75	6.25	6.31	0.31
<i>ESRM</i>	6.50	5.75	5.25	6.50	6.00	0.61
<i>HIS</i>	5.00	6.40	5.20	5.00	5.40	0.67
<i>GSR</i>	5.71	6.00	6.14	5.57	5.86	0.26

Table 9: Red Crescent Hospital results by respondent position

III- Aggregate Results by Hospitals

<i>Dimension</i>	<i>A.V.</i>	<i>STJOSF</i>	<i>MAK.</i>	<i>STJOHN</i>	<i>PBSMA</i>	<i>AS</i>	<i>RC</i>	<i>Mean</i>	<i>St. Dev.</i>
<i>TM</i>	5.60	5.25	4.80	5.55	6.15	4.50	5.88	5.39	0.58
<i>HRM</i>	5.55	5.23	5.50	5.73	6.05	3.58	5.55	5.31	0.81
<i>PM</i>	5.32	5.22	5.57	5.92	4.48	4.65	6.08	5.32	0.60
<i>PF</i>	5.75	5.50	5.70	6.60	6.30	5.25	6.05	5.88	0.47
<i>EF</i>	5.63	5.42	4.21	5.46	5.50	3.25	6.09	5.08	0.99
<i>MHP</i>	5.88	5.31	4.94	6.25	3.81	3.31	6.00	5.07	1.13
<i>HF</i>	5.75	5.44	5.88	5.81	4.69	5.38	5.81	5.54	0.42
<i>CI</i>	5.75	5.45	4.90	6.15	6.15	3.90	6.05	5.48	0.83
<i>BNCH</i>	5.31	5.17	5.28	6.00	5.64	3.97	5.78	5.31	0.66
<i>SC</i>	5.88	5.75	5.69	6.00	6.19	5.31	6.31	5.88	0.33
<i>ESRM</i>	5.50	5.44	5.88	6.38	5.19	4.19	6.00	5.51	0.70
<i>HIS</i>	5.50	5.25	4.20	5.10	4.45	2.50	5.40	4.63	1.06
<i>GSR</i>	5.54	5.39	5.61	6.47	4.54	4.96	5.86	5.48	0.62
<i>Average</i>	5.61	5.37	5.24	5.95	5.32	4.21	5.91	5.37	0.59
<i>St. Dev.</i>	0.18	0.16	0.58	0.43	0.84	0.90	0.24		

Table 10: Aggregate Results by Hospitals.

<i>Dimension</i>	<i>AV</i>	<i>STJOSF</i>	<i>MAK</i>	<i>STJOHN</i>	<i>PBSMA</i>	<i>AS</i>	<i>RC</i>	<i>Mean</i>	<i>St. Dev.</i>	<i>MEAN</i>	<i>Variance</i>
<i>TM</i>	5.30	4.90	5.30	5.30	5.70	4.10	5.60	5.17	0.54	5.39	-0.22
<i>HRM</i>	5.60	4.50	5.90	5.70	5.80	3.20	5.30	5.14	0.98	5.31	-0.17
<i>PM</i>	5.60	4.80	6.13	5.27	4.07	4.67	6.00	5.22	0.75	5.32	-0.10
<i>PF</i>	5.40	5.20	5.80	6.00	6.20	5.20	5.80	5.66	0.40	5.88	-0.22
<i>EF</i>	5.67	5.00	5.33	5.17	5.33	2.83	6.17	5.07	1.06	5.08	-0.01
<i>MHP</i>	6.00	4.50	5.50	5.00	3.25	3.50	6.00	4.82	1.12	5.07	-0.25
<i>HF</i>	5.50	4.75	6.00	6.00	4.00	5.25	5.75	5.32	0.73	5.54	-0.22
<i>CI</i>	6.00	5.40	5.00	5.80	5.80	3.60	6.00	5.37	0.86	5.48	-0.11
<i>BNCH</i>	5.56	4.22	6.11	5.56	5.44	4.22	5.78	5.27	0.75	5.31	-0.04
<i>SC</i>	6.00	6.00	7.00	5.50	5.75	5.00	6.25	5.93	0.62	5.88	0.05
<i>ESRM</i>	5.25	5.25	6.25	6.00	5.75	4.25	6.50	5.61	0.76	5.51	0.10
<i>HIS</i>	5.40	4.60	4.40	5.40	4.00	2.60	5.00	4.49	0.98	4.63	-0.14
<i>GSR</i>	5.29	4.86	5.71	6.14	5.14	5.43	5.71	5.47	0.42	5.48	-0.01
Average								5.27	0.37	5.38	-0.10

<i>Dimension</i>	<i>AV</i>	<i>STJOSF</i>	<i>MAK</i>	<i>STJOHN</i>	<i>PBSMA</i>	<i>AS</i>	<i>RC</i>	<i>Mean</i>	<i>St. Dev.</i>	<i>MEAN</i>	<i>Variance</i>
<i>TM</i>	6.10	5.50	4.10	6.50	6.00	5.00	6.10	5.61	0.83	5.39	0.22
<i>HRM</i>	5.70	5.70	4.80	6.60	6.00	4.30	6.20	5.61	0.80	5.31	0.30
<i>PM</i>	5.40	5.27	4.53	6.47	4.53	4.80	6.00	5.29	0.74	5.32	-0.03
<i>PF</i>	5.80	5.80	5.60	7.00	6.00	5.00	6.20	5.91	0.61	5.88	0.03
<i>EF</i>	5.50	5.83	2.00	6.17	5.17	3.33	5.67	4.81	1.54	5.08	-0.27
<i>MHP</i>	5.75	6.00	3.00	7.00	3.25	2.75	5.50	4.75	1.71	5.07	-0.32
<i>HF</i>	6.00	6.00	6.00	6.25	4.50	5.50	5.50	5.68	0.59	5.54	0.14
<i>CI</i>	6.20	5.40	3.80	7.00	6.00	4.20	5.60	5.46	1.12	5.48	-0.02
<i>BNCH</i>	4.56	5.44	4.11	6.22	5.33	3.89	5.22	4.97	0.82	5.31	-0.34
<i>SC</i>	5.75	6.00	4.50	6.50	6.00	5.75	6.00	5.79	0.62	5.88	-0.09
<i>ESRM</i>	5.50	5.75	6.00	6.75	4.25	3.75	5.75	5.39	1.04	5.51	-0.12
<i>HIS</i>	5.80	6.00	4.20	5.80	4.00	2.40	6.40	4.94	1.45	4.63	0.31
<i>GSR</i>	5.71	5.71	5.00	6.86	4.43	5.00	6.00	5.53	0.80	5.48	0.05
Average								5.36	0.38	5.38	-0.01

<i>Dimension</i>	<i>AV</i>	<i>STJOSF</i>	<i>MAK</i>	<i>STJOHN</i>	<i>PBSMA</i>	<i>AS</i>	<i>RC</i>	<i>Mean</i>	<i>St. Dev.</i>	<i>MEAN</i>	<i>Variance</i>
<i>TM</i>	5.00	6.20	4.80	4.90	6.00	4.60	6.10	5.37	0.69	5.39	-0.02
<i>HRM</i>	5.30	6.10	4.70	5.10	6.00	3.10	5.30	5.09	1.00	5.31	-0.22
<i>PM</i>	5.47	6.13	6.00	6.40	4.53	4.67	6.20	5.63	0.76	5.32	0.31
<i>PF</i>	5.60	6.20	5.20	6.80	6.00	5.40	6.20	5.91	0.55	5.88	0.03
<i>EF</i>	5.50	5.83	3.50	5.33	5.17	3.17	6.33	4.98	1.19	5.08	-0.10
<i>MHP</i>	5.50	6.25	4.75	7.00	3.25	3.00	6.25	5.14	1.55	5.07	0.07
<i>HF</i>	5.75	6.25	4.75	7.00	4.50	5.25	6.25	5.68	0.90	5.54	0.14
<i>CI</i>	5.60	6.00	5.00	6.60	6.00	4.20	6.40	5.69	0.84	5.48	0.21
<i>BNCH</i>	5.56	6.00	4.78	6.22	5.33	4.00	6.33	5.46	0.84	5.31	0.15
<i>SC</i>	5.50	6.00	4.50	6.25	6.00	5.25	6.75	5.75	0.74	5.88	-0.13
<i>ESRM</i>	5.75	5.75	5.75	6.75	4.25	5.00	5.25	5.50	0.78	5.51	-0.01
<i>HIS</i>	4.40	5.40	3.00	5.00	4.00	2.60	5.20	4.23	1.09	4.63	-0.40
<i>GSR</i>	5.86	5.86	5.71	6.86	4.43	4.71	6.14	5.65	0.83	5.48	0.17
Average								5.39	0.26	5.38	0.01

<i>Dimension</i>	<i>AV</i>	<i>STJOSF</i>	<i>MAK</i>	<i>STJOHN</i>	<i>PBSMA</i>	<i>AS</i>	<i>RC</i>	<i>Mean</i>	<i>St. Dev.</i>	<i>MEAN</i>	<i>Variance</i>
<i>TM</i>	6.00	4.40	5.00	5.50	6.90	4.30	5.70	5.40	0.92	5.39	0.01
<i>HRM</i>	5.60	4.60	6.60	5.50	6.40	3.70	5.40	5.40	1.00	5.31	0.09
<i>PM</i>	4.80	4.67	5.60	5.53	4.80	4.47	6.13	5.14	0.61	5.32	-0.18
<i>PF</i>	6.20	4.80	6.20	6.60	7.00	5.40	6.00	6.03	0.73	5.88	0.15
<i>EF</i>	5.83	5.00	6.00	5.17	6.33	3.67	6.17	5.45	0.93	5.08	0.37
<i>MHP</i>	6.25	4.50	6.50	6.00	5.50	4.00	6.25	5.57	0.97	5.07	0.50
<i>HF</i>	5.75	4.75	6.75	4.00	5.75	5.50	5.75	5.46	0.87	5.54	-0.08
<i>CI</i>	5.20	5.00	5.80	5.20	6.80	3.60	6.20	5.40	1.02	5.48	-0.08
<i>BNCH</i>	5.56	5.00	6.11	6.00	6.44	3.78	5.78	5.52	0.89	5.31	0.21
<i>SC</i>	6.25	5.00	6.75	5.75	7.00	5.25	6.25	6.04	0.74	5.88	0.16
<i>ESRM</i>	5.50	5.00	5.50	6.00	6.50	3.75	6.50	5.54	0.96	5.51	0.03
<i>HIS</i>	6.40	5.00	5.20	4.20	5.80	2.40	5.00	4.86	1.28	4.63	0.23
<i>GSR</i>	5.29	5.14	6.00	6.00	4.14	4.71	5.57	5.26	0.68	5.48	-0.22
Average								5.47	0.17	5.38	0.09

Tables 11 to 14: Aggregate Results by Medical Director, Administration Director, QMR, Head of Nursing Unit.

Comparison across Regional Studies

<i>Quality Practice</i>	<i>Indian Study</i>	<i>Palestinian Study</i>	
		<i>Likert Scale Rate</i>	<i>MBNQA Pts</i>
<i>TM Commitment & Leadership (120)</i>	103	5.39	92
<i>Patients Focus (85)</i>	68	5.88	71
<i>Measurement of Hospital Perf. (90)</i>	54	5.07	65
<i>Human Resource Management (85)</i>	78	5.31	65
<i>Process Management (85)</i>	68	5.32	65
<i>Total (465)</i>	371		358

Table 15: Comparison against the Indian Study Results

<i>Quality Practice</i>	<i>Iranian Study</i>		<i>Palestinian Study</i>	
	<i>5 Pts Scale</i>	<i>100%</i>	<i>7 Pts Scale</i>	<i>100%</i>
<i>Process Management</i>	3.74	74.8	5.32	76.0
<i>Patients Focus</i>	3.68	73.6	5.88	84.0
<i>Employee Focus</i>	3.66	73.2	5.08	72.6
<i>Leadership & Management</i>	3.59	71.8	5.39	77.0
<i>Measurement of Hospital Perf.</i>	3.32	66.4	5.07	72.40
<i>Average</i>	3.60	71.96	5.35	76.40

Table 16: Comparison against the Iranian Study Results