

**APPLICATION OF QUALITY MANAGEMENT PRINCIPLES
AND SERVICE DELIVERY AT KENYATTA NATIONAL
HOSPITAL**


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**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER
OF BUSINESS ADMINISTRATION AT THE UNIVERSITY OF NAIROBI,
SCHOOL OF BUSINESS.**

OCTOMBER 2021

DECLARATION

This research project is my original work, and it has not been submitted for any academic award in any institution.

Signed.  Date.10/10/2021.....

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D61/84032/2015

This research project has been submitted for examination with the authority and approval as the university supervisor.

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ACKNOWLEDGEMENT

my sincere gratitude goes to the almighty God for granting me knowledge, wisdom, good health and my guide throughout. Special thanks to my supervisor Mrs. Zipporah Kiruthu for her invaluable guidance and motivation. My gratitude also goes to entire management and staff of University of Nairobi, School of business Department of Management Science for providing the conducive environment for academic excellence. I thank my colleagues who helped and encouraged me during this course of study. My family, parents, siblings, relatives and friends, I appreciate you all for your effort, love, prayers and support. As well as all who contributed to the successful completion of this project.

DEDICATION

I dedicate this project report to my daughter Bobbi for consistently mentioning me in her prayers, and for her understanding, being patient and moral support; she gave me during the entire period of my study.

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ABBREVIATIONS / ACRONYMS

KNH: Kenyatta National Hospital

TOC: Theory of Constraints

QMPs: Quality Management Principles

TQM: Total Quality Management

RBV: Resource Based View

SPSS: Statistical Package for Social Sciences

ABSTRACT

Quality management principles are strategies applied by organizations to meet customer expectations in service delivery. The focused quality management principles included; Customer focus, Leadership, Employee involvement, and Continuous Improvement. The main objectives of the study were to assess' application of quality management principles and service delivery at Kenyatta National Hospital; To examine challenges facing Kenyatta national hospital in efforts to achieve quality management. Target respondents were sampled from employees in different departments at KNH, namely inpatient and outpatient, security and safety, nursing, purchasing, pharmacy and administration department. Self-administered questionnaires with both open and closed ended questions were used to collect the primary data from the respondents. 285 questionnaires were distributed to the respondents only 189 were received back for analysis. A rate of 66.32%, which was an outstanding number to pursue with the analysis. The collected raw data was organized, summarized, and analyzed using Microsoft excel and Statistical Package for Social Sciences (SPSS). Any response above the average justified execution of QMPs while below-average did not affirm the enactment of QMPs.

The research findings indicated that management and general staff at Kenyatta National Hospital understood the role of QMPs and service delivery. In fact, from the raw data obtained, the respondents either strongly agreed or agreed with the role and influence of QMPs in service delivery. However, it was surprising to note that when it came to the actual implementation of QMPs to foster service delivery, the feedback was alarmingly negative. Majority of the respondents did not think that quality management principles were being implemented at KNH. However, further investigation indicates that the challenges facing the facility were major contributory factors to failed service delivery. The study recommends adequate staffing, technological innovations and structural improvements to achieve credible and reliable service

delivery. Further studies should be conducted to understand the nature of operations at KNH to guide the hospital's management in understanding how they affect service delivery.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The number of patients looking for specialized healthcare services is on the rise at Kenyatta national hospital due to its positioning at level six, the apex of the health care delivery system. Therefore, service delivery is of national importance for other health care providers may emulate. The Kenyan constitution gives citizens the right to the highest attainable standards of health, which has made Kenya adopt Universal healthcare, which entails easy access to safe, effective, affordable, and quality services. This will ensure citizens receive quality health services ranging from treatment to rehabilitation, to palliative care. To achieve Universal health care, numerous strategies have been put in place to progressively improve and sustain the quality services in healthcare facilities in the country, namely, health subsidized insurance cover to the needy professionals and support staff employment, expansion of admission wards, and purchase of medical types of equipment in government-owned facilities (Prashar & Antony, 2018).

The health sector is a critical player in economic growth; it has a substantial impact on achieving sustainable developments goals in the country. The government has devolved the health sector to the counties to cater to the demand regarding accessibility and quality services this calls for an increase in facilities that provide high-level special care and the establishment of mobile clinics.

Quality management principles can be defined as a set of beliefs and norms, which are considered beneficial and can be used based on quality management. Organizations require a roadmap to meet competitive advantage in the market through service provision (Chum & Okungu, 2011).

Due to the dynamics of customers' needs and wants, most firms' operations have over the past couple of decades adopted Quality Management Principles to transform significant industries to improve their service delivery. Quality management principles are usually used to place an organization strategically in service delivery and not as a rule of law that must be strictly followed although organization leadership should ensure that employees own quality management principles for proper implementation.

The resource-based view and theory of constraints will be utilized; Theory of constraints uses the structured metrics-driven approach to scan, identify and utilize opportunities for improvement and measure the impacts of the implemented improvement efforts (Rodgers, Antony & Penman, 2019) . Monitoring and control measures have to be put in place for the success of the process. The resource-based theory provides every firm to take optimal advantage of capabilities and resources available in implementing quality programs in the organization for efficiency and effectiveness in operations.

Service organizations, especially in the healthcare sector, need to be particularly conversant with the quality management principles to improve patient services and overall healthcare facility operations. The Achievement of improved quality services in healthcare facilities is complex can only be understood within the organizational context of care. In fact, due to the different expectations that patients have, achieving improved service is one of the hardest tasks for healthcare facilities. Service improvement in healthcare can be directly related to desired health outcomes of individuals; the approach is based on patient satisfaction and perception (Papadopoulos & Zhang, 2016). Implementation of each of the principles depends on a specific health care facility to achieve optimal health care services. The motive of this research is to study application of quality management principles on service delivery at Kenyatta National Hospital. This is crucial to achieving universal healthcare through service delivery.

1.1.1 Quality Management Principles

Quality management principles are a set of standard laws, which form the basis of quality management. They are generic in nature, meaning they can be utilized in every firm regardless of their nature (Chang, 2016). The main quality management principles include customer focus, leadership, continuous improvement, employee involvement, process approach, factual approach to making decisions, and supplier relationships. Each of these principles will be discussed in detail in the subsequent sections. Quality management principles provide firms with directions to achieve quality objectives and a foundation in quality management. Organizations depend on customers; it is their responsibility to meet customers' needs and foresee future needs to remain competitive in the market. Management as a guide towards continuous service improvement uses them. They link different departments within an organization to a common goal of achieving

quality. Organizations have developed programs to monitor and assess the implementation of quality management principles to meet customer expectations through empowering employees to deliver value and focus on continuous improvement. In healthcare, they are met when exceeding outlined needs.

The management ensures employees have the right data and information as required to perform their duties effectively and efficiently in the firm. In this way, expected goals are met. Here the process management focuses on the activities rather than the outcomes it involves preventive and proactive measures of quality management to prevent variations of the end product. Monitoring and controlling errors in the process lead to improved service. This is improved customer results, the financial performance of the firm by reduction of wastes, and overall performance of the firm. In healthcare, it is necessary to equip doctors and the nursing workforce with the required skills for positive change. Healthcare managers should have the goodwill to understand the importance of implementation of quality management principles in their firm for service improvement. The following are the standard quality domains, which healthcare institutions adopt. Safety of the patients and staff, timely service delivery reducing waiting time, efficient by avoiding wastes, equity in service provision to all patients, patient-centered meets his needs and effective (beneficial to patients). Quality management principles are positively related to service improvement in healthcare. Fundamentally, healthcare facilities should never compromise quality in service improvement circles to attain long-term competitive advantage.

1.1.2 Service Delivery

Service delivery refers to a meeting or exceeding customer need. In healthcare service can be achieved through streamlining processes by reducing the cost of operations and clinical errors and embracing quality and safety in healthcare policies. The getting it right first time (girft) system helps clinicians, doctors, and managers analyze the variations data in services and practices and use it to meet and exceed customer expectations. Organizations have to instill the right culture until they are accepted as second nature. Systematic implementation of the standards has been recognized all over the world, and their primary meaning is the notion they can enable healthcare organizations to seek higher levels on service delivery to the patients it serves (Zgodavova, 2017). Continuous evaluations of quality management systems in the healthcare organization have particularly apparent benefits. Some of them include; improved patient health outcomes reduced

wastes and costs associated with clinical processes, Intensification in the realization and management processes, reduction in the number of errors and failures at organizational units, clear definition of all authorities and responsibilities for each employee group, a reduction in the overall expenditure of the healthcare organization following minimization of wasted resources brought about by failures, an increase in the effectiveness and quality of services offered to patients, the building of preconditions for preventing possible problems that occur at the workplace, and an increase in the healthcare organization's competitiveness (Rawson,& Moretz, 2016).

However, particular subjective and objective barriers come when the healthcare organization wishes to ensure implementation of the quality management system effectively, and they include an overall strategy of healthcare could fail to be clear, the healthcare services depend strongly on the accountable approach and individual quality of employees to the patients, together with their families, at any given time, there will be a discrepancy between the likelihood of the variety of healthcare increasing and available resources. A real healthcare organization's staffs have goodwill to change the culture and understand their roles in the paradigm shift towards organization service delivery. Ideally, all stakeholders in the firm are equally playing a role as a team to ensure service improvement is met as an organization goal.

1.1.3 Quality Management Principles and Service Delivery

QMPs form the overall strategies on which organizations carry their operations and business improvement based on quality and safety. Healthcare Managers play critical roles in designing, shaping patient care systems to provide quality services despite the frontal involvement of clinicians and doctors. The systems clarify the responsibilities of each stakeholder and resource management in order to achieve continual improvement and customer satisfaction (Morden, 2017) . Areas that need improvement have to be selected and focused on which have the following characteristics high volume of customer's frequency, high risks of outcomes longstanding and strong opinion during resolution of the problem. An organization should ensure the adopted changes aim at targeted service delivery. Quality management principles provide clear directions on areas to focus on depending on a specific organization. Customers have also become more informed and demanding implementing and sustaining a quality initiative has become a complicated task to be undertaken by organizations (Griffin, 2016). The service delivery process

can be integrated with the Deming cycle, whereby each lifecycle gives feedback to the next stage to enhance improvement in the organization.

1.1.4 Kenyatta National Hospital

KNH was founded in 1901 as a key player in the health sector locally; KNH is Kenya's most significant public health facility, which provides a full range of specialized health care treatment on basis of a referral hospital. This makes KNH a critical healthcare facility in the East Africa region and the entire African globe. KNH is well-known for providing specialized medical services, which include neurosurgery, reconstructive surgery, ophthalmology, oncology, and renal services, among others. It serves as a referral hospital from other health care institutions within the country. Furthermore, it is also the teaching health facility of the "University of Nairobi's College of Health Sciences and Kenya medical services training college it is also working closely with Kenya Medical Research Institute, Government Chemist, National Aids Control Council, and National Public Health Laboratories Services, among other institutions" (Omambia & Odhiambo-Otieno, 2016). Its present attendance records indicate that capacity beds are 2,000 with 6000 personnel attending 2000 inpatients and 1500 outpatients daily. Hence, this healthcare facility must utilize practical QMPs to improve its services to meet the patient's expectations.

Service delivery in the facility take several dimensions as the hospital has many departments. This makes the adoption of QMPs of critical importance because of the large number of patients that the facility serves daily. Unfortunately, the facility is continuously faced with challenges including a burgeoning patient number, few specialists, stock out of crucial medical supplies, insufficient functional specialized equipment's, failed management information systems corruption, and inefficient operational guidelines and standards (Gaimard, 2014). Because of such challenges, utilizing the QMPs as guidelines for useful service delivery is critical. This research is looking at the history and development of the hospital, especially concerning how the hospitals' administration can apply QMPs to improve service delivery and sustain competitive advantage among other healthcare firms.

1.2 Research Problem

Global competition on market share is tremendously increasing with the quest for quality products and services by customers. Most organizations have noticed the only way to be competitive is through the provision of high-quality services that meet customers' expectations. Many organizations have implemented quality management principles and appreciated benefits in their service delivery for quality. It has been achieved through customer focus, leadership, continuous improvement, employee involvement, process approach. Managers are tasked to communicate with employees the quality goals of the organization to minimize errors and ensure consistency. Since 2014, the ministry of health attained quality management system standards and joined other organizations from other countries, which are certified. This was meant to meet health policy framework to provide high quality services and affordable healthcare to all Kenyans (D'Souza, S. & Sequeira H. A. 2012).

Healthcare relies on service delivery to achieve desired standards and excellent workflow processes. The Kenya healthcare sector is a rapidly growing sector, since the promulgation of a new constitution in 2010 ushered new era in the healthcare sector whereby it was devolved into the 47 counties created under the new constitution, faced with numerous challenges. this led to mixed results, due to different management styles, policies, corruption levels, and staff morale in different counties. Making certain counties have significant developments, others lagged behind. This called for quality management systems to resolve the problems in healthcare and sustain quality. Kenyatta National Hospital has implemented quality management principles through system integrations. For example, adoption of new diagnostic methods for the best treatment of cancer and tuberculosis, development of vaccine center for effective immunization, and adoption of wide health insurance fund subsidy (Omambia et al. 2016).

Contemporary concepts of customer-focused healthcare are greatly based on research carried out by the Picker Institute in the year 1993, in collaboration with the Harvard School of Medicine (Barake, 2015). The research found out eight fundamental dimensions of patient-focused care. These include emotional support, information, respect for the values and preferences of patients, physical comfort, education and communication, transition and continuity, the involvement of friends and family, and care coordination (Frampton et al., 2008).

McIntyre (2012) observes that measurements are supposed to have relevance to everyone involved, including healthcare staff, patients, and the entire healthcare organization. Continuous improvement processes are often budget-neutral; in that case, the costs to carry out changes are usually offset by cost savings realized. These include the evaded costs associated with poor outcomes, errors, and process failures.

Donabedian (2003), one of the initial pioneers of the continuous improvement concept in healthcare, points out that to be capable of managing, improving, and implementing more general quality measures and improvements, it is essential to observe, measure, and assess. On that note, it is necessary to find "evidence" for improvement to spread and apply them as being a portion of healthcare. Tools have been built in healthcare to help in measuring medical outcomes and results, including tests of fresh therapies and rates of surgical mortality.

The "Australian Commission on Safety and Quality Healthcare" study in 2010 on customer focus and quality healthcare service resulted that a more significant number of patients, provision of quality healthcare refers to some intangible attributes such as the healthcare provider's technical expertise (Barake, 2015). Most of such studies established that quality healthcare implies the physical structure of the health facilities and the staff's technical quality; it ignores interpersonal quality. In that regard, interpersonal attributes such as trust, active listening, respect, sympathy, compassion, courtesy, effective listening, and understanding are significant components of high-quality healthcare. Hence, this study will aim at bridging this gap.

Studies in several sectors encompassing healthcare postulate that leadership is a crucial component in organizational performance (Barake, 2015). In a study of healthcare institutions that are highly ranked, it was also found out that leadership is a crucial factor. In that sense, it was found that leaders were passionate regarding improving safety, service, and quality and have a realistic style, seeking to remain in tune with particular issues at the forefront. (Barake 2015) points out that the role of leadership in providing quality healthcare is to instill a culture of patient safety, which leads to the creation of an environment for safer healthcare. Notably, these leaders assist organizations to recruit the leadership team, set an effective strategy, and come up with a disciplined culture, which is focused on the creation of high performance. However, a more comprehensive leadership concept includes teams. The members of the team are considered to agree; individuals forming a

group can have significant influence over others who are not part of the group. This influence may be higher than the aggregate of the individual impact brought in by the overall leader. On that line, the current study will look for ways to bridge that gap or discrepancy.

Ndambuki (2012) researched patients' levels of gratification and discernment on nursing services offered at Kenyatta National Hospital renal unit. He found that understaffing, illiteracy in machine operations, which are used in service delivery, poor communication channels, and insufficient funding of the unit hindered quality service delivery. The findings indicated weaknesses in public health care facilities to improve service delivery. The research highlighted various challenges. Because of this, numerous gaps existed that need to be addressed concerning service delivery. Service improvement at Kenyatta National Hospital can be achieved if there is a multi-factored approach to dealing with the significant challenges/gaps facing the facility. Unfortunately, the needs of hospital staff and patients are ever-changing. Currently, healthcare gaps can be summarized into four. One is the increases in healthcare services costs. Increasing costs mean that a large number of the populace who are still poor, find it increasingly difficult to meet their healthcare costs. The second gap is the quickly intensifying dependence on technology and the inability of the hospital to stay relevant. The other two include increasing pressure on healthcare institutions to reduce operating costs and improve quality to meet international standards. These challenges compel planners in healthcare to adopt a system, which can measurably manage healthcare to provide high-quality services. Indeed, this is the objective of quality management programs in healthcare facilities.

Nurses account for over 80% of health workers in any healthcare facility (Al-Shdaifat, 2015). Nurses play an essential role in the effective implementation of quality management programs. A healthcare organization that implements quality management principles may realize various benefits. Some of the benefits include improved patient health outcomes and improved efficiency of the clinical and managerial processes. In this case, by improving outcomes and processes is pertinent to high-priority health needs, a healthcare organization can alleviate wastes, as well as costs associated with redundancy and system failures.

The current study aims to find answers to two crucial questions: what are the quality management principles practiced at Kenyatta National Hospital and what extent do these quality management

principles affect service delivery at Kenyatta National Hospital departments and the challenges Kenyatta national hospital faces in the achievement of quality management.

1.3 Research Objectives

The main objective of the study was:

- i) To assess the application of Quality management principles and service delivery at Kenyatta National Hospital.
- ii) To assess challenges facing Kenyatta national hospital in efforts to achieve quality management.
- iii) To determine influence of customer focus on service delivery at Kenyatta National Hospital.
- iv) to establish influence of leadership on service delivery at Kenyatta National Hospital.
- v) To determine influence of evidence-based decision making on service delivery at Kenyatta National Hospital.

1.4 Value of the Study

This study is valuable, as it will make a significant contribution to research and practice in the field of healthcare. In that sense, it will ensure that a healthcare facility such as the KNH comes up with appropriate strategies intended to help in realizing the full adoption of QMPs to improve service delivery. The study will be of significance to the management and policymakers at KNH, and in the health sector in Kenya at large. It will inform policies concerning quality management. In addition, on matters concerning customer's perception of quality services offered in healthcare. Finally, the review will help identify areas for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter will review the literature on quality management principles and service delivery in healthcare facilities.

2.2. Theoretical Review

This area is focusing on theories advancing on healthcare and service delivery. The study is done on the resource-based view and theory of constraints.

2.2.1 Resource-Based View

Most organization performance depends on key resources it possesses which differ from one organization to another they can be tangibles or non-tangible resources. For example, knowledge, system, and procedural. RBV promotes maximum utilization of organization resources, which forms the basis of competitive advantage in the firm. For long-term sustainability, a firm must focus on its core competencies, which include durability, transparency, transferability, and replicability. An organization should also develop resource exploitation strategies to tap revenues created by the resources (Alvarez, & Barney, 2017). Healthcare depends on the available resources (revenue, human resource, serviceable equipment, information systems, and communication channels) machines to provide services to the patients. Teamwork is very critical when the organization's management assists an employee feel involved and provide them with the resources and support required to offer quality patient care, they are not just satisfied with the employer, but they as well become more loyal. The decrease in the recruitment costs and a smaller number of employees that miss work, together with reduced mistakes and patient variable costs, make boosting employee satisfaction become more appealing to managers. On the other hand, when employees feel unappreciated and unsatisfied may quit work; as a result, this exerts increased

stress levels and workloads on the remaining ones, and eventually, this reduces the level of satisfaction for the employees (Hitt. & Carnes, 2016). Departments within the facilities take responsibility for planning, monitoring, evaluation, and reporting to the management to optimize customer experience and improve services.

2.2.2 Theory of Constraints

It is based on the management philosophy by Mr. Elyahu Goldratt and Jeff Cox. The main objective of TOC is to optimize efficiency in processes on focused areas to enhance profitability, excellence, economies of scale, increased customer base among other company goals. TOC involves the integration of the following tools to achieve those goals; the five focusing steps, thinking processes, and throughput accounting (Goldratt, 2017). The five focusing steps involve; identification of system constraints (weak points), deciding on how to exploit them, subordination on the above decision, elevating systems constraints, incase constraint is broken return back step 1. The thinking process helps to address policies and come up with solutions relating to constraints using logical knowledge. This study will use the five focusing steps and thinking process. Constraints are termed as wastes, and they add no value in processes they should be eliminated to achieve set goals. This commitment to implement effective programs will cultivate the spirit of continuous improvement of service.

This theory will guide the study in improving clinical processes through improving processes and outcomes in relation to high-priority health requirements; healthcare will minimize wastes and costs as a result of system failures and redundancy. A core task for most healthcare systems is to manage and organize improvements by revealing underlying constraints. On that note, it is necessary to find “evidence” for improvement to spread and apply them as being a portion of healthcare. Tools have been built in healthcare to help in measuring medical outcomes and results, including tests of fresh therapies and rates of surgical mortality. (McIntyre, 2012) observes that measurements are supposed to have relevance to everyone involved, including healthcare staff, patients, and the entire healthcare organization. TOC is budget-neutral; the costs to carry out changes are usually offset by cost savings realized in service improvement. These include the evaded costs associated with poor outcomes, errors, and process failures (Golmohammadi, 2015). In healthcare waiting time is a measure of quality service by patients; that is why managers use it to

address workload by accurately identifying constraints and ensure smooth flow of queues within the facilities.

2.3. Quality Management Principles

Stakeholders in every organization have a vested interest in applying QMPs practices as part of their strategies to improve business processes and operations management. Senior managers, clinical staff, and administrative staff members utilize it as a guide in operating their organizations to realize success through continuous improvement of performance (Luburic, 2015). QMPs include customer focus, leadership, continuous improvement, employee involvement, process approach, factual approach to making decisions, and mutually gainful supplier relationships.

Customer focus in healthcare is the provision of quality services to patients in a professional process with shared decision-making and good communication. Contemporary concepts of customer-focused healthcare are greatly based on research carried out by the Picker Institute in the year 1993, in collaboration with the Harvard School of Medicine (Barake, 2015). The research found out eight fundamental dimensions of patient-focused care. These include emotional support, information, respect for the values and preferences of patients, physical comfort, education and communication, transition and continuity, the involvement of friends and family, and care coordination (Frampton et al., 2008). The advantages linked to patient-focused healthcare include reduced mortality, reduced department return visits, reduced infection rates, and reduced medication errors. Other benefits include reduced anxiety, increased patient and physician satisfaction, increased patient orientation and engagement, and improved life quality.

Fundamentally, leadership is an imperative societal aspect, which has defined civilization goals and values through time. In most cases, it plays a role as a point of focus and guiding power of the behavior of a group by causing compliance, personifying norms, discharging influence, and mobilizing efforts to goal attainment (Ross, 2017). Furthermore, leadership has undergone evolution into a strategic practice, which encompasses communicating a particular vision, setting up organizational processes and structures, creating capabilities, and controlling change initiatives that help an organization meet quality objectives.

In the provision of healthcare, continuous improvement is defined as the unending and joint efforts of each healthcare expert, patients together with their families, educators, planners, and researchers to make necessary changes, which will contribute to the realization of “improved patient outcomes, improved system performance, and improved professional development” (Batalden & Davidoff, 2017). Generally, continuous improvement is regarded to be a deed to “doing better” and whereas the rest of the improvements presume change; on the other hand, not all changes are indeed improvements. In healthcare, continuous improvement consists of diverse methods and models, targeting healthcare improvement, making care more efficient and effective, and improve safety for the people being served; that is, and patients.

Employee involvement refers to keeping the employees aligned with the organization's values and work ethics. Employee involvement empowers employees to make organizational decisions and allows them to feel appreciated and respected for what they do. Some best practices for advancing employee involvement include peer recognition, open communication, training, giving timely feedbacks, and creating safe spaces (Gibbons, 2016). Managers in every industry have prioritized the issue of employee involvement since there is increasing evidence that employee engagement positively correlates with organizational, group, and individual performance in some areas including turnover, productivity, loyalty, customer service, and retention. While particular improvements in the quality of healthcare can be realized via investing in infrastructure and technology; on the other hand, the most impressive improvements are realized through people. Unsatisfied healthcare workers may affect the quality of care negatively, and this, in turn, affects patient satisfaction adversely. Even though employee involvement brings in several positive changes to any organization, the current study does not define clearly the main aspects of employee involvement as responsibility delegation to personnel. Advantages of employee involvement include easiness introducing organizational changes, focus on results, talent development, high retention rates, and increased motivation.

On this issue, the current study will bridge the gap. For an organization to attain sustainable success, it has to maintain the relationship with the suppliers. The networks are based on mutual benefits in responding to opportunities, creation of value, sharing the common goal of quality, and stable flow of supplies. It is the responsibility of managers to prioritize choice best suppliers, managing them, pool experts and resources with relevance to the organization. Healthcare has to

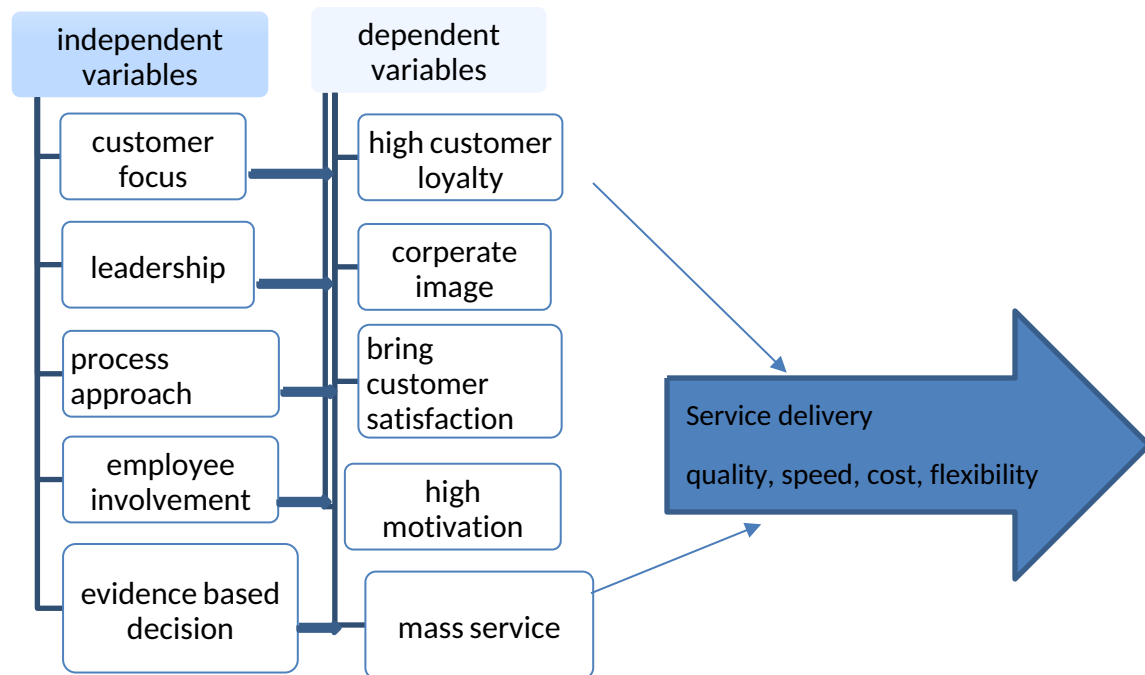
implement the principle for service delivery in facilities through collaborations and partnering with other healthcare institutions.

Evidence-based decision-making entails the evaluation of available data to make desired outcomes. Getting facts through data analysis builds confidence in decision-making. In healthcare embraces get it right first-time slogan, the correction of errors caused in a process can be destructive. Doctors and physicians use this principle to measure and monitor the indicators of service delivery in an organization. It improves operational effectiveness and efficiency.

Process approach is a consistent method to plan the processes and the interactions of these processes as part of the management system Healthcare works in an interrelated system to have credible results. Elimination of barriers to service delivery in health facilities should be prioritized to achieve consistent and predictable outcomes of aligned systems. This will help minimize risks on the output of processes and management of quality in the firm.

2.4 Conceptual Framework – Should the last section

The study will access quality management principles that help service delivery in healthcare at Kenyatta National Hospital.



2.5 Quality of Healthcare

An analysis of the quality of healthcare concept requires separating the definition as being detached from related or alternate terms. In the literature, it has been noted that the terms “patient safety” and “healthcare quality” are usually utilized interchangeably (Allen-Duck, Robinson & Stewart, 2017). Whereas there is a separate relationship between patient safety and healthcare quality, there is a clear distinction between these concepts. In that regard, patient safety is usually utilized to describe the characteristics of the quality of healthcare and is apparent in the recognized attributes of the concept analysis. Patient safety, in the academic literature, is marked as being among the several outcomes linked to healthcare quality.

A comprehensive concept analysis helps in identifying variables, which delineate safety from quality. According to the findings from the analysis conducted by Kim et al (2015), the providers of healthcare within a well-integrated system aimed at the prevention of avoidable adverse occurrences or medical errors, thus protecting the patients from injury or harm, gave a working definition of the concept of patient safety as the result of efforts. In 1998, the “National Roundtable of Health Care Quality” was convened by IOM and categorized quality issues into three main classes; misuse, overuse, and underuse (Allen-Duck et al., 2017). On that line, misuse was additionally defined as the avoidable treatment complications and turned out to be a common point of reference for conceptualizing the safety of patients as being a quality of healthcare component.

2.5 Quality Management Principles and Quality in Health Care

Quality management in the field of healthcare helps to ensure that clients obtain excellent care provision. The healthcare institutions are responsible for carrying out this function to exhibit their due diligence to offer optimal care for the clients (Sheahan, 2019). By employing QMPs to healthcare facilities, administrators and physicians can gain from identifying the ways of improving internal processes, which will pile more quality outcomes for the clients.

Most healthcare institutions establish guiding principles, or standards, which flush out their service projections. For example, a guiding principle may essentially be the expectation that clients shall not wait for more than twenty-four hours to receive a call returned by their physician (Sheahan, 2019). Fundamentally, QMPs plays a vital role in setting up the guiding principles. The field of

healthcare is rife with legal regulations; hence, the QMPs departments have the responsibility to identify which laws are applicable to their institution and coming up with guiding principles that are supposed to be adhered to.

2.6 Empirical Studies

Adeoti (2011) study aimed to investigate how total quality management can assist in identifying the breakage points in the claim that results in poor health quality and to find out the dominant factor in “the implementation of total quality management” (Adeoti, 2011).

Nithya (2018) attempted to measure the factors that influence TQM practices to meet the hospitals' quality performance. On that line, the results showed that a larger percentage of the respondents' profiles is from non-clinical and clinical departments and most department heads, represented for the investigation. The study extracted ten main factors that explain the total quality management practices of some selected healthcare facilities. Among these factors, 'top management dedication' is considered to have the highest priority, and this is followed by 'culture and quality system' and 'training and knowledge.' Notably, this might suggest that such factors would influence quality management existence in the healthcare industry.

Information systems also play an important role in achieving QMPs. To achieve TQM, especially in a healthcare organization, there need to be an assurance on the accuracy, relevancy, and quality of information gathered. This is achieved through the establishment of reputable and credible information systems. As investigated by D'Souza and Sequeira (2012), the verification and maintenance of software integrity plays an important role. Appropriate procedures where checks and control in all organizational processes are met can only be ensured if an organization uses appropriate technologies. The findings from the authors' study showed that there is a huge discrepancy between the current status and what is potentially possible or available in other areas. Ross and Venkatesh (2018) offered the healthcare professionals and patients adequate information to comprehend the quality improvement fundamental, and to give a commencing point for quality improvement to realize increased patient satisfaction. The study concluded that initiatives for quality improvement such as the organization's mission statement, regular reengineering and redesigning, and benchmarking in the healthcare facility, and seeking to identify quality issues and problems assists managers to work towards improving quality.

On the same note, Parand et al. (2017) whose aim was to review empirical literature to identify time spent, activities, and engagement of hospital executives in care quality conducted a study. The findings showed some evidence that the work and time spent by managers could influence the safety and quality of clinical outcomes, performance, and processes. Furthermore, Hazilah (2015) conducted another study. The main purpose was to offer an empirical analysis of the quality management practices among the Malaysian MOH hospitals, ranging from health attendants to medical specialists. In the study, the eight principles of QM were identified. Eventually, it was established that support for QM was the lowest among physicians. Finally, Carter et al. (2017). The study aimed to understand the impact of QM approaches on the performance of healthcare organizations. From the research findings, these researchers concluded that the scope of quality activities of the healthcare organization is supposed to be quite encompassing and broad.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

It will cover the procedures and methodology to be used to conduct the entire research. It will also elaborate on research design, population, sample size, sample procedures, data collection, and data analysis techniques used. Defined descriptive.

3.2 Research Design

The research will utilize descriptive data. Cooper & Schindler (2006) as research design aiming to assess who, what, where, or how events and conditions are related. Identifying possible behaviors, attitudes, and value characters on frequency. This was adopted as it unveiled facts without manipulation.

3.3 Population of the study

The population under study will be broad categories of employees from six different departments at Kenyatta national hospital inpatient and outpatient department, security and safety department, nursing department, purchasing department, pharmacy department and administration department and human resource mobilization, 285 respondents will be regarded as sufficient capture of required data.

Table 3.1: Target Population and Sample Size

Category	Population	Sample
In patients and out patient's department	3000	91
	200	45

Security and safety department		
Purchasing department	50	27
Nursing department	1000	78
Pharmacy department	20	9
Personnel department	200	35
TOTAL	4470	285

3.4 Sample Design

In this research, “stratified random sampling” was utilized to select the required test: and the values were selected based on Krejcie & Morgan (1970). The technique produces strata of the overall population parameter, which ensures representation of homogeneous population.

Determining the sample size was imperative to the researcher because it was meant to bring out a reliable representation of the whole population. In that case, the sample size for the study was 285 respondents. The researcher administered questionnaires to the respondents at the hospital (Okpala & Okpala, 2017). The researcher picked the questionnaires after a week to allow the respondents to fill them in during their free time.

3.5 Data Collection Methods

The study utilized primary data, which is the data originally collected for the first time for the study's purpose. The kind of data gathered was to be informed by the study objectives. The data was collected by utilizing two fronts (Hadley, 2017). The first one was that the researcher physically visits the project site; that is, Kenyatta National Hospital, and delivers the questionnaires. The second front was to collect the questionnaires to be analyzed after one week to

enable the participants to fill in the questionnaires in their own free time.

3.6 Data Analysis

Analysis of data was carried out following four phases often utilized in research, and these are cleaning up data, reducing, differentiating, and explaining. Cleaning up data involved editing, tabulation, and coding to detect any anomaly. Utilization of descriptive statistics to perform data analysis by using modes, standard deviation, and means according to the objectives of the study. Moreover, correlation analysis was utilized to determine dependent variables and independent variables (Zyska & Grofelnik, 2019). The results following data analysis were exhibited in tables to be interpreted. Furthermore, the research also utilized Microsoft software and SPSS tools to help in performing descriptive analysis from the quantitative data gathered on questionnaires.

CHAPTER FOUR

DATA ANALYSIS FINDINGS AND DISCUSSIONS

4.1 INTRODUCTION

This chapter covers the following subtopics data analysis, presentation, interpretation, discussion, and findings of the research. The motive of this research proposal was to study application of quality management principles on service delivery at Kenyatta National Hospital. The collected raw data was organized, summarized, and analyzed using Microsoft excel and Statistical Package for Social Sciences (SPSS). Any response above the average justified execution of QMP while below-average did not affirm the enactment of QMP. Tables and percentages were utilized in data presentation for ease of analysis. The data as observed earlier was collected from stakeholders close to the operations of the Kenyatta National Hospital including nurses, security, among other

personnel within the facility.

4.2 Questionnaire return rate

Sums of 285 questionnaires were distributed to the respondents only 189 were received back for analysis. A rate of 66.32%, which is an outstanding number to pursue with the analysis given the fact that some of the respondents are part-time workers or have other engagements to have the time to fill in the questionnaires.

4.3 Data Validity

As described in the research methodology, the data was collected following a stratified random sampling design. This approach was chosen because it was difficult to interview all the stakeholders and determine whom to choose for the analysis. Additionally, random sampling allows the researcher to save on time while at the same time removing any bias that may arise from other structured sampling methods. Because the respondents were chosen randomly it is much easier to have a sample that is representative of all the stakeholders involved in the research. The respondents were given ample time to fill out the questionnaires so the chances of the respondents making errors filling out the questionnaires were greatly minimized meaning that the data collected is valid and reliable for the research analysis.

4.4 Descriptive statistics

To investigate whether Quality Management Principles play an important role in service delivery at the Kenyatta National Hospital, descriptive statistics including mean, standard deviation, correlation, skewness, Kurtosis, and regression analysis were computed using the two software's described earlier: Excel and SPSS. The computations are attached in the two supporting documents. Various factors were investigated to come up with a concise and reliable analysis of the way QMP affects service delivery at the hospital. Among the factors considered and which the respondents were asked to give their opinion on included customer focus, leadership, employee involvement in operations, process approach, continuous improvement, evidence-based decision making, supplier relationships, service delivery, and challenges facing the institution.

4.4.1 Customer Focus

With respect to customer focus, it is clear that the descriptive statistics are almost evenly distributed. This means that among those who agreed, disagreed, or were neutral, were equally distributed among the three clusters of interaction, understanding of future needs, and measurement of customer satisfaction. This result perfectly explains the uniformity in the respondents understanding of the customer focus criterion. Additionally, it is clear that the kurtosis and skewness are all close to the mean being only between -0.944 and 1.72 of the mean in all criteria. The data is shown on table 4.1

TABLE 4.1: Customer Focus

	Strongly Agree	Agree	Not sure	Disagree	Strongly disagree	mean	standard deviation	kurtosis	skewness
Customer focus									
Interaction creates more value	20	39	41	53	36	37.8	11.86170308	1.7166528	-0.52410461
Understanding present and future needs and expectations	43	63	30	28	25	37.8	15.67482057	1.18889341	1.36649841
	37	66	48	22	16	37.8			

Measuring and monitoring of customer satisfaction							20.15440 399	- 0.943838 01	0.467317 87
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4.4.2 Leadership

Concerning leadership, it was clear that most of the respondents agreed with the three propositions that the top management was expected to provide quality management decisions, create a culture of quality, and were expected to encourage employees, those unsure and those who disagreed were in the minority. Because of this, leadership experienced a higher positive index with respect to kurtosis and skewness as shown in the sheet on descriptive and correlation in attached excel workbook.

4.4.3 Employee involvement and Process Approach

Concerning employee involvement and process approach, it was clear that the two subcategories showed similar characteristics on their three respective issues of drafting quality goals, training, and involvement in quality management for employee involvement, and understanding of organizational capabilities, risk management, and understanding authority in accountability and process management. The kurtosis and skewness of the two data sets showed similar characteristics. The data is reflected in table.4.2

Table 4.2: Employee involvement and Process Approach

Employee involvement									
Employee involved in drafting quality goals	33.00	52.00	34.00	44.00	26.00	37.80	10.21	- 0.83	0.51
Training of employees for improvement	30.00	51.00	37.00	29.00	42.00	37.80	9.09	- 0.62	0.67
Involvement of employees in quality management programs	18.00	63.00	33.00	36.00	39.00	37.80	16.24	2.02	0.79
Mean	27.00	55.33	34.67	36.33	35.67				
standard deviation	6.48	5.44	1.70	6.13	6.94				
Process approach									

Understanding organization capabilities before action	25.00	61.00	27.00	36.00	40.00	37.80	14.38	1.66	1.28
Input risk management	17.00	54.00	28.00	30.00	60.00	37.80	18.34	-2.34	0.32
Defining process management authority accountability	43.00	64.00	30.00	29.00	23.00	37.80	16.36	1.24	1.31
Mean	28.33	59.67	28.33	31.67	41.00				
standard deviation	10.87	4.19	1.25	3.09	15.12				

4.4.4 Continuous Improvement

With respect to continuous improvement, the descriptive statistics were rather diverse, many respondents disagreed on the three indices of improvement objectives, tracking improvement results, and recognition of improvement rewards. This is an indication that the employees understanding of continuous improvement at the facility are not clear. This can be evidenced by the standard deviation experienced in all three indices. Thus, there is need for the institution's management to explain what they mean by continuous improvement.

4.4.5 Evidence-based Decision Making and Supplier Relationship

The standard deviation, kurtosis, and skewness for these two subgroups were also high. This is an indication that the respondents were not aware of the way the organization applies these indices or how these indices affect service improvement. As indicated in the descriptive and correlation worksheet, most respondents disagreed with the individual test points. Thus, there is need for the management to change their decision-making processes and their relationship with suppliers. The way decisions are made and the way management engages with suppliers affect service improvement in a big way. Thus, changes to the two relations can go a long way in improving service delivery.

4.4.6 Definition of Service delivery

Concerning definition of service delivery, it was clear that this is where the biggest challenge was. Many respondents did not agree with the five propositions. Without having to look at the challenges facing the institution, it was clear that an understanding of service delivery lacks at the

institution. The table below summarizes the results with respect to standard deviation, kurtosis, and skewness.

Table 4.3: Definition of Service delivery

Service delivery definition									
Elimination of bottlenecks in service delivery	21.00	32.00	22.00	34.00	80.00	37.80	24.29	3.89	1.92
Superior provision of services	13.00	34.00	13.00	31.00	98.00	37.80	35.05	3.50	1.81
Managing queuing time in service delivery	13.00	40.00	27.00	30.00	79.00	37.80	24.97	2.53	1.42
Managing process, structure and outcomes	12.00	36.00	37.00	31.00	73.00	37.80	22.11	2.37	1.01
Exceeding customers' expectations	13.00	27.00	36.00	32.00	81.00	37.80	25.67	3.17	1.58
Mean	12.67	34.33	33.33	31.00	77.67				
standard deviation	0.47	5.44	4.50	0.82	3.40				

According to the table, it is clear that most respondents did not agree with the institution's framework on elimination of bottlenecks, provision of superior services, management of waiting time, management of structure outcomes, and exceeding customer expectations. This could be the reason why the respondents did not view the facility as being active in improving service delivery. Tackling these issues can go a long way in improving service delivery.

4.4.7 Challenges at KNH

There seems to be a lot of agreement on major challenges facing the institution according to the respondents' feedback. From the descriptive statistics, it is apparent that most respondents noted that financial constraints, lack of awareness, poor organizational culture, weak organizational policies, corruption, and poor working conditions were the major challenges facing the healthcare facility. Responses concerning implementation of strategic plans were equally distributed meaning that the respondents were not sure whether this was a challenge for the institution or not. There was

agreement on the fact that lack of teamwork, poor utilization of available data, and unserviceable medical equipment were not major challenges at the institution. The kurtosis suggests that data is close to the central peak as it is highly negative.

4.5 Correlation analysis

After reviewing the relationship between the population and sample and deriving the linear model, the next step is to analyze the correlation between the interviewees' responses. As indicated earlier, the respondents were supposed to fill in a set of questions based on a scale of one to five. Five represented strong agreement, four represented agreement, three was neutral or not sure, two was disagreement, and one was strong disagreement with the proposed issue or factor. Just as was the case with the population and sample, the data was collected and tabulated. To find the correlation between the variables, a correlation coefficient analysis was done using excel and SPSS software.

4.5.1 Customer Focus

Table 4.4 Customer Focus

<i>customer focus</i>	<i>Column 1</i>	<i>Column 2</i>	<i>Column 3</i>	<i>Column 4</i>	<i>Column 5</i>
Column 1	1				
Column 2	0.937395	1			
Column 3	-0.37258	0.02607	1		
Column 4	-0.90574	0.99664	0.05586	1	
Column 5	-0.75173	0.93434	0.33191	0.960379	1

The table 4.4 indicates that in relation to those who strongly agreed, there was a negative relationship between those who were neutral and those who disagreed on the three sets of questions provided. However, there were mixed responses within the indices tested compared to one another.

4.5.2 Leadership

Table 4.5 Leadership

<i>leadership</i>	<i>Column 1</i>	<i>Column 2</i>	<i>Column 3</i>	<i>Column 4</i>	<i>Column 5</i>
Column 1	1				
Column 2	-0.79	1			
Column 3	0.0189 26	0.6279 4	1		
Column 4	0.1971 28	-0.7568	0.9839 33	1	
Column 5	0.9638 8	0.5981 83	0.2480 41	0.0710 97	1

Leadership had mixed reactions among the three indices as indicated in the table 4.5. This is an indication that, the respondents did not agree on the role of leadership in the organization just as was the case with the descriptive statistics.

4.5.3 Employee Involvement

Table 4.6 Employee Involvement

<i>employee involvement</i>	<i>Column 1</i>	<i>Column 2</i>	<i>Column 3</i>	<i>Column 4</i>	<i>Column 5</i>
Column 1	1				
Column 2	0.9650 2	1			
Column 3	0.5447 05	0.7455 3	1		
Column 4	0.2266 11	0.0366 85	0.6933 8	1	
Column 5	0.5110 7	0.2678 28	0.4424 52	0.952 99	1

As the table 4.6 suggests, there was mixed correlation among the five response options. However, there were extreme concerns especially between those in agreement and strong agreement as well as disagreement and strong disagreement. This was rather unusual as the expectation was that such close clusters should have close to perfect positive correlation.

4.5.4 Process Approach

Table 4.7 Process Approach

	<i>Row 1</i>	<i>Row 2</i>	<i>Row 3</i>
Row 1	1		
	0.76892		
Row 2	6	1	
	0.64702	0.11066	
Row 3	4	6	1

With respect to process approach, there was uniformity among the three indices tested. As indicated in the table 4.7, all respondents did have similar views concerning the role of authority and accountability, risk management, and understanding organizational capabilities before taking action.

4.5.5 Continuous Improvement

There was a moderate negative correlation between creation of improvement objectives, review and tracking of results, and recognition and reward for performance among the respondents. However, there was a high correlation between the reward program and review of improvement results. This indicates that respondents presumed the two to be good motivators for improved performance and thus service improvement.

Table 4.8: Continuous Improvement

	<i>Row 1</i>	<i>Row 2</i>	<i>Row 3</i>
Row 1	1		
	-		
	0.6879		
Row 2	4	1	
	-		
	0.5463	0.98282	
Row 3	8	8	1

4.5.6 Evidence-based Decision Making

Concerning evidence-based decision-making, it was clear that there was a big disparity between those in favor of the organization’s commitment to good decision making. There was a high negative correlation between who strongly opposed the efforts of the management and those in favor. In fact, the table below computes this perfectly. Thus, the organization’s management needs to change their decision-making processes.

Table 4.9: Evidence-based Decision Making

<i>E-b decision</i>	<i>Column 1</i>	<i>Column 2</i>	<i>Column 3</i>	<i>Column 4</i>	<i>Column 5</i>
Column 1	1				
Column 2	0.866025	1			
Column 3	0.986414	0.772119	1		
Column 4	0.866025	1	0.772119	1	
Column 5	-0.98166	-0.94545	-0.93701	0.94545	1

4.5.7 Supplier Relationship

Just as was the case with evidence-based decision-making, many respondents were in disfavor of the institution’s interactions with its suppliers. While a small number of respondents were in favor or stayed neutral, a majority of respondents strongly disapproved the institution’s relationship with its suppliers. As had been noted earlier this could be because of corruption in procurement and tendering processes. A poor relationship with suppliers can negatively affect service delivery due to unreliability of scheduling and delivery. The table 4.10 summarizes this relationship.

Table 4.10: Supplier Relationship

<i>supplier relationsh ip</i>	<i>Colum n 1</i>	<i>Column 2</i>	<i>Colum n 3</i>	<i>Column 4</i>	<i>Colum n 5</i>
Column 1	1 0.596				
Column 2	04 0.991	1 0.6933			
Column 3	87 -	75 -	1 -		
	0.885	0.1555	0.819		
Column 4	89 -	4 -	66 -	1	
	0.872	0.9122	0.927	0.5465	
Column 5	66	5	71	51	1

4.5.8 Service Delivery

Most respondents questioned the administration’s understanding of service improvement. As the correlation table below indicates, only a small percentage of respondents agreed on issues of provision of exemplary services, elimination of delivery bottlenecks, management of waiting times, management of structure and process outcomes, and exceeding customer expectations. This is an indicator of how the management has failed to improve service delivery at the hospital.

Table 4.11: Service Delivery

<i>Service deliver y</i>	<i>Column 1</i>	<i>Colum n 2</i>	<i>Colum n 3</i>	<i>Colum n 4</i>	<i>Colum n 5</i>
Column n 1	1				
Column n 2	- 0.23193	1 -			
Column n 3	- 0.33565	0.1708 5	1		
Column n 4	0.87862	-	-		
	1	0.6297	0.0986	1	

		2	6	
		-	-	-
Colum	-	0.1374	0.8334	0.0809
n 5	0.06036	5	9	7
				1

4.5.9 Challenges

The challenges facing the Kenyatta National Hospital appear to be clear among a majority of the respondents. For instance, while 135 of the respondents saw inadequacy of resources as being a hindrance to service delivery, only 23 respondents thought that this was not a challenge. Additionally, while 149 of respondents cited poor working conditions as a challenge to service delivery, only 18 thought that this was not a challenge. The table 4.12 summarizes these correlations.

Table 4.12: Challenges

<i>challenges</i>	Row 1	Row 2	Row 3	Row 4	Row 5	Row 6	Row 7	Row 8	Row 9	Row 10
Row 1	1									
	0.970									
Row 2	443	1								
	0.973	0.992								
Row 3	922	724	1							
	0.978	0.998	0.997							
Row 4	674	432	075	1						
	0.989	0.979	0.966	0.979						
Row 5	644	335	154	734	1					
	0.984	0.944	0.931	0.948	0.990					
Row 6	959	245	199	247	169	1				
		-	-	-						
	0.002	0.063	0.147	0.079	0.070	0.162				
Row 7	605	06	68	04	902	348	1			
	-	-	-	-	-	-				
	0.733	0.648	0.714	0.686	0.639	0.662	0.141			
Row 8	04	22	13	65	57	09	641	1		
	-	-	-	-	-	-				
	0.625	0.544	0.629	0.587	0.514	0.527	0.310	0.978		
Row 9	45	76	25	89	68	25	184	551	1	

Row	0.653	0.600	0.643	0.630	0.581	0.605		0.946	0.895	
10	46	2	32	47	64	61	-0.065	237	791	1

In undertaking the correlation analysis, the researcher used the Pearson correlation and not Spearman’s correlation analysis. This was done intentionally since the Spearman correlation coefficient is mainly used with ranked data and for this research, the raw data was not ranked and thus the Pearson’s correlation coefficient was utilized. As can be observed from the tables, the variables represent the response scales from five to one indicating a strong agreement to strong disagreement.

Just as was the case with the population and sample, the variables provided in this output reflect the views of the respondents. From the tabulated data provided in the excel and SPSS files, it is clear that there is a big issue with service delivery at the Kenyatta National Hospital. While the previous responses were almost equally skewed, the responses on matters of service delivery indicate that many of the respondents did not believe that the management of the hospital was actively pursuing service delivery. The responses on matters of service delivery are given below table 4.13

Table 4.13: Responses on matters of service Delivery

Service delivery definition	Strong agreement	agreement	Not sure	disagreement	Strong disagreement	Total responses
Elimination of bottlenecks in service delivery	21	32	22	34	80	189
Superior provision of services	13	34	13	31	98	189
Managing queuing time in service delivery	13	40	27	30	79	189

Managing process, structure, and outcomes	12	36	37	31	73	189
Exceeding customers' expectations	13	27	36	32	81	189
	72	169	135	158	411	

From this data, it is clear that all respondents strongly disagreed with the hospital's efforts to achieve service improvement. However, this does not mean that the hospital is not trying to utilize QMPs but it may be an indicator that their approach is wrong.

The correlation analysis was conducted under the assumption that all variables were independent of each other because the responses were meant to assess whether the hospital was applying QMPs in an attempt to improve service delivery. However, for computational purposes, the correlation test assumed that variable two or the column for a strong agreement was treated as the dependent variable. This assumption was made because it was expected that the hospital was actively utilizing QMPs to achieve service delivery improvement. In fact, from the correlation analysis, it is clear that there is a high correlation between strong agreement and agreement and neutral represented by their coefficients as 0.958 and 0.836 respectively. Surprisingly, there was also a high correlation between strong disagreement and disagreement of 0.752, between disagreement and neutral of 0.944, and between neutral and agreement of 0.924. From the output, it is clear that the correlation between disagreement, neutral, and agreement was significant even at a confidence interval of 99%.

4.6 Regression Analysis and Hypothesis Testing

After analyzing the correlation coefficients, it is necessary to perform a regression analysis to see whether there is any linear relationship between the variables in the dataset. Testing the null hypothesis that QMPs influence service improvement at Kenyatta National Hospital is a necessary test. From the results provided, it is clear that there is a clear positive relationship between all the variables as the R square is one. Additionally, it is clear that the assumptions made that QMPs play

a role in service improvement are true. This is because the F statistic's P-value of 0.00 is less than the level of significance of 0.5. This is displayed in the chart . 4.14

Table 4.14: Regression Analysis and Hypothesis Testing

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000 ^a	1.000	1.000	0.000

a. Predictors: (Constant), V7, V6, V5, V4, V3

b. Dependent Variable: V2

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18608.222	5	3721.644		. ^b
	Residual	0.000	30	0.000		
	Total	18608.222	35			

a. Dependent Variable: V2

b. Predictors: (Constant), V7, V6, V5, V4, V3

However, the analysis of the coefficients indicates that in the case of the Kenyatta National Hospital, the relationship was reversed. This means that although there was a relationship between QMPs and service delivery, the relation was negative. As indicated above with the issue of service delivery where we found most respondents were in total disagreement, the regression model suggests the same thing.

4.6.1 Customer Focus

The regression analysis of customer focus is similar to that of leadership, employee involvement, process approach, and continuous improvement. This was also evidenced with descriptive statistics and correlation analysis. There was a great deal of agreement on the role of these QMPs on service improvement at not only Kenyatta National Hospital but other jurisdictions as well. From the excel workbook attached, the worksheet on “customer focus regression,” summarizes the

regression model. According to the output, the Adjusted R square of 0.7574 indicates that 75.74% of the dependent variable can be predicted using the independent variables. From the ANOVA table, it is clear that the significance F is greater than the test value of 0.05 and thus we do not reject the null hypothesis. It can therefore be deduced that the linear model can be estimated using the regression coefficients as $Y = 0.76X - 8.986$ as presented in the table 4.15.

Table 4.15: Customer Focus

ANOVA								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	250.1393	250.1393	7.24466	0.22646			
Residual	1	34.5274	34.5274					
Total	2	284.6667						

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-8.9863	16.08474	0.55868	0.675651	-213.362	195.3897	213.362	195.3897
X Variable 1	0.755708	0.280766	2.691591	0.22646	-2.81177	4.323181	2.81177	4.323181

4.6.2 Service Delivery

From the data collected from the respondents, it was quite surprising that factors affecting service delivery or issues defining service improvement seemed to be lacking at the hospital. As was suggested in the standard deviation and kurtosis results, the regression showed that there was a huge disparity between what was expected and what was experienced. The table 4.16 summarizes the ANOVA and regression coefficient analysis.

Table 4.16: Service Delivery

ANOVA

	Df	SS	MS	F	Significance F
Regression	2	10.97715	5.488576	0.248224	0.801139
Residual	2	44.22285	22.11142		
Total	4	55.2			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	26.0354	19.04975	1.366706	0.305074	-55.929	107.9998	55.929	107.9998415
X Variable 1	-0.22982	0.495413	0.46389	0.68832	-2.36141	1.901774	2.36141	1.901773549
X Variable 2	-0.14324	0.238028	0.60179	0.608445	-1.1674	0.880909	1.1674	0.880909201

As can be seen from the table above, the significance F is uncharacteristically huge at 0.801 and thus we reject the null hypothesis. From the coefficients we can deduce the model as $Y = 26.03 - 0.23X_1 - 0.14X_2$. The analysis of service delivery shared similar characteristics with analysis of evidence-based decision making and supplier relationship.

4.6.3 Challenges facing Kenyatta National Hospital

About the challenges facing Kenyatta national hospital, there was a high correlation as observed earlier, between expected and experienced challenges. The regression analysis is given. Table

Table 4.17: Challenges facing Kenyatta National Hospital

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.916753
R Square	0.840436
Adjusted R Square	0.794846
Standard Error	12.14134

Observations 10

ANOVA					
	Df	SS	MS	F	Significance F
Regression	2	5435.015	2717.507	18.43475	0.001623
Residual	7	1031.885	147.4122		
Total	9	6466.9			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	9.1607	18.48305	0.49563	0.635336	-52.8662	34.54473	52.8662	34.5447
X Variable 1	1.3227	0.218938	6.041544	0.00052	0.805016	1.840426	0.805016	1.840426
X Variable 2	0.7399	0.563406	1.3134	0.230459	-2.07222	0.592267	2.07222	0.592267

From the regression analysis, output it is clear that the adjusted R square of 0.794846 means that 79.48% of the dependent variable can be explained by the independent variables. The significance F of 0.0016 is less than 0.05 and this means that the model is a good fit as we reject the null hypothesis. The coefficients make it possible to derive the linear model as $Y=1.32X_1-0.74X_2-9$.

4.7 Discussion of Research Findings

This data analysis chapter has been very critical to understanding the study research. The various computations undertaken on various indices have been helpful in understanding the theory behind the relationship between QMPs and service delivery. In the theoretical and conceptual framework discussions, it was made clear that QMPs play a major role in service delivery. However, it was also made clear that this needs to be well implemented or otherwise the QMPs will play no significant role. When analyzing the research problems earlier in the research, Ndambuki (2012) researched patients' levels of gratification and discernment on nursing services offered at Kenyatta National Hospital renal unit. The author found that understaffing, illiteracy in machine operations, which are used in service delivery, poor communication channels and insufficient funding of the

unit hindered quality service delivery. The findings indicated weaknesses in public health care facilities on service delivery. The research highlighted various challenges. Because of this, numerous gaps exist that need to be addressed concerning service delivery. The conclusion made was that service improvement at Kenyatta National Hospital could be achieved if there is a multi-factored approach dealing with the significant challenges/gaps facing the facility. Additionally, while reviewing the theory of constraints (TOC), (Goldratt 2017) identified a process of five focusing steps that involve identification of system constraints (weak points), deciding on how to exploit them, subordination on the above decision, elevating systems constrains, incase constraint is broken return step 1. From the data analysis, it is clear that there is a problem with the hospital's administration in discerning them. That is probably the reason that service improvement at the hospital has been ineffective. This probably explains why service delivery improvement has failed at the institution. Additionally, as identified above, the various challenges facing the hospital have also hindered service delivery. This could probably explain why the results of the research turned out the way they were.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

This chapter offers a summary of the research findings, gives recommendations on what can be done at the hospital to improve service delivery, and analyzes some of the limitations that may have hampered the delivery of a perfect research study.

5.2 Summary of Findings

The aim of the research was mainly twofold. The first objective was to investigate how QMPs have or can influence service delivery at Kenyatta National Hospital. Secondly, there was the need to assess the various challenges management at Kenyatta National Hospital faces in their quest to achieve quality management.

The research findings were very supportive in understanding these issues. The research findings indicated that management and general staff at Kenyatta National Hospital understand the role of QMPs in service delivery. In fact, from the raw data obtained, the respondents either strongly

agreed or agreed with the role and influence of QMPs in service delivery. However, it was surprising to note that when it came to the actual implementation of QMPs to foster service delivery, the feedback was alarmingly negative. This is an indicator of systemic and structural challenges at the facility. A majority of the respondents did not think that quality management principles were being implemented at KNH. However, further investigation indicates that the challenges facing the facility were major contributory factors to failed service delivery.

5.3 Conclusion

The research findings have important implications for not only the Kenyatta National Hospital but also other healthcare facilities facing similar circumstances. With respect to service delivery, it is clear that there is a need for additional focus on the role of QMPs in quality management. The challenges facing the facility also need to be addressed if the hospital aims to find solutions to service delivery. From the research findings, it is clear that the facility can achieve credible and reliable service delivery. However, bottlenecks in operations need to be addressed from an external and internal perspective.

5.4 Recommendations

From the research findings, it is clear that for QMPs to influence service delivery at KNH, several changes need to be undertaken. In the first place, it is clear that the challenge of understaffing needs to be addressed. Even with good QMPS principles, understaffing is a critical factor that undermines service delivery. Secondly, the management needs to embark on a process of recruiting, training, or retraining staff especially in the field of the use of electronic medical records. With the healthcare sector undergoing unprecedented technological improvements, failure to train staff on the use of electronic medical records will result in poor service delivery. Another area of concern is the issue of the introduction of innovative medical equipment. The reliance on outdated types of equipment is affecting service delivery at the facility. The issue of resource allocation and funding need to be addressed by not only the hospital's management but also the ministry of health because the institution is a public facility. The organizational structure also needs to be overhauled to make it more accommodative to all stakeholders.

5.5 Limitations of the Study

Every research study faces one or more limitations that prevent its total generalization. This research study was no different. One of the limitations of this research was the overreliance on people's perceptions as sources of raw data. Because the data was not observed or measured, there is a high likelihood that the responses provided were biased. Additionally, respondents could have decided to just fill in the questionnaires randomly just to return the forms. This meant that the information provided might not have been accurate. Secondly, there was no section for respondents to indicate why they chose whichever scale they chose. Another limitation was the sample size. The sample size was rather small given that the hospital is the major referral facility in the country. Given its role in providing healthcare services to a large number of people, the sample may have included other stakeholders who interact with the facility such as suppliers and other service providers such as insurance companies.

5.6 Suggestions for Further Research

From this research study, it is clear that there is not enough literature concentrating on the operations of the hospital. In fact, in order to conduct better research on the role of QMPs on service delivery at the hospital, there is a need to conduct initial research on the entire set of operations at the facility. This research would better help the researcher understand in advance the major areas of concern at the hospital. Understanding the major operations and challenges facing the facility will guide not only the researcher but also the hospital's management in understanding how operations of the hospital are currently and what needs to be done in the future. Additionally, to conduct better research, there is a need to adopt a different data collection methodology. For instance, instead of relying on respondents' responses, the researcher can choose to observe and measure the key factors directly. Thus, issues such as time lapses, cases of corruption, staffing, and availability of medical equipment and supplies can be investigated.

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APPENDICES

Appendix I: Population and sample size

Category	Population	Sample
	3000	91

In patients and out patient's department		
Security and safety department	200	45
Purchasing department	50	27
Nursing department	1000	78
Pharmacy department	20	9
Personnel department	200	35
TOTAL	4470	285

Appendix II: Letter to the Respondent

UNIVERSITY OF NAIROBI,
SCHOOL OF BUSINESS,
P.O. BOX 30197,

NAIROBI.

Dear sir/Madam,

RE:APPLICATION OFQUALITY MANAGEMENT PRINCIPLES AND SERVICE DELIVERY AT KENYATTA NATIONAL HOSPITAL

I am a postgraduate student undertaking a Master of Business Administration Degree at the School of Business, University of Nairobi. Currently undertaking research on Quality Management Principles and Service delivery at Kenyatta National Hospital.

My approach to this case study will be both consultive and collaborative and ensures no inconvenience is caused to the routine activities in the departments of the research. I request the provision of required information through responding to the questions in the questionnaire. A copy of the research project will be made available to you upon request.

I will appreciate your co-operation in this academic exercise.

Thank you in advance.

Yours faithfully,

David Muli,

MBA Student.

Appendix III: Questionnaire

This questionnaire is designed to gather data for research to assess quality management principles implemented at Kenyatta national hospital in providing health care services and the same to assess challenges for achievement of service delivery at the hospital.

Part A: Profile of respondent and department in the organization.

1. Respondents department

2. Indicate by ticking position at your unit Top level () Middle level () Lower level ()

3. How long have you been working KNH.

i 0-1 YEARS () iii 5-10 years ()

ii 2-4 years () iv over 11 years ()

PART B Definition of Quality management principles

How do you agree with the following statement rate by a tick on the provided spaces?

5 Strongly agree 4 Agree 3 Neutral 2 Disagree 1 strongly disagree

Statements	5	4	3	2	1
Customer focus					
Interaction creates more value					
Understanding present and future needs and expectations					
Measuring and monitoring of customer satisfaction.					
Leadership					
Top Management provides quality management decisions					
Top managements establish culture of quality in the organization					
Top management recognizes, inspire and encourage employee					
Employee involvement					
Employee involved in drafting quality goals					
Training of employees for improvement					
Involvement of employees in quality management programs					
Process approach					
Understanding organization capabilities before action					

Input risk management					
Defining process management authority accountability					
Continuous improvement					
Establishment of improvement objectives					
Tracking and reviewing results on improvements					
Recognition and rewarding of improvements					
Evidence based decision making					
Monitoring key indicators in performance					
Provision of required data on time					
Data analyzing evaluation using suitable methods					
Supplier relationship					
Determining of relevant parties and their benefits to the organization					
Managing relationships with the suppliers					
Pool and sharing of expertise with suppliers					

PART B Definition service delivery

Indicate by a tick on the provided spaces as per the definitions 5 **strongly agree** 4 **Agree** 3 **Neutral** 2 **Disagree** 1 **strongly disagree**.

Service delivery definition	5	4	3	2	1
Elimination of bottlenecks in service delivery					

Superior provision of services					
Managing queuing time in service delivery					
Managing process, structure and outcomes					
Exceeding customers' expectations					

PART C Challenges at Kenyatta National Hospital in implementation of quality management principles.

This section will assess the drawbacks at Kenyatta National Hospital rate by tick how you agree.

5 Strongly agree 4 Agree 3 Neutral 2 Disagree 1 strongly disagree

Challenges at Kenyatta National Hospital	5	4	3	2	1
Inadequate resource to finance operations					
Lack of awareness by management					
Inappropriate organization structure					
Weak organization policies					
Poor working conditions					
Corruption in service provision					
Poor strategic plan implementation					
Lack of teamwork amongst the employees					
Poor utilization of available data					
Unserviceable medical equipment's					

Thank you for your time