

Chapter One

Introduction

1.1 Introduction:

Quality is a buzz word in our lives. When the customer is in market, he or she is knowingly or unknowingly very cautious about the quality of product or service. Imagine the last buying of any product or service, e.g., mobile purchased last time. You must have enquired about various features like RAM, Operating System, Processor, Size, Body Color, Cover, etc. If any of the features is not available, you might have suddenly changed the brand or have decided not to purchase it. Remember, how our mothers buy fruits, vegetables or grocery items. They are buying fresh and look-wise firm fruits, vegetable and groceries. Simultaneously, they are very conscious about the price of the fruits, vegetable and groceries. So, by nature, we are inclined to get various features of

Products or services or these are supposed to be provided by the manufacturers. If we get the desired standard features in a product or service, we generally say that the quality of the product or service is up to the mark. It means the features of products and services give satisfaction. These features can be termed as quality characteristics. (Dr. Vijender Pal Saini 2012)

Total quality management (TQM) is considered as an important quality and business performance improvement tool. The popularity of the concept has led to an outburst of TQM-related literature. Now-a-days deployment of TQM becomes a top management agenda in many organizations in the quest of positive overall business benefits in terms of improved product quality, increased customer satisfaction, enhanced employee satisfaction and reduced quality costs. Total quality management (TQM) is often regarded as a philosophy that seeks to attain customer satisfaction through continuous

improvement and teamwork Dean and Bowen, 1994. Contemporary insights provided by Brun 2011 about is that TQM tries to join all departments: Marketing, Finance, Design, Manufacturing, Purchase, Engineering, Human resources etc. to meet meeting customer requirements and to accomplish organization goals and objectives (Maddulety Koilakuntlaa, et al 2012).

Total Quality Management is a management approach that originated in the 1950s and has steadily become more popular since the early 1980s. Total Quality is a description of the culture, attitude and organization of a company that strives to provide customers with products and services that satisfy their needs. The culture requires quality in all aspects of the company's operations, with processes being done right the first time and defects and waste eradicated from operations.

Total Quality Management, TQM, is a method by which management and employees can become involved in the continuous improvement of the production of goods and services. It is a combination of quality and management tools aimed at increasing business and reducing losses due to wasteful practices.

TQM is a management philosophy that seeks to integrate all organizational functions (marketing, finance, design, engineering, and production, customer service, etc.) to focus on meeting customer needs and organizational objectives. (Khurram Hashmi, 2010)

TQM views an organization as a collection of processes. It maintains that organizations must strive to continuously improve these processes by incorporating the knowledge and experiences of workers. The simple objective of TQM is "Do the right things, from the first time, and every time." TQM is infinitely variable and adaptable. Although originally applied to manufacturing operations, and for a number of years only used in that area, TQM is now becoming recognized as a generic management tool,

just as applicable in service and public sector organizations. There are a number of evolutionary strands, with different sectors creating their own versions from the/ common ancestor. (Akinyele Adesola Patrick, 2012)

TQM can be an important part of hospitals competitive strategy in quality of healthcare system. Hospitals in competitive markets are more likely to attempt to differentiate themselves from their competitors on the basis of greater service quality. Thus, TQM which places a heavy emphasis on improvement in Customer satisfaction index that offers the prospect of grater combines internal quality measures with value analysis and conformance to specifications. Acceptable quality services not only include direct medical services such as diagnoses, medicines, surgery and treatment but indirect operations such as administration and purchasing whose costs are reflected in what the buyer pays. It may also include Total Quality of performance that is directly related to healthcare safety, security, attitude of nursing and word boy, role of doctors in terms of 'time' includes appointment, delay time, service time, timing with regards to medical treatment and surgery. (Gunjan Patel, April 2009)

Many health services sector suffer from poor performance due to the lack of application of modern management systems applied scientifically like TQM, TQM is reflected this decline directly to dealers with these service institutions. Many health services sector lose huge resources due to a lack of understanding of these systems and the reason the importance of the application of the great and its impact on these institutions internally and externally. For this research problem focus on how it can be done by the application of total quality management in correct manner and its impact on the performance of the service and the degree of satisfaction provided by the services of health services sector.(Zayed Mohammed Abu,1994)

1.2 Research problem:

Due to the interest of the stakeholder in private sector regarding the healthcare service sector, it was necessary to ensure that the health services provided in the government sector health were they of high quality compared to services provided by the private sector .

Also to identify the impact of total quality management in health services sector and its impact on customer satisfaction about these practices obtained on Royal Care International Hospital (private sector) and Omdurman Maternity Hospital (Government sector).

1.3 Importance of the research:

The importance of this research is that it:

- Know the extent of the Royal Care International Hospital & Omdurman Maternity Hospital practice of this concept, and to obtain data showing the extent of application the dimensions of services quality in both hospitals .and the impact of this implementation on the customer satisfaction
- This study will help hospitals and all health facilities that seeking to embrace the principle of total quality management in the ways and methods used in this study to develop and improve its image in the community that work in it, and win the other hospitals respect. Other ways, to increase its customer satisfaction on their counterparts from other hospital.
- Can help the researchers who want to take benefit of this study in several aspects, to get more data to identify the nature of the study and the method used.

1.4 Significance of the research:

To know the effect of the application of Total Quality Management in the **Royal Care International Hospital** (private sector) **and Omdurman**

Maternity Hospital (Government sector) to improve the performance and the reflection as good service to increase the customer satisfaction.

1.5 Research objectives:

General Objectives:

To assess the effect of implementation of total quality management in health services sector and its impact on customer satisfaction.

Specific Objectives:

- To find out the relationship between the application of total quality management and customer satisfaction in the health services sector.
- To measure the customer satisfaction.
- To identify the dimensions of services quality that must be provided in health services.
- To find out the most prominent difficulties and obstacles in the application of quality in health service sector.

1.6 Research questions:

Main question:

Is there any impact of application the total quality management on customer satisfaction in health services sector?

Sub questions:

- To what extent the Royal Care International Hospital & Omdurman Maternity Hospital committed to the quality of health care service?
- Is the community aware of the dimensions of services quality that must be provided in health care?

1.7 Research hypothesis:

- There is significant application of the quality of service in health services sector.
- There is significant effect of the application of total quality management on customer satisfaction.
- There is no significant Change in the adoption of total quality management on customer satisfaction.
- There is no different between the application of the total quality management and its effect in the private sector and the governmental sector.

1.8 Study Terms:

- **Total Quality Management (TQM) :**

TQM is defined by the ASQ as “management approach to long –term success through customer satisfaction. In a TQM effort, all members of an organization participate in improving processes, products, services, and the culture in which they work“.

- **Service Quality:**

conformance to operating specifications with performance measures such as waiting times, error rates in transactions, and processing times used to determine whether the process is in or out of control.

- **Customer satisfaction:**

is a term frequently used in marketing. It is a measure of how products and services supplied by a company meet or surpass customer expectation.

- **Royal Care International Hospital – (RCIH):**

- Is private hospital located in Burri, Khartoum, Sudan. It is a multi-disciplinary hospital focusing on advanced health care services, in addition to the Center

for Continuing Education and Research according to the latest advanced scientific methods.

-The (RCIH) was established in 2010 by Sudanese founders, in goal to present a very carefully care for patients built on the fundamentals of quality, cooperation, empathy, development and ethics.

- **Omdurman Maternity Hospital – (OMH) :**

It was opened in 1957 at Mourada area by Dr. abd al-Rahman Atabani as a specialized hospital for the purpose of raising maternal and newborn care, as natural development for the midwifery school.

The Omdurman maternity hospital (Al-Dayat) is the largest hospital for gynecology and obstetrics at the level of Sudan .

- **Khartoum City:**

The capital of the Republic of Sudan, located in the center of Sudan.

1.9 Ethical consideration:

This research approval from Sudan University of Science & Technology and from Khartoum state ministry of health research department and from hospitals (Royal Care International / Omdurman Maternity).

Research purpose and objective was explained to participant in clear simple words.

Participant has right to voluntary inform consent and has right to withdraw as any time without any deprivation, also has right to benefit from the researcher knowledge and skills.

The data in this research confidently will not be used in other study.

Questioner was filled with the staff in their rest time without any interruption to their work and for customer also without any interruption to their therapy plan.

Chapter Two

Theoretical Background

2.1 Quality

According to the Oxford Dictionary (2003), quality is defined as being the degree of excellence of a thing; relative nature or kind or character of a thing and a class or grade of something determined by this.

When talking to others about Quality we must be sure that we have the same understanding of the term. Consider the following definitions:

- A degree of excellence - The Concise Oxford Dictionary
- Fitness for purpose – (Defoe and Juran,2010)
- The totality of features and characteristics that bear on the ability of a product or service to satisfy a given need - British Standard 4778 (British Standards Institution; 1991)
- The total composite product and service characteristics of marketing, engineering, manufacture, and maintenance through which the product and service will meet the expectations of the customer – (Feigenbaum1961)
- Quality is a dynamic state associated with products, services, people, processes, and environments that meets or exceeds expectations and helps produce superior value -Goetsch and Davis (2010)

The dictionary definition of quality is interesting, but does not really help in studying the area as it is too vague. This perhaps fits with the general perception of quality which often confuses quality with specification.

Juran's simple definition of quality, on the other hand, suggests that if both vehicles satisfy the purpose for which they were purchased, they can both be quality products, and a differentiation in quality cannot be assessed merely in terms of features that one product enjoys over the other.

Feigenbaum's definition of quality is interesting because it brings into consideration departments other than manufacturing which contribute to the quality of product and service provided by the company to meet the expectations of the customer.

It is perhaps worth contemplating whether meeting the expectations of the customer is a higher level of achievement than providing a product or service that is fit for purpose.

Customer's expectations would reasonably include a product or service meeting any declared 'purpose'; however, as we shall see later, there may be things that the customer does not explicitly state, but that nevertheless form a legitimate part of their expectations. We might think here of the styling of the product or level of reliability.

Conformance to specification implies that the specification, if achieved, will meet the requirements of the customer. It is clear that if market research is flawed or out of date, products/services derived from such information are unlikely to meet customers' requirements no matter how closely they have been produced to specification. (Graeme Knowles, et al 2011)

ISO 9000:2000 defined Quality by degree to which a set of inherent characteristic fulfils requirements;

Characteristic – distinguishing feature, i.e. physical, sensory, temporal or functional etc

Requirement –need or expectation that is stated or implied or obligatory, i.e. custom or common practice for you!

Quality is the key component and success factor to any organization to increase organizational performance, productivity and improve employees' performance (Ooi Kb, et al 2007)

Quality is Zero Defects and Quality is Free the concept, “Zero Defects’ was originated during 1960s, quality is best understood by the following concepts:

1. Do It Right First Time-Do It Right Every Time (DIRFT-DIRET)
2. Zero defects (Philip B. Crosby et al 2000)

Based on the perspective of the humans, the definition of quality may vary. Different perspectives have been derived from last 3 decades to understand the term “quality”. Every customer established some needs and these needs should be transformed into measurable characteristics.

The final aim is to make the customer satisfied for what he paid for a service or a product (N.V.S. Raju, et al 2014).

The quality movement can trace its roots back to medieval Europe, where craftsmen began organizing into unions called guilds in the late 13th century . Until the early 19th century, manufacturing in the industrialized world tended to follow this craftsmanship model. The factory system, with its emphasis on product inspection, started in Great Britain in the mid-1750s and grew into the Industrial Revolution in the early 1800s .

In the early 20th century, manufacturers began to include quality processes in quality practices .

After the United States entered World War II, quality became a critical component of the war effort: Bullets manufactured in one state, for example, had to work consistently in rifles made in another. The armed forces initially inspected virtually every unit of product; then to simplify and speed up this process without compromising safety, the military began to use sampling techniques for inspection, aided by the publication of military-specification

standards and training courses in Walter Shewhart's statistical process control techniques .

The birth of total quality in the United States came as a direct response to the quality revolution in Japan following World War II. The Japanese welcomed the input of Americans Joseph M. Juran and W. Edwards Deming and rather than concentrating on inspection, focused on improving all organizational processes through the people who used them. (Nancy R. et al 2004)

To attain quality, it is well to begin by establishing the “vision” for the organization, along with policies

and goals Conversion of goals into results (making quality happen) is then done through managerial processes—sequences of activities that produce the intended results. Managing for quality makes extensive use of three such managerial processes:

- _ Quality planning (Quality by Design)
- _ Quality control (Process Control & Regulatory)
- _ Quality improvement (Lean Six Sigma)

These processes are now known as the “Juran trilogy.” They parallel the processes long used to manage for finance.

Each of the three processes is also a universal—it follows an unvarying sequence of steps. Each sequence is applicable in its respective area, no matter what is the industry, function, culture, or whatever. (Joseph M. Juran et al 1988)

Quality Planning:

The design process enables innovation to happen by designing products (goods, services, or information) together with the processes—including controls—to produce the final outputs. Today many call this Quality By Design or Design for Six Sigma (DFSS)

The Juran Quality by Design model is a structured method used to create innovative design features that respond to customers' needs and the process features to be used to make those new designs. Quality by Design refers to the product or service development processes in organizations.

Quality Control:

Compliance or quality control is the third universal process in the Juran Trilogy.

The term “control of quality” emerged early in the twentieth century. The concept was to broaden the approach to achieving quality, from the then-prevailing after-the-fact inspection (detection control) to what we now call “prevention (proactive control).” For a few decades, the word “control” had a broad meaning, which included the concept of quality planning. Then came events that narrowed the meaning of “quality control.” The “statistical quality control” movement gave the impression that quality control consisted of using statistical methods. The “reliability” movement claimed that quality control applied only to quality at the time of test but not during service life.

Today, the term “quality control” often means quality control and compliance. The goal is to comply with international standards or regulatory authorities such as ISO 9000.

Quality Improvement:

Improvement happens every day, in every organization—even among the poor performers. That is how businesses survive—in the short term. Improvement is an activity in which every organization carries out tasks to make incremental improvements, day after day. Daily improvement is different from breakthrough improvement. Breakthrough requires special methods and leadership support to attain significant changes and results.

It also differs from planning and control as it requires taking a “step back” to discover what may be preventing the current level of performance from

meeting the needs of its customers. By focusing on attaining breakthrough improvement, leaders can create a system to increase the rate of improvement. By attaining just a few vital breakthroughs year after year (The Pareto Principle), the organization can outperform its competitors and meet stakeholder needs. (Dr. Joseph A DeFeo, 2019)

As used here, “breakthrough” means “the organized creation of beneficial change and the attainment of unprecedented levels of performance.” Synonyms are “quality improvement” or “Six Sigma improvement.” Unprecedented change may require attaining a Six Sigma level (3.4 ppm) or 10-fold levels of improvement over current levels of process performance. Breakthrough results in significant cost reduction, customer satisfaction enhancement and superior results that will satisfy stakeholders.

The Juran Trilogy has evolved over time in some industries. This evolution has not altered the intent of the trilogy. It only changes the names. For instance, traditional goods producers call it QC, QI and QP while another may say QA/QC, CI and DFSS. The Trilogy continues to be the means to present total quality management to all employees looking to find a way to keep it simple. (**Dr. Joseph A DeFeo** April 15, 2019 *Juran’s Quality Handbook*)



Figure 2.1 Show the Juran Trilogy

2.1.1 Total Quality Management

By the 1970s, U.S. industrial sectors such as automobiles and electronics had been broadsided by Japan's high-quality competition. The U.S. response, emphasizing not only statistics but approaches that embraced the entire organization, became known as total quality management (TQM)

By the last decade of the 20th century, TQM was considered a fad by many business leaders. But while the use of the term TQM has faded somewhat, particularly in the United States, its practices continue. (Sadikoglu E, et al 2014)

In the few years since the turn of the century, the quality movement seems to have matured beyond Total Quality. New quality systems have evolved from the foundations of Deming, Juran and the early Japanese practitioners of quality, and quality has moved beyond manufacturing into service, healthcare, education and government sectors.

One of the important quality management programmes is Total Quality Management (TQM), which is a designed and established organizational effort to manage quality based on participation at every level, aiming to improve customer satisfaction and performance of staff (Sadikoglu E, et al 2014)

For any successful total quality management implementation, elements such as leadership, trust, ethics, communication, integrity, training and education, teamwork, recognition, customer focus, information analysis, employee empowerment, human resource development and management policies and strategy are required (Abbas NA, 2014).

In healthcare systems, TQM is a designed and efficient process that creates participation of entire organization in planning and implementation of continuous improvement in quality. Several attempts to implement TQM across various sectors, including health care services, have been made but the success record of TQM has been dismal, which could be attributed to faulty implementation process, such as functional hierarchical, bureaucratic and authoritarian organizational structure, lack of consensus, unchallengeable leadership style, internal requirement domination and manpower shortfall (Emad AA, 2015)

2.1.2 Evolution of TQM

1900 defect detection

- 100% inspection by operator at end of the process separating good from bad

1940 defect detection

Quality control, 100% stage inspection by inspectors, Faulty items scrapped or reworked, At end of process, 100% inspection by inspectors separating good from bad.

1960 defect control

Sampling, Quality control stage inspection, but only a sample taken out, Concept of *acceptable quality levels*, Defence Standard 05-21: 1973 - Quality Control, CEGB QA 42 Series: 1978 -Quality Assurance, BS 5750:1979. The original quality standard and basis for ISO 9001

1980 defect prevention

Growth of company-wide total quality, Flood of total quality literature (confusion between Total Quality Control, TQC and TQM), Concept of internal customer widely used, Cross-functional teams, QA Management Standards, e.g. BS 5882:1980 (ISO 6215) – Total Quality Assurance Programme for Nuclear Power Plants, BS 5750:1987 (ISO 9000) – Quality Systems

1990 total quality management and Excellence

Applicability to service and manufacturing industries, People focus, Continuous improvement, Emphasis on business processes, Customer focus
It will be obvious that TQM originated in manufacturing industries; however it applies today in every kind of organisation, covering all products, processes and services. (Waldman, et al 1994).

2.1.3 TQM Definitions

From the very early days TQM has meant different things to different people. Some have treated it largely as a motivational campaign aiming to improve service to external customers. Others have focused on internal training as a way of motivating and giving people tools to undertake improvement activities. Many have identified that beyond training, teamwork and the use of statistical techniques there is, in TQM, the quest for the self-improving organisation. (Insights to Performance Excellence 2019-2020)

While cultural change, organizational change, and the use of quality tools, together with a documented quality system, all have a part to play, TQM is a

complete management philosophy which may require a refocus and redirection of the business, (depending on what the business was like before). The following quotes illustrate the different things which TQM means to different people:

‘Total quality management is continuously satisfying customer requirements, at lowest cost, by harnessing the commitment of everyone in the organisation.’ (Dr David Cook PA Consultants, 1986).

‘Total quality management is an approach to improving the effectiveness and flexibility of business as a whole. It is essentially a way of organizing, involving the whole company, business or organization, every department, every activity, every single person at every level.’ (Professor J S Oakland, University of Bradford, 1988)

‘TQM is a corporate business management philosophy which recognizes that customer needs and business goals are inseparable (British Quality Association, 1989).

TQM is applicable to both industry and commerce and the public sector. It ensures maximum effectiveness and efficiency within a business and secures commercial leadership by putting in place processes and systems which will promote excellence, prevent errors and ensure that every aspect of the business is aligned to customer needs and the advancement of business goals without duplication or waste or effort.

Commitment to TQM should originate at the chief executive level in a business and be promoted in all human activities. The accomplishment of quality is thus achieved by personal involvement and accountability, devoted to a continuous improvement process, with measurable levels of performance by all concerned. It involves every department function and process in a business and the active commitment of all employees to meeting customer needs. Other quotes are:

‘In general total quality management is defined as follows: Quality – is to satisfy customers’ requirements continually, Total quality – is to achieve quality at low cost, Total quality management – is to obtain total quality by involving everyone’s daily commitment.’ (Professor Gopal K Kanji, Sheffield City Polytechnic, 1990).

‘TQM is a way of managing to improve the effectiveness, flexibility and competitiveness of a business as a whole. It applies just as much to service industries as it does to manufacturing. It involves whole companies getting organised in every department, every activity and every single person at every level.’ (Professor J S Oakland, 1991).

‘An approach for continuously improving goods and services which requires the full participation of all levels and functions of an organisation. It aims to satisfy the needs of customers at lowest cost.’ (R S Mann, 1992.)

‘Total means that everyone in the organisation is involved in the final product or service to the customer, Quality means conformance to requirements.

Management: TQM is a managed process which involves people, systems and supporting tools and techniques. TQM is therefore a change agent which is aimed at providing a customer-driven organisation.’(John MacDonald, 1993). ‘All things that we must do to achieve quality leadership.’(Joseph M Juran, 1995.)

‘TQM is an overall umbrella term which embraces customer service, quality assurance, quality circles, and quality tools. It is a change from an output organisation to a process organisation. It is total involvement to delight customers.’ (National Productivity Council of India, Delhi, 1995, S A Khader, Director (TQM) NPC, India).

‘Total Quality Management is a process which embraces the conscious striving for zero defects in all aspects of an organisation’s activities.’

Or ‘Total Quality Management is management with the workforce co-operating in the processes, developing, producing and marketing quality goods and services which satisfy customers needs and expectations first time and every subsequent time.’ (University of Leicester, 1997).

Some of the core aspects of TQM that you were asked to identify should include: Satisfying the customer, Top-level commitment, Continuous improvement, Everyone committed and involved, Prevention of errors, Promotion of excellence, Best use of resources: Human & Material. Minimizing costs, Measurable results, Benefit to employees and society, Supporting systems, tools and techniques.

ISO Definition for TQM

The International Organization for Standardization (ISO) has produced a definition of TQM in the standard ISO 8402:1994 Quality Management and Quality Assurance – Vocabulary.

‘3.7 Total Quality Management

Management approach of an organisation (1.7), centered on quality (2.1), based on the participation of all its members and aiming at long-term success through customer (1.9) satisfaction, and benefits to all its members of the organisation and to society.

2.1.4 Principles of TQM

Seven Elements of TQM

- **Approach** – management led

The commitment of top management is essential to the success of TQM. This requires a fundamental cultural shift from quality assurance and quality control, to a culture where the responsibility for quality is delegated. The TQM ethos must be cascaded down from top management throughout the organisation. This must reach outside the organisation to suppliers and company dealers and agents.

- **Scope** – company-wide

Total quality implies the involvement of every person and every process within an organisation to satisfy their customers. It is company-wide. Total quality management is the means by which total quality is achieved. Individual departments must work together to achieve total quality. Attempts to make changes in one area in isolation can actually make the situation worse in other areas. What is required is co-operation and communication and not competition between departments.

- **Scale** – everyone responsible

Everyone in the organisation has a personal responsibility for quality and customer satisfaction. This is true even for people who do not have direct contact with external suppliers and customers. This concept of internal customers and suppliers is fundamental to the philosophy of TQM. Hence internal customer–supplier chains can be formed throughout the whole organisation. This personal responsibility gives pride in the work and job satisfaction for individuals. This in turn encourages all employees to identify and tackle the problems in their own areas.

- **Philosophy** – prevention not detection

The philosophy aims at prevention not detection of errors or defects. It recognises that quality cannot be inspected into a product or service. This leads to a continual seeking to improve all processes in order to avoid errors and defects. This means that the time a manager spends overcoming immediate problems (‘firefighting’) is reduced. This leaves the manager more time to seek further improvements. The manager’s use of time will have changed from firefighting to that of process improvement with consequent reductions in costs, waste and lead times. (Professor J S Oakland, 1991)

- **Standard** – right the first time

People cannot just be told to get it right first time. However if they are

provided with management commitment, encouragement, the right tools and resources, and above all appropriate training, then the resulting changes in attitudes will promote a 'right first time' culture.

- **Control** – cost of quality

The 'cost of quality' statement is a main measure of quality improvement. By increasing the percentage of costs that are given to the prevention of errors and defects the percentage of failure costs reduces and therefore the overall costs reduce as well.

- **Theme** – continuous improvement

Total quality is a road not an end. It embodies the theme of continuous improvement. In TQM people are empowered to take ownership of their own quality situation, and teamwork is particularly important.

2.1.5 Core Principles of TQM

customer satisfaction, continuous improvement, commitment of the entire workforce.

Customer Satisfaction

In order to achieve customer satisfaction, customer needs must be identified, met and the results measured as a basis for ongoing improvement. It can be argued that any organisation should seek: to satisfy customers, to achieve higher customer satisfaction than its competitors, to retain customers, even if they complain.

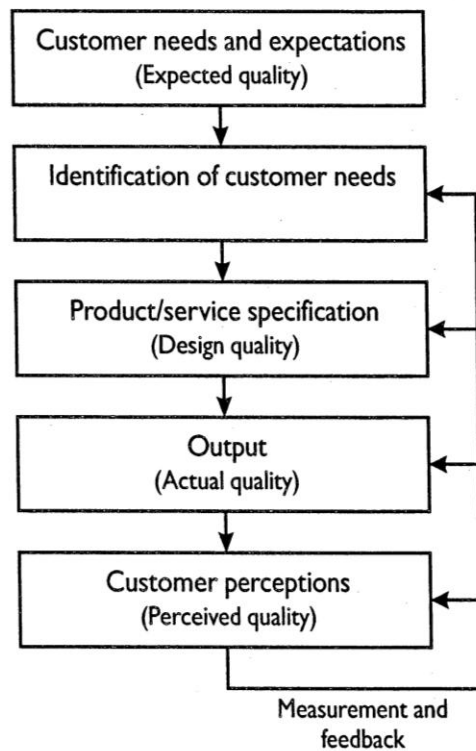
A total quality approach requires customers to be identified, both internally and externally and for the organisation to appreciate the significance of the customer–supplier chain. Customer satisfaction results from the provision of products or services that meet or exceed customers' needs.

Evans and Lindsay in their book, *The Management and Control of Quality*, present a 'customer-driven quality cycle'. The expected quality is what the customer assumes will be provided by the supplier. The supplier identifies

the customer needs and produces the specification for the product or service. The output process produces a product or service which has an actual quality. This may be different from the expected quality. The customer, on seeing the actual product or service, has a perception of the quality at this stage, and this could be different from the expected quality. In focusing on quality, it is the customer's perception that is important. (Lynn A. Fish,2011)

Too often suppliers ignore the customer's perception of quality. A total quality approach takes this into account and seeks to meet or exceed customer expectations.

If actual quality is the same as expected quality, then the impact on the customer is likely to be zero. Customers' perceptions are generally only influenced where actual quality exceeds, or fails to meet, expected quality



$$\text{Perceived quality} = \text{Actual quality} - \text{Expected quality}$$

Figure 2.2 *Customer-Driven Quality Cycle*

It has been found that customers respond positively to additional, unexpected, features that are added to a product or service. Even minor enhancements can cause customer 'excitement'. 'Basic' features are those that are available on all products/services of a similar type. 'Excitement' features can give a product or service an advantage over products or services that might only demonstrate 'basic' features. You might, for example, favour one manufacturer's entry level motor car that has electrically-controlled windows over others that don't. The excitement comes from finding a model that has that something extra; expectations at the low end of the market might be for manually-operated windows only. (Dale B, et al 1998).

Obviously, the cost of the motor car with the 'excitement' features should not be above the cost of a motor car with basic features, otherwise expectations will have been modified. The cost balance might result from a trade-off with another feature that the customer might not miss; though in practice there are many ways that a supplier can manipulate cost, price, revenue and profit.

Continuous Improvement

Continuous improvement is a sustained effort to align the performance of an organisation with its promises; the promises made to its customers, itself and its employees.

A key principle of TQM is that improvement should never end. Once an organisation stops looking for better ways of doing things it ceases to progress and therefore stagnates. From a competitive point of view this can be disastrous. Other manufacturers or service providers may soon overtake you. Organisations that truly adopt the principles of TQM look for improvement on a continual, never-ending, basis. The following list illustrates the wide variety of improvement tools and techniques available.

Some Tools and Techniques for Continuous Improvement

project management, new product life cycle, process planning, flowcharting,

benchmarking, business process re-engineering, problem solving, design of experiments (Taguchi), quality function deployment, quality policy deployment (Hoshin Kanri), quality circles, reduction of variation, Pareto diagrams, cause and effect diagrams, stratification, check sheets, histograms, scatter diagrams, control charts, failure mode and effects analysis, brainstorming, critical success factors (Dale B, et al 1998).

Commitment of the entire workforce

Quality programs should give the opportunity for development of employees.

Improvement should be based on an employee's understanding of the primary process, and supported by research directed at work processes as well as at workers 'satisfaction. There should be some kind of connection between quality management and personnel management, for example to stimulate employees to develop themselves, and to develop quality protocols, standards, and guidelines, for example, with respect to retraining or selection criteria for personnel (Wagner *et al.*, 1995).

A significant portion of the TQM philosophy focuses on the human resource environment. TQM implementation relies heavily on the brawn and brain of front-line workers .Workers set the pace for quality within a TQM system (Evans et al, 1993).

Thus, it is imperative that employees are treated in such a manner that they can become involved and enact the tools of quality. Therefore, in the following paragraphs we present arguments to describe the relationships of TQM workforce factors and Employee involvement.

2.1.6 Key Elements of TQM

Quality awareness The entire organisation needs to be made aware of the need for quality.

Management leadership The management tiers have to demonstrate their

commitment to quality and lead by example.

Organizing for quality improvement In line with management commitment the organisational systems need to be changed to be conducive to quality.

Creating participative environments People need to feel that they are able to contribute towards improvements.

Training for quality improvement Management must ensure that all staff has the skills and abilities to contribute effectively.

Involvement of every function at all levels Management needs to ensure that all staff at all levels throughout the organization is involved.

Customer and supplier involvement Determine what the customers' and suppliers' needs and expectations are for both internal and external customers. Even unrealistic expectations need to be dealt with.

Problem prevention and solving Attack the sources of any difficulties rather than try to remedy the results.

Statistical process control Introduce the use of statistically valid methods of ensuring the accurate control of processes.

Measurement of quality performance Integrate indicators of how well people are doing and feed this back to them.

Recognition for achievement Reward those who have achieved not just those who manage them.

Continuous improvement Develop a culture for total quality and continuous improvement.

2.1.7 The benefits of TQM include:

reduced costs, quality matched to the end customer's requirements, an empowered workforce, shared responsibility for success, a marketing advantage, a customer-driven organization (J. Gerald Suarez, et al 1992).

2.1.8 Barriers to TQM

Surveys have shown that the following can act as barriers to successful TQM implementation:

inflexible culture, management behaviour, making time, difficult to measure results, programmes too long, poor interdepartmental knowledge, lost momentum, 'business as usual, no need for change', poor communication, management gimmicks, attitude to customer not clear, chief executive officer not committed (K. Subrahmanya Bhat, et al 2009).

2.1.9 Quality in Health Care

TQM is a managerial philosophy and a key management issue since it is essential for efficiency and competitiveness. The term TQM would be used as a comprehensive and integrated managerial system that is committed to generate a working environment in hospitals, which achieve continuous improvement for the abilities and the skills of all employees and working systems. This improvement aims for a continuous improvement in all activities that lead to improved health services through all elements applications of TQM that are proper to the hospital. (Talib *et al.*2010)

Thompson and Sunol (1995) claimed that a real improvement in the quality of health service cannot take place unless patients are involved, and health service evaluation will not be satisfactory if it focuses only upon measures of clinical effectiveness and economic efficiency without including measures of patients' perceptions. Also, it has been argued that the identification of client priorities among different quality dimensions could lead to the increasingly efficient and effective allocation of limited health resources.

Health services include a wide variety of quality aspects, all of which are important. In the case of medical services, the seller is doctors, hospitals, nursing homes, clinics, etc. because they offer health services for sale as

stipulated prices. The buyer is the client or patient who buys these health services at the stipulated prices. It may also include quality of performance that is directly connected and closely related to healthcare such as food, housing, safety, security, attitude of employees, and other factors that arise in connection with hospitals and nursing homes. So, the time taken to fix an appointment, delay time, services time, timing with regard to medical treatment and surgery.

- Quality of administration and management
- Quality of doctors
- Quality of hospital care (K.Shridhara Bhat,2007)

The concept of quality in healthcare continues to develop as various providers, patient, client, governmental, and insurance groups maintain an interest in how to 'improve' the quality of healthcare service management and delivery.

Defining healthcare quality:

One of the conceptual problems facing healthcare is that quality cannot be measured if it cannot be defined. However, there is no single definition of quality in the management, marketing, and healthcare fields (Reeves & Bednar, 1994). Writers in the health field are tending to use the Institute of Medicine's (USA) quality definition which indicates that quality of care is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge (Lohr, 1990). The appeal of this definition is that it is broad enough to encompass several traditional quality measurement domains and emerging domains. These include access to care, processes of care, outcomes of care, appropriateness, and consumer satisfaction (Jencks, 1995).

The health care and medical services are growing immensely due to a high influx of the private sector, changing disease patterns, medical tourism, and demographic variations. Development of new and advanced techniques, increased awareness on patient's safety, intensity of competition in health care market, and new generation of purchasers and providers have forced the health care institutions to improve the efficiency and introduce a consumer culture in their institutions for effective cost and quality of care (Mosadegh-Rad, 2005; Lee, Ng, & Zhang, 2002; Short, 1995).

Quality of care is the vital issue for every health care institution and there is an immediate need for health care reforms in order to address and resolve the problems associated with quality of care, as well as patient preferences, safety, and choice (Koeck, 1997). Another critical issue is the consistently increasing operating costs of health care institutions. Rising health care expenditures have created serious financial burdens for the ex-chequer (government department in charge of national revenue or national treasury) in many countries like Canada, the United States, the United Kingdom, and Taiwan (Yang, 2003), and are facing a serious fall in business and a debt crisis. In such a situation, health care institutions need to re-examine their ways of doing business in order to decrease their operating costs while increasing quality and value in their delivery process.

To address the aforementioned issues a plethora of literature in healthcare were reviewed which showed implementation of different quality management practices and tools such as ISO9000, continuous quality improvement, health quality improvement circle, quality management systems, and others are important in this respect (Yang, 2003). However, one of the suggested approaches to resolve these issues more effectively and practically, and to bring better quality to health care institutions, is the

adoption of total quality management (TQM) approach (Manjunath, *et al* 2007).

TQM have now taken a central role in the health care quality management by adapting the concepts of TQM, the healthcare institutions can transform their traditional quality improvement system to customer oriented system through a framework involving customer focus, process management, new tools and techniques, and teamwork ((McLaughlin & Simpson, 1999).

Within such an approach, health care institutions focus on creating physical, psychological, and social environment that is conducive to their patients and staff. Externally, they also concentrate on promoting the health and well-being of communities and on reducing costs (Ovretveit, 2000).

The reasons behind the wide acceptability of TQM in health care institutions are many, but before highlighting these reasons it is necessary to understand what TQM is in context to health care environment. It is defined as:

The satisfaction of patients, doctors, nurses, and suppliers (i.e., social shareholders) and other interested groups, achieved by implementing effective planning, programs, policies and strategies (i.e., hard issues),and human and all other assets (i.e., soft issues) efficiently and continually within a hospital context. (Arasli, 2002, p. 347)

Further, the TQM focuses on: customer (patient) satisfaction, continuous improvement, teamwork, process management, systemization, organization culture and structure, and lastly commitment from management and supportive leadership.

Several studies have also emphasized that successful implementation of TQM can result in significantly superior outcomes in health care institutions (Yang, et al 2003), some of these outcomes are:

Upgraded quality of service, Improved health care quality and performance, Patient satisfaction, . Reduced operating cost of health care institutions, Employee satisfaction and Patient safety.

Therefore, health care institutions have started to implement it rigorously; even some of the hospitals associations and organizations have directed all its health care institutions to adopt TQM as early as possible. Some of the studies show the positive aspects of TQM movement for hospitals such as quality improvement, financial performance, competitive advantage, and employee commitment in the various hospitals and nursing homes (Alexander, Weiner, & Griffith, 2006; Chesteen, Heigheim, Randall, & Wardell, 2005; Douglas & Judge. 2001).

A study conducted by Lee et al. (2007) concluded that for the successful implementation of TQM system in hospitals requires hospital control, developing an incorporated performance measurement system, and a broad approach for quality progress.

Other similar studies of interest based on TQM in the health care environment are those of Ovretveit (2000); Satia and Dohlie (1999); Brennan (1998); Nwabueze and Kanji (1997); and Aggarwal and Zairi (1997).

Moreover, implementing TQM principle and practices will not only mitigate the financial crisis of the health care institutions but will also help to Overcome many critical problems which they are facing. It is also pertinent to understand that the pressure the health care institutions are facing might Push them to implement TQM program to resolve the critical issues involved.

Thus, TQM can become an alternative option for policy makers as well as for managers of health care institutions. (Zillur Rahman *et al*, 2011)

Deming principles to healthcare Systems:

nsists on zero defects eliminate inspection through proper quality control on suppliers.

- Constant improve the system
- Educational and Training program
- Maintain the records
- Eliminate numerical goals, work standards and slogans
- Remove the barriers that hinder the worker through the day
- Top management support for implementing TQM

In today's Given the widespread diffusion of quality management principles among the researchers, various educators and practitioners have started to experiment with them in recent years in order to explore how they can also be used for the improvement of services in healthcare. Mainly, these principles in healthcare support the quality management principles in general, but, at the same time, they are significantly modified, according to the specificities of this sector . EN 15224:2016 - Health Services - Quality Management Systems

Lists the basic principles of quality management in healthcare:

1. Customer focus: Like any organization, every private and/or public healthcare organization, when providing healthcare services, must respect the customer centered approach. This approach is an important objective in the development of public and private services as it constitutes one of the main drivers for healthcare services reforms. Customers are the ones for whom such organizations exist and their needs, demands and expectations must be paid special attention. Indeed, as the famous professor Deming, otherwise known as "the person who helped the success of the Japanese revolution of quality", once noted - "everything starts and ends with the customer" .Hence, healthcare services must be designed and developed according to the requirements, needs and expectations of the customers (patients/clients), thus

taking into account all the requirements of the healthcare environment as well as the entire society.

2. Stakeholder involvement:

Customers are not the only group whose needs and requirements should be met. "Adequate worth must also be provided to employees, local and global community, investors and society in general, in terms of both financial and non-financial aspects of a company's performance" (Karapetrovic, S. (2002). Therefore, defining the healthcare service, often, requires the identification of needs, expectations and requirements of all the stakeholders and interested parties that, in addition to the service provider and health insurance, include customer (patient/ client) as well as the physician and doctor.

3. Leadership:

Another novelty brought with a new version of the ISO 9001 - leadership is crucial for the management of the healthcare organizations and the quality management system of those organizations that adopted customer centered approach. Leaders have the role to inspire, promote and support the organizational culture of quality. According to Filipović et al. doctors are not the only ones who contribute to the healthcare service quality. According to the same authors, the quality improvement is equally contributed by doctors and managers - doctors in the field of their professional practice and managers in the field of quality and safety of all the services provided by the healthcare.

4. People and care vision:

The exceptional role of employees in the organization is present in all areas of life and work of the man. Drawing information, knowingly or unconsciously, man creates values, beliefs and attitudes, and, guided by a variety of external influences, makes decisions. This way, employees, as one of the most valuable resources of today, become a powerful lever for

strengthening the competitive advantage of the majority of contemporary organizations in healthcare.

5. Process orientation:

In recent times, the majority of authors agree that healthcare services require the implementation of integrated and multidisciplinary processes that unite different functions, clinical specialist activities as well as the variety of providers of healthcare services. When it comes to understanding the process orientation, it is necessary to understand some of the basic concepts that it carries with it. For instance, it is necessary to introduce new roles, such as the owner, the bearer and the executor of the process. It is necessary to introduce systems of evaluation and rewarding that will be based on the achieved results of the process and not on the results achieved within the individual organizational units.

6. Guidance through information:

Nowadays, healthcare organizations exchange a great number of different healthcare information and provide a great number of healthcare services, all with the support of modern information technologies. In recent years, there have been a growing number of international standards related to the application of certain information technologies in the healthcare sector and the ISO organization has even formed several technical committees in this field. Standardization of healthcare informatics indicates that data is collected more efficiently and information is transmitted more effectively within the healthcare. (Filipović et al, 2017)

7. Partnerships for quality across healthcare services:

When providing healthcare services, the coordination is often necessary between several healthcare organizations as providers of one complex service. These may be two or three different healthcare organizations and, sometimes, in a regional context, we can talk about a whole network of

healthcare organizations that, by networking at different levels, contain a "partnership for quality across healthcare services". This all is realized in order to provide users with complete healthcare and cover all the healthcare problems with appropriate specialist medical knowledge.

8. Demand oriented care:

The fact is that the healthcare sector is much more specific, but one of the basic specific characteristics in relation to which other profit organizations differ in relation to healthcare is the importance of a proper approach to determining the needs and expectations of customers. The definition of healthcare services given in EN ISO 15224:2016 that describes them as "people working for people", support this claim. Therefore, the fundamental change

that must be implemented in this sector is to change the treatment paradigm based on the opinion of the doctor (without taking into account the patient's opinion) to the treatment based, particularly, on the needs, demands and expectations of the customer.

9. Mutually beneficial supplier relationship:

Third party services such as technical support, information and communication services, business consulting, recruitment services, sanitation, catering and training have a critical effect on the quality of healthcare organization and its outcomes.

As any quality service can be provided solely with the consideration of all the known requests from all the stakeholders and interested parties, mutually beneficial relationships with suppliers in healthcare have received recent attention.

10. Continual improvement:

According to ISO 9001:2015 - "The organization shall continually improve the suitability, adequacy and effectiveness of the quality management

system". Hence, all the healthcare organizations must also focus on this principle that encourages learning, contributes to the development and continual improvement of the healthcare.

These ten quality management principles shown the comprehensive, fundamental rules by which the healthcare organizations are governed and managed, with the aim of continuously improving the performance relevant to patients and/or clients and other stakeholders and interested parties. (Quality management systems - EN ISO 9001:2015 for healthcare).

2.2 Service Quality

In the last three decades, there has been incrementing the interest internationally in the quality of health care services, as standards of living have transmuted and there is an ordinate dictation for better medical care to amend lifestyles. Amending the quality of medical care accommodations has become a primary concern for patients so in order to provide better accommodation to patient's service quality has become increasingly paramount for hospitals in reverence of gratifying and retaining patients (Anderson R, Weisman C, et al. 2007)

As Quality of Life is badly affected in health care services more than of any other service sector so health care providers that fail to understand the importance of delivering service quality and customer satisfaction may be inviting a possible loss of patients (Buzzell RD, Gale BT 1987); Patients are becoming more and more conscious about the quality of health care accommodations provided by hospitals (Zineldin M 2006). Consumers of health care accommodations have exceptionally higher prospects and authoritatively mandate a high caliber of precision, reliability, responsiveness and empathy from accommodation providers (Brady MK, Cronin JrJJ 2001).

In the light of the previous studies, the relationship between TQM and Service Quality in health service industry is proved. Health services have a

special condition among other services because of the nature of the high risks. This makes evaluating customer satisfaction and service quality in a health care more important and complex (Taner & Antony, 2006). To achieve success in getting excellence in service or service quality, hospitals should seek for “zero defections”, retaining each customer to which the organization can provide service and profit from it (Reichheld & Sasser, 1990).

Based on Lim and Tang (2000), “zero defections” expect constant exercises to improve the quality service delivery operation (cited in Rashid & Jusoff, 2008).

The role of service quality is recognized as being a critical determinant for the success of an organization in a competitive environment. Improvements in service quality have been linked to increased profit margins, lower costs, positive attitudes towards the service by customers, and willingness of customers to pay price premiums (Halstead, Casavant & Nixon, 1998; Heskett, Jones, Loveman, Sasser & Schlesinger, 1994; Zeithaml, 2000).

Defining Service quality

Service quality is defined as conformance to operating specifications with performance measures such as waiting times, error rates in transactions, and processing times used to determine whether the process is in or out of control (Reichheld & Sasser, 1990; Schmenner, 1995; Taylor, 1995).

Service quality means understanding the customer’s needs and identifying ways to meet or exceed them. Quality is sometimes equated with customer satisfaction, or the difference between the customer’s perception and expectations of service transaction.

Service quality is defined as the difference between customer perceptions and their expectations, according to customers; quality is satisfactory if performance meets with expectations (Holder M, Berndt A 2011) We can

also identify about satisfaction from the feedback of customers (Brinkerhoff D, Wetterberg A 2013). Satisfied customers shows long term relationship with their service provider which result in higher level of compliance that leads to better health outcomes (Njong A, Tchouapi RPM 2014). Customer satisfaction is an important aspect for service organizations and is highly related to service quality (Spreng RA, Mackoy RD 1996).

In order to achieve competitive advantage it is most important to focus on service quality because customers are more conscious about quality, so it's important to deliver higher service quality better than its competitors ,The service firm can differentiate itself by delivering high quality service more than that of its competitors because ability of service firm depend on how consistently it provides value to its customers, whereas best method to retain customers is depend on their quality (Kotler P, Amstrong G 2006). Service quality is defined as the difference between customer expectation and their perception about the service experience (Parasuraman A, Zeithaml VA, Berry LL 1988).

2.2.1 Service Quality and Patient Satisfaction

Service quality impact on consumer loyalty has been concentrated in numerous fields (Amin M, et al 2011) and has turned into a dubious issue in advertising writing. A few analysts and scholastics saw that service quality is a forerunner of consumer loyalty (McDougall GH, Levesque TJ, 1994)

In the clinic business, (Naidu A 2009) found that the relationship among human service quality and patient satisfaction is great. A patient is fulfilled at the point when healing center service quality matches with their desires and prerequisites, thusly, the more noteworthy the patient fulfillment (Chahal H, Kumari N 2010). Be that as it may, patients have their rights and decision, and on the off chance that they are not fulfilled by their healing facility, they have the chance to change to another healing facility (Kessler DP, Mylod D

2011). Besides there is no accord concerning the relation between service quality and patient satisfaction in the healing facility industry, as various specialists of social insurance industry are more direct on measuring specialized and utilitarian quality as opposed to patient fulfillment (Gill L, White L 2009) ,and quiet satisfaction keeps on being measured as an intermediary for the patient's appraisal of administration quality (Turriss SA 2005)

When service quality improves, the probability of customer satisfaction increases. Increased customer satisfaction leads to behavioral outcomes such as commitment, customer retention, and creation of a mutually rewarding relationship with the service provider and the user, increased customer tolerance for service failures and positive word-of-mouth advertising about the organization (Gounaris S, Dimitriadis S 2003)

2.2.2 Dimensions of services quality

Service is a series of behaviours, processes and performances (Zeithaml and Bitner, 2006). Delivering quality service is an essential strategy for success and survival in today's competitive environment (Dawkins and Reichheld, 2000). According to Parasuraman et al., (2005), early studies during 1980s focused on determining what service quality meant to customers and developing strategies to meet customer expectations. Service quality has also attracted the attention of researchers all over the world (Chowdhary and Prakash, 2007). However, most of the research has focused on measuring service quality using the SERVQUAL instrument (Parasuraman et al., 2005). Parasuraman et al., (2008) stated that the factors for assessing service quality could be categorized into five service quality dimensions which include tangibility (the physical evidence of the service such as physical facilities and appearance of personnel), reliability(consistency of performance and service dependability),

responsiveness (the willingness or readiness of employees to provide prompt service), assurance (knowledge and courtesy of employees and their ability to inspire trust and confidence) and empathy (caring, individualized attention the firm provides its customers). Many researchers have been using two methods in measuring service quality (Juanita et al., 2005).

In order to measure international service quality there is two school of thought, the 1st one is Nordic school of thought and second is American school view, Nordic school of thought explain service quality in two ways such as functional and technical quality whereas the American school of thought define about service quality in five dimensions

“(1) Tangibles (Physical facilities, equipment, and appearance of personnel);

(2) Reliability (Ability to perform the promised service dependably and accurately);

(3) Responsiveness (Willingness to help customer and provide prompt service);

(4) Assurance (Knowledge and courtesy of employees and their ability to inspire trust and confidence);

(5) Empathy (Caring, individualized attention the firm provides its customers)” (Grönroos C 1984), in this paper we have to use these five dimensions.

The most important work on such topic was the gap model developed by Parasuraman and his colleagues. Many contributions have been done on the measuring of service quality that is considered around the SERVQUAL scale. In order to easily understand about service quality this model is very important (Tsoukatos E, Rand GK 2006). It has many applications which are used and tested in a variety of sectors, like insurance restaurant in banking and internet banking (Qin H, Prybutok VR, Zhao Q 2010).

2.2.3 SERVQUAL dimensions

The predominant service quality measurement method described in the literature is SERVQUAL. Developed by Parasuraman, Zeithaml, and Berry (1988), it assesses both the user's service expectations and perceptions of the provider's performance. Their qualitative research suggested ten dimensions of service quality that they labeled tangibles, reliability, responsiveness, competence, courtesy, credibility, security, access, communication, and understanding. Through empirical research, they reduced these ten dimensions to five underlying dimensions of service quality that were posited to be generic to all service industries- tangibles, reliability, responsiveness, empathy (access, communication, and understanding) and Assurance (competence, courtesy, credibility and security).

- Tangibles refer to appearance of physical facilities, equipment, personnel, and communication materials.
- Reliability means the ability to perform the promised service dependably and accurately.
- Responsiveness is willingness to help customers and provide prompt service.
- Empathy is caring and the individualized attention firms provide to customers.
- Assurance is knowledge and courtesy of employees and their ability to convey trust and confidence.

Based on (Zeithaml *et al.* 1990) the SERVQUAL Instrument measures the five dimensions of Service Quality. These five dimensions are: tangibility, reliability, responsiveness, assurance and empathy.

Tangibility

Since services are tangible, customers derive their perception of service quality by comparing the tangible associated with these services provided. It

is the appearance of the physical facilities, equipment, personnel and communication materials. In this survey, on the questionnaire designed, the customers respond to the questions about the physical layout and the facilities that FFR offers to its customers.

Reliability

It is the ability to perform the promised service dependably and accurately. Reliability means that the company delivers on its promises-promises about delivery, service provision, problem resolutions and pricing. Customers want to do business with companies that keep their promises, particularly their promises about the service outcomes and core service attributes. All companies need to be aware of customer expectation of reliability. Firms that do not provide the core service that customers think they are buying fail their customers in the most direct way.

Responsiveness

It is the willingness to help customers and provide prompt service. This dimension emphasizes attentiveness and promptness in dealing with customer's requests, questions, complaints and problems. Responsiveness is communicated to customers by length of time they have to wait for assistance, answers to questions or attention to problems. Responsiveness also captures the notion of flexibility and ability to customize the service to customer needs.

Assurance

It means to inspire trust and confidence. Assurance is defined as employees' knowledge of courtesy and the ability of the firm and its employees to inspire trust and confidence. This dimension is likely to be particularly important for the services that the customers perceives as involving high rising and/or about which they feel uncertain about the ability to evaluate. Trust and confidence may be embodied in the person who links the customer to the

company, for example, the marketing department. Thus, employees are aware of the importance to create trust and confidence from the customers to gain competitive advantage and for customers' loyalty.

Empathy

It means to provide caring individualized attention the firms provide its customers. In some countries, it is essential to provide individual attention to show to the customer that the company does best to satisfy his needs. Empathy is an additional plus that the trust and confidence of the customers and at the same time increase the loyalty. In this competitive world, the customer's requirements are rising day after day and it is the companies' duties to their maximum to meet the demands of customers, else customers who do not receive individual attention will search elsewhere. (Zeithaml et al. 1990)

2.3 Customer satisfaction

The jargon of "Customer Satisfaction" is now very prevalent in most organizations, which is clearly a good thing .However, there is significant evidence that the practice of customer focus lags behind the rhetoric. (Graeme Knowles, 2011)

Customer satisfaction is marketing term that measures how products or services supplied by a company meet or surpass a customer's expectation. Customer satisfaction is important because it provides marketers and business owners with a metric that they can use to manage and improve their business.

Factors Influencing Customer Satisfaction:

- Service quality
- Price
- Specific product or service features
- Consumer emotions

- Attributions for service success or failure
- Perceptions of equity or fairness
- Other consumers, family members, and coworkers
- Personal factors
- Situational factors

Customer Satisfaction from TQM Perspective

TQM's view on customer satisfaction is that it is the driving force for an organisation to improve its performance (Zairi and Youssef, 1995). Theorists in this area (see, e.g., Tsang and Antony, 2001), state that understanding, satisfying and surpassing customer needs and expectations on a continuous basis should be the key goal of TQM. To realise customer satisfaction, organisations need to make an inventory of customers' data, customers' complaints, and benchmarking in order to improve the customer orientation (Tsang and Antony, 2001). In short, the TQM literature sees customer satisfaction as identifying the needs of customers and then exceeding their expectations.

Customer Satisfaction from Performance Management Perspective

Number of performance measurement systems has evolved, broadening their focus on the stakeholder's requirements rather than only reflecting shareholder's economic-profits (Garengo et al., 2005).

In essence, the Balanced Scorecard, or performance management (PM) in general, also emphasizes understanding of the customer and meeting his/her expectations, which is regarded as the main mechanism for achieving superior profitability (Kaplan and Norton, 1992). Marketing's theory on customer satisfaction is presented next.

Customer Satisfaction from Marketing Perspective

Simply defined, marketing involves the task of creating, promoting, and delivering goods and services to consumers. According to McNamara (1972), the marketing concept is:

“a philosophy of business management based upon a companywide acceptance of the need for customer orientation, profit orientation, and recognition of the important role of marketing in communicating the needs of the market to all major corporate departments”.

Clearly, this definition indicates a paradigm shift in focus from an emphasis on transaction marketing to a marketing orientation, involving understanding and building long-term mutually beneficial relationship. Kotler (1998) posits that the key to achieving organizational goals consists in determining the needs and wants of target markets and delivering the desired satisfactions more effectively and efficiently than competitors. Similarly, Walker et al. (1992) assert that the marketing concept initiates the planning and coordinating all activities for satisfying customer needs and wants.

Conceptualizing customer satisfaction

Despite the widespread recognition attached to customer satisfaction, researchers have not yet agreed on one global definition for it. Swan and Combs (1976) defined satisfaction as a post-purchase attitude. Westbrook (1980) introduced the notion that customer satisfaction involves cognitive and affective aspects in pre-purchase, purchase, and post-purchase phases of buying goods and/or receiving services. Rust and Oliver (1994) suggest that customer satisfaction or dissatisfaction emerges as a response to a single or prolonged set of service encounters. Giese and Cote (2000) argue that consumer satisfaction comprises three basic components including the type of response; the centre of interest or the subject on which the response is focused; and the moment in time at which the evaluation is made.

Customer satisfaction refers to the consumer’s judgments regarding a firm’s success or failure in meeting expectations, with met expectations resulting in satisfaction and unmet expectations resulting in dissatisfaction (Oliver, 1999). This definition suggests that satisfaction is a “post consumption” experience which compares perceived quality with expected quality (Anderson and Fornell, 1994; Parasuraman et al., 1985). As well, satisfaction is a judgment a customer makes following a service encounter, and that this evaluation is highly heterogeneous. It differs from customer to customer, encounter to encounter, and firm to firm, supporting the need for new insights in customer satisfaction between and across industries. Finally, the satisfaction is a process spanning the consumption period and that research of the post-purchase phase is critical to new knowledge development.

Customer Perceptions of Quality and Customer Satisfaction:

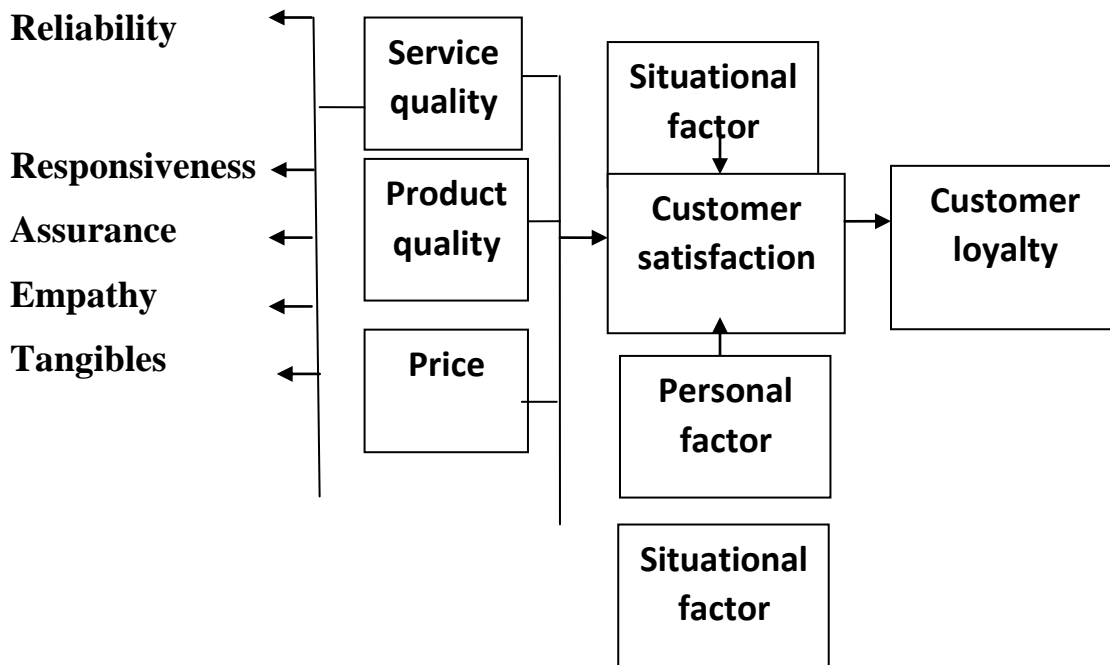


Figure 2.3 Customer Perceptions of Quality and Customer Satisfaction

Outcomes of Customer Satisfaction:

- Increased customer loyalty
- Positive word-of-mouth communications
- Increased revenues
- Increased return to shareholders

According to Evans and Dean (2003), the customer is the judge of quality. Understanding customer needs, both current and future and keeping pace with changing market require effective strategies for listening to and learning from customers, measuring their satisfaction relative to competitors and building relationships. Satisfaction and dissatisfactions information are important because understanding them leads to the right improvements that can create satisfied customers who reward the company with loyalty.

Satisfaction can be expressed in many ways, like positive word-of-mouth, giving compliments to the service provider and brand loyalty to the service organization. Quite often it is assumed that satisfied consumers will be brand loyal. That needs not be the case, especially even now entrants have come to the satisfied customers will show a higher repurchase rate than dissatisfactions of customers is an important one. Customer satisfaction leads to repeat purchases and repeat purchases lead to loyal customers. In turn, customer's loyalty leads to enhanced brand equity and higher profits.

On the other hand the only measure of acceptable quality is customers satisfaction, which takes into account both objective and subjective interpretations of the needs and expectations of customers. If the customers are satisfied with the products and services offered, the organization has not only correctly interpreted customer needs and expectations but it is also providing products and services of acceptable quality (Singh, R.G., & Shah, M.K. 2011).

Healthcare industry continues to face several challenges from the environment. Among many, one of the critical challenges is to improve the quality and efficiency of patient care. The ability of the healthcare organization to deliver fast and effective patient care is critical to its success. However enabling hospitals to provide better healthcare for their patients require a significant other issues like increasing efficiencies in how the staff delivers the service ranging from gate keeper attitudes, admission procedures, billing provisions to discharge of the patients from the hospitals.(Rajkumar Giridhari Singh, 2019)

There have been various studies conducted to find out the satisfaction of the patients. Quality management has emerged not only as the most significant and long term strategy for ensuring the survival of organizations, but also leads to business excellence (Raja et al., 2007). James (2005) highlighted that the competition in healthcare industry is shifting from price competition to quality and performance competitions. A patient's expression of satisfaction or dissatisfaction is a judgment on the quality of hospital care in all of its aspects (Torcson, 2005).

Patient satisfaction is an indicator that should be indispensable to the assessment of the quality of care in hospitals. Badri, et al.(2008) view that patients and their satisfaction are considered the most crucial point in planning, implementation and evaluation of service delivery and that the meeting the needs of the patients and creating health care standards were imperative towards achieving high quality. Zineldin (2006) stated that patient satisfaction is an important health outcome and measure.

According to Locker and Dunt (1978), patient satisfaction has become an important part of policy formulation and medical, in as much as it affects compliance and participation in care. Patient satisfaction may be used as an

evaluation of quality of care, as an outcome variable, and as a method for quality improvement.

Singh and Shah (2011) in a study found that Patients can have multiple reasons for choosing a particular medical provider. Again proportion of patients willing to seek a particular hospital (medical provider) can be significantly different across attributes such as infrastructure considerations, suggestions by friends and relatives, transport convenience, availability of specialist consultants, near to home etc. (Singh and Shah, 2011).

According to Sitzzi and Wood (1997), components of satisfaction consist of: structural, technical and interpersonal aspects of care. The structural aspects includes: access, physical setting, costs, convenience, and treatment by non-clinical staff/insurers. The technical aspects include knowledge, competence/quality of care, interventions, and outcomes. The interpersonal aspects includes: communication, empathy, and education.

Hall and Dornan (1990) in a study conclude that patient satisfaction is associated with age and education and nearly significantly associated with social and marital status.

Hall and Dornan (1988), in another study found that patients were more satisfied with newer doctors because they spend more time with patients, and displayed more technical and interpersonal competence. They have also observed that negative experiences are remembered for a longer period of time by the patients.

Brody et al. (1989) commented that patients are unable to assess technical care; patients may perceive technical care as so.

Services quality and customer satisfaction.

Many researchers have studied the relationship between service quality and customer satisfaction (Roth and Van Der Velde 1991, Roth and Jackson III 1995). Prior studies have considered service quality as an antecedent of

customer satisfaction (Cronin and Taylor 1992, Anderson et al. 1994, Gotlieb et al. 1994). Empirical findings showed that service quality is related to customer satisfaction (Babakus et al. 2004). Customers who are satisfied with the perceived service quality will have a favorable emotional response, i.e., customer satisfaction. Research in service marketing considers customer satisfaction as an affective construct (e.g., Westbrook and Reilly 1983, Oliver 1997, Olsen 2002). Westbrook and Reilly (1983) suggested that customer satisfaction is an emotional response to the experiences provided by and associated with particular products purchased or services provided. Similarly, Oliver (1997) pointed out that customer judgment

2.4 Quality in Sudan

The current estimated population of Sudan is about 41,727,150 people according to the latest United Nations report in the first month of 2017 in which 33.7% of the population were reported living in the urban areas . The population growth is 2.41% in the annual report of 2017. Sudan is a young population country with the median age 19.6 years (UN, Sudan Population (2017))

Depend on World Health Organization and Sudan statistics in 2016 the total life expectancy for male and female at birth, a measure of the general health condition and an indicator of the standard of living, was estimated around 62 and 66 years respectively, and this is considered the average of least developed countries . The under-five child mortality rate was 77/1000 in 2015 compared to 128/1000 in 1990 and the maternal mortality ratio was 360/100,000 in 2015 compared to 720/100,000 in 1990.

Sudan is considered a lower-middle income country—with 47% of the population living below the poverty line (Republic of the Sudan, Federal Ministry of Health. Joint financial management Assessment 2016).

Sudan is one of the well off countries in term of national resources. Oil production is the major cause of the economy's growth the country witnessed during the resent years. The nominal growth domestic product (GDP) grew from US \$ 9.9 billion in 1980 to US \$ 57.9 billion in 2008. However, this growth was not broad-based, investments and services are concentrated around the capital and big cities. There are wide disparities between urban and rural areas and between regions (Sudan Millennium Development Goals Progress Report, 2010). Poverty remains widespread with Sudan ranking 157th in 2010 (down from 147 in 2005) out of 169 countries on human development index (Human Development Report, 2011, Human Development Index, United Nations Development Programme, 2011). About 46.5% of the population live below poverty line with less than 1\$ earning a day, while 8% live in extreme poverty. The unemployment rate for 15 years and above is 13% with 9% for males and 23% for females (Sudan National Baseline Household Survey, CBS, 2009). The country witnessed decades of conflicts and there is ongoing emergency in Darfur region, this made health a major challenge.

Sudan has a federal system of governance with three levels of administration. Health is included in the concurrent list of the Interim Constitution (2005) and follows the principles of devolution envisaged by the Local Government Act (2003) with the powers of governance distributed between federal government, states and the localities.

(Dina M. Sami Khalifa et al, 29 May 2014).

In addition to excessive burden of communicable diseases such as malaria, tuberculosis, and schistosomiasis, Sudan is predominantly susceptible to non-communicable diseases, natural and manmade disasters. Drought, flood, internal conflicts, and outbreaks of violence are quite common which bring

about a burden of traumatic disease and demand for high quality emergency health care (World Health Statistics Report 2017)

Organization of Sudan's health service delivery system:

Sudan's public system is structured in a three-leveled structure: primary, secondary and tertiary levels. The primary level is composed of primary health care units (PHCU) which are operated by community health workers, dressing units operated by nurses or medical assistants, dispensaries which are operated by medical assistants and health centers which are operated by medical doctors at the level of general practitioner. The secondary level is composed of rural (district) hospitals which has the admission capacity with 40 to 100 beds. Tertiary-level is composed of teaching, specialized, and general hospitals in addition to 21 tertiary-level hospitals and specialized centers. The public sector operates %90.7 of health facilities in the country and %82.9 of the health care.

Only %13 of the localities in Sudan has a fully-functioning health service delivery organizational structure. The lower level facilities are less functional. About %51.1 of PHCUs are not functioning, %57.4 of dressing units are not functioning, and %30 of dispensaries are not functioning. The major reason behind this inactivity is the lack of human resource which is the reason stopping work of %40 of these facilities. Furthermore, the public health system is markedly skewed towards establishing hospitals and tertiary care services. There has been increased focus on establishing hospitals during the past years (their number increased from 253 in 1995 to 351 in 2004). This affects patients' pathway to care to utilize secondary and tertiary health facilities as entry points to the system instead of being referral centers. (Dr A. F. Eltayeb, 2015)

2.5 Royal Care International Hospital

The **Royal Care International Hospital** is private hospital located in Burri, Khartoum, Sudan. It is a multi-disciplinary hospital focusing on advanced health care services, in addition to the Center for Continuing Education and Research according to the latest advanced scientific methods. The hospital was established in 2010 by Sudanese founders, in goal to present a very carefully care for patients built on the fundamentals of quality, cooperation, empathy, development and ethics.

The hospital contains Emergency Department, Operations Department, Laboratory Department, Radiology Department, Intensive Care and Intermediate unit, Cardiac Catheterization, Day Care Unit, Oncology Center and Neonatology unit

In addition to many centers of excellence Include: Dialysis, Orthopedic, Hearing and balance center, Diabetes and endocrinology, Speech diseases, Ophthalmology, Rehabilitation and physiotherapy, Oral and dental health, and Dermatology ,Beauty and laser therapy centers.

2.6 Omdurman Maternity Hospital

The **Omdurman Maternity Hospital** was inaugurated in 1957 at Mourada area as a specialized hospital (public sector) for the purpose of rising maternal and newborn care, as natural development for the midwifery school, the hospital included labor room and a two story building with 34 beds divided into two words. in 1971 he establishment of third stair with a capacity of 18 beds the late man of righteousness and benevolence Othman AwadAbu Lela. On 1971 the newborn pediatric ward was built with limited capabilities.

On 1979 the operations complex was opened with a room for operations and a sterilization room at the expense of the Indian community , the rehabilitation and expansion of hospital and modernization in terms of

infrastructure ,where the change and renewal included the neonatal unit where it has 64 beds and 23 nurseries .the complex of cold operations ;this complex has been updated to contain 3 operation rooms , and the follow up ward after the operation of 10 beds, the emergency operations complex contains two operating rooms and a recovery room equipped with all operational equipment . The private suite was opened in 1983 with a capacity of 14 rooms and normal delivery room and operating room was expanded to become 36 rooms and two chamber caesarean section and a delivery complex with five rooms for delivery , The two-stair complex for pregnant women and operations with a capacity of 40 beds General word for pregnant women and operations (word 3) with a capacity of 80 beds ,critical condition word (word 0) with capacity of 9 beds . Gynecology after this section was just command inside the hospital has become a complex of women's diseases and contains two complex of operations with a capacity of 5 rooms and also contains the clinics of women's health and emergency's with the capacity of 11 beds and patient's rooms with a capacity of 45 beds, and contains the department of endoscopy began laparoscopic surgery in 2006. The number of births used to be 500 births per year. This number currently reaches international records at 30,397 births every year with noticeable decrease in maternity and neonates' mortality. The total number of births since the inauguration of the hospital is 460,043 and still counting and never closed its doors.

2.7 Previous Studies:

Hana Arrfou 2019 found that the concept of “total quality management (TQM)” is broadly used in business. Regardless of the fact that several studies have analyzed this topic, little research has been conducted on integrating total quality management and supply chain management (SCM) practices in business organizations. The role of innovation capabilities is considered to be highly valuable, because they are considered feasible approaches, which can be applied by top management to enhance organizational effectiveness and productivity.

This study aims to develop a new business model that integrates the most important practices between total quality management and supply chain management, while emphasizing the role of innovation capabilities. This paper also suggests possibilities toward a new approach with regard to minimizing the cost and improving operational performance. Furthermore, it proposes a conceptual framework that shows the major variables in explaining the new business model of integration practices between TQM and SCM, and addressing the role of innovation capabilities to handle this model.

- Mine HALIS et al 2017, applied principles to achieve Total Quality Management (TQM) at healthcare institutions. Main elements elaborated in accordance with field specialists and international standards. These principles, elements, and the associated processes were reflected on the healthcare industry and the specific requirements of its operations, management, and customers. In order to apply the literature study into the field, a case study of the healthcare industry in Libya is adopted. The research method was to survey hospital staff from all levels and in several institutions about the basic principles of TQM at their workplace. The participants were also asked about the work methods, their awareness about

the importance of TQM, the usage of modern technology by their institutions, utilization of resources, and the problems that may hinder the implementation of TQM the hospitals. The analysis of the survey indicated that the implementation of quality at Libyan hospitals is estimated at 33.6% with a significant lack of awareness about quality. A set of recommendation is then provided for hospital leadership for study and implementation.

- Heba H. Hijazi, PhD Et al 2018 Targeting the patient's needs and preferences has become an important contributor for improving care delivery, enhancing patient satisfaction, and achieving better clinical outcomes. This study aimed to examine the impact of applying quality management practices on patient centeredness within the context of health care accreditation and to explore the differences in the views of various health care workers regarding the attributes affecting patient-centered care. Our study followed a cross-sectional survey design wherein 4 Jordanian public hospitals were investigated several months after accreditation was obtained. Total 829 clinical/nonclinical hospital staff members consented for study participation. This sample was divided into 3 main occupational categories to represent the administrators, nurses, as well as doctors and other health professionals. Using a structural equation modeling, our results indicated that the predictors of patient-centered care for both administrators and those providing clinical care were participation in the accreditation process, leadership commitment to quality improvement, and measurement of quality improvement outcomes. In particular, perceiving the importance of the hospital's engagement in the accreditation process was shown to be relevant to the administrators (gamma = 0.96), nurses (gamma = 0.80), as well as to doctors and other health professionals (gamma = 0.71). However, the administrator staff (gamma = 0.31) was less likely to perceive the influence of measuring the quality

improvement outcomes on the delivery of patient-centered care than nurses (gamma = 0.59) as well as doctors and other health care providers (gamma = 0.55). From the nurses' perspectives only, patient centeredness was found to be driven by building an institutional framework that supports quality assurance in hospital settings (gamma = 0.36). In conclusion, accreditation is a leading factor for delivering patient-centered care and should be on a hospital's agenda as a strategy for continuous quality improvement.

- Emad A. Al-Shdaifat 2015 the aims of the study were to explore the extent of Total Quality Management (TQM) implementation in hospitals and its association with demographic variables. Methods: This cross-sectional study collected data from 332 nurses using a self-developed questionnaire. The participants were recruited from government, military, university and private health sectors. Results: The results of this study showed that 70% of variance in implementing TQM can be achieved by following the principles of TQM. These principles include continuous improvement, teamwork, training, top management commitment and customer focus. Continuous improvement was the most significant factor in explaining variance in implementing TQM principles. TQM was implemented in Jordanian hospitals at a level approximately less than 60%. The most implemented principle was customer focus, and the least implemented was continuous improvement. The private sector implemented all of these five principles more than other sectors did. Conclusion: Efforts should be focused on establishing a foundation that can inspect and accredit quality in the health care system.

- Rajkumar Giridhari Singh 2019 Healthcare industry continues to face several challenges from the environment. Among many, one of the critical challenges is to improve the quality and efficiency of patient care. The ability of the healthcare

organization to deliver fast and effective patient care is critical to its success. However enabling hospitals to provide better healthcare for their patients require a significant other issues like increasing efficiencies in how the staff delivers the service ranging from gate keeper attitudes, admission procedures, billing provisions to discharge of the patients from the hospitals. The purpose of this paper is directed to find out customers satisfaction from the hospitals under study. It seeks to analyze the quality of medical service in the hospitals.

Finally the paper aims to determine and examine if there are differences among the hospitals in the satisfaction of the patients. To address the objective, a survey was conducted of the patients of three biggest private hospitals in Manipur (India). The survey asked about the patient satisfaction of the service they received from the hospitals using schedules. The schedule includes questions on the perceptions of the patients in registration and admission, cleanliness and comfort, doctors' care, nurses' care, treatments, and fees and charges.

- Gunjan Patel 2015 This paper presents the description on Healthcare organizations are required to focus on Total quality improve: Rendering acceptable, quality health services to patients at affordable price within reasonable price, within in a reasonable time; Applying zero errors to all patients services; maintaining a continuous error prevention program; Training employees in medical care on such aspects as error prevention,

reducing delay time and providing prompt reasonable to patient's needs; management system have always improvement in such systems to realize the true nature of the quality of healthcare and to be motivated towards improving this quality. In spite of billions of dollars of money spent worldwide, most of the healthcare is seen to be ineffective, inefficient and inadequate. Therefore there is a crying need to bring about a paradigm shift in the quality of health care delivery and to monitor and sustain it. It is obvious that those institutions, which are quality conscious and are committed to continuous quality improvement, will gain the highest consumer acceptance and will flourish at the expense of others. The 'Quality Revolution', as it is sometimes referred to, is nothing but putting the patient at the heart of health care and wrapping the care around it, rather than the other way around. Quality Measuring and assessing service is important, particularly when multiple sources of variation are present. Analyzing all medical processes to remove rework and waste could build healthcare quality and lead to significant reductions in patient cost. The use of quality-assurance programs and statistical tools can be directly applied to healthcare organizations with improved quality of patient's objectives and the results of care from the patient's viewpoint.

- Khairul Anuar Mohd Ali 2013 This study is carried out to investigate the impact of total quality management (TQM) practices on hospital performance. Several studies have proven that TQM practices have a significant impact on organisational performances. However, this has not been fully addressed in many developing countries especially in the healthcare industry. Realising the need, this study seeks to explore the impact of TQM practices on the hospital performance in Jordanian hospitals. The research has been carried out in both public and private hospitals in Jordan.

The data collection was gathered through a stratified random sampling method. 300 questionnaires were distributed out of 713 population samples. The response rate was 77% of the total questionnaires distributed. The findings indicate that there is a positive relationship between the variables of TQM practices and hospital performance, especially in the dimension of patient result and staff/work system results .

- Prabha Ramseook-Munhurrin et al 2011, Total Quality Management (TQM) has emerged as a potential solution to improve the efficiency and effectiveness of health care provision and is becoming increasingly important for the successful operation of public hospitals. The aim of the study is to determine the extent to which TQM can be adopted in public hospitals in Mauritius. The objective of the study is to assess management and employees perceptions on the critical factors influencing effective TQM adoption in public hospitals. A questionnaire comprising of items on a 5-point Likert scale was used to capture the perceptions and the data was analyzed using descriptive statistics and t-tests. The findings showed that the TQM dimensions have a significant impact on the perception of management and employees. Analysis of variance (ANOVA) was further employed to examine if the critical factors were perceived differently by management and employees. The results also revealed that management perceives TQM adoption as being relevant and effective, in the case of public hospitals.
- FAISAL TALIB et al 2011 Due to the growing prominence of total quality management (TQM) in health care, the present study was conducted to identify
The set of TQM practices for its successful implementation in healthcare institutions through a systematic review of literature. A research strategy was

performed on the selected papers published between 1995 and 2009. An appropriate database was chosen and 15 peer-reviewed research papers were identified through a screening process and were finally reviewed for this study. Eight supporting TQM practices, such as top-management commitment, teamwork and participation, process management, customer focus and satisfaction, resource management, organization behavior and culture, continuous improvement, and training and education were identified as best practices for TQM implementation in any health care setting. The article concludes with a set of recommendations for the future researchers to discuss, develop, and work upon in order to achieve better precision and generalizations.

- Biljana Tomic Et al 2018 The paper clarifies the idea and summarizes the concepts, principles and standards of quality management in healthcare, thus creating the foundation for understanding the role and importance of quality of life in this field. Therefore, special attention will be paid to the quality management concepts within the ISO 9000:2015 and the ISO 9001:2015 will be especially considered in the context of implementation in the healthcare industry. Inspired by that, the paper will give a brief overview of the problem of implementation of the quality management system in healthcare, thus illustrating the specific characteristics of this sector. The quality management principles within healthcare, according to the EN 15224:2016 (requirements according to ISO 9001:2008) are explored next. The international standards in healthcare as well as the most prominent ISO technical committees in this sector follow. Finally, the paper offers some conclusion remarks with guidelines and suggestions for future research .

- Majdi M Alzoubi et al 2020 Background: Synergistic integration of predictors and elements that determine the success of total quality management (TQM) implementations in hospitals has been the bane of theoretical development in the TQM research area. Thus, this paper aims to offer a systematic literature review to provide a foundation on which research on TQM can be built and to identify the predictors of successful TQM in the health-care context. Materials and methods: A systematic literature survey was adopted in this paper, involving the review of 25 relevant researched articles found in the databases Science Direct,

health-care context. Also, it is revealed that the identified core predictors have positive effects on an improved health-care system. However, the systematic survey of the literature reveals a dearth of studies on TQM in the health-care context.

Conclusion: As TQM has become an important management approach for advancing effectiveness in the health-care sector, this kind of research is of value to researchers and managers. Stakeholders in the health sectors should introduce and implement TQM in hospitals and clinics. Nevertheless, this study has limitations, including that the databases and search engines adopted for the literature search are not exhaustive.

- Macide Artac Ozdal et al 2018 Total Quality Management (TQM), a core strategic management approach is designed for quality of any organization (healthcare) based on the employer and employees' participation for customers' satisfaction, organization's effectiveness, competitiveness and flexibility. The study aimed at evaluating the implementation of TQM and its impact on employees' performance in a tertiary-level teaching hospital in

Oyo State, Nigeria. A descriptive cross-sectional study design was adopted, with designed questionnaires circulated to hospital staff using a random sampling method. A total of 106 healthcare workers completed the questionnaires. The data were collected using a structured questionnaire, which were statistically analyzed using SPSS version 17. The results of the study revealed that the implementation of the principles of TQM practices ranges from leadership to employees' satisfaction. Financial and political pressures were found to be important external factors affecting employees' performance in the particular hospital. These findings could give better understanding on the improvement and promotion of total quality management practices and its impact on employees' performance in the healthcare organizations; improve effectiveness, productivity, profitability and flexibility of the hospital facilities and services provided to patients/clients.

Chapter Three

Materials and Methods

This chapter contains a description of the materials and methods followed by the researcher for determining the study population and sample, the study tool, the verification steps of the accuracy and stability of the search tool, also a description of the study design and statistical methods that used in data analysis.

3.1 Study design:

This study based on the descriptive and analytical approach, which depends on the state of facilities services Sudanese regime applicable to the study of total quality management in addition to the statistical analysis of the questionnaire.

This study based on theoretical background of methodology and using hypothesis testing approach.

3.2 Information Sources:

- **Primary sources:**

Questionnaire as a key tool to search, designed specifically for this purpose.

- **Secondary sources:**

Books, Researches and academic studies and references, Reports and records of the institutions and relevant authorities, Specialized studies in the study field, Web sites relevant.

3.3 Place and duration of study:

The study were be in Khartoum state , It contains the country's second largest city by population(Omdurman), and the city of Khartoum, which is the capital of the state as well as the national capital of Sudan were the hospitals was Royal Care International Hospital & Omdurman Maternity Hospital customer and employee in period from Nov -2018 to August 2021.

3.4 Study population:

The population is the all observations in study, which is divided into two parts:

- Firstly the limited population: Customers of the Royal Care International Hospital & customers Omdurman Maternity Hospital.

- Secondly the unlimited population: Employees of the two hospitals divided into:

Medical staff, Administrative staff, workers.

-Inclusion Criteria:

* All customers in the two hospitals.

* All the staff employment duration more than 6 month before the beginning of study.

Exclusion Criteria:

Duration of employment if less than 6 month cannot participate in the questionnaire.

3.5 Data collection:

For the purpose of obtaining data, collecting and achieving search objectives, the following method have been used:

1- Direct interviews by the researcher for all customers.

2- Self administer to all employees.

3- Questionnaires

3.6 Study sample:

Sample size of the patients:

The total number of Patients in Royal Care International Hospital (n) =140

$$n_0 = \frac{(z)^2 (p)(1-p)}{(d)^2}$$

$$z = 1.96 \quad p = 0.5 \quad d = 0.05$$

By the above equation $n_0 = 384$

$$n_{strata} = \frac{n}{N} * n_0 = 140/483 * 384 = 111$$

Based on that the researcher select about **111 patients** from Royal Care International Hospital to participate in the study.

The total number of Patients in Omdurman Maternity Hospital (n) = 343

$$n_{strata} = \frac{n}{N} * n_0 = 343/483 * 384 = 272$$

Based on that the researcher select about **272 patients** from Omdurman Maternity Hospital to participate in the study.

Sample size of the employees:

$$n_0 = \frac{(z)^2 (p)(q)}{(d)^2}$$

$$z = 1.96 \quad p = 0.3 \quad q = 0.7 \quad d = 0.05$$

$$n_0 = 323$$

Based on that the Employees of Royal Care International Hospital participated in the study:

$$\text{Medical staff} = n_{strata} = \frac{n}{N} * n_0 = 600/1500 * 323 = 129$$

$$\text{Workers} = 700/1500 * 323 = 151$$

$$\text{Administrative Staff} = 200/1500 * 323 = 43$$

In the same wording

$$n_0 = \frac{(z)^2 (p)(q)}{(d)^2}$$

$$z = 1.96 \quad p = 0.2 \quad q = 0.8 \quad d = 0.05$$

$$n_0 = 246$$

Based on that the Employees of Omdurman Maternity Hospital participated in the study::

$$\text{Medical staff} = n_{strata} = \frac{n}{N} * n_0 = 559/913 * 246 = 129$$

$$\text{Workers} = 250/913 * 246 = 67$$

$$\text{Administrative Staff} = 104/913 * 246 = 28$$

3.7 Study tool:

The researcher has developed a study tool to become a tool for data collection in this study, and that a review of previous literature on the subject of the Implementation of the Total Quality Management (TQM) in Health Services Sector and Its impact on customer satisfaction.

3.7.1 Believe study tool:

The study was presented on number of validators in the field of study, so the measure became in the final form.

Reliability and Validity:

Stability means that measure gives the same results if used more than once under similar conditions.

Reliability is defined as the extent to which a questionnaire, test, observation or any measurement procedure produces the same results on repeated trials.

Validity is defined as the extent to which the instrument measures what it purports to measure. and calculate in many ways represents the easiest being the square root of the reliability coefficient

$$\text{Validity} = \sqrt{\text{Reliability}}$$

Researcher calculates the reliability coefficient of the scale used in the questionnaire by alpha equation and the results as follows:

Table3.1: Reliability and Validity:

reliability coefficient	Validity coefficient
0.89	0.94

Notes from the results table (3.1) that all reliability and validity coefficients for questionnaire is greater than (50%) and close to the one, This indicates that the questionnaire is characterized by high reliability and validity, and makes statistical analysis acceptable.

3.8 Study procedures:

I have been conducting this study, according to the following steps:

1. Preparation of the study measurements of the final image.
2. Identify the study sample.
3. Distribute the study tool on the study sample, and retrieval, where distributed (930) questionnaires, have been retrieved (930), which formed the study sample of customer and employee in both hospital .
4. Enter the data into the computer and processed statistically using the Statistical Package for Social Sciences (SPSS).
5. Extracting, analyzing and discussing the results.

3.9 Statistical Processing:

Data are encoded and processed statistically using the Statistical Package for Social Sciences (SPSS).

Statistically processors used:

To achieve the objectives of the study and to verify hypotheses, statistical methods were used the following:

- 1 - charts.
- 2 - frequency distribution of the answers.
- 3 - percentages.
- 4 - alpha equation, to calculate the reliability coefficient.
- 5 - median.
- 6 - Chi-square test for the significance of differences between the answers.

To get results as accurate as possible, has been used SPSS statistical software, which indicates a shortcut to Statistical Package for Social Sciences.

3.10 Data analysis:

The data has been organized and analyzed using Microsoft Excel and SPSS version 23 to represent as figures and tables.

Chapter Four

Results

4.1 Results:

This study aimed to identify the effect of implementation of total quality management in health services sector and its impact on customer satisfaction of Royal Care International Hospital & Omdurman Maternity Hospital from the perspective of customer view point & employee view point, also aimed to identify the impact of the study variables (Job title, gender, age) on the effect of implementation of total quality management in health services sector and its impact on customer satisfaction.

To achieve the objective of the study, questionnaire was prepared and to ensure its sincerity, and the coefficient of stability, and after the data collection process, are encoded and entered a computer and processed statistically using the Statistical Package for Social Sciences (SPSS) Here are the results of the study according to the sequence of questions, and hypotheses:

4.1 Sample distribution by Job title variable

Firstly the sample distribution by Job title variable regarding the customer:

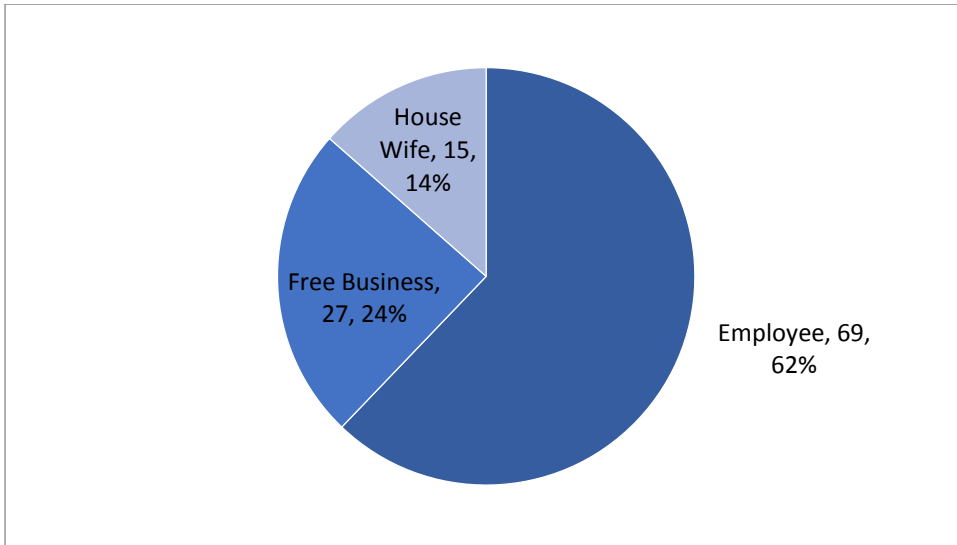


Figure 4.1: The sample distribution by Job title variable in the customer of Royal Care International Hospital

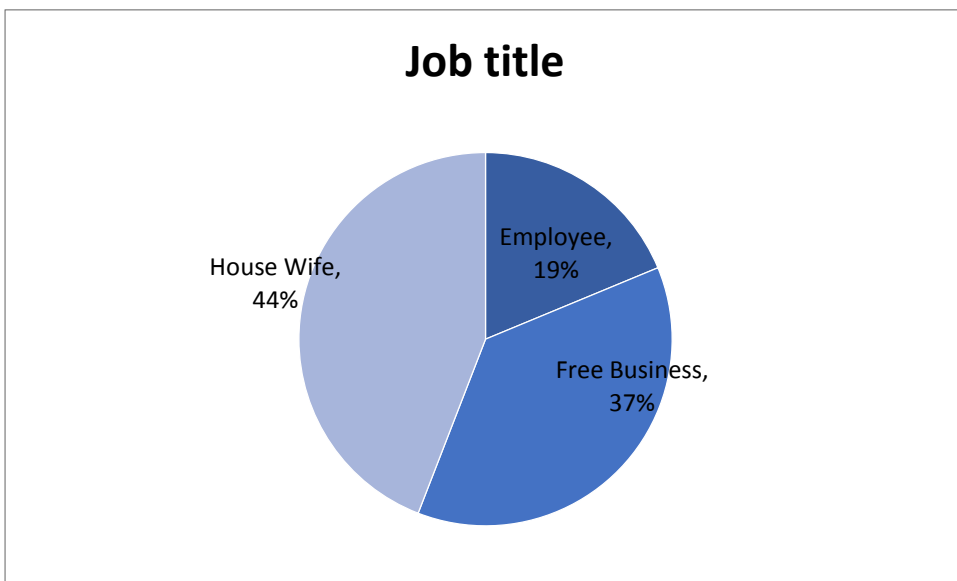


Figure 4.2: The sample distribution by Job title variable in the customer of Omdurman Maternity Hospital

Secondly the sample distribution by Job title variable regarding the Employee:

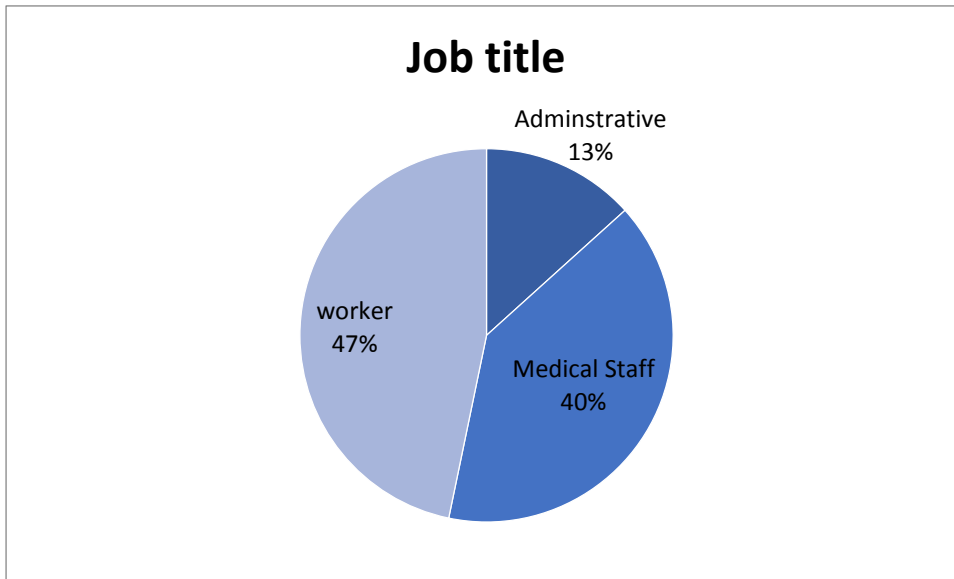


Figure 4.3: The sample distribution by Job title variable in the employee of Royal Care International Hospital

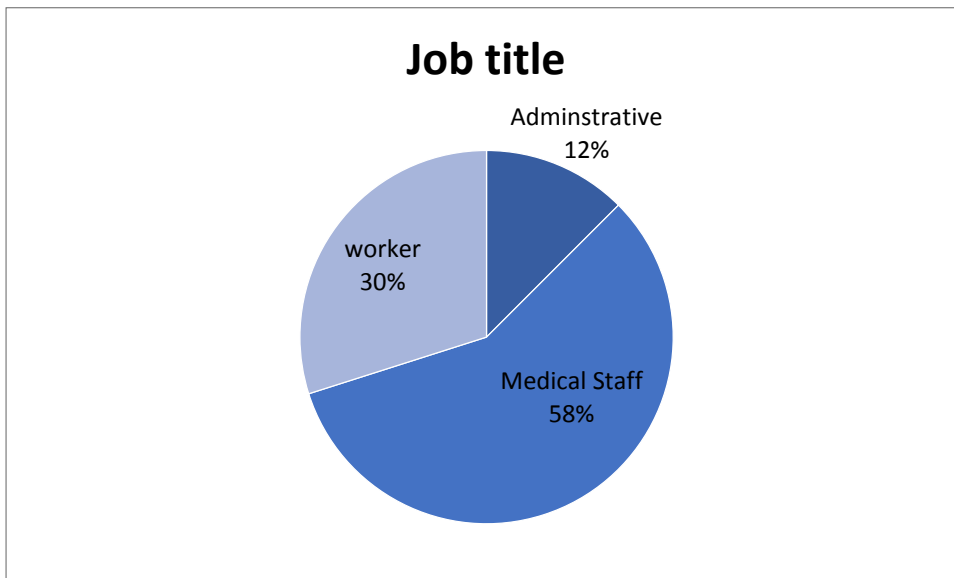


Figure 4.4: The sample distribution by Job title variable in the employee of Omdurman Maternity Hospital

4.2 Sample distribution by gender variable

Firstly the sample distribution by gender variable regarding the customer:

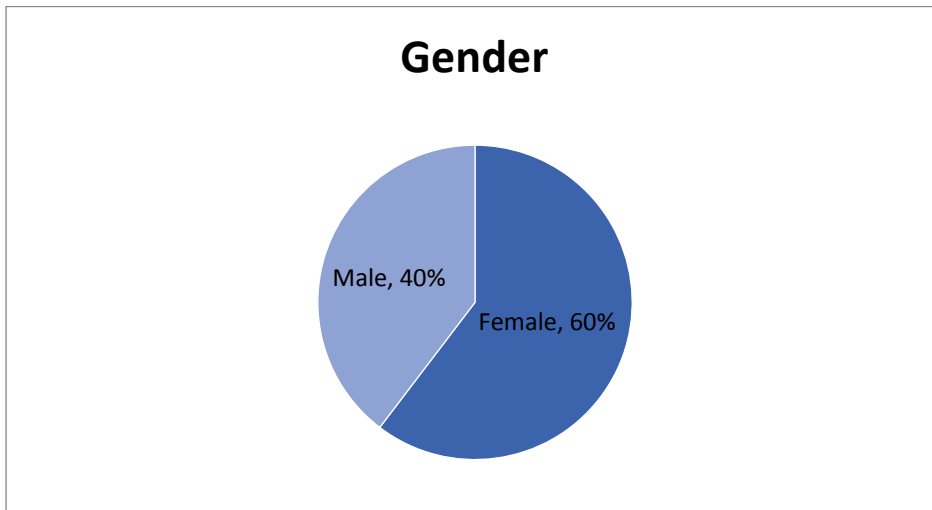


Figure 4.5: The sample distribution by gender variable regarding the customer of Royal Care International Hospital

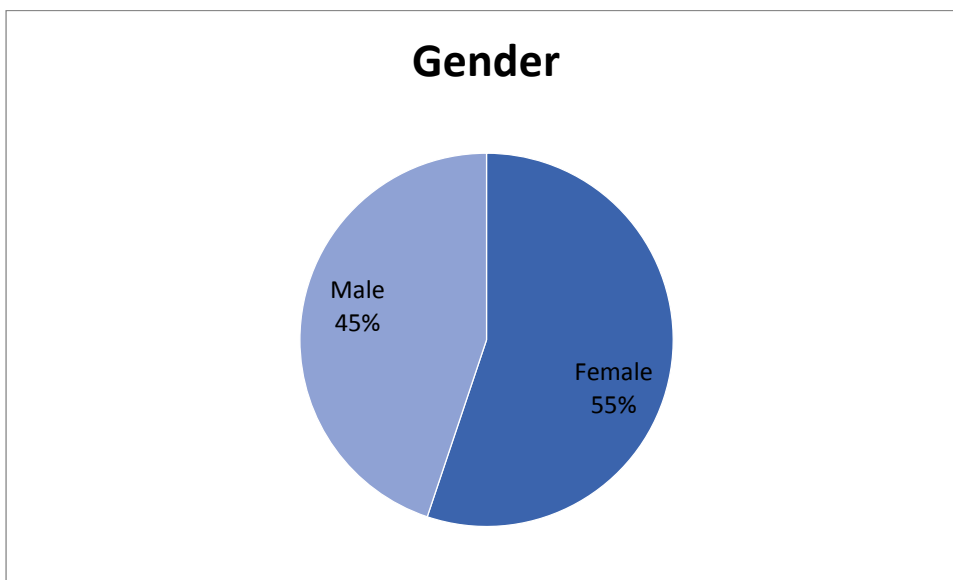


Figure 4.6: The sample distribution by gender variable regarding the customer of Omdurman Maternity Hospital

Secondly the sample distribution by Gender variable regarding the Employee:

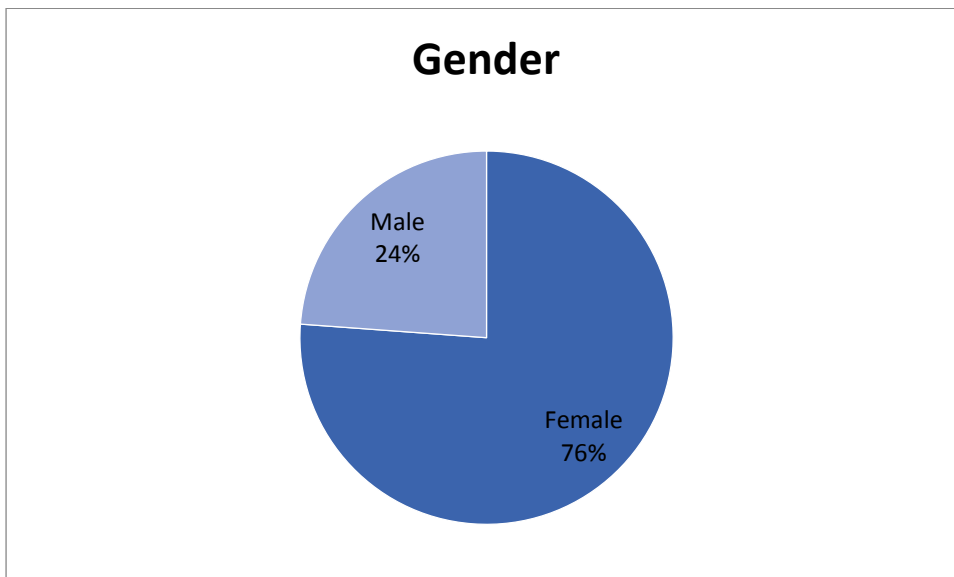


Figure 4.7: The sample distribution by gender variable regarding the employee of Royal Care International Hospital

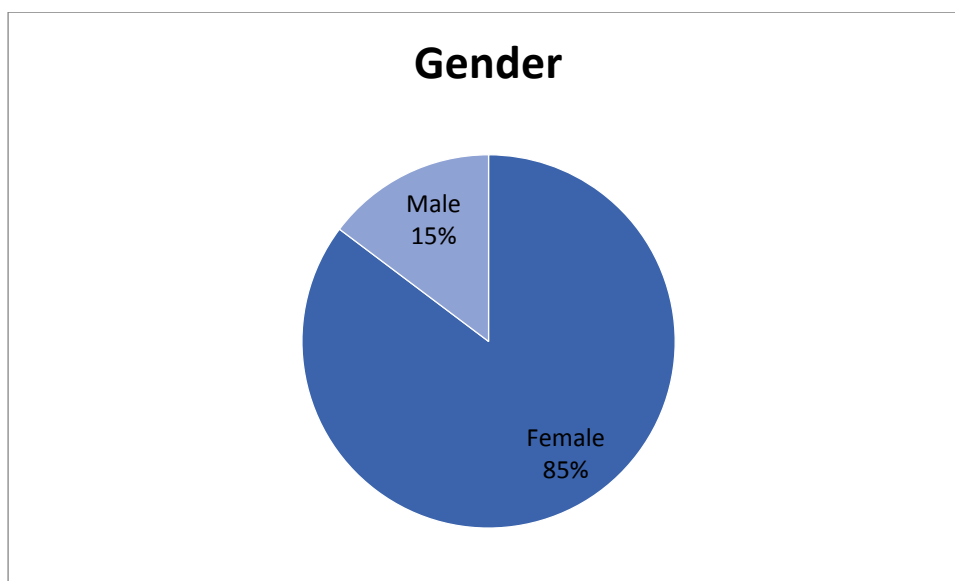


Figure 4.8: The sample distribution by gender variable regarding the employee of Omdurman Maternity Hospital

4.3 Sample distribution by Age variable

Firstly the sample distribution by Age variable regarding the customer:

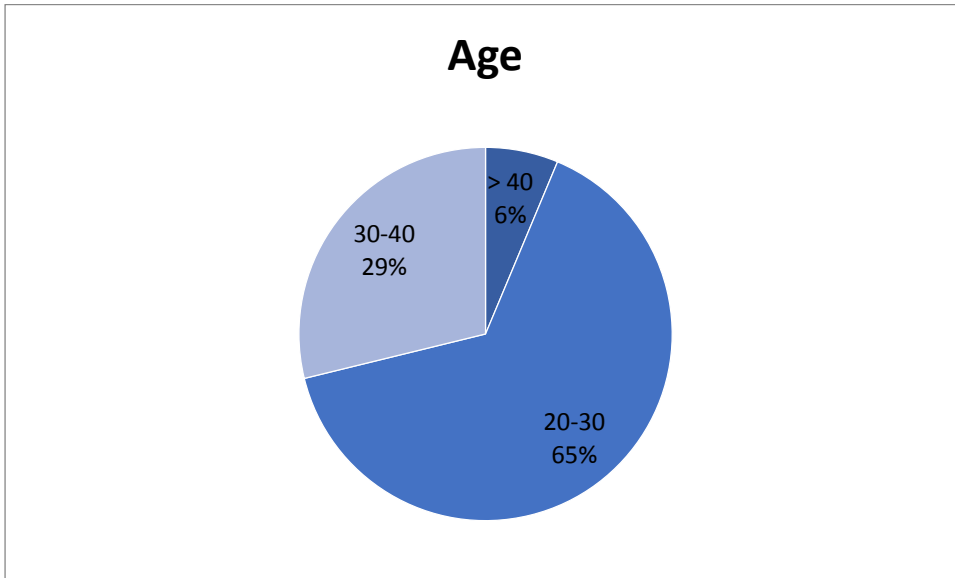


Figure 4.9: The sample distribution by age variable regarding the customer of Royal Care International Hospital

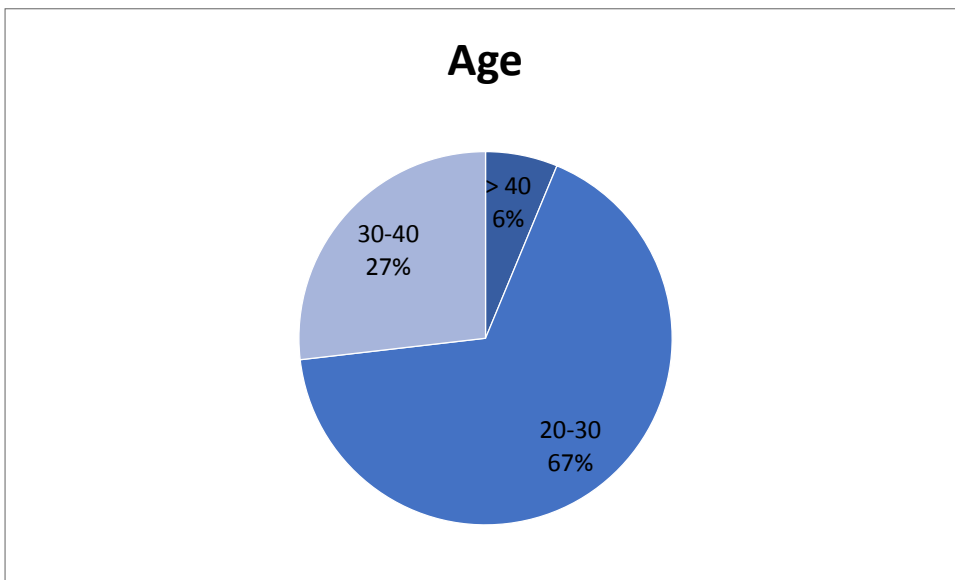


Figure 4.10: The sample distribution by age variable regarding the customer of Omdurman Maternity Hospital

Secondly the sample distribution by Age variable regarding the employee:

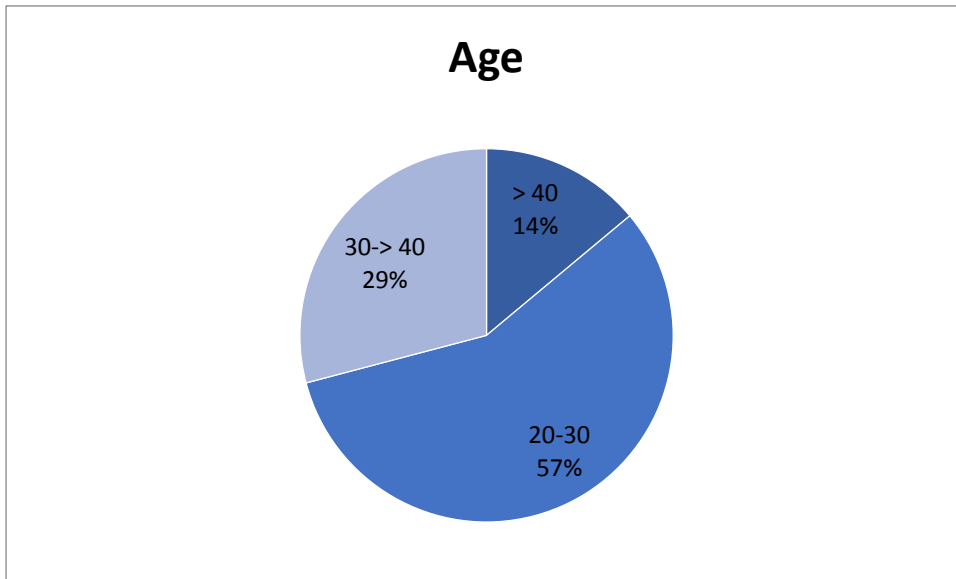


Figure 4.11: The sample distribution by age variable regarding the employee of Royal Care International Hospital

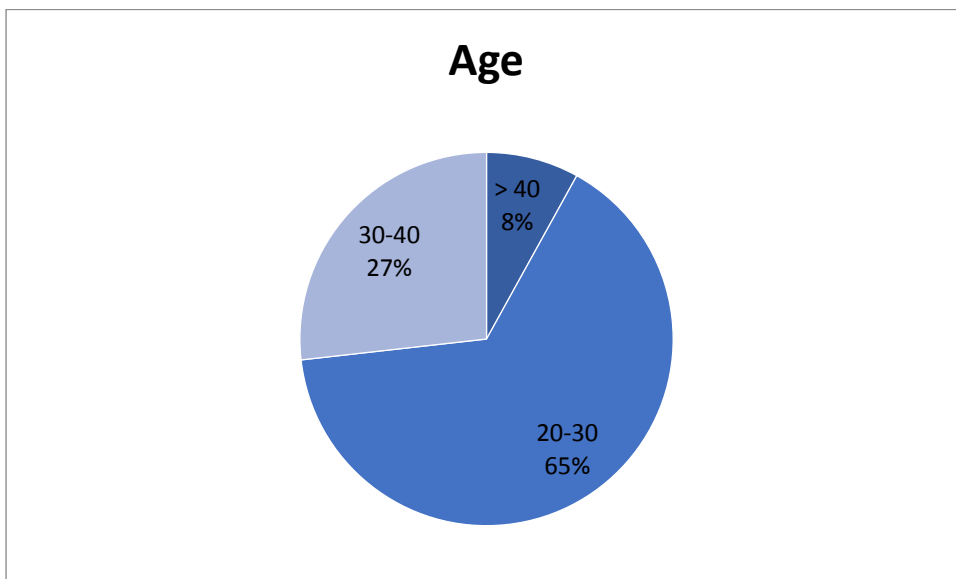


Figure 4.12: The sample distribution by age variable regarding the employee of Omdurman Maternity Hospital

4.4 Results concerning the study questions and hypothesis:

To answer the questions of the study and verification of hypotheses we calculated median for each of the phrases in the questionnaire and which show views of individuals the study, which was given Grade (5) as a weight for each answer " Strongly agree", and grade (4) as a weight for each answer "agree" grade (3) as a weight for each answer " Neural ", grade (2) as a weight for each answer, " Disagree" and grade (1) as a weight for each answer " Strongly disagree".

To know Trends answer, by calculated median to know the significance of differences in answers and the related of the answer to the SERVQUAL model to measure service quality in the two hospital by assessing our customer's service expectations and perceptions of the provider's performance in the hospitals

- **The result of first axis (Customer)**

Table 4.1: Frequency distribution for the Royal Care International Hospital Customer Answers:

Questions	Agree strongly		Agree		Neural		Disagree		Disagree strongly	
	Freq	Percent	Freq	Percent	Freq	Percent	Freq	Percent	Freq	Percent
Diagnostic equipment and medical equipment	3	2.7%	59	53.15%	20	18.03%	28	25.22%	1	0.9%
staff uniforms	-	-	5	4.5%	79	71.1%	26	23.4%	1	0.9%
provide service on time	4	3.6%	51	45.9%	3	2.7%	48	43.2%	5	4.5%
Existence of guidelines and signs	2	1.8%	48	43.3%	2	1.8%	46	41.3%	13	11.7%
services correctly from the first time	-	-	42	37.8%	13	11.7%	55	49.5%	1	0.9%
confident and comfortable with the medical staff	-	-	37	33.3%	8	7.2%	65	58.6%	1	0.9%
level of cleanliness	9	8.1%	43	38.7%	12	10.8%	42	37.8%	5	4.5%
staff to provide the service around the clock	-	-	42	37.8	8	7.2%	55	49.5%	6	5.4%

admission procedures	11	9.9%	43	38.7%	5	4.5%	47	42.3%	5	4.5%
Availability of public facilities/utility	11	9.9%	48	43.2%	5	4.5%	42	37.8%	5	4.5%
staff works as a team	2	1.8%	39	35.1%	2	1.8%	66	59.5%	2	1.8%
The staff are well qualified & trained	2	1.8%	39	35.1%	2	1.8%	67	60.3%	1	0.9%
medical services	4	3.6%	35	31.5%	11	9.9%	57	51.3%	4	3.6%
presence of employees in their workplaces	4	3.6%	36	32.4%	6	5.4%	61	54.9%	4	3.6%
making suggestions and complaints	2	1.8%	30	27.8%	31	27.9%	46	41.4%	2	1.8%
quick to deal with complaints and suggestions	-	-	33	29.7%	26	23.4%	47	42.3%	5	4.5%
appearance by staff	8	7.2%	51	45.9%	5	4.5%	54	48.6%	2	1.8%
staff are ready to listen attentively and help patients	3	2.7%	43	38.7%	2	1.8%	61	54.9%	2	1.8%
The rooms are convenient	5	4.5%	31	27.9%	15	13.5%	54	48.6%	6	5.4%
food provided	5	4.5%	28	25.2%	15	13.5%	53	47.7%	10	9%
laboratory and clinical examinations	3	2.7%	47	42.3%	7	6.3%	46	41.4%	8	7.2%
calling the inquiries number	-	-	22	19.8%	5	4.5%	78	70.3%	6	5.4%
problems are dealt with seriously	-	-	15	13.5%	9	8.1%	83	74.8%	4	3.6%
Rapid response from medical staff	-	-	6	5.4%	7	6.3%	93	83.8%	5	4.5%
support people with special needs	-	-	14	12.6%	13	11.7%	81	73%	3	2.7%
waiting areas	2	1.8%	27	24.3%	27	24.3%	53	47.7%	2	1.8%
information about the health status and treatment plan	3	2.7%	24	21.6%	6	5.4%	74	66.7%	4	3.6%
Patient privacy and confidentiality	2	1.8%	16	14.4%	16	14.4%	68	61.3%	9	8.1%
health services provided are better	4	3.6%	29	26.1%	13	11.7%	56	50.5%	9	8.1%
I am satisfied	4	3.6%	28	25.2%	17	15.3%	53	47.7%	9	8.1%

Table 4.2: Median and chi-square test for the Royal Care International Hospital Customer Answers:

NO	Questions	Median	Chi-Squire value	Sig
1	Diagnostic equipment and medical equipment	4	99.586	0.000
2	staff uniforms	4	139.198	0.000
3	provide service on time	3	112.198	0.000
4	Existence of guidelines and signs	2	95.982	0.000
5	services correctly from the first time	2	69.865	0.000
6	confident and comfortable with the medical staff	2	92.928	0.000
7	level of cleanliness	3	63.009	0.000
8	staff to provide the service around the clock	2	65.180	0.000
9	admission procedures	4	79.495	0.000
10	Availability of public facilities/utility	2	79.946	0.000
11	staff works as a team	2	154.270	0.000
12	The staff are well qualified & trained	2	160.126	0.000
13	medical services	2	97.423	0.000
14	presence of employees in their workplaces	3	118.054	0.000
15	making suggestions and complaints	3	68.505	0.000
16	quick to deal with complaints and suggestions	4	33.108	0.000
17	appearance by staff	2	101.568	0.000
18	staff are ready to listen attentively and help patients	2	140.667	0.000

19	The rooms are convenient	2	76.523	0.000
20	food provided	3	66.613	0.000
21	laboratory and clinical examinations	2	89.315	0.000
22	calling the inquiries number	2	127.883	0.000
23	problems are dealt with seriously	2	148.856	0.000
24	Rapid response from medical staff	2	204.640	0.000
25	support people with special needs	3	138.910	0.000
26	waiting areas	2	81.568	0.000
27	information about the health status and treatment plan	2	164.360	0.000
28	Patient privacy and confidentiality	2	124.180	0.000
29	health services provided are better	2	80.126	0.000
30	I am satisfied	2	68.234	0.000
	Total	2	4956.506	0.000

Table 4.3: Frequency distribution for the Omdurman Maternity Hospital Customer Answers

Questions	<i>Agree strongly</i>		<i>Agree</i>		<i>Neural</i>		<i>Disagree</i>		<i>Disagree strongly</i>	
	Freq	Percent	Freq	Percent	Freq	Percent	Freq	Percent	Freq	Percent
Diagnostic equipment and medical equipment	8	2.9%	131	48.2%	51	18.7%	79	29%	3	1.1%
staff uniforms	5	1.8%	180	66.2%	13	4.8%	71	26.1%	3	1.1%
provide service on time	8	2.9%	120	44.1%	7	2.5%	122	44.8%	15	5.5%
Existence of guidelines and signs	4	1.5%	97	87.4%	8	2.9%	129	47.4%	34	12.5%
services correctly from the first time	-	-	96	35.3%	32	11.7%	141	51.8%	3	1.1%
confident and comfortable with the	-	-	83	30.5%	22	8.1%	164	60.3%	3	1.1%

medical staff										
level of cleanliness	20	7.4%	108	39.7%	31	11.4%	104	38.2%	9	3.3%
staff to provide the service around the clock	-	-	103	37.8%	24	8.8%	132	48.5%	13	4.8%
admission procedures	24	8.8%	113	41.5%	16	5.9%	110	40.4%	9	3.3%
Availability of public facilities/utility	4	1.8%	84	30.9%	7	2.5%	173	63.6%	4	1.8%
staff works as a team	4	1.8%	84	30.9%	12	4.4%	169	62.1%	3	1.1%
The staff are well qualified & trained	8	2.9%	72	26.4%	42	15.4%	142	52.2%	8	2.9%
medical services	8	2.9%	90	33%	17	6.2%	149	54.8%	8	2.9%
presence of employees in their workplaces	4	1.5%	68	25%	87	31.9%	109	40%	4	1.5%
making suggestions and complaints	-	-	73	26.8%	79	29%	108	39.7%	12	4.4%
quick to deal with complaints and suggestions	21	7.7%	125	45.9%	16	5.9%	106	38.9%	4	1.5%
appearance by staff	10	2.6%	105	38.6%	4	1.5%	149	54.7%	4	1.5%
staff are ready to listen attentively and help patients	14	5.1%	83	30.5%	32	11.7%	128	47%	15	5.5%
The rooms are convenient	14	5.1%	80	29.4%	33	12.1%	124	45.6%	21	7.7%
food provided	10	3.6%	120	44%	16	5.9%	109	40%	17	6.2%
laboratory and clinical examinations	-	-	52	19.1%	9	3.3%	198	72.7%	13	4.7%
calling the inquiries number	-	-	32	11.7%	20	7.3%	212	77.9%	8	2.9%
problems are dealt with seriously	-	-	15	5.5%	15	5.5%	233	85.7%	9	3.3%
Rapid response from medical staff	-	-	29	10.6%	27	9.9%	211	77.5%	5	1.8%
support people with special needs	4	1.4%	62	23%	69	25.3%	133	48.9%	4	1.4%
waiting areas	8	2.9%	66	24.2%	10	3.6%	180	66.1%	8	2.9%

						Median	Chi-		Sig	

information about the health status and treatment plan	4	1.4%	35	12.8%	39	14.3%	174	63.9%	20	7.3%
Patient privacy and confidentiality	14	5.1%	64	23.5%	39	14.3%	140	51.4%	20	7.3%
health services provided are better	18	6.6%	65	23.8%	38	13.9%	132	48.5%	19	6.9%
I am satisfied	10	3.6%	90	33%	44	16.1%	113	41.5%	15	5.5%

Table 4.4: Median and chi-square test for the Omdurman Maternity Hospital Customer Answers

NO	Questions		Squire value	
1	Diagnostic equipment and medical equipment	3	307.971	0.000
2	staff uniforms	3	216.096	0.000
3	provide service on time	2	188.324	0.000
4	Existence of guidelines and signs	2	152.088	0.000
5	services correctly from the first time	2	117.404	0.000
6	confident and comfortable with the medical staff	2	146.346	0.000
7	level of cleanliness	3	178.265	0.000
8	staff to provide the service around the clock	2	99.934	0.000
9	admission procedures	3	160.324	0.000
10	Availability of public facilities/utility	3	163.853	0.000
11	staff works as a team	2	290.382	0.000
12	The staff are well qualified & trained	2	283.912	0.000
13	medical services	2	217.529	0.000
14	presence of employees in their workplaces	2	224.735	0.000
15	making suggestions and complaints	3	256.500	0.000
16	quick to deal with complaints and suggestions	3	113.059	0.000
17	appearance by staff	3	192.324	0.000
18	staff are ready to listen attentively and help patients	2	230.912	0.000
19	The rooms are convenient	2	169.618	0.000
20	food provided	2	151.265	0.000
21	laboratory and clinical examinations	3	180.441	0.000
22	calling the inquiries number	2	203.301	0.000
23	problems are dealt with seriously	2	254.235	0.000

24	Rapid response from medical staff	2	337.596	0.000
25	support people with special needs	2	253.904	0.000
26	waiting areas	2	216.265	0.000
27	information about the health status and treatment plan	2	291.294	0.000
28	Patient privacy and confidentiality	2	259.882	0.000
29	health services provided are better	2	166.235	0.000
30	I am satisfied	2	212.890	0.000
Total		2	9847.891	0.000

- **The result of second axis (Employee)**

Table 4.5: Frequency distribution for the Royal Care International Hospital Employee Answers:

Questions NO	Agree strongly		Agree		Neural		Disagree		Disagree strongly	
	Freq	Percent	Freq	Percent	Freq	Percent	Freq	Percent	Freq	Percent
clear and specific vision	97	30%	137	42.4%	34	10.5%	42	13%	13	4.1%
employees participate in drafting the vision	36	11.1%	168	52%	43	13.3%	61	18.8%	15	4.8%
a clear mission in the hospital	53	16.4%	186	57.6%	53	16.4%	18	5.5%	13	4.1%
employees participate in drafting the mission	45	13.9%	143	44.3%	67	20.7%	54	16.7%	14	4.3%
Leadership commitment	56	17.3%	156	48.3%	57	17.6%	43	13.3%	16	4.5%
All employees participate in TQM activities	51	15.6%	171	52.9%	43	13.3%	35	10.8%	23	7.1%
provides all the resources for quality	46	14.2%	130	40.2%	74	22.9%	52	16%	21	6.5%
implementation of the quality plan	40	12.4%	144	44.6%	65	20.1%	58	17.9%	16	4.5%
benefit from the results of field research and quality workshops	57	17.6%	109	33.7%	68	21%	61	18.8%	28	8.6%

assessment tools to measure progress	38	11.7%	112	34.7%	44	13.6%	106	32.8%	20	6.2%
employees are motivated	55	17%	92	28.3%	44	13.6%	107	33%	25	7.7%
employees are involved in development plans	57	17.6%	121	37.4%	35	10.8%	91	28.1%	19	5.9%
mechanism to deal with complaints and suggestions	38	11.7%	111	34.4%	41	12.7%	86	26.6%	47	14.5%
performance indicators	47	14.5%	151	46.7%	48	14.8%	59	18.2%	18	5.5%
Increased satisfaction	59	18.2%	95	29.4%	39	12.1%	95	29.4%	35	10.8%
hospital's reputation improved	77	23.8%	109	33.7%	58	17.9%	50	15.5%	29	8.9%
distribute tasks and responsibilities to all employees	75	23.2%	103	31.6%	58	17.9%	63	19.5%	24	7.4%
optimal use of resources	65	20.1%	101	31.2%	48	14.8%	66	20.4%	43	13.3%
reducing errors and improving processes	57	17.6%	119	36.8%	59	18.2%	65	20.1%	23	7.1%
financial performance has improved	59	18.2%	87	26.9%	71	21.9%	54	16.7%	52	16%
the level of professional performance of workers	63	19.5%	90	27.8%	68	21%	64	19.8%	38	11.7%
Patient problems are dealt with seriously	65	20.1%	114	35.3%	56	17.3%	50	15.4%	38	11.7%
support and promotion of morale	45	13.9%	135	41.7%	62	19.2%	65	20.1%	16	4.9%
level of performance of the services	42	13%	121	37.4%	82	25.3%	60	18.5%	18	5.5%
I am satisfied	60	18.5%	124	38.3%	25	7.7%	86	26.6%	28	8.6%

Table 4.6: Median and chi-square test for the Royal Care International Hospital Employees Answers

NO	Questions	Median	Chi-Squire	Sig
1	clear and specific vision	2	206.721	0.000
2	employees participate in drafting the vision	2	368.158	0.000
3	a clear mission in the hospital	2	264.034	0.000
4	employees participate in drafting the mission	2	240.703	0.000
5	Leadership commitment	2	225.322	0.000
6	All employees participate in TQM activities	2	264.183	0.000
7	provides all the resources for quality	2	186.684	0.000
8	implementation of the quality plan	2	257.619	0.000
9	benefit from the results of field research and quality workshops	2	142.102	0.000
10	assessment tools to measure progress	2	328.653	0.000
11	employees are motivated	2	236.591	0.000
12	employees are involved in development plans	2	293.458	0.000
13	mechanism to deal with complaints and suggestions	2	209.198	0.000
14	performance indicators	2	283.031	0.000
15	Increased satisfaction	2	201.173	0.000
16	hospital's reputation improved	2	115.576	0.000
17	distribute tasks and responsibilities to all employees	2	136.703	0.000
18	optimal use of resources	2	126.127	0.000
19	reducing errors and improving processes	2	182.201	0.000
20	financial performance has improved	2	62.226	0.000
21	the level of professional performance of workers	2	94.994	0.000
22	Patient problems are dealt with seriously	2	119.118	0.000
23	support and promotion of morale	2	234.759	0.000
24	level of performance of the services	2	191.836	0.000
25	I am satisfied	2	285.161	0.000
Total		2	4956.506	0.000

Table 4.7: Frequency distribution for the Omdurman Maternity Hospital
Employee Answers

<i>Questions NO</i>	<i>Agree strongly</i>		<i>Agree</i>		<i>Neural</i>		<i>Disagree</i>		<i>Disagree strongly</i>	
	<i>Freq</i>	<i>Percent</i>	<i>Freq</i>	<i>Percent</i>	<i>Freq</i>	<i>Percent</i>	<i>Freq</i>	<i>Percent</i>	<i>Freq</i>	<i>Percent</i>
clear and specific vision	48	21.4%	105	46.8%	25	11.1%	30	13.3%	16	7.1%
employees participate in drafting the vision	19	8.4%	112	50%	26	11.6%	48	21.4%	19	8.4%
a clear mission in the hospital	27	12%	116	51.7%	38	16.9%	26	11.6%	17	7.5%
employees participate in drafting the mission	26	11.6%	89	39.7%	42	18.7%	50	23.3%	17	7.5%
Leadership commitment	35	15.6%	102	45.5%	31	13.8%	36	16%	20	8.9%
All employees participate in TQM activities	33	14.7%	105	46.8%	28	12.5%	36	16%	22	9.8%
provides all the resources for quality	21	9.3%	84	37.5%	47	20.9%	51	22.7%	21	9.3%
implementation of the quality plan	18	8%	94	41.9%	37	16.5%	58	25.8%	17	7.5%
benefit from the results of field research and quality workshops	30	13.3v	70	31.2%	44	19.6%	59	26.3%	21	9.3%
assessment tools to measure progress	23	10.2%	75	33.4%	30	13.3%	74	33%	22	9.8%
employees are motivated	29	12.9%	53	23.6%	38	16.9%	76	33.9%	28	12.5%
employees are involved in development plans	40	17.8%	64	28.5%	22	9.8%	77	34.3%	21	9.3%
mechanism to deal with complaints and suggestions	24	10.7%	58	25.8%	33	14.7%	69	30.8%	40	17.8%
performance indicators	28	12.5%	78	34.8%	37	16.5%	63	28.1%	18	8%
Increased satisfaction	34	15.1%	49	21.8%	34	15.2%	76	33.9%	31	13.8%
hospital's reputation improved	48	21.4%	66	29.4%	41	18.3%	42	18.7%	27	12%

distribute tasks and responsibilities to all employees	46	20.5%	63	28.1%	38	16.9%	52	23.2%	25	11.1%
optimal use of resources	33	14.7%	59	26.3%	38	16.9%	55	24.5%	39	17.4%
reducing errors and improving processes	29	12.9%	81	36.1%	40	17.8%	51	22.7%	23	10.3%
financial performance has improved	25	11.1%	58	25.8%	50	22.3%	52	23.2%	39	17.4%
the level of professional performance of workers	39	17.4%	61	27.2%	39	17.4%	53	23.6%	32	14.2%
Patient problems are dealt with seriously	41	18.3%	80	35.7%	31	13.8%	43	19.2%	29	12.9%
support and promotion of morale	27	12%	81	36.1%	44	19.6%	52	23.2%	20	8.9%
level of performance of the services	19	8.4%	84	37.5%	52	23.2%	47	20.9%	22	9.8%
I am satisfied	26	11.6%	86	38.4%	20	8.9%	65	29%	29	12.9%

Table 4.8: Median and chi-square test for the Omdurman Maternity Hospital Employees Answers

Chapter Five

Discussion, Conclusion and Recommendations

5.1 Discussion:

5.1.1 Discussion the Results concerning the study sample distribution by every variable:

From **Figure** (4.1) and figure (4.2) we note that the classification of most customer of (RCIH) participate in the study regarding job title - house wife is 15 participant (that means 13.5% of total number of participants) while the customer of (OMH) participate in the study regarding job title - house wife is 120 participant (that means 44.1% of total number of participants)

Also we note the customer of (RCIH) having job title - free business is 27 participants about 24.3% of total number of participants in the study , while the customer of (OMH) having job title - free business is 101 participant (that means 37.1% of total number of participants)

We find also the largest percentage of customer of (RCIH) participate having job title –employee about 69 participants describe 62.2% , while the lowest percentage of customer of (OMH) participate having job title –employee about 51 participants describe 18.7%

From **Figure** (4.3) and figure (4.4) we note that the classification of most employee of (RCIH) participate in the study regarding job title – Administrative is 43 participant (that means 8.6% of total number of participants) while the employee of (OMH) participate in the study regarding job title - administrative is 28 participant (that means 12.5% of total number of participants)

Also we note the employee of (RCIH) having job title – Medical staff is 129 participants about 39.9 % of total number of participants in the study,

while the employee of (OMH) having job title - medical staff is 129 participant (that means 57.5% of total number of participants)

We find also the employee of (RCIH) having job title – Worker is 151 participants about 46.7% of total number of participants in the study, while the employee of (OMH) having job title - medical staff is 67 participant (that means 29.9% of total number of participants)

From **Figure** (4.5) and figure (4.6) we note that most of the (RCIH) customer participants are females by (67) that means 60.3% of total number of participants while the number of males in (RCIH) (44) about (39.6%).

We find also that most of the (OMH) customer participants are females by(150 participants) that means 55.1% of total number of participants in study are female while the number of males participants in (OMH) as customer is (122) about 44.8% .

From **Figure** (4.7) and figure (4.8) we note that most of the (RCIH) customer participants are females by (246) that means 76.1% of total number of participants while the number of males in (RCIH) (77) about (23.8%).

We find also that most of the (OMH) customer participants are females by(191 participants) that means 85.2% of total number of participants in study are female while the number of males participants in (OMH) as customer is (33) about 14.7% .

From **Figure** (4.9) and figure (4.10) we note that the classification of the RCIH customer regarding age , the participants in the study having age (> 40) is 7 participants by 6.3% and the participants in age (20-30) is 72 participants by 64.8% and also the participants in age (30-40) is 32 participants by 28.8%.

(This means that the majority of RCIH customers surveyed were between the age (20-30))

while that the classification of the OMH customer regarding age , the participants in the study having age (> 40) is 17 participants by 6.2% and the participants in age (20-30) is 182 participants by 66.9% and also the participants in age (30-40) is 37 participants by 26.8%.

(This means that the majority of OMH customers surveyed were between the age (20-30) also)

From **Figure** (4.11) and figure (4.12) we note that the classification of the RCIH employee regarding age , the participants in the study having age (> 40) is 45 participants by 13.9% and the participants in age (20-30) is 184 participants by 56.9% and also the participants in age (30-40) is 94 participants by 29.1%.

(This means that the majority of RCIH employee surveyed were between the age (20-30))

while that the classification of the OMH employee regarding age , the participants in the study having age (> 40) is 18 participants by 8% and the participants in age (20-30) is 146 participants by 65.1% and also the participants in age (30-40) is 60 participants by 26.7%.

(This means that the majority of OMH employee surveyed were between the age (20-30) also)

5.1.2 Discussion the Results concerning the study questions and hypothesis:

Discussion the first axis (Customer)

- Table 4. 2 show the median of the majority of the RCH customer's answers, on the statements of the first hypothesis was (2), which means that the majority of the study sample individuals are disagree with the statements of the axis.

- The results in Table (4.2) mean that all the sample members agree to accept the hypothesis, even if there are statistically significant differences between the answers of the sample members, it can be determined by applying the choice of Chi-square to indicate the differences between the answers on each of the hypothesis statements.
- The above-mentioned table indicates that the value of the Chi-square calculated to indicate the differences between the different responses of the subjects to the first hypothesis was <0.05 . This indicates that there are statistically significant differences between the answers and in favor of the disagree ones. This results agreed with Khairul Anuar Mohd Ali 2013 were he found the a positive relationship between the variables of TQM practices and hospital performance
- The median of the majority of the OMH customer's answers, on the statements of the first hypothesis was (2), which means that the majority of the study sample individuals are disagree with the statements of the axis.
- The results in Table (4.4) mean that all the sample members agree to accept the hypothesis, even if there are statistically significant differences between the answers of the sample members, it can be determined by applying the choice of Chi-square to indicate the differences between the answers on each of the hypothesis statements.
- The above-mentioned table indicates that the value of the Chi-square calculated to indicate the differences between the different responses of the subjects to the first hypothesis was <0.05 .. This indicates that there are statistically significant differences between the answers and in favor of the disagree ones.
- Regarding the SERVQUAL dimension & the relation with the question of customer questionnaire here will clarify it :

Quality dimension	Question Number
Tangibility	(Q1/Q2/Q4/Q7/Q10/Q17/Q19)
Reliability	(Q5/Q9/Q13/Q16/Q20/Q21)
Responsiveness	(Q3/Q8/Q14/Q15/Q22/Q23)
Assurance	(Q6/Q11/Q12/Q28/Q29)
Empathy	(Q18/Q25/Q26/Q27)

From the table 4.1 & table 4.3 above:

There are different categories for the questions for customer, the first question in the customer questionnaire was (Diagnostic equipment and medical equipment are available and keep pace with development) the majority were their answer in RCIH was agree, and the OMH customers most of them they were neutral.

Conclude from the above that the (RCIH) were more concerned with the tangibility dimension than OMH.

The second question in the customer questionnaire was (The staff uniforms have a decent and dedicated for each section) the majority were their answer in RCIH was agree, while the OMH customers most of them they were neutral.

Conclude from the above that the (RCIH) were a gain more concerned with the tangibility dimension than (OMH) .

The third question in the customer questionnaire was (Employees usually provide service on time) the majority were their answer in RCIH was neutral, while the OMH customers most of them they were disagree.

Conclude from the above that the RCIH were little bit concerned with the Reliability dimension, but we find out the OMH they are not concerned with Reliability dimension.

The fourth question in the customer questionnaire was (Existence of guidelines and signs for patients and accompanying persons to enable easy access to the required location on the hospital) the majority were their answer in RCIH was disagree, also the OMH customers most of them they were disagree

Conclude from the above that the (RCIH) and (OMH) weren't concerned with the tangibility dimension on this side.

The fifth question in the customer questionnaire was (Employees provide services correctly from the first time) the majority were their answer in RCIH was disagree, also the OMH customers most of them they were disagree.

Conclude from the above that the RCIH & OMH weren't concerned with the Reliability dimension.

The sixth question in the customer questionnaire was (I feel confident and comfortable with the medical staff) the majority were their answer in RCIH was disagree, while the OMH customers most of them also they were disagree.

Conclude from the above that the RCIH & OMH weren't concerned with the Assurance dimension.

The seven question in the customer questionnaire was (The level of cleanliness is generally acceptable) the majority were their answer in RCIH was neutral, while the OMH customers most of them they were neutral also.

Conclude from the above that the (RCIH) and (OMH) needing more care about the tangibility dimension on this side.

The eighth question in the customer questionnaire was (The hospital has the appropriate staff to provide the service around the clock) the majority

were their answer in RCIH was disagree, while the OMH customers most of them also they were disagree.

Conclude from the above that the RCIH & OMH weren't concerned with the Responsiveness dimension.

The ninth question in the customer questionnaire was (The hospital admission procedures are quick and easy and affordable) the majority were their answer in RCIH was agree, while the OMH customers most of them they were neutral.

Conclude from the above that the RCIH were concerned with the Reliability dimension, but we find out the OMH they weren't concerned enough with Reliability dimension.

The tenth question in the customer questionnaire was (Availability of public facilities/utility and easy access to them) the majority were their answer in RCIH was disagree, while the OMH customers most of them they were neutral.

Conclude from the above that the RCIH & OMH they need more interest with the Tangibility dimension.

The eleventh question in the customer questionnaire was (The staff works as a team to provide the care needed by the patient) the majority were their answer in RCIH was disagree, while the OMH customers most of them also they were disagree.

Conclude from the above that the RCIH & OMH weren't concerned with the Assurance dimension.

The twelfth question in the customer questionnaire was (The staff are well qualified & trained) the majority were their answer in RCIH was disagree, while the OMH customers most of them also they were disagree.

Conclude from the above that the RCIH & OMH weren't concerned with the Assurance dimension.

The thirteenth question in the customer questionnaire was (The medical services provided are comprehensive and complete) the majority were their answer in RCIH was disagree, while the OMH customers most of them also they were disagree.

Conclude from the above that the RCIH & OMH weren't concerned with the Assurance dimension.

The fourteenth question in the customer questionnaire was (The presence of employees in their workplaces and easy access to them) the most of participants their answer in RCIH was neutral, while the OMH customers most of them also they were disagree.

Conclude from the above that the RCIH were more interested in the Responsiveness dimension than OMH.

The fifteenth question in the customer questionnaire was (Ease of making suggestions and complaints and providing appropriate methods) the majority were their answer in RCIH was neutral, while the OMH customers most of them also they were neutral.

Conclude from the above that the RCIH & OMH needed more interest in the Assurance dimension on this side.

The sixteenth question in the customer questionnaire was (An effective mechanism and quick to deal with complaints and suggestions) the majority were their answer in RCIH was agree, while the OMH customers most of them they were disagree.

Conclude from the above that the RCIH they care about the Empathy dimension more than the OMH.

The seventeen question in the customer questionnaire was (Good reception, courteous handling and good appearance by staff) the majority were their answer in RCIH was disagree, also the OMH customers most of them they were disagree.

Conclude from the above that the RCIH & OMH weren't concerned with the Tangibility dimension.

The eighteenth question in the customer questionnaire was (The staff are ready to listen attentively and help patients and give them enough time to inquire and clarification) the majority were their answer in RCIH was disagree, also the OMH customers most of them they were disagree.

Conclude from the above that the RCIH & OMH weren't concerned with the Responsiveness dimension.

The nineteenth question in the customer questionnaire was (The rooms are comfortable and convenient and clean) the majority were their answer in RCIH was disagree, also the OMH customers most of them they were disagree.

Conclude from the above that the RCIH & OMH weren't interested in the Tangibility dimension.

The twentieth question in the customer questionnaire was (The food provided is of high quality) the majority were their answer in RCIH was neutral, while the OMH customers most of them they were disagree.

Conclude from the above that the RCIH were more interested with the Reliability dimension than the OMH on this side.

Question twenty one in the customer questionnaire was (Provides adequate laboratory and clinical examinations and prompt diagnosis) the majority were their answer in RCIH was agree with percent 42.3%, while the OMH customers most of them they were disagree with percent 72.7%.

Conclude from the above that the RCIH were interested with the Reliability dimension, but we find out the OMH they weren't care about Reliability dimension.

Question twenty two in the customer questionnaire was (Obtaining sufficient information by calling the inquiries number) the majority were

their answer in RCIH was disagree, also the OMH customers most of them they were disagree.

Conclude from the above that the RCIH & OMH weren't interested in the Tangibility dimension.

Question twenty three in the customer questionnaire was (Patients problems are dealt with seriously) the majority were their answer in RCIH was disagree, also the OMH customers most of them they were disagree.

Conclude from the above that the RCIH & OMH weren't interested in the Empathy dimension.

Question twenty four in the customer questionnaire was (Rapid response from medical staff upon call) the majority were their answer in RCIH was disagree, also the OMH customers most of them they were disagree.

Conclude from the above that the RCIH & OMH weren't interested in the Responsiveness dimension.

Question twenty five in the customer questionnaire was (The presence of services to support people with special needs) the majority were their answer in RCIH was neutral, also the OMH customers most of them they were disagree.

Conclude from the above that the RCIH more concerned in the Empathy dimension than OMH.

Question twenty six in the customer questionnaire was (There are convenient and proper waiting areas) the majority were their answer in RCIH was disagree, also the OMH customers most of them they were disagree.

Conclude from the above that the RCIH & OMH weren't concerned in the Tangibility dimension.

Question twenty seven in the customer questionnaire was (The medical staff give sufficient information about the health status and treatment plan for

the patient) the majority were their answer in RCIH was disagree, also the OMH customers most of them they were disagree.

Conclude from the above that the RCIH & OMH weren't concerned in the Reliability dimension.

Question twenty seven in the customer questionnaire was (The medical staff give sufficient information about the health status and treatment plan for the patient) the majority were their answer in RCIH was disagree, also the OMH customers most of them they were disagree.

Conclude from the above that the RCIH & OMH weren't concerned in the Reliability dimension.

Question twenty eight in the customer questionnaire was (Patient privacy and confidentiality is respected in this hospital) the majority were their answer in RCIH was disagree, also the OMH customers most of them they were disagree.

Conclude from the above that the RCIH & OMH weren't concerned in the Assurance dimension.

Question twenty nine in the customer questionnaire was (The health services provided are better than other treatment facilities) the majority were their answer in RCIH was disagree, also the OMH customers most of them they were disagree.

Conclude from the above that the RCIH & OMH weren't concerned in the Reliability dimension.

Question thirteen in the customer questionnaire was (In general, I am satisfied with this hospital services) the majority were their answer in RCIH was disagree, while the OMH customers most of them they were also disagree. Conclude from the above that the majority of RCIH & OMH customer they weren't satisfied about the service provided from these hospitals.

Finally when calculating the special results for the different dimensions of service quality, the tangibility shows that RCIH give us 34.2% while OMH 23.8%, for reliability in RCIH 20.7% and in OMH was 23.8%. For responsiveness, assurance and empathy for RCIH and OMH was 9% and 4.4%, 9% and 16.1% and 6.3% and 11% respectively.

Discussion the second axis (Employee)

- The median of the majority of the RCIH employee's answers, on the statements of the first hypothesis was (2), which means that the majority of the study sample individuals are disagree with the statements of the axis.
- The results in Table (4.6) mean that all the sample members agree to accept the hypothesis, even if there are statistically significant differences between the answers of the sample members, it can be determined by applying the choice of Chi-square to indicate the differences between the answers on each of the hypothesis statements.
- The above-mentioned table indicates that the value of the Chi-square calculated to indicate the differences between the different responses of the subjects to the first hypothesis was < 0.05 . This indicates that there are statistically significant differences between the answers and in favor of the disagree ones.
- The median of the majority of the OMH employee's answers, on the statements of the first hypothesis was (3), which means that the majority of the study sample individuals are neutral with the statements of the axis.
- The results in Table (4.8) mean that all the sample members agree to accept the hypothesis, even if there are statistically significant differences between the answers of the sample members, it can be determined by applying the choice of Chi-square to indicate the differences between the answers on each of the hypothesis statements.

- The above-mentioned table indicates that the value of the Chi-square calculated to indicate the differences between the different responses of the subjects to the first hypothesis was <0.05 . This indicates that there are statistically significant differences between the answers and in favor of the disagree ones. This result agreed with Macide Artac Ozdal et al 2018 was he found that the implementation of the principles of TQM practices ranges from leadership to employees' satisfaction.

From the table 4.5 & table 4.7 above:

Shows the results of the analysis of both employee's satisfaction in two hospitals regarding the implementation of the quality and the effect of it in overall performance and satisfaction of the customer.

The first question in the employee questionnaire was (The hospital has a clear and specific vision) as regards the employees in RCIH the majority of them were disagree, while the OMH employees most of them they were agree.

Conclude from the above that the (OMH) have a clear and specific vision opposite of its counterpart (RCIH).

The second question in the employee questionnaire was (Representatives of all departments and employees participate in drafting the vision) as regards the employees in RCIH the most of them were disagree, while the OMH employees most of them they were agree.

The third question in the employee questionnaire was (There is a clear mission in the hospital and clearly defined and declared) as regards the employees in RCIH the majority of them were disagree, while the OMH employees most of them they were agree.

Conclude from the above that the (OMH) have a clear mission defined and declared to all hospital but (RCIH) need to define and declared to all hospital the mission.

The fourth question in the employee questionnaire was (Representatives of all departments and employees participate in drafting the mission) as regards the employees in RCIH the most of them were disagree, and the OMH employees most of them they were agree.

The answer of question 2 & 4 show that (OMH) are interested in participate their employees in drafting the vision & mission.

The fifth question in the employee questionnaire was (Leadership is working on activating the role of the Total Quality Management) as regards the employees in RCIH the majority of them were disagree, while the OMH employees most of them they were agree.

The sixth question in the employee questionnaire was (All employees participate in the implementation of total quality management activities) as regards the employees in RCIH the majority of them were disagree, while the OMH employees most of them they were agree.

The seventh question in the employee questionnaire was (The hospital provides all the resources necessary to implement quality programs) as regards the employees in RCIH the majority of them were disagree, while the OMH employees most of them they were neutral.

Through the answers to questions 6 &7 it become clear to us the availability of the principle of total quality management in the (OMH) regard the involvement of people and process approach more than (RCIH).

The eighth question in the employee questionnaire was (The proportion of the implementation of the quality plan in the hospital and a clear follow-up) as regards the employees in RCIH the majority of them were disagree, but the OMH employees most of them they were agree.

Conclude from the above that the (RCIH) need more follow-up to the proportion of the implementation of the quality plan in the hospital

The ninth question in the employee questionnaire was (There is a great benefit from the results of field research and quality workshops and programs in improving hospital performance)as regards the employees in RCIH the majority of them were disagree, while the OMH employees most of them they were neutral.

Conclude from the above that the (RCIH) haven't researches that support continuous improvement programs.

The tenth question in the employee questionnaire was (The hospital uses a variety of assessment tools to measure progress in implementing quality plans) as regards the employees in RCIH the majority of them were disagree, while there is a large percentage of OMH employees they were neutral .

Conclude from the above that the (RCIH) and (OMH) must give more interest in assessment tools to measure the implementing quality plans.

The eleventh question in the employee questionnaire was (The employees are motivated financially and morally) as regards the employees in RCIH the majority of them were disagree, also the OMH employees most of them they were neutral.

Conclude from the above that the (RCIH) weren't concerned about motivation the employees which is most important in employee commitment and organization success through their performance.

The twelfth question in the employee questionnaire was (All hospital employees are involved in implementing hospital development plans) as regards the employees in RCIH the majority of them were disagree, while the OMH employees most of them they were neutral.

Conclude from the above that the (RCIH) must focus in involvement of people because it's most important principle of TQM.

The thirteenth question in the employee questionnaire was (The existence of an effective and rapid mechanism to deal with complaints and suggestions) as regards the employees in RCIH the majority of them were disagree, while the OMH employees most of them they were neutral.

Conclude from the above that the (RCIH) must be aware of customer requirement (internal and external customer) and always satisfying them.

The fourteenth question in the employee questionnaire was (One of the advantages of the TQM methodology is finding performance indicators and how to measure them) as regards the employees in RCIH the majority of them were disagree, but the OMH employees most of them they were neutral. Conclude from the above that the (OMH) & (RCIH) most focus on finding performance indicators and to measure them.

The fifteenth question in the employee questionnaire was (Increased satisfaction of internal clients (employees) and external clients (customers) with the application of comprehensive quality concepts) as regards the employees in RCIH the most of them were disagree, while the OMH employees the majority were neutral.

Conclude from the above that the (RCIH) must focus in application of comprehensive quality concepts to Increase the satisfaction of customers (internal &external).

The sixteenth question in the employee questionnaire was (The hospital's reputation improved externally after implementing the comprehensive quality programs) as regards the employees in RCIH the majority of them were disagree, while the OMH employees most of them they were agree.

Conclude from the above that the (OMH) through their implementation of total quality programs, they benefited from improving the hospitals reputation more than (RCIH) .

The seventeenth question in the employee questionnaire was (There is a clear contingency plan to distribute tasks and responsibilities to all hospital employees in crises) as regards the employees in RCIH it was found that the ratio of disagree is high percentage, but the OMH employees most of them they were neutral.

Conclude from the above that the (OMH) & (RCIH) they must focus to have clear plans and responsibilities even in crises.

The eighteenth question in the employee questionnaire was (Total quality management has made optimal use of material and human resources) as regards the employees in RCIH the majority of them were disagree, while the OMH employees most of them they were neutral.

The nineteenth question in the employee questionnaire was (Total quality programs have contributed to reducing errors and improving processes) as regards the employees in RCIH the majority of them were disagree, also the OMH employees most of them they were neutral.

Through the answers to questions 18 &19 it become clear to us the availability of the principle of total quality management in the (OMH) regard the involvement of people and process approach rather than (RCIH)

Question twenty in the employee questionnaire was (The hospital's financial performance has improved since the start of implementing the principles of total quality) as regards the employees in RCIH the majority of them were disagree, while the OMH employees most of them they were neutral.

Through the answers of this question, it's clear the strong relationship between the application of TQM and the improvement of financial performance.

Question twenty one in the employee questionnaire was (The application of total quality has led to an improvement in the level of professional performance of workers, which has led to the provision of high level of medical care) as regards the employees in RCIH the majority of them were disagree, also the OMH employees most of them they were neutral. And by upgrading the level of professional performance, there will be a high level of medical care and thus we obtain customer satisfaction in RCIH and also OMH.

Question twenty two in the employee questionnaire was (Patients problems are dealt with seriously) as regards the employees in RCIH the majority of them were disagreeing, also the OMH employees most of them they were agree.

Conclude from the above that the (OMH) they were concerned in customer focus as one of the important principles of TQM.

Question twenty three in the employee questionnaire was (There is support and promotion of morale and there is a commitment to career among workers) as regards the employees in RCIH the majority of them were disagree, but the OMH employees most of them they were neutral. Conclude from the above that the (OMH) they were more concerned in commitment of employee through support them.

Question twenty four in the employee questionnaire was (The level of performance of the services currently provided after the application of the overall quality is better than the previous period) as regards the employees in RCIH the majority of them were disagree, while the OMH employees most of them they were neutral.

By answering this question, we found that there is a direct relationship between the levels of service performance provided and the extent of applying the total quality management which will automatically increase the customer satisfaction.

Question twenty five in the employee questionnaire was (In general, I am satisfied with what the overall quality concepts of the hospital have provided) as regards the employees in RCIH the majority of them were disagree, while the OMH employees most of them they were neutral.

Conclude from the above that the majority of RCIH & OMH employee they weren't satisfied enough with what the overall quality concepts of the hospital have provided.

5.2 Conclusion:

The Impact of total quality management on customer satisfaction in health care service sector in RCIH and OMH in Khartoum state -Sudan.

Based on an analysis of the results of customer and employee opinions according to the service quality dimensions, we can conclude that the quality of health services in the private and public sectors is not good.

From this study we can conclude that:

The concept of total quality management & services quality began to deepen and spread in the community and the people they are aware about the dimensions of services quality that must be provided in health care. And the application of the total quality management programs and paying attention to the dimension of quality in healthcare has a good impact on customer satisfaction in health services sector. While The Royal Care International Hospital & Omdurman Maternity Hospital not committed to the quality of health care service. Furthermore The Royal Care International Hospital & Omdurman Maternity Hospital the customers and employees weren't satisfied about the hospital services provided and overall quality concepts of the hospital have provided respectively.

Regarding the different dimensions of service quality, the tangibility shows that RCIH give us 34.2% while OMH 23.8%, for reliability in RCIH 20.7% and in OMH was 23.8%. For responsiveness, assurance and empathy for RCIH and OMH was 9% and 4.4%, 9% and 16.1% and 6.3% and 11% respectively.

5.3 Recommendations:

- Work must be done to increase the commitment of the senior management in hospitals to the role of quality and to apply its concepts in raising the quality of services provided, and thus in raising customer satisfaction rates by more training and workshop about the importance of the quality for them.
- More attention to customer suggestions and complaints, conducting a random questionnaire periodically to measure service quality according to the health quality dimensions mentioned above, and working to improve the service provision process continuously.
- Work according to clinical standards, pathways, and protocols that are evidence-based healthcare guidance tools that have been implemented internationally to improve care for a variety of conditions, and serve as an important reference resource for clinicians and public health officials.
- Reducing the long waiting time for patients, this leads to an increase in the quality of health services provided to them.
- Morbidity and Mortality Reviews provide as a collaborative learning mechanism, and a transparent review process for clinicians to examine their practices and identify areas for improvement, such as patient outcomes and adverse events, without fear of blame and are used for all clinical staff to conduct a review of what contributed to complications or patient death, for learning purposes in addition to identifying improvements required in practical and effective matters in patient safety.
- It is important to involve all employees in implementing comprehensive quality programs, making strategic plans, and working in a team spirit to seek to develop and improve all services provided

- .Employees who are satisfied with their work are essential for healthcare organizations in order to deliver high-quality, patient centered care, Therefore, emphasis must be placed on searching for employee satisfaction and training them on an ongoing basis, and seeking to motivate the diligent ones
- Work to improve the work environment for employees and pay attention to discussing proposals and work obstacles that they face on a regular basis
- For the next researchers to focus on the relationship between the dimensions of health quality and its impact on the increase in the percentage of patient safety in healthcare sector, and how to use Lean Six Sigma in the health field and its impact on improving service quality and to improve patient safety by eliminating life-threatening errors.
- Efforts should be focused on establishing a foundation that can inspect and accredit quality in the health care system in Sudan.

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Appendix:

Customer Satisfaction Survey Form

This research is for obtaining a PhD from the Sudan University of Science and Technology in applying total quality management in the health services sector and measuring customer satisfaction.

We are pleased to receive your comments and opinions on the services provided by the hospital, as we look forward to providing the best possible services for you and we kindly ask you to devote ten minutes to filling this questionnaire, which will help me in assessing the overall quality level and developing the services provided to you and raise the level required as well as the participant will benefit by increasing knowledge About the comprehensive quality standards, foundations and rights as a patient in the hospital, this information will be very confidential and we intend that participation in this research is voluntary and you have the right to withdraw at any time.

Researcher name: Alia Abdallah Mohammed Ahmed Ahmed Ali

Job title:

Gender: Male / female

Age: 20 - 30

30 - 40

40 and over

Please put a sign (√) in front of the answer that suits you:

No	Question	Strongly agree 5	Agree 4	Neutral 3	Disagree 2	Strongly disagree 1
1	Diagnostic equipment and medical equipment are available and keep pace with development					
2	The staff uniforms have a decent and dedicated for each section					
3	Employees usually provide service on time.					
4	Existence of guidelines and signs for patients and accompanying persons to enable easy access to the required location on the hospital					
5	Employees provide services correctly from the first time					
6	I feel confident and comfortable with the medical staff					
7	The level of cleanliness is generally acceptable					
8	The hospital has the appropriate staff					

	to provide the service around the clock					
9	The hospital admission procedures are quick and easy and affordable					
10	Availability of public facilities/utility and easy access to them					

No	Question	Strongly agree 5	Agree 4	Neutral 3	Disagree 2	Strongly disagree 1
11	The staff works as a team to provide the care needed by the patient					
12	The staff are well qualified & trained					
13	The medical services provided are comprehensive and complete					
14	The presence of employees in their workplaces and easy access to them					
15	Ease of making suggestions and complaints and providing appropriate methods					
16	An effective mechanism and quick to deal with complaints and suggestions					
17	Good reception, courteous handling and good appearance by staff					
18	The staff are ready to listen attentively and help patients and give them enough time to inquire and clarification					
19	The rooms are comfortable and convenient and clean					
20	The food provided is high quality					
21	Provides adequate laboratory and clinical examinations and prompt diagnosis					
22	Obtaining sufficient information by calling the inquiries number					
23	Patients problems are dealt with seriously					
24	Rapid response from medical staff upon call					
25	The presence of services to support people with special needs					
26	There are convenient and proper waiting areas					
27	The medical staff give sufficient information about the health status and treatment plan for the patient					
28	Patient privacy and confidentiality is respected in this hospital					
29	The health services provided are better than other treatment facilities					
30	In general, I am satisfied with this hospital services					

Do you propose any improvements / adjustments to raise efficiency and improve the service and your satisfaction? (Please list it in detail):

-
-

Employee Satisfaction Survey Form

This research is for obtaining a PhD from the Sudan University of Science and Technology in applying total quality management in the health services sector and measuring customer satisfaction.

I am pleased to receive your comments and opinions on the extent of implementing comprehensive quality programs in your hospital. I ask you to dedicate ten minutes to filling the questionnaire, which will help me in assessing the overall quality level and the extent of benefiting from it in the health sector, as well as the participant will benefit by increasing knowledge about the comprehensive quality standards and foundations and benefit the hospital in developing services With it and upgrading the level, this information will be very confidential and we intend that participation in this research is voluntary and you have the right to withdraw at any time.

Researcher name: Alia Abdallah Mohammed Ahmed Ahmed Ali

Job title: Administrative Doctor Nursing Worker

Gender: Male Female

Age: 20 – 30 30 - 40 40 and over

No	Question	Strongly agree 5	Agree 4	Neutral 3	Disagree 2	Strongly disagree 1
1	The hospital has a clear and specific vision					
2	Representatives of all departments and employees participate in drafting the vision					
3	There is a clear mission in the hospital and clearly defined and declared					
4	Representatives of all departments and employees participate in drafting the mission					
5	Leadership is working on activating the role of the Total Quality Management					
6	All employees participate in the implementation of total quality management activities					
7	The hospital provides all the resources necessary to implement quality programs					
8	The proportion of the implementation of the quality plan in the hospital and a clear follow-up					

9	There is a great benefit from the results of field research and quality workshops and programs in improving hospital performance					
10	The hospital uses a variety of assessment tools to measure progress in implementing quality plans					

No	Question	Strongly agree 5	Agree 4	Neutral 3	Disagree 2	Strongly disagree 1
11	The employees are motivated financially and morally					
12	All hospital employees are involved in implementing hospital development plans					
13	The existence of an effective and rapid mechanism to deal with complaints and suggestions					
14	One of the advantages of the TQM methodology is finding performance indicators and how to measure them					
15	Increased satisfaction of internal clients (employees) and external clients (customers) with the application of comprehensive quality concepts					
16	The hospital's reputation improved externally after implementing the comprehensive quality programs					
17	There is a clear contingency plan to distribute tasks and responsibilities to all hospital employees in crises					
18	Total quality management has made optimal use of material and human resources					
19	Total quality programs have contributed to reducing errors and improving processes					
20	The hospital's financial performance has improved since the start of implementing the principles of total quality					
21	The application of total quality has led to an improvement in the level of professional performance of workers, which has led to the provision of high level of medical care					
22	Patients problems are dealt with seriously					
23	There is support and promotion of morale and there is a commitment to career among workers					
24	The level of performance of the services					

	currently provided after the application of the overall quality is better than the previous period					
25	In general, I am satisfied with what the overall quality concepts of the hospital have provided					

Do you propose any improvements / adjustments to raise efficiency in the hospital and to apply the concepts of total quality optimally?

-
-

جامعة السودان للعلوم والتكنولوجيا

كلية الدراسات العليا

عمادة التطوير والجودة

نموذج استبيان رضى متلقى الخدمة

هذا البحث لنيل درجة الدكتوراه من جامعة السودان للعلوم والتكنولوجيا في تطبيق إدارة الجودة الشاملة في قطاع الخدمات الصحية و قياس رضا العملاء .

يسرنا أن نتلقى ملاحظتكم وآرائكم حول الخدمات التي تقدمها المستشفى ، حيث أننا نتطلع إلى تقديم أفضل خدمات ممكنة لكم و نرجو منكم التكرم بتخصيص عشرة دقائق لتعبئة هذا الاستبيان الذي سيساعدني في تقييم مستوى الجودة الشاملة و تطوير الخدمات المقدمة لكم والارتقاء بالمستوى المطلوب وكذلك سيستفيد المشاركون بزيادة المعرفة عن معايير الجودة الشاملة و أسسها وحقوقه كمريض بالمستشفى، وستكون هذه المعلومات سرية للغاية وننوه ان المشاركة في هذا البحث طوعية ومن حقك الانسحاب في أى وقت .

أسم الباحث : علياء عبدالله محمد احمد محمد علي

الجنس : ذكر انثى

الوظيفة :

العمر: 30 - 20 40 - 30 40 فأكثر

يرجى وضع علامة (√) امام الاجابة التي تناسبك :

م	السؤال	لاوافق بشدة	لاوافق	حيادي	وافق	وافق بشدة
		1	2	3	4	5
	أجهزة التشخيص والمعدات الطبية تواكب التطور و متوفرة					

						الموظفون لهم زي لائق و مخصص لكل قسم
						الموظفون عادة يقدمون الخدمة في الوقت المحدد.
						وجود لوائح ارشادية للمرضى والمرافقين تمكن من الوصول الى المكان المطلوب داخل حرم المستشفى بسهولة ويسر
						الموظفون يقدمون الخدمات بطريقة صحيحة من أول مرة
						أشعر بالثقة والراحة مع الطاقم الطبي المعالج
						مستوى النظافة بشكل عام مقبول
						يتواجد بالمستشفى الكادر المناسب لتقديم الخدمة على مدار الساعة
						إجراءات التنويم سريعة وسهلة وميسره
						توفر المرافق العامة وسهولة الوصول اليها
						يقوم الطاقم بالعمل كفريق واحد ليوفر الرعاية التي يحتاجها المريض
						الموظفون مؤهلون بشكل جيد
						الخدمات الطبية المقدمة شاملة و كاملة
						تواجد الموظفين في اماكن عملهم وسهولة الوصول اليهم
						سهولة تقديم الاقتراحات والشكاوي وتوفير الطرق المناسبة لذلك
						وجود آلية فعالة وسريعه للتعامل مع الشكاوي والاقتراحات
						حسن الاستقبال واللباقه في التعامل وحسن المظهر من قبل الموظفين
						الموظفون مستعدون للاستماع باهتمام ومساعدة المرضى واعطائهم الوقت الكافي للاستفسار والاستيضاح
						الغرف مريحة وملانمة ونظيفة
						الطعام المقدم ذو جودة عالية
						توفر الفحوصات المخبريه والسرييره الكافيه والتشخيص السريع

					الحصول على المعلومات الكافية من خلال الاتصال بالاستعلامات
					مشكلات المرضى يتم التعامل معها بجدية
					سرعة الاستجابة للاستدعاء من قبل أفراد الطاقم الطبي.
					وجود الخدمات المساندة لذوي الاحتياجات الخاصة
					توفر أماكن انتظار للمواعيد، مريحه ولانقحه
					يقوم الطاقم الطبي بإعطاء معلومات كافية عن الحالة الصحية والخطة العلاجية للمريض
					يتم احترام خصوصية المريض في هذا المستشفى
					الخدمات الصحية المقدمة أفضل من المرافق العلاجية الأخرى
					بشكل عام، أنا راضي عن خدمات هذا المستشفى

هل تقترح أي تحسينات/تعديلات لرفع الكفاءة و تطوير الخدمة ونيل رضاكم؟ (يرجى ذكرها بالتفصيل):

- (1)
- (2)
- (3)
- (4)
- (5)

شكرا لحسن تعاونكم

نموذج إستبيان رضا مقدمى الخدمة

هذا البحث لنيل درجة الدكتوراه من جامعة السودان للعلوم والتكنولوجيا في تطبيق إدارة الجودة الشاملة في قطاع الخدمات الصحية و قياس رضا العملاء.

يسرنى أن أتلقي ملاحظتكم وآرائكم حول مدي تطبيق برامج الجودة الشاملة بمستشفاكم العامر فأرجو منكم التكرم بتخصيص عشرة دقائق لتعبئة الاستبيان الذي سيساعدني في تقييم مستوى الجودة الشاملة و مدى الاستفادة منها في القطاع الصحى وكذلك سيستفيد المشاركون بزيادة المعرفة عن معايير الجودة الشاملة و أسسها وتفيد المستشفى في تطوير الخدمات بها والارتقاء بالمستوى، وستكون هذه المعلومات سرية للغاية وننوه ان المشاركة في هذا البحث طوعية ومن حقك الانسحاب في اى وقت .

أسم الباحث : علياء عبدالله محمد احمد محمد علي

الوظيفة: إداري طبيب تمريض عمال الجنس: ذكر أنثى العمر: 20 - 30 30 - 40 40 فأكثر

م	السؤال	أوافق بشدة 5	أوافق 4	حياد 3	لا أوافق 2	لا أوافق بشدة 1
1	توجد بالمؤسسة رؤية واضحة ومحددة تعكس رؤية المستشفى					
2	يشارك فى صياغة الرؤية ممثلين عن جميع الادارات و الموظفين					
3	توجد للمؤسسة رسالة واضحة ومحددة و معلنة					
4	يشارك فى صياغة الرسالة ممثلين عن جميع الادارات و جميع الموظفين					
5	تعمل القيادة على تفعيل دور إدارة الجودة الشاملة					

					6	يشارك العاملین فی تنفيذ أنشطة إدارة الجودة الشاملة
					7	توفر المستشفى الموارد المادية لتنفيذ برامج الجودة
					8	نسبة تنفيذ خطة الجودة في المستشفى واضحة و متابعة
					9	توجد استفادة كبرى من نتائج الابحاث الميدانية وحلقات الجودة و برامجها في تحسين الاداء بالمستشفى
					10	تستخدم المستشفى مجموعة متنوعة من ادوات التقييم لقياس التطور في تنفيذ خطط الجودة
					11	يتم تحفيز الموظفين ماديا ومعنويا
					12	يشترك جميع الموظفين بالمستشفى في تنفيذ خطط تطوير المستشفى
					13	وجود آلية فعالة وسريعه للتعامل مع الشكاوي والاقتراحات
					14	من مزايا منهجية إدارة الجودة الشاملة إيجاد مؤشرات الأداء و كيفية قياسها
					15	إزدياد رضاء العملاء الداخليين (الموظفين) و العملاء الخارجيون (المستفيدين) مع تطبيق مفاهيم الجودة الشاملة
					16	تحسنت سمعة المستشفى خارجيا بعد تنفيذ برامج الجودة الشاملة
					17	توجد خطة طوارئ واضحة لتوزيع المهام والمسؤوليات على جميع العاملين بالمؤسسة في الازمات
					18	إدارة الجودة الشاملة حققت الاستخدام الأمثل للموارد المادية والبشرية
					19	ساهمت برامج الجودة الشاملة في تقليل الأخطاء وتحسين العمليات

					تحسن الأداء المالي للمستشفى منذ البدء في تنفيذ أسس الجودة الشاملة	20
					دور الجودة الشاملة في الارتقاء بمستوى الأداء المهني للعاملين مما أدى الى تقديم مستوى رعاية طبية عالية	21
					مشكلات المرضى يتم التعامل معها بجدية	22
					هنالك دعم وتعزيز للروح المعنوية ويوجد التزام وظيفي عند العاملين	23
					مستوى أداء الخدمات المقدمه حاليا بعد تطبيق الجودة الشاملة افضل من الفترة السابقه	24
					بشكل عام، أنا راضي عن ما قدمته مفاهيم الجودة الشاملة للمستشفى	25

هل تقترح أي تحسينات/تعديلات لرفع الكفاءة في المستشفى و تطبيق مفاهيم الجودة الشاملة بصورة أمثل ؟

- (1)
- (2)
- (3)
- (4)

شكرا لحسن تعاونكم