



Factors Affecting Provision of Quality Service in the Public Health Sector: A Case of Nyahururu District Hospital, Kenya

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ABSTRACT: *In healthcare industry service quality has become an imperative in providing patient satisfaction because delivering quality service directly affects the patient's satisfaction. The public health sector should ensure patients receive the best health service, but this has not been the case. By the start of the millennium, the quality of service in public hospitals in Kenya declined. Therefore this research study sought to investigate factors affecting provision of quality service in public health sector in Kenya with specific reference to Nyahururu District Hospital. A Conceptual framework explaining the relationship between (the independent variables-factors) status of employee capacity, technology advancement and availability of financial resources, and how they influence service quality in the Public health sector in Kenya (dependent variable- outcome) is developed. The study used a descriptive survey approach in collecting data. Thereafter the study used stratified random sampling to get the target population of 129 respondents who included Doctors, Nurses, Clinical Officers, Lab Technologists and Pharmacists. This sample size was considered representative and comprehensive in the coverage of the study objectives. The primary data for this study was collected using self-administered questionnaires. Quantitative data, which was collected using closed ended questions in the questionnaires, was chronologically arranged and then coded. Data cleaning was then done and tabulated and analyzed through the help of Statistical Package for Social Sciences (SPSS 11.0). Presentation of data was in form of tables, pie-charts and bar graphs only. The data was then analyzed using descriptive approach such as frequency, percentages, means and standard deviations. Qualitative data checklist was developed for qualitative data and then analyzed through content analysis. From the findings the study concluded that organization must enhance employee's capacity in order to improve provision of service quality. From the findings the study concluded that public health sectors should improve the level of adoption of technology and willingness to invest and advance in modern technology in order to facilitate service assessment, improve process and communication which are essential for effective and efficient quality service in public health sector in Kenya. Use of more than one communication means to inform, persuade and educate the customer is also required. From the findings the study concluded that management should emphasize on the use of upward, horizontal and vertical communication channels in order to provide information to upper level managers about activities and performances throughout the organization as well as improving individual participation in provision of quality service. From the conclusion the study recommended that management in public health sector should improve employee's capacity to enhance provision of health service quality. Adequate number of high skilled and experienced employees, effective recruitment should be adopted to improve monitoring of doctors and staff, meeting performance and practice standards enhances service quality provision.*

CHAPTER ONE:INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Quality' as defined by International Organization for Standardization is a relative concept and if the inherent characteristic of a service meets the requirements of the customer, it can be rated as high quality (SachdevandVerma, 2004). This implies that there are certain subjective and certain objective criteria, which define quality (Jain and Gupta, 2004). In a service industry, like healthcare, experience of the patient plays a crucial role in rating and

assessment of quality of services. Quality in healthcare (may comprise of newer technology, newer and effective medication, and higher staff to patient ratios, affordability, efficiency and effectiveness of service delivery (Gyani, 2010).

The health sector comprises the public system with major players including the Ministry of Health and parastatals organizations, and the private sector, which includes private



for-profit, Non Governmental Organizations, and Faith Based Organizations facilities (RoK, 2010). Health services are provided through a network of over 4,700 health facilities countrywide, with the public sector system accounting for about 51 percent of these facilities. The public health sector consists of the following levels of health facilities: national referral hospitals, provincial general hospitals, district hospitals, health centres, and dispensaries. Health services are integrated as one goes down the hierarchy of health structure from the national level to the provincial and district levels (RoK, 2010).

In healthcare industry service quality has become an imperative (Ennis & Harrington, 2001; Jabnoun and Chacker, 2003) in providing patient satisfaction because delivering quality service directly affects the customer satisfaction (Kara, Lonial, TarimandZaim, 2005), loyalty and financial profitability of service businesses. Kotler (2000) defines satisfaction as a person's feelings of pleasure resulting from comparing a perceived performance in relation to his/her expectations. Thus, satisfaction gained from the services can be considered as a function of service quality (Liu, 2005).

Quality service can be broken down into two quality dimensions: technical quality and functional quality (Dean and Lang, 2008). While technical quality in the health care sector is defined primarily on the basis of the technical accuracy of the medical diagnoses and procedures or the conformance to professional specifications, functional quality refers to the manner in which the health care service is delivered to the patients. In other words, technical quality is about what the customers get, functional quality is about how they get it (Chiu, 2002). Research has shown that technical quality falls short of being a truly useful measure for describing how patients evaluate the quality of a medical service encounter (BecherandChassin, 2001). Although technical quality has high priority with patients, most

patients do not have the knowledge to evaluate effectively the quality of the diagnostic and therapeutic intervention process or information necessary for such evaluation is not shared with the patients (Andaleeb, 2001).

Research has shown that consumers tend to evaluate the quality of services by focusing on more functional issues like physical facilities, interactions with receptionists or brochures rather than hard-to evaluate technical aspects of the service delivery (BoshoffandGray, 2004; Gonzalez-Valentine, Padin-Lopez and Romon-Garrido, 2005). Research finds that patient satisfaction is positively related to purchase intentions (Boshoffad, 2004), loyalty toward health care providers (Lim and Tang 2000) and adherence to medical treatment recommendations (Lee, Delene, Bundaand Kim, 2000). Consumers must rely on attitudes toward caregivers and the facility itself in order to evaluate their experiences hence there is a strong connection between health service quality perceptions and customer satisfaction (Kara, Lonial, TarimandZaim, 2005). Healthcare providers' focus is providing the appropriate treatment to their patients. They believe that this actually is the focus of the patients as well (Mostafa, 2005). However, as Sohail (2003) observed, patients' perceptions often differ from those of the physician and physicians may misperceive their patients' evaluations. This causes dissatisfaction on the patient's side and leads the patient to look for an alternative provider and spread negative word of mouth which would affect potential clients (Wisniewski and Wisniewski, 2005)

According to Boshoff and Gray (2004) quality service formula can be demonstrated as follows: Human Resource + Effective Systems = Quality Service. Coulthard (2004) notes that this requires that companies place strong emphasis on human resources selection and in providing extensive internal and external training to staff to ensure that the latest skills and knowledge are utilized in the delivery of the highest level of quality service while at the same time



designing and implementing highly effective systems to address clients needs fully and with a strong attention to detail. Palmer (2001) notes that quality is an intangible factor based on perception and can be quantified as: $Q=P/E$. where: Q= Quality; P=Performance; E=Expectations. Determination of P and E will most likely be based on perception with the organization determining P and the customer determining expectations.

The public health sector in Kenya consists of national referral hospitals, provincial general hospitals, district hospitals, health centres, and dispensaries. National referral hospitals are at the apex of the health care system, providing sophisticated diagnostic, therapeutic, and rehabilitative services. The two national referral hospitals are Kenyatta National Hospital in Nairobi and Moi Referral and Teaching Hospital in Eldoret. Provincial hospitals act as referral hospitals to their district hospitals. They also provide very specialized care. The provincial level acts as an intermediary between the national central level and the districts. They oversee the implementation of health policy at the district level, maintain quality standards, and coordinate and control all district health activities (RoK, 2001).

District hospitals concentrate on the delivery of health care services and generate their own expenditure plans and budget requirements based on guidelines from headquarters through the provinces. The network of health centres provides many of the ambulatory health services. Health centres generally offer preventive and curative services, mostly adapted to local needs. Dispensaries are meant to be the system's first line of contact with patients, but in some areas, health centres or even hospitals are effectively the first points of contact. Dispensaries provide wider coverage for preventive health measures, which is a primary goal of the health policy. The government health service is supplemented by privately owned and operated hospitals

and clinics and faith-based organizations' hospitals and clinics, which together provide between 30 and 40 percent of the hospital beds in Kenya (RoK, 2010).

Although several health-oriented Non Governmental Organizations operate throughout the country, the population covered by these Non Governmental Organizations health services cannot be easily determined. Depending on their comparative advantage, Non Governmental Organizations, Faith Based Organizations and community-based organizations (CBOs) undertake specific health services (RoK, 2010). The Ministry of Health provides support to mission health facilities by training their staff as well as seconding staff to these facilities and offering drugs and vaccines. Currently, the private sector (both for-profit and not-for-profit) contributes over 40 percent of health services in the country, providing mainly curative health services and very few preventive services (RoK, 2001).

One of the well-known public health institutions is the Nyahururu District Hospital which was built to fulfill the role of being a District Referral and Teaching Hospital, as well as to provide internship services for trainees. Established in 1940 with a bed capacity of 40, Nyahururu District Hospital is at the apex of the district referral system in the Health Sector in Nyandarua District. Nyahururu Hospital has 17 wards, 22 out-patient clinics, 2 theatres and Accident & Emergency Department out of the total bed capacity of 142. The hospital offers a wide range of diagnostic services such as Laboratories, Radiology/Imaging and Endoscopy among other specialized services. Sometime, the average bed occupancy rate goes to 120%. In addition, at any given day the Hospital hosts in its wards between 80 and 160 patients. On average the Hospital caters for over 8000 in-patients and over 20,000 out-patients annually. However for some years, Nyahururu District Hospital has been experienced problems with service



delivery arising from overcrowding, and shortages of equipment, supplies, and trained staff, management weaknesses, both in structure and staffing and to the absence of good controls and systems. This has drastically affected the quality of service delivery in the hospital (RoK, 2001).

Nyahururu District hospital in Kenya grapple with service delivery challenges (Kimalu, 2002) due to a number of factors, which among them is the fact that after independence, many health facilities were established by the government in pursuit of its policy of free for all. However, the corresponding health equipment were not installed and where they were installed they were not well maintained.

1.2 Statement of the Problem

The Kenya's health sector recorded tremendous growth especially in the 1970's and early 80's. This sector growth was attributed to the high priority accorded to the improvement of the quality of service. By the start of the millennium, the quality of service in public hospitals in Kenya worsened. Infant mortality rate increased from 74 in 1998 to 76 in 2010 while the under five-mortality rate rose from 112 in 1998 to 117 in 2010. Life expectancy at birth for females declined to 60.07 years and 59.48 for males (RoK, 2010). This demonstrates that there has been low quality service in public health sector.

Whereas there has been an attempt to improve health service delivery (RoK, 2010), it seems not much has been achieved in raising the quality of service in public health institutions and this is compounded by limited information on the factors that ail the delivery of quality service in the public health sector in Kenya. Therefore this research study sought to assess the factors that are contributing to low quality service in public health sector focusing on Nyahururu District hospital.

1.3 Objectives of the Study

The general objective of the study was to assess factors affecting provision of quality service in public health sector in Kenya, with specific focus on Nyahururu District Hospital

The study was guided by the following specific objectives,

- i) To determine the influence of employees' capacity status on the provision of quality service in public health sector in Kenya
- ii) To assess the effects of technology advancement on the provision of quality service in public health sector in Kenya
- iii) To establish the influence of availability of Financial resources on provision of quality service in public health sector in Kenya

1.4 Research Questions

The study sought to answer the following questions

- i) To what extent does employees' capacity status influence the provision of quality service in public health sector in Kenya?
- ii) How does technology advancement influence the provision of quality service in public health sector in Kenya?
- iii) To what extent does availability of financial resources influence the provision of quality service in public health sector in Kenya?

1.5 Justification of the Study

The importance of the health sector is articulated in the Millennium Development Goals (MDG) (RoK, 2001). Three out of the eight goals directly pertain to health improvement. As per the Abuja Declaration of 2001, countries committed to earmark 15% of their national budgets for the health sector but Kenya is yet to meet this target as demonstrated in the 2010/2011 fiscal national budget, with only 5.6% of the national budget (Kshs 41.5 billion) allocated to the Ministry



of Public Health and the Ministry of Medical Services (Stover, 2005). This relatively meager allocation compromises access to quality health services. This combined with health problems, an acute shortage of health workers, shortage of drugs and medical supplies in public health institutions, unaffordable out-of-pocket costs for health services, poorly remunerated health personnel or non-payment of health workers compromise the quality of services even further (Kihui, 2010). The choice of Nyahururu District Hospital as a case study is informed by the fact that it's the largest District hospital in the Nyandarua North and health services the greatest number of patients as well as acting as a referral and teaching hospital.

1.6 Significance of the Study

Understanding satisfaction and service quality have, for some considerable time, been recognized as critical to developing service improvement strategies (Sofaer and Firminger, 2005). Hence the study is significant to Nyahururu District Hospital administration because they will be able to understand and appreciate the factors that affect service delivery in the organization and seek ways to alleviate the challenges facing service delivery. The study is significant in that it will help the public hospital administration to understand and appreciate the factors that affect service delivery in the health public sector in Kenya.

The study is significant to the private health sector and professional health bodies as they will be able to appreciate the factors that influence the public health sector and draw lessons from the same with the view of improving the delivery of health services in the private sector, while the professional bodies will be able to advise the public sector managers on the viable solutions to the issue of enhancing health service delivery in the public sector.

The study provides background information to research organizations and scholars who will want to carry out

further research in this area as they will use it as reference material and a basis of identifying research gaps.

1.7 Scope of the Study

The scope of the study was the staff including doctors, Nurses, clinical officers, lab technologists and pharmacists of the Nyahururu District Hospital. The study focused on determining the factors that affects provision of quality service in public health sector in Kenya. A case study of Nyahururu District Hospital

1.8 Limitations of the study

This study was limited to the investigation of the factors that affect service quality delivery in public health sector in Kenya with specific reference to Nyahururu District Hospital. The research study focused on the effect of employees' capacity, technology, communication channels and financial resources on the quality of service delivery in Kenya public sector. In the public sector patient perception of quality health outcome has come to encompass the clinical results, economic measures and health related quality of life, however, this study will not be able to examine all the factors that influence quality of service in public health sector in Kenya but will only examine specific factors such as staff skills, technology, and management style and organization culture on the quality of service delivery in Kenya public sector. Hence the findings of this study are not adequate to address all the factors that influence quality service thus they cannot be generalized to other hospital in the country.

1.9 Definition of Terms

Customer Service: A series of activities designed to enhance the level of customer satisfaction; that is feeling that a product or a service has met the customer expectation (Sureshchandar,



Rajendran and Kamalanabhan, 2001).

Functional quality refers to the manner in which the health care service is delivered to the patients (Petrick, 2009)

Health services a wide array of services that affect health, including those for physical and mental illnesses (Ogutu and Wamae, 2004).

Quality of service Degree to which health services for individuals and populations increase the likelihood of desired health outcomes (Gyani, 2010).

Service quality a measure of how well a delivered service matches the customer's expectations (Demirel, Yoldas and Divanoglu, 2009).

Technical quality refers on the basis of the technical accuracy of the medical Diagnoses and procedures or the conformance to professional specifications, (Choi, *et al* 2008)

2.2.1 Employees' Capacity

Highly skilled physicians, nurses, administrators, and ancillary staff are critical to producing high-quality outcomes and effective quality improvement hence hospital growth (Argote, 2000). There is need for selective hiring of qualified staff. Successful recruitment and retention of staff is tied to empowerment of staff that must be treated as full partners in the hospital operation and given opportunities for advancement (Brown and Duguid, 2003). All staff are expected to be good team players, able to participate in multi-disciplinary teams for hospital operations and growth (Argote and Ingram, 2000). The hospitals need to place great emphasis on recruiting and retaining top-level physicians and nurses, accompanied by an effort to encourage these professionals to form working teams, including case managers, pharmacists, social workers, and others, to promote quality (Brown and Duguid, 2003).

To facilitate service quality and growth, hospitals must implement effective human resource strategies involving selective hiring, and retention of physicians and nurses (Cohen and Levinthal, 2001); monitoring of doctors on staff (or with privileges) and ensuring that they must continue to meet certain performance and practice standards to retain credentials (Crewson, 2004). Ability to attract and employ an adequate number of competent health staff such as: generous staffing levels that ensure a reasonable caseload; this includes setting minimum staffing ratios and abiding by them offering Competitive salaries; respect for and empowering of the medical staff (Friedman and Kelman, 2006).

To improve efficiency in service delivery, public sector hospitals must build the capacity to attract and employ an adequate number of high-quality nurses (Argote and Ingram, 2000) suggests that the key to service delivery is to adapt to circumstances that are constantly changing and that the long-term winners are the best adapters, but are not

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

In this chapter, literature, which is related to and consistent with the objectives of this study, is reviewed. Important theoretical and practical problems are brought out, relevant literature on the aspects pertaining to the factors affecting provision of service quality in public health sector in Kenya.

2.2 Factors affecting Provision of Quality Service in Public Health Sector



necessarily the winners of today's race for market share. According to Ennis and Harrington, (2001) an adaptable organization has adaptable employees; the atmosphere is tolerant of mistakes, which are viewed as opportunities to learn and productive failures are mistakes that generate new insight and understanding because they are not hidden, but are mined for all they are worth. An adaptable organization utilizes failure as a clue that initiates targets, and perhaps some of the assumptions behind them (Brown and Duguid, 2003) need rethinking and listening to employees, customers, and the marketplace, and willingness to change directions in midcourse if necessary (Jain and Gupta 2004).

Hospitals quality of service often fails because of the sum total of seemingly inconsequential events arising from employees lack of capacity as in itself service delivery requires specific skill levels and experience which must be continuously learned (Cohen and Levinthal, 2001). Only an organization that does not presume to know will be able to detect and use fresh new information from its environment (Gremler and Gwinner, 2000). Managing service delivery involves being on the ground, learning from experience, meeting customers and staff, understanding their problems and concerns—and doing something about them (Argote and Ingram, 2000).

Rose, Uli, Abdul, and Ng, (2004) argue that successful chief executive officers of public hospitals recognize the need to give their managers the freedom to acquire and utilize their skills in making decisions hence empowering the management team and makes it easier for the chief executive officer to manage service delivery. A central part of igniting people's passions and entrepreneurial drive is giving them the opportunity to make decisions and take risks (Crewson, 2004). Requiring departments to prepare "delivery plans" explaining how they intend to reach a target and laying out "trajectories" for continuous service improvement; assuring frequent, current performance data

exists (including data on subunit performance where delivery occurs that way) (Cohen and Levinthal, 2001); monitoring performance data, for discussion both with the department; seeking to understand the delivery production process and develop (via department-level units) "best practices" for performance improvement (Friedman and Kelman, 2006).

Dabholkar, Cadotte, Woodruff and Jenkins (1996) used the term "physical aspects" to refer to the physical appearance of store and layout convenience. Parasuraman, Zeithaml and Berry, (1988) called it as "tangibles" adding appearances of staff besides physical facilities and equipment. Baker (1986) and Santos (2002) acknowledged the appearance of staff as part of tangibles. They also added existence of other customers in the service facility onto the interpretation. Bitner (1992) dropped the social environment but focus instead on the "built environment" or what she called as "servicescape". She categorized the servicescape to include ambient conditions, spatial layout and functionality, and signs, symbols, and artifacts. Ambient conditions include colour, music, temperature, lighting, and scent. Spatial layout refers to the arrangement, size, shape, and spatial relationships of machinery, equipment, and furnishings.

Functionality refers to the capability of machinery, equipment, and furnishings to enhance performance and achieve customer goals. Lastly, signs, symbols, and artifacts act as signals that communicate information about the service place to customers.

2.2.2 Technology and Provision of Quality Health Service

Technology for harnessing of Information and data play a critical role in the quality service delivery in hospitals (Allen, 2001). Investments in Technology that facilitate service assessment and improvement process is essential (Dutton and Starbuck, 2002). The hospital must show four main commitments: a willingness to invest in Information



Technology; investments in Information Technology and in Quality Insurance departments with qualified staff that abstract medical records, analyze data, and facilitate the Quality Insurance process (Cibulskis and Hiawalyer, 2002).

According to the Government of Kenya (2001) report , successful Technology strategy that needs to be employed by hospitals and this must involve four main commitments: a willingness to invest in Information Technology, Working with physicians and others to customize an information system to meet specific needs and culture of the institution; nurturing and encouraging buy-in so new systems will be utilized and their benefits will be realized and devising information technology systems that provide real-time feedback to providers as they are caring for patients (GOK, 2001).Oliveira-Cruz, Hanson, and Mills (2001) note that most emerging firms get into trouble because the management team either does not have the information it needs to make the right decisions or chooses to ignore the information that is available.

The main ingredients of a real-time system involve its timeliness. Hospitals want to develop a system that allows all caregivers to have access to relevant information as soon as it is available (Karimi, Somers, Gupta, 2001). To that end, the hospitals have or are adopting applications that do the following: Reduce time lags in getting laboratory and imaging results. Whether an information system is completely home-grown or purchased off the shelf, Information Technology must be customized to incorporate and meet the particular needs and circumstances of the hospital (Sun and Shibo, 2005). This is not a one-time process, but one that must engage clinicians and administrators to adapt and refine systems over time (Singh and Ranchod, 2004). A proprietary information systems that shapes the culture, patient mix, and staffing of the hospital and engaging physicians and nurses in developing or adapting Information Technology serves to ensure that the

resulting system meets the needs of clinicians (Blas, and Limbambala 2001). It also encourages buy-in, and helps create Information Technology champions among the staff, who then teach and encourage their colleagues to use the new system (Baldrige National Quality Program, 2003).

The newer Information Technology systems reflect the hospitals' commitment and willingness to invest in the tools that promote quality (Davis, Hughes and Audet, 2002). Nerenz and Neil, (2001) recommends the kinds of quality-related Information Technology investments that the hospitals need to make include: Moving to a paperless system that provides information at the right time (electronic medical records, e-hospital notes with input at bedside); Moving toward bar-coded medications and automatic dispensing; Coordinating patient admissions with bed capacity, immediate tracking of filled beds and daily changes in nursing needs (MacAuley, 2001).

According to Cibulskis and Hiawalyer (2002), the use of electronic dashboards linked to patient records that alert staff to test results and unresolved issues, enables physicians to view imaging results and other test results on a personal computer in hospitals and in their offices. Smee, (2002) indicated that investing in Computerized Physician Order Entry (CPOE) and other types of decision support software to remind physicians about procedures or tests that were indicated and to reduce medication errors through alerts about potential dosage errors and drug interactions was critical in improving service quality in health sector.Cibulskis and Hiawalyer (2002) indicated that providing clinicians with computer access to up-to-date scientific and medical literature summaries on specific diseases, procedures, developing management tools for monitoring and comparing performance of physicians, units, procedures.

The hospitals need to give their physicians, nurses, and other staff the tools and support they need to practice high-quality



medicine on a daily basis, and to identify and investigate quality problems when they surface (Smee, 2002). It also includes access to guidelines and protocols, and offers support to physicians in developing a consensus around their own evidence-based best practices so that they have tools they are actually willing to use (Cibulskis, and Hiawalyer, 2002). Other tools involve external training, peer networking, and conferences that provide guidance and feedback. In order for physicians, nurses, case managers, and other hospital personnel to make their policies and procedures work effectively, they need a modern information system producing real-time data on patient health status, test results, and other key factors (Oliveira-Cruz, Hanson and Mills, 2001).

The main ingredients of a real-time system involve its timeliness (MacAuley, 2001). Hospitals want to develop a system that allows all caregivers to have access to relevant information as soon as it is available (Oliveira-Cruz, Hanson and Mills, 2001). To that end, the hospitals have or are adopting applications that do the following: reduce time lags in getting laboratory and imaging results; deliver information on test results, history, health status (Tam, 2005) while providers are treating patients so that treatment decisions can be made based on the latest information; and making user-friendly guidelines and recommendations readily accessible to physicians, based on the latest medical research on specific conditions, procedures, medications, (Nerenz and Neil, 2001) hospitals places much emphasis on getting the right information to the right people at the right time, resulting in demonstrable quality improvements (Rust and Tuck, 2006).

The quality and timing of information should be tailored to the needs of decision makers. Information should not just include current and historic data, but also include projections for the future (Allen, 2001). It is important for organizational architects to consider service delivery within

the firm's big picture to ensure that performance indicators and performance incentives, organizational design and institutional culture, and flow of information are all aligned to achieve and reinforce the common objectives of service delivery (Cibulskis and Hiawalyer, 2002).

Information and communication technologies could provide fast, efficient and relatively cheap access to information leading to dramatic improvements in access to advice and care (Cohen and Levinthal, 2001). Information and communication technologies (ICTs) are not only limited to the transfer of information (Singh and Ranchod, 2004). Communication is used to promote better health behaviour, to improve decision making, to promote information exchange among peers, for self-care and professional support, and to enhance the effectiveness of health institutions (Baldrige National Quality Program, 2003). Innovations such as electronic medical records, hospital information systems, Intranets, public networks, health decision-support and expert systems, telemedicine, and community health information systems have altered cost, quality, accessibility and delivery of health care (Speier and Venkatesh, 2002).

According to the Institute of Medicine of the National Academies (U.S.), information and communication challenges contribute to reduced quality, adverse health outcomes, and health disparities (2004). Furthermore, there is evidence that communication challenges may result in increased use of expensive diagnostic tests, increased use of emergency services and decreased use of primary care services, and poor or no patient follow-up when such follow-up is indicated (Irving and Dickson, 2004).

There is compelling evidence that information communication technology challenges have an adverse effect on initial access to health services. These challenges are not limited to encounters with physicians and hospital care. Patients face significant barriers to health promotion



and disease prevention programs there is also evidence that they face significant barriers to first contact with a variety of providers (Arhin, 2000). The research indicates that there is a general pattern of lower use of many preventive and screening programs by those facing language barriers (Brown and Duguid, 2003). Higher use has been reported for some emergency department services, and for additional tests ordered to compensate for inadequate communication.

2.2.4 Financial Resources

The fixed budget is widely used in hospitals, often based on historical spending levels, with a (frequently inadequate) provision for price changes (Peters, Elmendorf, Kandola and Chellaraj, 2000). Such a system clearly can secure good expenditure control and is administratively undemanding (Smee, 2002). However, it can often perpetuate historical inequities and fail to respond to new demands and priorities (Peters, Elmendorf, Kandola and Chellaraj, 2000). Moreover, fixed budgets offer few incentives to maximize the effectiveness, quality, or quantity of care offered by hospitals (Smee, 2002). Indeed, many budget systems continue to finance hospitals through line-item budgets directly from the ministry of health. Such mechanisms allow central bureaucracies to exert the maximum level of control over peripheral spending with little or no capacity at peripheral levels for flexible use of funds in response to local needs (Arhin-Tenkorang, 2000). Thus, centralized budget systems can contribute to technical inefficiency by preventing local managers from optimizing the deployment of inputs thereby perpetuating poor quality of service (Peters, Elmendorf, Kandola and Chellaraj, 2000).

Financial management, in service organizations, has been a constraint and an obstacle to other functions that contribute to service delivery (Adams and Colebourne, 1999). They suggest an 'enlightened' approach to finance in service organizations. This consists of more participative and positive approach where far from being an obstacle, it

contributes to strategic planning, costing systems, personnel motivation, quality control, continued solvency, and keeping outsiders' confidence in management (Arhin-Tenkorang, 2000). In particular, there is a need to distinguish 'good costs' that improves organizational capabilities and quality service delivery from 'bad costs' that increase bureaucracy hence becoming obstacles to service delivery (Sun and Shibo, 2005).

Allocated resources for health flow through various layers of national and local government's institutions on their way to the health facilities (Blas and Limbambala, 2001). Financial accountability using monitoring, auditing and accounting mechanisms defined by the country legal and institutional framework is a prerequisite to ensure that allocated funds are used for the intended purposes (Oliveira-Cruz, Hanson, and Mills. 2001). In many developing countries, governments do not have the financial and technical capacity to effectively exercise such oversight and control functions, track and report on allocation, disbursement and use of financial resources (Smee, 2002).

Political and bureaucratic leakage, fraud, abuse and corrupt practices are likely to occur at every stage of the process as a result of poorly managed expenditure systems, lack of effective auditing and supervision, organisational deficiencies and lax fiscal controls over the flow of public funds (Peters, Elmendorf, Kandola and Chellaraj, 2000). Falsification of financial statements is more of a problem in proprietary (private) hospitals. Executives will sometimes exaggerate revenue and misstate expenses in order to meet expectations of industry analysts and shareholders (Maureen, 2005).

Public hospitals in Kenya are in dire need of funding to rehabilitate, redesign, equip and staff them to ensure effective and efficient service delivery to Kenyans (RoK, 2001). Low funding for Community Health Workers



programme in the country has adversely affected the delivery of health services especially at the grass-roots (Maureen, 2005). "For the last 25 years there has been little investment in health sector and it is only after the government assumed power in 2003 that the sector was put into consideration through the economic stimulus program (RoK, 2001). Most of the public hospitals in Kenya especially rural areas are in a sad state that has incapacitated them from offering efficient services to patients, and to alleviate the deplorable condition, proper measures must be taken into consideration (Maureen, 2005).

2.3 Theoretical framework

Health service quality theory of Donabedian (1980) proposed that satisfaction was the principal outcome of the process of care. He argued that the expression of satisfaction or dissatisfaction is the patient's judgment on the quality of care in all its aspects. Patient satisfaction has come to be seen as a part of health outcome quality which also encompasses the clinical results, economic measures and health related quality of life (Heidegger, Saal, and Nuebling, 2006).

Perceived service quality is important concept on quality management area. Numerous researchers have investigated the relationship between perceived service quality and customer satisfaction and they concluded that perceived service quality affected customer satisfaction Lim and Tang (2000). Furthermore, at services context, perceived service quality has more influence to customer satisfaction compared to perceived price. Even though they have various definitions, generally they agreed that perceived service quality is related to overall customer service evaluation according to their service expectation and performance perception level (Lui, 2005).

Various dimensions have been investigated to measure the perceived service quality Mostafa, (2005). However, the most popular one is the dimensions that proposed by

Parasuraman (1985) which are reliability, assurance, tangibles, empathy, and responsiveness (Nerenz. and Neil (2001). The application of those perceived service quality dimensions on education sector has showed by numerous researchers such as reference (Norusis, 2007)

Perceived health service quality has been studied extensively in the private healthcare sector; with Servqual having been used frequently in a modified form and predominantly in the "for profit" American health sector (O'Connor and Trinh, 2000). More recently, Brady and Cronin (2001) advanced the multidimensional hierarchical conceptualization offered by Norusis (2007) by combining that model with the three factor model of Rust and Oliver (2006), and proposed a hierarchical multidimensional model of service quality. Based on this work, Dagger, Sweeney, and Johnson (2007), have proposed service quality as a multidimensional, higher order construct, with four overarching dimensions (interpersonal quality, technical quality, environment quality and administrative quality) and nine sub-dimensions that is they suggest that consumers assess service quality at a global level, a dimensional level and at a sub-dimensional (Oliveira-Cruz, Hanson and Mills 2001).

2.3.1 Service Quality Dimension

There are two main models of service quality, which include: Service Quality Model of Glied, (2000) which indicates that the expectations of the customer depend on the five determinants market communication, image, word of mouth, customer needs and customer learning. Experiences depend on the technical quality (what/outcome) and the functional quality (how/process), which is filtered through the image (who). Both expectations and experiences can create a perception gap. While the Gap Model propounded by Parasuraman, Zeithaml and Berry (1990) was a slight modification of Gonzalez Padin and Romon. (2005) model and says that the expected service is influenced by the word-



of-mouth, the personal needs, past experience and also by the external communication to customers. A perception gap can appear between the expected service and the perceived service (Coulthard, 2004).

Petrick, (2009) identified ten determinants of service quality that may relate to any service: Competence, Courtesy, Credibility; Security; Access; Communication, Understanding knowing the customer; Tangibles; Reliability; Responsiveness. Later they were reduced to five to include Tangibles; Reliability; Responsiveness; Assurance: competence, courtesy, trustworthiness, security and Empathy.

2.3.2 Gap Model in Service Quality

The conceptual framework of service quality can also be applied to health care service and is relevant to this research study as a healthcare service requires high consumer involvement in the consumption process; hence, the attainment of quality healthcare service relies significantly on the co-contribution of the patient to the service delivery process. Studies have also evidenced that compliance with medical advice and treatment regimes is directly related to the perceived quality of the service and the subsequent resulting health outcome (Irving and Dickson, 2004; Sandoval, Brown, Sullivan and Green, 2006).

In line with Edvardsson, (2005) and sentiments that that customers' experiences has a strong impact on customers' quality perceptions; Patients experience accruing from their encounter with medical staff and other support staff and the process of getting treatment create the customer's cognitive, emotional and behavioural responses of either satisfaction or dissatisfaction with the quality of service. As in this study this encounter is influenced by many other factors such communication, medical staff skills, the technology used in the treatment and the availability of the required facilities

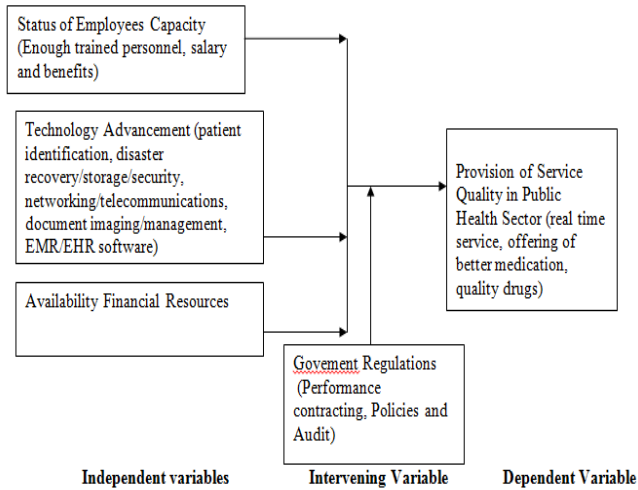
and equipment as proposed in the conceptual framework 2.3 which shape this experience and determine the outcome.

2.4 Conceptual Framework

Conceptual framework is a schematic presentation which identifies the variables that when put together explain the issue of concern (Mugenda and Mugenda, 2003). Conceptual framework explaining the relationship between (the independent variables-factors) employee capacity, technology, communication channels and financial resources and how they influence service quality in the Public health sector in Kenya (dependent variable- outcome) as shown in the schematic figure 2.1. Failure by hospital management to improve service quality by enhancing financial resources, improve technological investment, improving employees capacity and adopting effective communication channels, service quality in the hospital will be of low standards affecting customer satisfactions and leading to negative customer perception on health service offered in the hospital (Sohail, 2003).

Though there has been an attempt to improve the situation it seems not much has been achieved in raising the quality of service in public health institutions and this is compounded by limited information on the factors that ail the delivery of service quality in the public health sector in Kenya.

Figure 2: 1 Conceptual framework



2.5 Empirical Review

The emergence of service quality and its assessment has attracted the attention of numerous researchers in the past two decades or so. In this sense, there are two main lines of thoughts on measuring service quality (Kang and James, 2004): an American and an European perspective. Brady and Cronin (2001) suggest that the researchers generally adopt one of the two conceptualizations in their work. The focus on functional quality attributes is referred to as the American perspective of service quality while the European perspective suggests that service quality considers two more components.

The European perspective considers additional aspects other than the process of service delivery. Gronroos (1984), for instance, noted that the quality of a service as perceived by customers consists of three dimensions: functional (the process of service delivery to customers), technical (the outcomes generated by the service to the customers), and image (how the customers view the company). Considering those dimensions, the quality of the service is dependent upon two variables: the expected service and the perceived service. More details of the previous argument are provided by Grönroos (1984).

Functional quality of a service is often assessed by measures of customers' attitudes, as in customer satisfaction questionnaires. As described by Hayes (1997), the process of identifying customers' attitudes begins with determining customers' requirements or quality dimensions. Parasuraman et al. (1985) identified in a first study 10 quality dimensions based on a series of focus group sessions. From this study, the authors concluded that customers use the same criteria to assess service quality independently of the type of service

For Hayes (1997), however, some quality dimensions are generalised across many services, but some will apply only to specific types of services, and it is necessary to understand quality dimensions to be able to develop measures to assess them. The author explains then two ways of identifying important quality dimensions of services, quality dimension development approach and critical incident approach. The first one uses different sources of information, such as opinions of providers and literature. The other one is a process to obtain information from customers.

The ten determinants of service quality established by Parasuraman et al. (1985) provide a list that can guide investigation on the first approach. The authors subsequently developed Servqual (Parasuraman et al., 1988), a two-part instrument for measuring service quality that was refined later. Much of the research to date has focused on measuring service quality using this approach and its use has become quite widespread (Kang and James, 2004).

Lim and Tang (2000) conducted a modified service quality with six dimensions, namely, tangibles, reliability, assurance, responsiveness, empathy, accessibility and affordability on 252 patients in Singapore hospitals. They concluded that hospitals needed improvements across all six dimensions. Andaleeb (2001) in Urban Bangladesh found



out that patient perceptions were sought on five aspects of service quality including responsiveness, assurance, communication, discipline and baksheesh. In the study, conducted discipline, which was an extension of the tangibles dimension had the greatest impact on customer satisfaction followed by assurance, responsiveness and communication. Baksheesh had the least impact on patient satisfaction. Sandoval, Brown, Sullivan and Green, (2006) found that of the five service quality dimensions responsiveness, assurance and empathy were more important predictors of overall satisfaction. Jabnoun and Chaker (2003) compared public and private hospitals in UAE. Factor analysis resulted in five dimensions; empathy, tangibles, reliability, administrative responsiveness and supporting skills. They found significant differences between private and public hospitals in terms of overall service quality in empathy, tangibles, reliability and administrative responsiveness dimensions. Their findings indicate that public hospitals were perceived to be better than private hospitals on service quality.

Again in 2005, Gonzalez-Valentine, Padin-Lopez, Romon-Garrido, (2005) conducted their research on patients in a regional university hospital in Southern Spain with the purpose of assessing the satisfaction of patients with nursing care by using service quality. Factor analysis did not reproduce the five dimensions, but extracted three factors only. Payne, (2006) analyzed the relationship between service quality and customer satisfaction in public, private and university hospitals in Turkey. Quality perceptions were measured with four factors, namely; services before the treatment, physician services, and care for private needs, laboratory services and physical environment. It was found that public hospitals had the lowest values in service quality dimensions and overall satisfaction followed by university and private hospitals. Demirel et al. (2009) identified nursing services and trust, treatment, and physical environment as the three factors related to service quality.

They also found that perceived service quality has positive correlation with patient satisfaction, willingness to recommend and intention to visit the hospital again.

2.6 Critical Review

Greater value is being placed on patient satisfaction Smith and Clark, (2008), however, despite the increasing focus on customer satisfaction; research into health care patients' perceptions of the dimensions of service quality is scarce. This can be problematic, as quality of care is an essential issue in health care services (Stover, 2005).

The service quality dimensions in health care differ in number and dimensional structure from the widely adopted service quality dimensions first identified by Zeithaml (1988): reliability, responsiveness, assurance, empathy and tangibles. The service quality dimensions in health services include: reliability, tangibles, assurance, empathy, food, access, outcome, admission, discharge and responsiveness. In addition, health care patients perceive the service quality dimensions relating to the core product in health care delivery (for example, outcome and reliability) as more important than the service quality dimensions relating to the peripheral product in health care delivery for example food, access and tangibles (MacAuley, 2001).

According to Lee, Delene, Bunda and Kim (2000) patients with different geographic, demographic, and behavioristic characteristics have different needs and wants during health care delivery and therefore perceive different service quality dimensions and factors that influence the delivery of health service differently based on their unique situations. Hence patients place emphasis on different quality dimensions and factors which they regard as important (Kara, Lonial, TarimandZaim, 2005).

2.7 Summary

Highly skilled physicians, nurses, administrators, and ancillary staff are critical to producing high-quality



outcomes and effective service quality delivery. There is the challenge of selective hiring of qualified staff. Successful recruitment and retention of staff is tied to empowerment of staff that must be treated as full partners in the hospital operation and given opportunities for advancement. Technology for harnessing of Information and data play a critical role in service delivery in mission hospitals (Lee and Yoo, 2000). The study will be based on Parasuraman model (1985) provided a list of ten determinants of Customer service quality; access, communication, competence, courtesy, credibility, reliability, responsiveness, security, understanding and tangibles Investments in Technology that facilitate service assessment and improvement process is essential. The hospital must show four main commitments: a willingness to invest in Information Technology; working with staff and others to customize an information system to meet specific needs and culture of the institution; nurturing and encouraging buy-in so that new systems will be utilized and their benefits realized; and devising Information Technology systems that provide real-time feedback to providers (Algılanan and Connor, 2003). The research team found a high degree of correlation between communication, competence, courtesy, credibility and security, and between access and understanding and so they combined them into two broad dimensions of assurance and empathy, i.e. a total of five consolidated dimensions (Berry et al., 1985).

The service quality oriented public hospitals are marked by the depth and breadth of their management commitment. This is reflected in leadership that practiced as preached; willingness to invest in high-quality staff processes, and supportive tools; and institution-wide commitment to dig beneath surface measures to uncover causes of service delivery problems and to press relentlessly for solutions.

3.1 INTRODUCTION

This section presents the different methods that the researcher used to collect, analyze, present and discuss the findings of the study. This included details on the research strategy, the different categories of respondents and how the data was collected during fieldwork. Also the ways through which the different data sets was analyzed and presented was discussed.

3.2 Research Design

The study used a descriptive survey approach in collecting data from the respondents. Descriptive survey research portrays an accurate profile of persons, events, or account of the characteristics, for example behaviour, opinions, abilities, beliefs, and knowledge of a particular individual, situation or group (Cooper and Schindler, 2008). The descriptive survey method is preferred because it ensures complete description of the situation, making sure that there is minimum bias in the collection of data (Kothari, 2008). A descriptive study was concerned with finding out the what, where and how of a phenomenon. This design was considered suitable because it aids in collecting information from respondents on their attitudes, awareness and opinions in relation to the subject area.

3.3 Population

Target population refers to the entire group of individuals or objects from which the study seeks to generalize its findings (Cooper and Schindler, 2008). A population frame is a comprehensive itemized list of all subjects, which comprise the study population, from which a sample will be taken (Mugenda and Mugenda, 2003). The population of the study was 194 comprising doctors, nurses, clinical officers and lab technologies in Nyahururu District hospital. The Nyahururu District Hospital was selected as it was the referral public hospital in Nyandarua County.

Table 3.1 Study population



Population Category	Number	Sample proportion
Doctors	17	13
Nurses	80	55
Clinical Officers	50	35
Lab Technologists	30	17
Pharmacists	17	9
Total	194	129

Nyahururu Hospital, Medical Registry (2012)

3.4 Sample size and Sampling Technique

Sampling is that part of statistical practice concerned with the selection of an unbiased or random subset of individual observations within a population of individuals intended to yield some knowledge about the population of concern, especially for the purposes of making fair generalization of results back to the population from which they were chosen (Babbie, 1998).

Thereafter the study used stratified random sampling to get the sample population. According to Kothari (2008), a stratified random sampling is used where the population embraces a number of distinct categories, the frame can be organized by these categories into separate "strata." Each stratum is then sampled as an independent sub-population, out of which individual elements can be randomly selected. This was preferred because the study population is not homogeneous as it consists of staff attending to both inpatients and outpatients making it the most appropriate sample to come up with the target sample.

According to Menard, (2002) the size of the sample depends upon the precision the researcher desires in estimating the population parameter at a particular confidence level hence there is no single rule that can be used to determine sample size. Therefore, from the study population of 194, a sample size of 50% will be taken giving a respondent base of 129 consisting of Doctors, Nurses, Clinical Officers, Lab

Technologists and Pharmacists as shown on table 3.2 below. This sample size was considered representative and comprehensive in the coverage of the study objectives and economical in terms of time and money.

Sampling for the respondents from hospital employees was determined using the Fischer formula for the population of more than 10,000 elements. This was done using 95% confidence interval, -alpha level 0.05, one tailed (Babbie, 1998).

$$N = \frac{Z^2 pq}{d^2}$$

.....Equation 1 (Higgins, 2001)

The desired sample size was determined using the following Fisher et al. (1991) formulae:-

$$n = \frac{Z^2 pq}{d^2}$$

Where:

n = the desired sample size (when population is greater than 10,000).

Z = the standard normal deviation, set at 1.96, which corresponds to 95% confidence level.

p = the prevalence proportion set at 0.50 in accordance with the Fisher (1991) guide.

$$q = 1.0 - p$$

d = degree of accuracy desired, here set at 0.05 corresponding to the 1.96 z-statistic used in the numerator.

In substitution,

$$n = \frac{1.96^2 \times 0.5(1 - 0.5)}{0.05^2} = 384$$



Nyahururu Hospital has a staff in post of N=194 and since N is less than 10,000 the second formula will be applied in determining the sample size. Thus: -

$$nf = \frac{n}{1 + \frac{n}{N}}$$

Where: -

nf = desired sample size for a population less than 10,000.

n = desired sample size for population more than 10,000 which is 384.

N = Population which is 194

Substituting, $nf = \frac{384}{1 + \frac{384}{194}} = 129$ Therefore, the desired sample size, n = 129

Table 3.2 Sample size

Population Category	Number	Sample proportion
Doctors	17	13
Nurses	80	55
Clinical Officers	50	35
Lab Technologists	30	17
Pharmacists	17	9
Total	194	129

Source: Researcher (2012)

3.5 Research Instruments

The primary data for this study was collected using the questionnaires and complemented by desk research hence ensuring that detailed and relevant information on the subject of study is collected. Questionnaires was used in collecting data and consisted of a mixture of open ended and

close ended questions and according to Babbie, (1998) this allows for intensity and richness of individual perceptions in respondent responses. The study was used questionnaires because it is flexible and facilitates the capture of in-depth knowledge of the respondents, promotes respondent cooperation and allows the interviewer to probe further for clarification of issues. As a method of data collection questionnaires are appropriate because they are easy to analyze, and are cost effective (Andersn, 2003)

The questionnaires which mainly contained closed and open ended questions was self administered to the sample respondents and according to (Andersn, 2003). This allowed for intensity and richness of individual perceptions in respondent responses. Each respondent received the same set of questions in exactly the same way. A letter requesting for information accompanied the questionnaire explaining the purpose of study to the respondents.

3.7 PILOT STUDY

According to Mugenda (2008) Pilot testing involves conducting a preliminary test of data collection tools and procedures to identify and eliminate problems, allowing programs to make corrective revisions to instruments and data collection procedures to ensure that the data that was collected is reliable and valid. The reliability and validity of research instruments determines the quality of data collected and hence that of the whole research (Babbie, 1998).

Validity refers to the accuracy or truthfulness of a measurement in terms of the likelihood that research questions was misunderstood or misinterpreted and on whether the research instruments provides adequate coverage of research objectives. Expert opinions from the supervisor and literature search were done to help to establish validity. In order to collect reliable data, the researcher designed questionnaires under the guidance of the study supervisor and discussion with the peers and ask the



same question with slightly different wording in different parts of the research instrument or in complementary instruments.

Reliability is synonymous with repeatability or stability and a measurement that yields consistent results over time is said to be reliable (Kothari, 2008). The test retest method was used to ascertain the reliability. Cronbach’s alpha formula was used in calculating the reliability of data coefficient (Mugenda, 2008).

Reliability will be obtained by correlating the scores of each questionnaire for each variable. This is recommended by such scientific researchers as Kothari, (2008) when measuring reliability of a test. Pearson product moment correlation coefficient (r) was used to test reliability of the questionnaire. The correlation coefficient of the halves was corrected by Spearman Brown Prophecy formula

Re = 2r / (1+r) Equation (2)

(Tuckman, 1972)

The questionnaire will be reliable if the value for Re was closer to 1.0 getting consistent responses when the same question posed to the same respondent more than once.

3.8 DATA ANALYSIS

Mugenda and Mugenda, (2003) describe data analysis as a process of bringing order, structure and meaning to the multitude of collected data. It is a chaotic, ambiguous, time-consuming, creative and fascinating process.

Quantitative data, which was collected using closed ended questions in the questionnaires, was chronologically arranged with respect to the questionnaire outline to ensure that the correct code was entered for the correct variable. Data cleaning then was done and tabulated. The tabulated data was analyzed with the help of the Statistical Package

for Social Sciences (SPSS 11.0) that has data handling and statistical analysis capability that can analyze data statistics and generate descriptive statistics (Norusis, 2007). The data was then be analyzed using descriptive statistics which includes; frequency, percentages, means and standard deviations in order to establish patterns, trends and relationships and to make it easier to understand and interpret the implications of the study.

For qualitative data, which was mainly gathered from open ended questions and interviews, a qualitative data checklist was developed. The checklist was clustered along main themes of the research to ease consolidation of information and interpretation and then analyzed through content analysis. Content analysis is the process of analyzing verbal or written communications in a systematic way to measure variables qualitatively (Norusis, 2007).

The purpose of presentation of data is to highlight the results and to make data or results more illustrative by presenting in the form of figures and tables so that it is easy to observe general trends (Babbie, 1998). Thus presentation of data was in form of tables, pie-charts and bar graphs only where it provides successful interpretation of the findings. Descriptive data was provided in form of explanatory notes.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.0 Introduction

This chapter discussed the interpretations and presentations of the findings. The objectives of this study were to investigate the factors that affect provision of service quality in public health sector in Kenya. It focused on data analysis, interpretation and presentation and presents the discussion and conclusion of the study.

4.1 Response rate



From the study, the target population was 129 where 103 respondents responded and returned the questionnaires. This constituted an 80% response rate. Mugenda and Mugenda (2003) indicated a respondent rate of 50%, 60% or 70% is sufficient for a study and therefore a respondent rate of 80% for this study was very good.

4.2.1 Reliability statistics

Table 4.1: Reliability statistics

Variable	Crobranch	No of Item
Employees' Capacity	0.7527	5
Technology	0.8892	7
Communication Channels	0.8049	6
Financial Resources	0.8350	5
Overall	0.8327	

The Table 4.2 illustrates the findings of the study concerning the reliability analysis. In this study, reliability was ensured by piloted questionnaire with a selected sample from hospital staff who included nurses, doctors, laboratory technologists, pharmacists and clinical officers who were not included in the actual data collection. The pre-test was conducted principal researcher (Neuman, 2000). From the findings, the coefficient will be 0.8327 approximately 0.83 which was closer to 1 making the instrument very reliable.

4.2.2 Validity Outcomes

Validity is the accuracy or meaningfulness and technical soundness of the research. It was the degree to which a test measure what it purport to measure. (Mugenda and Mugenda, 1999) stated that, to enhance validity of a questionnaire, data should be collected from reliable sources; the language used on the questionnaire was kept simple to avoid any ambiguity and misunderstanding. The validity of data collected was made through collecting data from the relevance respondents having been permitted by

the University and the management of Nyahururu district Hospital.

The validity of the instrument was established by being given to experts with experience in provision of quality health service who evaluated the items in relation to the study objectives. The validity was determined through the use of content validity index obtained by summing items rated 3 to 4 by experts and divided by the total number of items in the questionnaires. Content validity index of 0.852 was obtained indicated that the validity of the instrument was acceptable as recommended by Davis (1992) who recommended content validity index of 0.80 for new measures.

4.2 General information

Table 4.2: Highest academic qualifications

	Frequency	Percent
College	26	26
University	67	65
Others	10	9
Total	103	100.0

The study sought to investigate the highest academic qualifications attained by the respondents. From the findings, majority (65%) of the respondents indicated that they had attained university highest level of education most 26% of the respondents had attained college level of education while (9%) of the respondents had other level of education as certificate and postgraduate level of education. This implies the organization employed qualified personnel who could adopt service quality strategies and tools and could thus offer relevant information concerning factors that affect provision of service quality in public health.

The findings concurred with Brown and Duguid, (2003) who found that highly skilled physicians, nurses,

administrators, and ancillary staff enhanced production of high-quality outcomes and effective quality improvement in hospitals.

Figure 4.1: Whether adequate number of employees

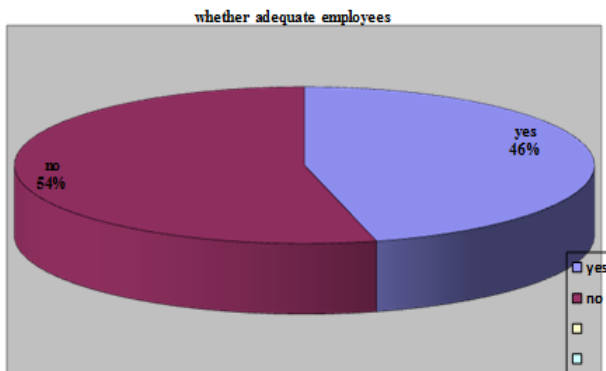


Figure 4: 1: Adequate number of employees

The study sought to investigate whether there was adequate number of employees in the NyahururuHospital. From the findings, majority (54%) of the respondent indicated that there was no adequate number of employees while (46%) of the respondents indicated that there was adequate number of employees. This implies that more vacancies need to be announced for new employees in order to minimize the individual work force hence providing service quality in public health.

The findings concurred with Argote, (2000) who indicated that enough highly skilled physicians, nurses, administrators, and ancillary staff were critical to producing high-quality outcomes and effective quality improvement hence hospital growth. The study also concurred with Brown and Duguid, (2003) who indicated that there was need for selective hiring of qualified staff and successful recruitment and retention of the right number of staff tied to empowerment of staff that must be treated as full partners in the hospital operation and given opportunities for advancement.

1.1 4.3 EMPLOYEE’S CAPACITY

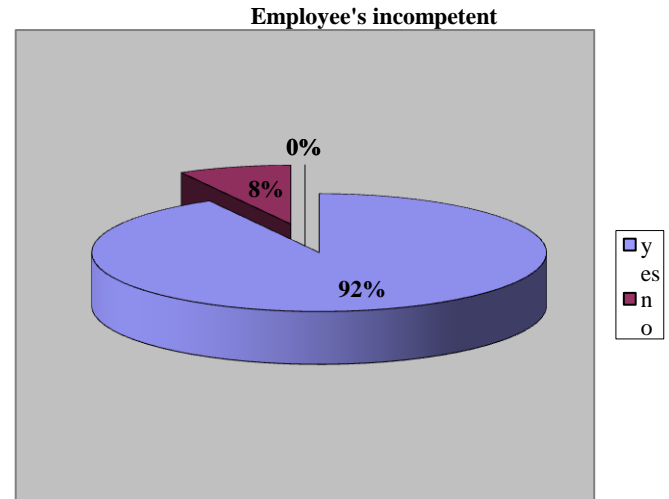


Figure 4.2: Employee’s incompetence

The study sought to investigate whether Employee’s incompetence affected service quality in the public health sector. From the findings, majority (92%) of the respondents indicated that employee’s incompetence affected service quality while a few (8%) of the respondents indicated that employee’s incompetence did not affect quality. This implies that more training and workshop for employees would be needed in order to provide service quality in public health sector.

Employees' capacity influence the provision of quality service

Table 4.3: Employees' capacity influence

	Frequency	Percent
Very great extent	54	53
Great extent	36	31
Moderate	13	16
Total	103	100.0



The study sought to know the extent to which employee’s capacity influenced the provision of service quality in the public health sector. From the findings, majority (53%) of the respondents indicated that employee’s capacity influenced the provision of service quality in the public health sector to a very great extent, (31%) of the respondents indicated that employee’s capacity influenced the provision of service quality in the public health sector to a great extent while 16% of the respondents indicated that employee’s capacity influenced the provision of service quality in the public health sector to a moderate extent. The study further sought to know the reasons on employee’s capacity in influencing the provision of service quality.

From the findings respondents stated that employee’s

capacity in the public health sector improved proper medication, offered patient satisfaction, enhanced good relationship between medical providers and patients, enabled the participation in multi-disciplinary and attracted more patient. This concurred with Argote, (2000) who stated that highly skilled physicians, nurses, administrators, and ancillary staff are critical to producing high-quality outcomes and effective quality improvement hence hospital growth. This implies that there is need for selective employment of qualified and highly skilled staff for the provision of service quality in public health sector.

Extent of employee’s capacity effects in providing quality services

Table 4.4: Employee’s capacity

	Neutral	Agree	Strongly agree	N	Mean	Std deviation
High skilled personnel in the public health sectors influence high service quality provision in the public health sector	13	67	23	103	4.79	0.83
Ineffective recruitment lead to employment of competent leading to efficiently delivery of health services	23	18	62	103	4.45	0.75
Specific skill levels and experience for the health staff should be continuously learned to enhances and quality service provision	22	32	49	103	4.52	0.87
Monitoring of doctors on staff and ensuring that they meet performance and practice standards should be emphasized	22	24	57	103	4.12	0.88
The management should have ability to attract and employ an adequate number of high-quality nurses to enhance efficient service delivery of health services	20	31	52	103	4.61	0.95

The Table 4.3 indicates the response of respondent’s extent to which they agreed with the given statement concerning employee’s capacity in providing quality services. The findings on the extent to which the employee’s capacity in

providing quality services in public health sector, a five point likert scale was used to interpret the respondent’s extent. Accorded to scale those issues that were strongly disagreed on were awarded 1 while those which were strongly agreed on were awarded 5. Within the continuum



are 2 for disagree, 3 for neutral and 4 for agree. Mean and standard deviation were used to analyze the data. According to the study, those factors with a mean close to 4.5 were rated as to a strongly agree while those with a mean close to 3.0 were rated to a strongly disagree or even not considered at all.

On the same note the higher the standard deviation the higher the level of disagreement or dispersion among the respondents. From the findings, majority of the respondents strongly agreed that high skilled personnel in the public health sectors influence high service quality provision, management should have ability to attract and employ an adequate number of high-quality nurses and specific skill levels and experience for the health staff should be continuously learned to enhance quality service provision as indicated by a mean of 4.79, 4.61 and 4.52 supported by strong standard deviation of 0.83, 0.95 and 0.87.

The study further found that most of the respondents agreed that effective recruitment lead to employment of competent staff leading to efficiently delivery of health services and monitoring of doctors on staff and ensuring that they meet performance and practice standards should be emphasized as indicated by a mean of 4.45 and 4.12 supported by strong standard deviation of 0.75 and 0.88. This implied that employment of competent medical staff in public health sectors influence effective and efficient delivery of quality service and therefore the hospital management should have ability to attract and employ adequate number of high-quality nurses and specific skill levels and experience for the health staff which should be continuously learned to enhance quality service provision. This concurred with Argote and Ingram (2000) who indicated that to improve efficiency in service delivery, public health sector hospitals must build the capacity to attract and employ adequate number of high-quality nurses.

4.4 TECHNOLOGY

Level of technology investment

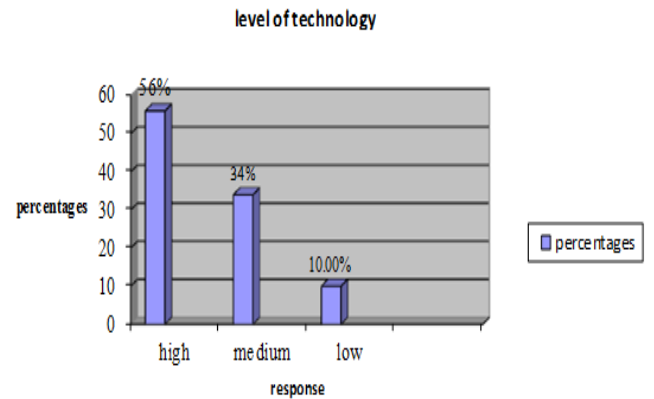


Figure 4.3: Level of technology investment

The study sought to know the level of technology in the public health sector. From the findings majority (56%) of the respondents indicated that there was high level of technology investment (34%) of the respondents indicated that there was medium level of technology investment while a few (10%) of the respondents indicated that there was low level of technology investment. This implies that management in public health sector need to improve the level of adoption of new technology for effective and efficient service quality.

Management willingness to invest in modern technology

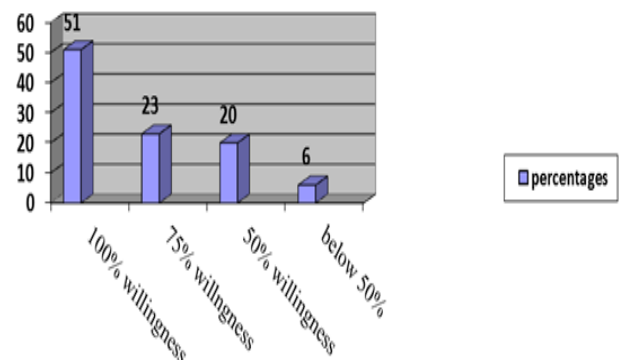


Figure 4.4: Management willingness

The Figure 4.4 indicates the respondent's responses on rating the management willingness to invest in modern technology. From the findings majority (51%) of the respondents indicated that the management willingness to invest in modern technology was 100%, (23%) of the respondents indicated that the management willingness to invest in modern technology was 75% willingness rate, 20% of the respondents indicated that the management willingness to invest in modern technology was 50% while a few (6%) of the respondents indicated that the management willingness to invest in modern technology was below (50%) willingness rate. This implies that the management of the NyahururuHospital was willing to invest in new technology for effective and efficient service quality in public health sector in Kenya. These findings were in line with Dutton and Starbuck, (2002) who indicated that investments in Technology that facilitate service assessment and improvement process is essential. The hospital management therefore was committed and willing so as to improve service quality in the hospital.

Adoption of technology improve service delivery

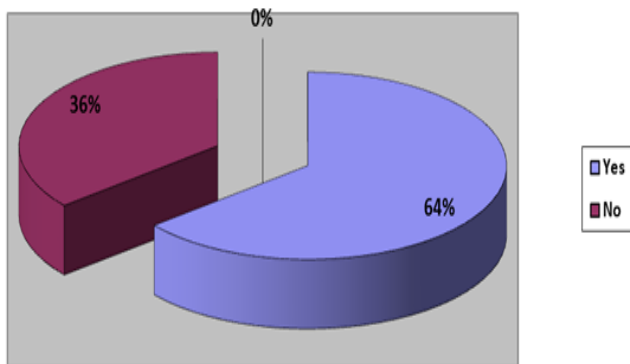


Figure 4.5: Adoption of technology improve service delivery

The study sought to investigate whether the adoption of technology improved the service delivery in NyahururuHospital. From the findings, majority (64%) of the respondents indicated that the adoption of technology

improved the service delivery in Nyahururu hospital while a few (36%) of the respondents indicated that the adoption of technology did not improve the service delivery in Nyahururu hospital. This implied that adoption of technology in the hospital service quality. The findings concurred with Mills(2001) who found that devising information technology systems provided real-time feedback to providers as they were caring for patients, through technology, the hospital would be in a position of offering bar-coded medications and automatic dispensing; coordinating patient admissions with bed capacity, immediate tracking of filled beds and daily changes in nursing needs.

Technological advancement effect of service quality

Table 4.5: Technological advancement

	Frequency	Percent
Very great extent	54	53
Great extent	49	47
Total	103	100

The study sought to know the extent to which the technological advancement influenced the provision of service quality in the public health sector. From the findings majority (53%) of the respondents indicated that technological advancement influenced the provision of service quality in the public health sector to a very great extent while (47%) of the respondents indicated that technological advancement influenced the provision of service quality in the public health sector to a great extent. This concurred with Dutton and Starbuck (2002) who indicated that investments in technology facilitate service assessment and improvement process is essential. This implies that government hospitals need to have successful technology strategies to facilitate service quality where through information technologies could remind doctors and



other medical staff could be reminded of procedures or tests that were indicated and to reduce medication errors through alerts about potential dosage errors and drug interactions.

lack of investment in technology

Table 4.6: Lack of investment in technology

	Frequency	Percent
Strongly disagree	7	9
Agree	41	37
Strongly agree	65	54
Total	103	100

The study sought to know the extent to which respondents agreed that lack of investment in technology development affected the reliability, responsiveness and assurance in the

Table 4.7: Technology developments in providing service quality

Statement	Neutral	Agree	Strongly agree	N	Mean	Std deviation
Technology should be adopted to facilitate service assessment in public hospitals	26	24	53	103	4.68	0.64
Adoption of technology lead to improvement of essential and quality healthcare delivery	29	23	51	103	4.81	0.79
Technology reduces time lags in getting lab and imaging results	26	42	35	103	3.98	0.44
Adoption of IT Ensure that the resulting system meets the needs of clinicians and provide quality services to patients	34	28	41	103	3.73	0.41
High technology adoption in public sector leads to provision of high-quality medicine to patients	28	38	37	103	4.48	0.59
Adoption of IT in public health sector enhance communication patients	15	40	48	103	4.63	0.71

The Table 4.6 Indicates the responses on the extent to which respondents agreed on the given statements concerning the technology development in providing service quality in the public health sector. A five point likert scale was used to

delivery of health services in the hospital. From the findings, majority (54%) of the respondents strongly agreed that lack of investment in technology development affected the reliability, responsiveness and assurance in the delivery of health services in the hospital, (37%) of the respondents agreed that lack of investment in technology development affected the reliability, responsiveness and assurance in the delivery of health services in the hospital while a few (9%) of the respondents were neutral on whether lack of investment in technology development affected the reliability, responsiveness and assurance in the delivery of health services in the hospital. This implied that failure by the management of the hospitals in Kenya resulted in offering poor medical services where quality, accessibility cost, and delivery of health services is not achieved as indicated by Speier and Venkatesh, (2002).

Technology development in providing service quality

interpret the respondent’s responses. Accorded to scale those issues that were strongly disagreed were awarded 1 while those which were strongly agreed on were awarded 5. Within the continuum are 2 for disagree, 3 for neutral and 4 for agree. Mean and standard deviation were used to analyze



the data. According to the study, those factors with a mean close to 4.5 were rated as to a strongly agree while those with a mean close to 1.0 were rated to a strongly disagree or even not considered at all.

On the same note the higher the standard deviation the higher the level of disagreement or dispersion among the respondents. From the findings, majority of the respondents strongly agreed that adoption of technology lead to improvement of essential and quality healthcare delivery, that technology should be adopted to facilitate service assessment in public hospitals and that adoption of Information Technology in public health sector enhanced communication patients as indicated by a mean of 4.81, 4.68 and 4.63 supported by strong standard deviation of 0.79, 0.64 and 0.71. Most of the respondents agreed that high technology adoption in public sector lead to provision of high-quality medicine to patients, technology reduced time lags in getting lab and imaging results and that adoption of Information Technology ensured the resulting system meets the needs of clinicians and provide quality services to patients as indicated by a mean of 4.48, 3.98 and 3.73 supported by strong standard deviation of 0.59, 0.44 and 0.41.

This implied that adoption of technology lead to improvement of essential and quality healthcare delivery, that technology should be adopted to facilitate service assessment in public hospitals and that adoption of Information Technology in public health sector enhanced communication patients. The findings were in line with Oliveira-Cruz, Hanson and Mills, (2001) who indicated that comprehensive information system improve the quality of management's decisions and increased the firm's ability to offer service quality in organization.

Opinion on how technology could improve the delivery of services

On the opinion on how technology could improve the delivery of services in the public health sector, respondents stated that technology would improve the accessibility of relevant information efficiently and effectively, real-time feedback to care givers, fast and relatively cheap access to information and enable the flow of the right information to the right people at the right time. The findings concurred with Blas, and Limbambala (2001) who stated that a proprietary information systems that shapes the culture, patient mix, and staffing of the hospital and engaging physicians and nurses in developing or adapting Information Technology serves to ensure that the resulting system meets the needs of clinicians.

4.4 COMMUNICATION

Types of communication channel used

The study sought to investigate the types of communication channels that were used in NyahururuHospital. From the findings the hospital used upward type of communication channel in order to provide information to staff in the hospital to ensure effectively and efficient about activities and performances throughout the hospital, used horizontal and vertical type of communications channel in order to flatten and invert and enhance the firm's internal communication thus improving individual participation in provision of service quality in public health sector in Kenya. The study further found that face-to-face type of communication was used to convey difficult or ambiguous messages, or when sender and receiver differ in background or opinions. This concurred with Payne, (2006) who found that effective internal communications channel was the requisite for integration and harmony in delivery service quality in hospital activities and quality.

Effectiveness of the communication channel used

Table 4.8: Communication channel used

	Frequency	Percent
Very effective	35	42
Effective	41	49
Moderate	7	9
Total	83	100.0

The study sought to investigate the effectiveness of the communication channel used at NyahururuHospital. From the findings, majority (49%) of the respondents indicated that the communication channel used at NyahururuHospital was effective, (42%) of the respondents indicated that the communication channel used at NyahururuHospital was very effective while (9%) of the respondents were neutral on whether the communication channel used at NyahururuHospital was effective.

This implied that there was a need for the management of the hospital to improve its communication channels to ensure the patients receive the correct medical prescriptions, advices and instructions improving patient’s satisfaction for the services they receive from the hospital. This concurred with Payne,(2006) who indicated that through communication patients access to treatment, participation in preventive measures , ability to obtain consent, improve health professionals abilities to meet their ethical obligations, quality of care, including, hospital admissions, diagnostic testing, medical errors, patient follow-up, quality of mental health care and patient safety.

Whether communication channel used lead to patient’s satisfaction

Communication channel used lead to patient’s satisfaction

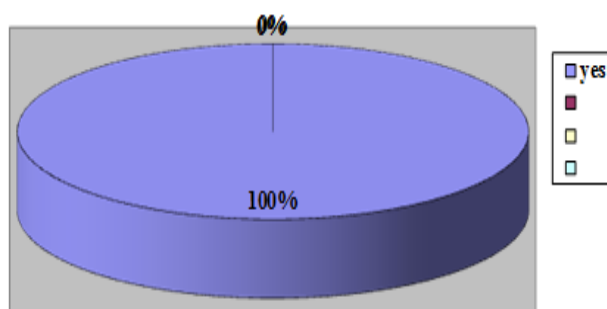


Figure 4: 2 Communication channel used lead to patient’s satisfaction

The study sought to investigate whether the type of communication channel used lead to patient’s satisfaction. From the findings all (100%) of the respondents indicated that the type of communication channel used lead to patient’s satisfaction. Communication with patients is vital to delivering service satisfaction because when hospital staff takes the time to answer questions of concern to patients (EFP, 2006).

Medical tests and nature of treatment clearly explained

Figure 4: 3 Medical tests and nature

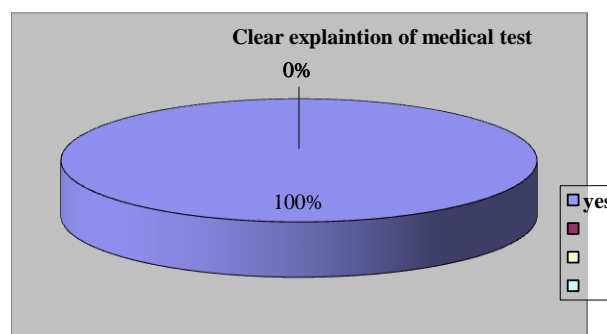


Figure 4: 4 Medical tests and nature

The Figure 4.7 indicates the response on whether the medical tests and nature of treatment were clearly explained.



From the all (100%) of the respondents indicated that medical tests and nature of treatment were clearly explained in the hospital. From the findings, accurate and comprehensive information enables the medical tests and nature of treatment to be clearly explained to patients, through better communication among department the coordination which facilitates clear explanation of medical tests and the nature of treatment is enabled. It may be necessary to use more than one communication means to inform, persuade and educate the customer. This is concurred with Rust and Tuck (2006) who stated that designing services to be user friendly will simultaneously facilitate consumer use and external communication what the service delivery system is actually able to provide the customers

Poor communication channels affect delivery of health services

Table 4.9: Poor communication channels

	Frequency	Percent
Yes	64	65
No	39	35
Total	83	100.0

The study sought to investigate whether poor communication channels affected delivery of health services in Nyahururu district hospital. From the findings, majority (65%) of the respondents indicated that poor communication channels affected delivery of health services in the hospital while a few (35%) of the respondents indicated that poor communication channels do not affect delivery of health services in the hospital. From the findings, ineffective communication between the managing department's members and the operations department's members, inability to communicate accurately affected offering of better health service lowering patient's expectations.

This was in agreement with Choi and Kim, (2008) who noted that service strategy had to be communicated over and over again to everyone; the "employee at all levels must be aligned with a single vision of what the organization is trying to accomplish" and that effective internal communications was the requisite for integration and harmony in the service organization's activities and quality. This concurred with Irving and Dickson (2004) who indicated that communication challenges contribute to reduced quality, adverse health outcomes, and health disparities.

Communication channels influence provision of quality service

Table 4.10: Influences of Communication channels

	Frequency	Percent
Very great extent	80	84
Great extent	23	16
Total	103	100.0

The study sought to know the extent to which communication channels influenced the provision of quality service in public health sector. From the findings, majority (84%) of the respondents indicated the communication channels influenced the provision of service quality in public health sector to a very great extent while 16% of the respondents indicated the communication channels influenced the provision of service quality in public health sector to a great extent. The findings concurred with Communication is the most important aspect of the Service delivery as indicated by Friedman and Kelman, (2006) who found that communication with patients is vital to delivering servicesatisfaction because when hospital staff takes the time to answer questions of concern to patients, it can alleviate many feelings of uncertainty.

Communication channels in the hospital enhance delivery of service quality

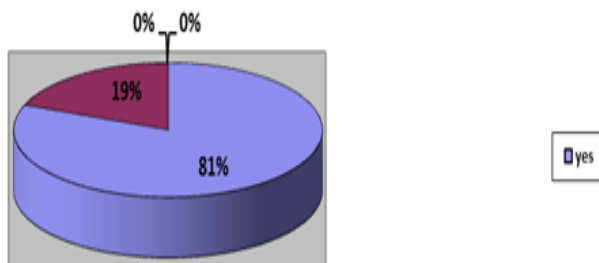


Figure 4. 6: Communication channels enhance delivery

The figure 4.8 the response on whether communication channels in the hospital enhanced delivery of quality services like offering medication at the right time. From the findings, majority (81%) of the respondents indicated that communication channels in the hospital enhanced delivery of services quality like offering medication at the right time

Numeric value corresponding to opinion for statement

Table 4.11: Numeric value corresponding to opinion for statement

	Neutral	Agree	Strongly agree	N	Mean	Std deviation
Effective communication lead to access to treatment, quality of care, efficient admissions, diagnostic testing and patient follow-up	0	29	74	103	4.86	0.87
Poor Communication weaken participation in preventive measures , ability to obtain consent meeting ethical obligations	0	55	48	103	3.91	0.37
Communication challenges lead to delayed diagnosis, misdiagnosis, and inappropriate referral.	5	39	59	103	4.64	0.73
Ineffective communication lead to increased risk of hospital admission, increased risk of intubation and poor prescribed medication	6	18	79	103	4.73	0.69
High service quality is achieved in public hospital due to the efficient, horizontal communication among departments	6	45	52	103	4.13	0.59

while a few (19%) of the respondents indicated that communication channels in the hospital do not enhance delivery of services quality like offering medication at the right time. This implied that communication channel used in public health sectors improve delivery of service quality through facilitating right diagnosis , educating patients on health issues in public sector.

This concurred with Reinartz, Kraft, and Hoyer, (2004) who indicated that In order to use adequately and to appreciate fully the choices that the organization offers, the customer has to be in possession of accurate and comprehensive information and therefore should be necessary to use more than one communication means to inform, persuade and educate the customer.

The table 4.10 indicates the respondent's response on the numeric value corresponding to the opinion for each statement. The findings on the numeric value corresponding to the opinion for the given statement; a five point likert scale was used to interpret the respondent's extent. Accorded to scale those issues that were strongly disagreed were awarded 1 while those which were strongly agreed on were awarded 5. Within the continuum are 2 for disagree, 3 for neutral and 4 for agree. Mean and standard deviation were used to analyze the data. According to the researcher, those factors with a mean close to 4.5 were rated as to a strongly agree while those with a mean close to 3.0 were rated to a strongly disagree or even not considered at all.

On the same note the higher the standard deviation the higher the level of disagreement or dispersion among the respondents. From the finding, majority of the respondents strongly agreed that effective communication lead to access to treatment, quality of care, efficient admissions, diagnostic testing and patient follow-up that ineffective communication lead to increased risk of hospital admission, increased risk of intubation and poor prescribed medication and that communication challenges lead to delayed diagnosis, misdiagnosis, and inappropriate referral as indicated by a mean of 4.86, 4.73 and 4.64 supported by strong standard deviation of 0.87, 0.69 and 0.73. Most of the respondents agreed that high service quality was achieved in public hospital due to the efficient, horizontal communication among departments and that poor communication weaken participation in preventive measures, ability to obtain consent meeting ethical obligations as indicated by a mean of 4.13 and 3.91 supported by standard deviation of 0.59 and 0.37. This clearly depicted that effective communication channels in public health sector was a need to improve service quality delivery.

The findings concurred with Sun and Shibo, (2005) who indicated that communication helped in the coordination or

integration of departments in an organization to achieve strategic objectives and enhancing provision of service quality consistency with policies and procedures across departments and institution and overall improve performance of the organization.

4.5 Financial resources

Operate with a fixed budget

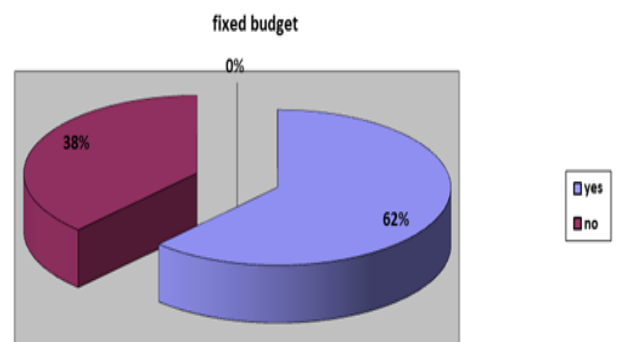


Figure 4.7: Fixed budget

The study sought to investigate whether there was a fixed budget at NyahururuHospital. From the findings, majority (62%) of the respondents indicated that there was a fixed budget at NyahururuHospital while a few (38%) of the respondents indicated that there was no fixed budget at NyahururuHospital. From the findings, fixed budget ensured good expenditure control and undemanding administrative. Fixed budgets offered few incentives to maximize the effectiveness, quality, or quantity of care offered by hospitals (Smee, 2002).

Rating the level of financial resource allocation for the hospital

Level of financial resource allocation

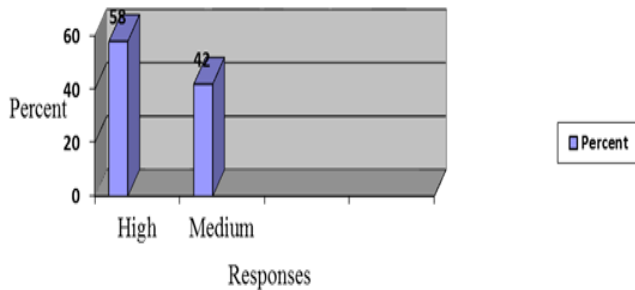


Figure 4.8: Level of financial resource allocation

The study sought to know the level of financial resource allocation for the hospital in the public health sector. From the findings majority (58%) of the respondents indicated that there was high level of financial resource allocation for the hospital, while a few (42%) of the respondents indicated that there was minimum level of financial resource allocation for the hospital. This implied that management in public health sector need to improve the level of financial resource allocation for the hospital to offer effective and efficient health service.

Lack of finances affect reliability in delivery of medical services

Table 4.12: Lack of finances affect reliability

	Frequency	Percent
very great extent	48	45
Great extent	37	38
Moderate	18	17
Total	103	100

The study sought to know the extent to which lack of finances affected the reliability in delivery of medical services in the hospital. From the findings, majority (45%) of the respondents indicated that lack of finances affected the reliability in delivery of medical services in the hospital to a very great extent, (38%) of the respondents indicated that lack of finances affected the reliability in delivery of medical services in the hospital to a great extent while a few (17%) of the respondents indicated were neutral on whether

lack of finances affected the reliability in delivery of medical services in the hospital.

The respondents explained that insufficient fund limit the hospital in acquiring quality drugs, build more wards, and offering patients support facilities such as wheelchairs and medical equipment and other hospital requires that help in diagnosing the patients as required and improve on their service quality. The respondents further explained that through enough financial resources, the hospital will be in a position of acquiring specialized medical personnel to treat patients who required specialized medical attention. The findings was in line with Smee, (2002) who indicated that most developing countries, governments do not have the financial and technical capacity to effectively exercise such oversight and control functions, track and report on allocation, disbursement and use of financial resources.

Whether financial management was as constraint

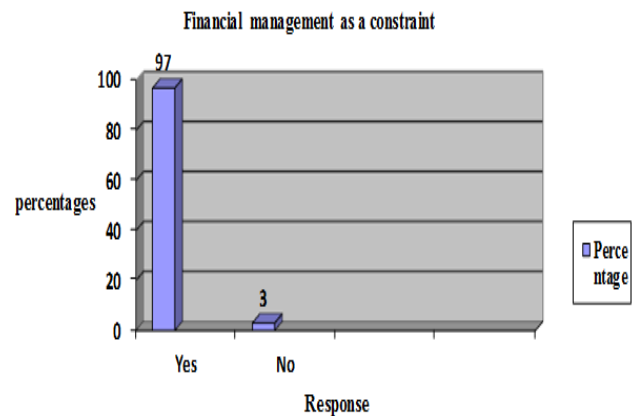


Figure 4.9: Financial management was as constraint

The figure 4.11 indicates the responses on whether financial management was a constraint facing provision of medical services in the public health sector. From the findings, majority (97%) of the respondents indicated that financial management was a constraint facing provision of medical services in the public health sector while a few (3%) of the respondents indicated that financial management was not a constraint facing provision of medical services in the public health sector. This concurred with Adams and Colebourne,



(1999) who stated that financial management, in service organizations, has been a constraint and an obstacle to other functions that contribute to service delivery. This hindered, strategic planning, costing systems, personnel motivation, quality control, continued solvency affecting patient confidence in financial management would be required in order to improve the efficiency in service quality in public health sector in Kenya.

Financial resources influence on provision of service quality

Table 4.13: Financial resources influence on provision of service quality

	Frequency	Percent
Very great extent	23	16
Great extent	76	79
Moderate	4	5
Total	103	100.0

The study sought to know the extent to which financial resources influenced the provision of service quality in public health sector in Kenya. From the findings, majority (79%) of the respondents indicated that financial resources influenced the provision of service quality in public health sector in Kenya to a great extent, (16%) of the respondents indicated that financial resources influenced the provision of service quality in public health sector in Kenya to a very great extent while a few (5%) of the respondents indicated were neutral on whether financial resources influenced the provision of service quality in public health sector in Kenya. From the findings, majority of the respondents stated that financial accountability using monitoring, auditing and accounting mechanisms ensured that allocated funds are used for the intended purposes.

Effects of financial resources in the hospital service delivery

Table 4.14: Effects of financial resources in the hospital service delivery

Statement	Neutral	Agree	Strongly agree	N	Mean	Std deviation
Insufficient funds lead to rehabilitation, redesign, equip resulting in ineffective and inefficient service delivery patients	8	43	52	103	4.53	0.55
Centralized budget systems contribute to technical inefficiency by preventing health staff from optimizing the deployment of inputs perpetuating poor quality of service in hospital	11	45	47	103	3.99	0.34
Bureaucracy in financial management is a hindrance to provision of medical services	7	40	56	103	4.67	0.63
Use of fixed budgets in hospitals led to inequities and fail to respond to new demands and priorities	13	53	37	103	4.03	0.41
Insufficient funding of public hospital lead to purchasing of low quality health equipment leading to poor service delivery	12	28	63	103	4.61	0.53

The table 4.13 indicates the respondent’s response on the numeric value corresponding to the opinion for each statement. The findings on the numeric value corresponding to the opinion for the given statement; a five point likert

scale was used to interpret the respondent’s extent. Accorded to scale those issues that were strongly disagreed were awarded 1 while those which were strongly agreed on were awarded 5. Within the continuum are 2 for disagree, 3



for neutral and 4 for agree. Mean and standard deviation were used to analyze the data. According to the researcher, those factors with a mean close to 4.5 were rated as to a strongly agree while those with a mean close to 1.0 were rated to a strongly disagree or even not considered at all. On the same note the higher the standard deviation the higher the level of disagreement or dispersion among the respondents. From the finding, majority of the respondents strongly agreed that bureaucracy in financial management was a hindrance to provision of medical services, insufficient funding of public hospital lead to purchasing of low quality health equipment and rehabilitation, redesign, equip resulting in ineffective and inefficient service delivery patients as indicated by a mean of 4.67, 4.61, 4.53 supported by standard deviation of 0.63, 0.53 and 0.55 respectively.

From the findings, respondents agreed that use of fixed budgets in hospitals led to inequities and fail to respond to new demands and priorities and that centralized budget systems contribute to technical inefficiency by preventing health staff from optimizing the deployment of inputs perpetuating poor quality of service in hospital as indicated by a mean of 4.03 and 3.99 supported by standard deviation of 0.41 and 0.34 respectively. This implied that insufficient funds negatively affected the efficient health service delivery in the hospital. The Public hospitals in Kenya as indicated by Maureen, (2005) are in dire need of funding to rehabilitate, redesign, equip and staff them to ensure effective and efficient service delivery to as low funding adversely affected the delivery of health services in the national hospital as well as local dispensaries.

Assessment on how insufficient fund lead to poor services delivery

The study sought to investigate the respondent's assessment on how insufficient fund lead to poor services delivery in public health sector. From the findings, respondents stated that insufficient fund lead to purchasing of low quality drugs

and medical equipment offering efficient services to patients, low staff payment who felt demotivated to carry out their duties as expected. This concurred with Smeed, (2002). Who indicated that insufficient funding resulted to few incentives to maximize the effectiveness, quality, or quantity of care offered by hospitals and that many budget systems continue to finance hospitals through line-item budgets directly from the ministry of health leading to bureaucracies and exert the maximum level of control over peripheral spending with little or no capacity at peripheral levels for flexible use of funds in response to local needs.

Opinion how availability of financial resources could be improved

The respondents were requested to indicate their opinion on how availability of financial resources could be improved in the hospital. From the findings, respondents stated that the government should give priority for financing the hospital and allocate sufficient fund during budget day, world organization could also improve financing of the hospital through grants. Other respondent indicated that hospital could increase hospital fund through donation from other health institutions such as WHO, World Red Cross and other NGOs, while other indicated that the hospital should also be allowed to charge some medical services to generate finance. Increased financial capabilities in the hospital would enable the hospital to secure good expenditure control and improve equity and respondent effectively to new demand and priorities from the hospital as indicated by Peters, Elmendorf, Kandola and Chellaraj, (2000)

4.6 Service quality

Quality level of health services provided

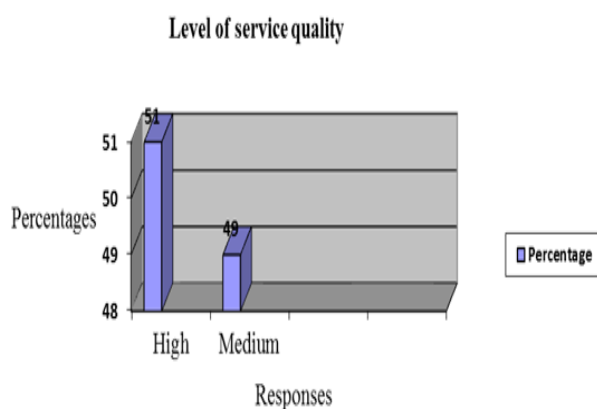


Figure 4.10: Quality level

The study sought to know the quality level of health services provided in the hospital. From the findings majority (51%) of the respondents indicated that there was high quality level of health services provided in the hospital while (49%) of the respondents indicated that there was minimum quality level of health services provided in the hospital. This implies that management in hospital needed to adopt new technologies to deliver medical services, allocate sufficient finances, adopt effective communication channels as well as increase employee’s capacity to improve the quality level of health services provided in the hospital for effective and efficient service quality.

Feedback for the Medical service received

Table 4.15: Time needed on receiving health service

	Frequency	Percentages
Yes	76	79
No	27	21
Total	103	100

The study sought to investigate whether it takes a lot of time to receive the needed health service. From the findings, majority (79%) of the respondents indicated that it does not takes a lot of time to receive the needed health service while a few (21%) of the respondents indicated that it takes a lot of time to receive the needed health service.

Patient’s satisfaction level to the care provided

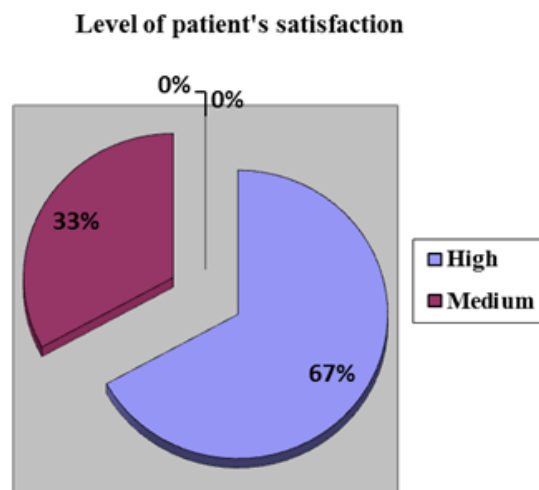


Figure 4.11: Patient’s satisfaction level

The study sought to investigate the patient’s satisfaction level to the care provided in the hospital. From the findings majority 67% of the respondents indicated that there was high patient’s satisfaction level to the care provided in the hospital while 33% of the respondents indicated that there was minimum patient’s satisfaction level from the medical care provided in the hospital. This implies that management in public health sector should ensure that patient’s satisfaction level improved through effective and efficient medical care provided in the hospital and increase patient loyalty. Demirel, Yoldas and Divanoglu, (2009) indicated that patient’s dissatisfaction forces the patient to look for an alternative provider and spread negative word of mouth which would affective the corporate image of the hospital.

Whether quality of health service provided differ

Table 4.16: quality of health service provided differ

	Frequency	Percentages
No	103	100
Total	103	100

The study sought to know whether quality of health service provided differed according to demographic factors gender



and marital status. From the findings, all 100% of the respondents indicated that the quality of health service provided did not differ according to demographic factors gender and marital status.

Whether wish to see an improvement in the quality services in the health sector

Table 4.17: Improvement in the quality services in the health sector.

	Frequency	Percentages
Yes	103	100
Total	103	100

The study sought to know whether the respondents would wish to see an improvement in the quality services in the health sector in Kenya. From the findings all (100%) of the respondents indicated that they would wish to see an improvement in the service quality in the health sector in Kenya. This concurred with Owino, and Korir, (2000) who observes that for Kenya's Public health sector organizations need to develop customer-centric culture, attract and retain the right medical staff to promote quality, devise and update the right in-house processes for quality improvement and give staff the right tools to do the job in order to improve in terms of delivery of quality healthcare service.

Correlations

Table 4.18: Correlation of the study variables

		Employees' capacity	Technology	Communication channels	Financial resources
Employees' capacity	Pearson Correlation	1			
	Sig. (2-tailed)	0.02			
	N	83			
Technology	Pearson Correlation	-.865(**)	1		
	Sig. (2-tailed)	.004			
	N	83	83		
Communication channels	Pearson Correlation	-.0614(**)	.490(*)	1	
	Sig. (2-tailed)	.001	.007		
	N	83	83	83	
Financial resources	Pearson Correlation	-.633(**)	.382(*)	.430(**)	1
	Sig. (2-tailed)	.002	.037	.003	
	N	83	83	83	83

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).



The study conducted a Pearson Correlation analysis for all the study variables and noted that there existed a very strong and negative correlation between factor affecting delivery of service quality in NyahuruHospital in provision of health services at 95% level of confidence level.

The strength of association between delivery of quality health services and employees capacity was strong and negative having scored a correlation coefficient of 0.633 and a 95% precision level. The correlation was statistically significant since it had a P- Value of 0.002 which is less than 0.005 hence statistically significant..

There also existed a strong and negative correlation between adoption of technology and provision of service quality in NyahuruHospital with a correlation coefficient of 0.865 and a significance level of 0.04. This correlation was statistically significant since its P- Value was less than 0.005.

The strength of association between communication channels and provision of quality health services was strong and negative having scored a correlation coefficient of 0.614 with a P-Value of 0.01 and a 99% confidence level. The correlation was statistically significant since it had a P- Value of less than 0.005 and therefore statistically significant.

The strength of association between delivery of quality health service and financial resources was strong and negative having scored a correlation coefficient of 0.430.

This correlation had a precision of less than 99% and a P- Value of less than 0.005 and therefore statistically significant. This implied that there existed a negative correlation between the independent variables employees' capacity, technology adoption, communication channel and financial resources.

4.7 Regression Analysis

A multivariate regression model was applied to determine the factors affecting provision of service quality in public health sector in Kenya.

The Linear regression used in this model was:

$$Y = \alpha + \beta X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mu$$

Where

Y= Depend variable, Provision of Service Quality

α = Constant

β = Coefficient of the factors

X_1 = Employees' Capacity

X_2 =Technology

X_3 =Communication Channels

X_4 =Financial Resources

μ = Error Term

Table 4.19: Model Summary

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate	Change Statistics					
						R Square Change	F Change	df1	df2	Sig. Change	F
1	.83(a)	.698	.673		0.34	1.741	6	.207	8.191	.001(a)	



Predictors: (Constant) Employees' capacity, Technology, Communication channels And Financial resources

Dependent: Provision of Service Quality

The model column of multiple models is reduce to a single regression by SPSS command and with a model indicating 1 implied that the there was one linear model being used to determine the factors affecting delivery of service quality in NyahururuHospital.

R is the square root of R-Squared and is the correlation between the observed and predicted values of dependent variable implying that the association of 0.083 between factors affecting delivery of service quality , employees' capacity, technology, communication channels and financial resources and delivery of service quality was strong.

R-Squared is the proportion of the variance in the dependent variable delivery of service quality that was explained by variations in the independent variables employees' capacity, technology, communication channels and financial resources. This implied that 69.8% of variance or correlation

between variables in general but does not reflect the extent to which any particular independent variable employees' capacity, technology, communication channels and financial resources was associated with the delivery of service quality.

Adjusted R² is called the coefficient of determination which indicates how the provision of service quality varies with variation in factors affecting provision of service quality which includes employees' capacity, technology, communication channels and financial resources. From table above, the value of adjusted R² is 0. 718. This implies that, there was a variation of 71.8% of provision of service quality varied with variation in factors affecting provision of service quality which includes employees' capacity, technology, communication channels and financial resources and was statistically significance with P-Value of 0.01 which was less than 0.05 at a confidence level of 95%.

ANOVA (b)

Table 4.20: ANOVA (b)

Table with 7 columns: Model, Regression, Residual, Total, Sum Squares, Df, Mean Square, F, Sig. Row 1: Regression (3.841, 5, .307, 5.191, 0.01(a)), Residual (7.714, 76, .059), Total (11.556, 81)

Predictors: (Constant) Employees' capacity, Technology, Communication channels And Financial resources

Dependent: Provision of Service Quality



Regression, Residual, and Total. The Total variance was the difference into the variance which can be explained by the independent variables (Model) and the variance which was not explained by the independent variables (Error).

The strength of variation of the predictor values influence the provision of service quality dependence variable at 0.01 significant levels.

Coefficients (a)

Table 4.21: Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.000	.375		3.640	0.01
	Employees' capacity	-0.981	.495	.857	2.931	0.03
	Technology	-0.917	.646	.792	2..803	0.04
	Communication channels	-0.768	.428	.691	1.906	0.02
	Financial resources	-0.671	.590	-.629	1.672	0.01

Predictors: (Constant) Employees' capacity, Technology, Communication channels And Financial resources

Dependent: Provision of Service Quality

$$Y = 7.000 - 0.981 X_1 - 0.917X_2 - 0.768X_3 - 0.671X_4$$

Where X_1 = Employees' capacity, X_2 =Technology, X_3 =Communication Channels, X_4 =Financial Resources

The values, 0.981, 0.917, 0.768 and 0.671 are the unstandardized coefficients. These were the coefficients that the study would obtain when standardized of all of the variables in the regression, including the dependent and all of the independent variables, and running of the regression. By standardizing the variables before running the regression, the study put all of the variables on the same scale, and compares the magnitude of the coefficients of the

independent to determine which one had more effects on delivery of service quality. The larger betas were associated with the larger t-values and lower p-values. The column of coefficient shows the predictor variables of constant, Employees' capacity, Technology, communication channels and financial resources. The first variable constant of 7.000 represented the constant which predicted value of delivery of service quality when all other variables affecting delivery of service quality was constant at zero (0).

From the above regression model, it was found that provision of service quality public health sector would be at 7.000 holding, employees' capacity, technology, communication channels and financial resources constant at Zero. Low employee's capacity would lead to a decrease in



provision of service quality public health sector by factor of 0.981 with P value of 0.003 while lack of Technology adoption in provision of health service would lead to a decrease in provision of service quality by a factor of 0.917 with P value of 0.004. The study also found that ineffective communication channels affected delivery service quality in public health sector by a factor of 0.768 with P value of 0.002 while insufficient financial resources would result to decrease in provision of health service quality by factor of 0.671 with P value of 0.001.

This clearly indicates that there existed a negative relationship between factors affecting service quality in hospital and provision of service quality in Nyahuru Hospital clearly indicating that low Employees' capacity, poor Technology adoption ineffective communication Channels and insufficient financial resources affected delivery of service quality in the hospital as they were statistically significant with a P-Value of 0.03, 0.04, 0.02 and 0.01 at 95% confidence level. This implied that low employees capacity, low technology adoption, ineffective communication channels and insufficient fund affect delivery of service quality to patients in public health sector affecting health service quality perceptions, patient satisfaction and loyalty.

The findings concurred with Sandoval, Brown, Sullivan and Green, (2006) who found that most public hospital service processes lack flexibility and budgetary autonomy, while staff lack performance based incentives which leading to poor health service outcomes and inefficiency .The findings also concurred with Arhin-Tenkorang, (2000), who indicated that underfunded public health centers, hampered by weak public health system and lack of skilled health workers, inadequate medicines, supplies and equipment and lack of essential support services such as laboratory services, pharmacy and amenities affected provision and delivery of service quality in public hospitals.

CHAPTER FIVE:

SUMMURY, CONCLUSIONS AND RECOMMENDATION

5.0 Introduction

This chapter provided the summary of the findings from chapter four, conclusions and recommendations of the study based on the objectives of the study. The main objective of this study was to determine the factors affecting provision of service quality in the public health sector focusing on a case study of Nyahuru Hospital.

5.1 Summary of the findings

From the findings, the study established that employee's incompetence affected service quality and more training and workshop for physicians, nurses, administrators, and ancillary staff to produce high-quality outcomes as this would improve proper medication services, offer patient satisfaction, enhance good relationship between medical providers and patients, enable the participation in multi-disciplinary and attracts more patient hence effective improvement of hospital growth.

From the findings, the study established that high skilled personnel in the public health sectors influence high service quality provision, management should have ability to attract and employ an adequate number of high-quality nurses and specific skill levels and experience for the health staff should be continuously learned to enhance quality service provision and that ineffective recruitment lead to employment of incompetent human resources leading to inefficiently delivery of health services.

From the findings the study established management in public health sector need to improve the level of adoption and willingness to invest and advance in modern technology as this would facilitate service assessment, improvement process and communication which are essential for effective and efficient service quality in public health sector in



Kenya. Lack of investment in technology development affected the reliability, responsiveness and assurance in the delivery of health services in the hospital. This concurred with Demirel, (2009) who also found that perceived service quality has positive correlation with patient satisfaction, willingness to recommend and intention to visit the hospital again. This implies that more effort was required to invest more in the adoption of new technology. Most of the respondents agreed that high technology adoption in public sector lead to provision of high-quality medicine to patients, reduced time lags in getting lab and imaging results and ensured the resulting system meets the needs of clinicians as indicated by a mean of 4.48, 3.98 and 3.73. Management should also enhance the technology as this would improve the accessibility of relevant information efficiently and effectively, real-time feedback to care givers, fast and relatively cheap access to information and enable the flow of the right information to the right people at the right time. The findings concurred with Blas, and Limbambala (2001) who stated that a proprietary information systems that shapes the culture, patient mix, and staffing of the hospital and engaging physicians and nurses in developing or adapting Information Technology serves to ensure that the resulting system meets the needs of clinicians.

From the findings the study established that upward type of communication channel provided information to upper level managers about activities and performances throughout the organization, horizontal and vertical type of communications channel improved individual participation in provision of service quality while face-to-face type of communication was used to convey difficult or ambiguous messages, or when sender and receiver differ in background or opinions. Effectiveness of the communication channel used should be maintained for the satisfaction of the patient's as this is vital to delivering service when hospital staff takes the time to answer questions of concern to patients expectation and clearly explaining the medical tests

and nature of treatment. Use more than one communication means to inform, persuade and educate the customer is also required. This is concurred with Rust and Tuck (2006) who stated that designing services to be user friendly will simultaneously facilitate consumer use and external communication what the service delivery system is actually able to provide the customers. Poor communication between the managing department's members and the operations department's members, inability to communicate clearly and accurately the benefits of the service offered to the customers affect delivery of health services.

From the findings, the study established communication channels influenced the provision of quality service in public health sector to a very great extent as it lead to access to treatment, quality of care, efficient admissions, diagnostic testing and patient follow-up. Ineffective communication leads to increased risk of hospital admission, intubation and poor prescribed medication, delayed diagnosis, misdiagnosis, and inappropriate referral.

The study established that fixed budget ensured good expenditure control and undemanding administrative offering few incentives to maximize the effectiveness, quality, or quantity of care offered by hospitals. Poor financial management in service organizations hindered other functions that contribute to service delivery therefore management should improve the level of financial resource allocation through a strategic planning, costing systems, personnel motivation, quality control, continued solvency, and keeping outsiders' confidence in financial management, financial accountability using monitoring, auditing and accounting mechanisms ensured that allocated funds are used for the intended purposes in order to improve the efficiency in service quality in public health sector in Kenya. Wamae (2004) public hospital service processes lack flexibility and budgetary autonomy, while staff lack performance based incentives which have become



associated with poor health service outcomes and inefficiency.

From the finding, the study established that bureaucracy in financial management, insufficient funding leading to purchase of low quality health equipment results to ineffective and inefficient service delivery patients. Fixed budgets in hospitals led to inequities and fail to respond to new demands and priorities while centralized budget systems contribute to technical inefficiency by preventing health staff from optimizing the deployment of inputs perpetuating poor quality of service in hospital.

From the findings, the study established that insufficient funds lead to purchasing of low quality drugs and medical equipment, low staff payment demotivating them in carrying out their duties as expected. However availability of financial resources could be improved in the hospital through the help of the government giving priority for financing the hospital and allocate sufficient fund during budget day, world organization can also improve pharmacy of the hospital like WHO and other NGOs and the hospital should also be allowed to charge some medical services to generate finance.

From the findings the study established that there was high quality level of health services provided without taking a lot of time or differing according to demographic factors gender and marital status thus ensuring that patient's satisfaction level to the care provided is improved in the hospital for effective and efficient service quality. This concurred with Demirel, Yoldas and Divanoglu, (2009) who stated that patient's dissatisfaction causes the patient to look for an alternative provider and spread negative word of mouth which would affect potential clients.

The study established that there existed a negative relationship between factors affecting service quality in hospital and provision of service quality in

Nyahururu Hospital clearly indicating that low Employees' capacity, poor Technology adoption ineffective communication Channels and insufficient financial resources affected delivery of service quality in the hospital statistically significant. The hospitals need to give their physicians, nurses, and other staff the tools and support they needed to practice high-quality medicine on a daily basis, and to identify and investigate quality problems when they surface. This could be achieved through effective communication channel, adoption of new technologies, sufficiently funding the hospital and improving employee's capacity in the hospital as indicated by Smith (2000). The study further established that more emphasize should be put on enhancing employees' capacity, technology, communication channels and financial resources to achieve provision of service quality in the hospital. This is because delivering health quality service has significant relationship with customer satisfaction, customer retention, loyalty, costs, profitability, service guarantees and growth of health institution in public sectors as indicated by Boshoff and Gray (2004).

5.2 CONCLUSIONS OF THE STUDY

From the findings, the study concluded that organization must enhance employee's capacity in order to improve provision of service quality. Adequate number of high skilled and experienced employees must be employed continuously, discourage ineffective recruitment, encourage monitoring of doctors and staff, ensure that performance and practice standards are met to enhance service quality provision. This would lead to proper medication services, patient satisfaction, good relationship between medical providers and patients, enable the participation in multi-disciplinary and attracts more patient hence effective improvement of hospital growth.



From the findings the study concluded that public health sectors should improve the level of adoption of technology and willingness to invest and advance in modern technology in order to facilitate service assessment, improve process and communication which are essential for effective and efficient service quality in public health sector in Kenya. Technology adoption in health institutions would enable the provision of high-quality medicine to patients, reduce time lags in getting lab and imaging results, ensure the resulting system meets the needs of clinicians and improve the accessibility of relevant information efficiently and effectively.

Use of more than one communication means to inform, persuade and educate the customer is also required. From the findings the study concluded that management should emphasize on the use of upward, horizontal and vertical communication channels in order to provide information to upper level managers about activities and performances throughout the organization as well as improving individual participation in provision of service quality through use of face-to-face communication in conveying difficult or ambiguous messages, or when sender and receiver differ in background or opinions. Effective communication would enable the accessibility to treatment, quality of health care, efficient admissions; diagnostic testing and patient follow-up also reduce risk of hospital admission, intubation and poor prescribed medication, delayed diagnosis, misdiagnosis, and inappropriate referral.

From the findings, the study concluded that delivery of service quality health in the health sectors should be improved through effective allocation of financial resources in public health sector in order to promote other functions that contribute to service delivery, reduce the bureaucracy in financial management and offer funds for purchase of high quality health equipment and employing of more competent staff who could offer. The financial resource allocation

should be done through a strategic planning, costing systems, personnel motivation, quality control, continued solvency, and keeping outsiders' confidence in financial management, financial accountability using monitoring, auditing and accounting mechanisms to ensure that allocated funds are used for the intended purposes in order to ensure good expenditure control and maximize the effectiveness, quality, or quantity of medical care offered by hospitals.

From the findings the study concluded that fixed budgets in hospitals led to inequities and fails to respond to new demands and priorities while centralized budget systems contributed to technical inefficiency by preventing health staff from optimizing the deployment of inputs perpetuating poor quality of service in hospital. Insufficient funds lead to purchasing of low quality drugs and medical equipment, low staff payment de-motivating them in carrying out their duties as expected affecting provision of high service quality.

From the findings, the study concluded that high quality level of health services must be provided efficiently without differing according to demographic factors gender and marital statuses in order to ensure improve patient's satisfaction level for health care provided to improve patient satisfaction, patient retention, loyalty, costs, profitability, service guarantees and growth of health institution from public sectors

5.3 Recommendations of the study

From the conclusion the study recommended that management in public health sector should improve employee's capacity to enhance provision of health service quality. Adequate number of high skilled and experienced employees, effective recruitment should be adopted to improve monitoring of doctors and staff, meeting performance and practice standards enhances service quality provision.



From the findings and conclusion, the study recommended that public health sectors should adopt modern technology so as to facilitate service assessment, improve process and communication, provide high-quality medicine to patients, reduce time lags in getting lab and imaging results, ensure the resulting system meets the needs of clinicians and improve the accessibility of relevant information efficiently and effectively.

The study also recommend that public health institutions should adopt use of face-to-face, upward, horizontal and vertical communication channels as this would flow of information to upper level managers, improve individual participation, conveying difficult or ambiguous messages, enable the accessibility to treatment, quality of care, efficient admissions, diagnostic testing and patient follow-up also reduce risk of hospital admission, intubation and poor prescribed medication, delayed diagnosis, misdiagnosis, and inappropriate referral.

From the findings the study recommended that organization should improve financial management in service organizations in order to promote other functions that contribute to service delivery, reduce the bureaucracy in financial management and offer funds for purchase of high quality health equipment and generally influence delivery of health service quality so as to enhance patient satisfaction, patient retention, loyalty, health service guarantees and growth and development of health institution from public sectors.

The study investigated the factors affecting provision of service quality. This study recommends that a further study should be carried out to investigate the factors that influence strategies of provision of service quality to enable organization offer effective provision of service quality.

The study established that there was a variation of 71.8% of provision of service quality varied with variation in factors

affecting provision of service quality which includes employees' capacity, technology, communication channels and financial resources at a confidence level of 95%. The difference in variations may be due to application of other factors. This study therefore recommends a further study to be carried out to determine the factors affecting provision of service quality not considered in this study.

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