# Preservation and Conservation Practices, Patient Records Retrieval Strategy on Service Quality of Health Information Management Professionals in Public Health Institutions in Oyo State, Nigeria

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## Certification

This is to certify that, Temitope Elizabeth OJO with matriculation number LCU/PG/002192 carried out this research work titled "Preservation and conservation practices, patient records retrieval strategy on service quality among health information management professionals in public health institutions in Oyo State, Nigeria" in the department of Information Management, Faculty of Communication and Information Sciences, Lead City University, Ibadan, Oyo State, for the award of Master of Science Degree (M.Sc) in Health Information Management and that this has not been previously submitted.

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**Dedication**

This work is dedicated to the Almighty God

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## Abstract

Service quality is the degree to which a service satisfies the needs and expectations of healthcare consumer (patients). It is also the comparison between service expectations and perceptions as patients expectation serves as a foundation for its evaluation. It is high when performance exceeds expectation and vice-versa. Preservation and conservation practice entails actions taken to extend the useful life of patient health records including treatment to avoid damage. To ensure high service quality there should be comprehensive working record retrieval strategy. Literature has not established how preservation and conservation practice and patient records retrieval strategy influence service quality among health information management professionals, it is on this that this study analyzed preservation and conservation practice, patient records retrieval strategy on service quality of HIM professionals in public health institutions in Oyo State.

A cross-sectional study was adopted comprising 322 HIM Professionals, total enumeration technique was employed. Structured questionnaire was used for data collection. Data collected was analyzed using descriptive and inferential statistics. The findings revealed very high quality service by HIM professionals (X=3.55) on a 4-point scale with preservation and conservation practice very high level on (X=3.60), where patient records retrieval strategy was high at (X=3.36). There was a significant influence of preservation and conservation on service quality at 0.667, adjusted value $r^2$=0.444. There was a less significant influence of records retrieval strategy on service quality at 0.421, $r^2$=0.175. There was a significant combined influence of preservation and conservation practice, patient records retrieval strategy on service quality among HIM professionals at 0.693, $r^2$=0.447. The outcome shows preservation and conservation practice and patient records retrieval strategy has contributed significantly to service quality of HIM professionals in public health institutions in Oyo State. Therefore, it was recommended that HIM professionals should be encouraged with relevant training to enhance higher performance.



**Keywords:** Service quality, Preservation and conservation practice, Patient record retrieval strategy and Health information management

**Word Count:** 298

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# Chapter One

# Introduction

## 1.1 Background to the study

Hospitals play an indispensable role in providing quality service in the healthcare sector to a nation's citizenry. A variety of experts are employed by hospital administration and management board, and they collaborate to give services to patients with various health needs. Health information management professionals are one of the essential qualified healthcare providers in any hospital. Other qualified professionals operate in many departments of the hospital to provide high-quality services at all times. These include Doctors, Nurses, Radiographers, Pharmacists, Physiotherapists, Medical Laboratory Scientists, Environmental and Public Health Workers, Dental Technologists, and other paramedical employees[1]. Without doctors' tireless efforts and those of the health information management specialists, hospital services would be incomplete. However, people skilled in gathering, evaluating, and safeguarding digital and analog medical data necessary for delivering high-quality patients' care are known as health information management professionals [2].

Professionals in health information management can be found at primary, secondary, and tertiary hospitals. They carry out responsibilities such as ensuring that hospital patients' health information are not disclosed to third parties without the management of the hospital's prior consent. They exist because of the type of information that is generated and secured in hospitals. Given that there is regulatory authority to oversee their activities

and that the information are so sensitive, skilled employees are needed to manage patient health records and other pertinent statistical data of event occurrence in hospitals[3].

More also, health records are important working tools used by health information management professionals in hospital. They serve to protect patient health records and ensure that they are available when doctors need them for treatment continuity and other purposes. It is noteworthy that patients may repeat a course of treatment if their health records are not complete, in good shape, and contain all of the laboratory test results. Without a doubt, this might then affect how patients see the services provided by hospital health information management professionals. Health records department of the hospital, which is the initial point of contact for all patients that arrive, employs health information management professionals. Taking into account the fact that a measure of how well hospital services are received by patients is their perception of service quality[4].

In the hospital, quality is an essential component of health service. People who work in hospitals, in particular health information management professionals to all patients should render patient-centered services[5]. This is due to the fact that patients are the primary recipients of the services provided, and they assess whether the services are of the necessary quality to produce the necessary satisfaction. Therefore, the degree to which a service meets the needs and expectations of the client is referred to as service quality[6]. When the hospital management evaluates service quality, patient perception should be a must. Patients are the best judges of the quality of the services provided by health information management specialists in hospitals, so it may not be simple to ask them before offering them a service, but it is crucial to do so.

The servqual model can be used to measure the difference between a patient's impressions of the service they received and their expectations for the service being

provided. The amount of the discrepancy between expected and perceived services determines how accurately the model measures patients' perceptions of the quality of the services. Based on how patients assess the process and results of receiving health services, health information management experts can gauge the quality of their services. This suggests that high service quality is defined as meeting and exceeding customers' expectations for the services[7]. In 1991, the SERVQUAL model was revised as a multidimensional scale to capture customers' views and expectations of service quality, which entails computing the discrepancy between perception and expectation on a variety of predetermined criteria. In this study, the term "service quality" used by health information management professionals refers to what patients anticipate from these experts in terms of their opinion of service quality. Indicators like communication, reliability, and timeliness were adopted in the study[9].

SERVQUAL model takes into account both patient expectations and perceptions of the service, therefore it was adjusted for this study. A study found that the SERVQUAL model is the most effective method for evaluating service delivery in the service sector[10]. Since delivering services is a major duty of health information management professionals, it is crucial to concentrate on doing so while taking into account how satisfied patients are. Patients' perception and satisfaction of service quality are positively correlated. This suggests that the quality of the service in tertiary hospitals will depend on how the patients perceive it. Thus, patients' view should be considered paramount when planning services, the services should be patients' centric especially as regard to health information management professionals. In order to provide the services, it is important to understand what the patients expect of the hospital as a whole and in particular of the health information management professionals. Due to this, service providers can tailor their services to the needs of their patients[11].

Professionals in health information management should have a reliable method for getting information to patients, as well as an appropriate approach, to make it possible to transfer information without difficulty. It focuses on how health information management specialists interact with patients while carrying out their duties. Do patients find staff members who handle medical records willing to attend to their demands and satisfy them by giving the information required at the appropriate time? When the message is clearly understood, communication should eliminate all bias.

Reliability of service is the ability of the hospital to deliver the promised service consistently and accurately. Professionals in health information management must offer services that entice patients to request more high-quality care. The health information management specialists should be able to be relied upon by the patient to know what to do and to perform it correctly to meet their needs.

Timeliness of service has to do with how quickly hospital patients receive services from health information management specialists. This is because patients should save time whenever they visit the hospital for medical care because time is very expensive and can be correlated to money. The length of time a patient spent in the hospital will affect whether or not they were satisfied with the services.

Patients who in some manner use a public health institutions complain about the staff's attitude toward their jobs and the way they interact with patients poorly. According to a study, the public generally views the services provided by public health facilities as being of very poor quality, referring to them as "mere consulting clinics" to describe their current state[12]. Although healthcare professionals have long utilized their professional associations to call for more government funding of the health sector, they also openly express their unhappiness with the perceived quality of care[13]. Despite the mechanisms

put in place, such as the monitoring agency established to improve service quality such as SERVICOM, it is clear that the service delivery of the health information management professionals has improved. Hospitals must maintain accurate patient records that are easily accessible in order for health information management personnel to perform effectively and efficiently.

At many hospitals, the preservation and conservation of patient health records is a task that frequently goes unnoticed, unappreciated and underrated[14]. One of the most important factors that can help the medical industry which is responsible for saving lives develop is the preservation of medical records. Sometimes people conflate the terms conservation and preservation. Both preservation and conservation involved a strict respect for the integrity of the record resources and on recognition of its significance as an item of cultural heritage, despite the endless debate over the exact meanings of the two concepts (Preservation and Conservation). Additionally, they point out that there was a commitment to extending the life of the record resources through preventive measures, the use of stale materials, and proper treatment methods. The two concepts could be treated differently, preservation encompasses all managerial, technical and financial considerations or factors applied to delay mutilation and extend the useful life of (collection) materials to assure their continuous availability, while conservation refers the treatment of record resources by interventive procedures or measures. It should be considered as one of the options in a health programme that includes collection care[15].

Preservation means taking steps to stop, slow down, or cease mutilation. Another way to put it is the ability to foresee and stop degradation. Preservation entails all actions taken to extend the useful life of record resources in a hospital collection are referred to as preservation, while the coordination and planning for the actual use of binding, restoration, paper chemistry, and other material technology procedures, as well as other

knowledge important to the preservation of information resources, are the focus of the field of knowledge known as conservation[16]. In other terms, conservation refers to all of the tasks that need a trained conservator or conservation specialist to physically care for a specific object or artifact.

A hospital can be effective and efficient if it has a good, well-thought-out plan for data preservation, but if preservation procedures are neglected, important patient health records may be damaged or lose important information. Poor health records management can significantly reduce a hospital's efficiency while also wasting time and overstressing medical staff. Vital health records are frequently misplaced, buried, and lost in hospitals with poor preservation plans, which results in excessive time spent sorting through disorganized filing cabinets and the waste of valuable office space, forcing the hospital to pay exorbitant prices for document storage. Additionally, communication among coworkers deteriorates, and health workers' stress levels rise as a result of the needlessly difficult search and sharing of information[17].

Records preservation activities include storage, retrieval, maintenance, careful use and disposal or weeding of medical information but for this study metrics from Information Orientation Model is adopted which are collecting information, organizing information, processing information, retrieving information and maintaining information which include disposal or weeding[18]. Due to a lack of efficient records administration systems, health workers in Oyo State's public health institutions, like as doctors and nurses, frequently struggle to provide citizens with timely and effective health services. Inadequate medical record preservation is frequently the case in settings with limited resources, endangering the level of service provided by experts in health information management. Long patient waiting times before receiving health care are typically caused by inefficient records management systems[19]. According to a recent study's

findings, public health institutions in Oyo State have experienced problems with improper record preservation, which prevents health workers from providing some treatments because the patient's medical history is not there in the medical files. This is because if health professionals treat patients without having enough knowledge of their medical history, they risk providing subpar care that could be harmful to the patient's health. In addition, a number of health issues continue as a result of a lack of medical knowledge that may be used to administer the proper therapy when necessary. In the context of Oyo State, the management and preservation of hospital records present a very dismal picture[20].

The populace of developing countries still lacks access to basic health care despite tremendous national and international effort. Due to lack of fundamental health data, it challenging to create and implement a justification for the allocation of the limited resources available for patient care and illness prevention[21]. A lot of effort is spent looking for patient records in large medical facilities, and occasionally some records are never located again. Non availability of potentially life-saving health information poses a serious risk that damaged or missing medical records could present. A legal risk might also arise from poor management of the preservation of medical data. In general, the goal of preservation is to maintain something in its current state or to guard against deterioration.

Record retrieval technique or strategy is the process of finding record system resources from a group of those resources that are relevant to a record need. Searches may use full-text indexing or another type of content-based indexing. Record retrieval is science of finding patient health records in papers, in documents themselves, in databases of patient texts and photos, as well as in the metadata that characterizes data. Automated record retrieval systems are used to decrease what has been known as record overload. An information record system is a software program that gives users access to patients'

health record[22]. A record retrieval strategy starts when a health information management professional inserts a query into the system. Queries, such as search terms in web search engines, are explicit declarations of health record demands[23]. A query used for record retrieval does not specifically identify each and every item in the collection. Instead, several objects may match the query, perhaps with different degrees of relevancy. An object is a representation of an entity in a database or content collection. The database record is compared with user queries. Results in record retrieval are often ranked since the results may or may not fit the query[24]. One significant distinction between record retrieval searching and database searching is the ranking of the results.

Depending on the application the data objects could be, for instance, text documents, images, audio files, mind maps or laboratory test results on health conditions[25]. Frequently, document surrogates or metadata are used in record retrieval systems to represent actual documents rather than keeping or storing them there directly. The majority of record retrieval systems calculate a numerical score on how well each database object matches the query and rank the objects within the database based on this score. This study will measure patient record retrieval strategies with record searching, record collecting, record reading and writing of records[26]. These functional processes are lacking during record retrieval among health information management professionals in public health institutions in Oyo State, Nigeria which makes it difficult for patients to access their records. These protocols are not followed when patients are examined and it is due to poor record management in public health institutions in Oyo State. For patients' record to be retrieved appropriately and properly, the records must first be saved in which the process is referred to as preservation and conservation of records. In light of the aforementioned discussion, this study seeks to investigate the influence of preservation

practices and patient record retrieval strategies on service quality among health information management professionals in public health institutions in Oyo State, Nigeria.

## 1.2 Statement of the Problem

In today's global competitive environment delivering high-quality services by health information management professionals is seen as a crucial strategy for success and survival of hospital services. Professionals in health information management are in charge of keeping track of patients' medical records and making them available to doctors when they need them for treatment continuity. Preliminary investigations, close observations and literature reviews, however, have revealed that patients face difficulties like misplacement/loss of records, delay in retrieving records, time wastage due to long line on appointment days, poor communication and occasionally rude attitude from health information management professionals in public health institutions in Oyo State.

It is noteworthy that patients may repeat a treatment they have already started if their medical records are not complete, in good shape, and retrieved as when needed. These difficulties might impair patients' perception of the value of the service provided. Practical experiences reveal that there is inadequate or no preservation and conservation practice in place, thus enhance duplication of patient health record, no specific policy on records retention and conservation techniques, equipment available are not functional leading to inaccurate patients prescription, worsen health condition and if care is not taken, result to death. All the aforementioned have negative impact on the level service quality in public health institutions. Several empirical studies on the topic have been conducted. However, it appears that scholars in Nigeria have paid less attention to studies concentrating on how preservation and conservation practice and patient record retrieval

strategy affect service quality, particularly in health institutions in Oyo State. This suggests a hole that needs to be looked into. This study aims to find out how preservation and conservation practice, patient record retrieval strategy affects the level of service quality provided by health information management professionals in Oyo State, Nigeria.

### 1.3 Aim and Objectives of the Study

The aim of this study is to investigate the influence of preservation and conservation practices and patient record retrieval strategies on service quality among health information management professionals in public health institutions in Oyo State, Nigeria. The objectives are to:

i. identify the level of service quality among health information management professionals in public health institutions in Oyo State, Nigeria;
ii. identify various preservation and conservation practices prevalent among health information management professionals in public health institutions in Oyo State, Nigeria;
iii. examine different patient record retrieval strategies that exist among health information management professionals in public health institutions in Oyo State, Nigeria;
iv. ascertain the influence of preservation and conservation practices on service quality among health information management professionals in public health institutions in Oyo State, Nigeria
v. ascertain the influence of patient record retrieval strategies on service quality among health information management professionals in public health institutions in Oyo State, Nigeria;

vi. determine the combined influence of preservation and conservation practices and patient record retrieval strategies on service quality among health information management professionals in public health institutions in Oyo State, Nigeria.

## 1.4 Research Questions

1. What is the level of service quality among health information management professionals in public health institutions in Oyo State, Nigeria?
2. What are the various preservation and conservation practices prevalent among health information management professionals in public health institutions in Oyo State, Nigeria?
3. What are the different patient record retrieval strategies that exist among health information management professionals in public health institutions in Oyo State, Nigeria?

## 1.5 Hypotheses

**$H_0$1** - There will be no significant influence of preservation practices on service quality among health information management professionals in public health institutions in Oyo State, Nigeria;

**$H_0$2** – There will be no significant influence of patient record retrieval strategies on service quality among health information management professionals in public health institutions in Oyo State, Nigeria;

**$H_03$ -** There will be no significant combined influence of preservation practices and patient record retrieval strategies on service quality among health information management professionals in public health institutions in Oyo State, Nigeria.

## 1.6 Significance of the Study

This research work would greatly benefit the patients who are the primary healthcare consumers to be fully aware of the existing challenges that may possible tamper the expected service quality, staffs and management in public health institutions in Oyo State as well as the following stakeholders; health information management professionals, aspiring researchers, and government.

Health information management professionals in public health institutions in Oyo State and Nigeria at large is addressed in this study, as this also would assist the management of the hospital to comprehend and address the obstacles raised in protecting and accessing patients records and data. It will show the potentials of service quality in healthcare practices and bottlenecks in technological advantages to the incremental positive service quality delivery among health information management professionals.

The results of this study will serve as a starting point for future research into further analysis of preservation and conservation practice, patient record retrieval strategies of health information management professionals and other related dimension and relevant topics in the future. The study will undoubtedly add to the body of knowledge already in existence and highlight fresh perspectives on patient trust. It will also act as link and guide for governments establishment to solve the issue of double standard in government parastatals and agencies especially among civil servants (workers).

## 1.7 Scope of the Study

The study focuses on the influence of preservation and conservation practices and patient record retrieval strategies on service quality among health information management professionals in public health institutions in Oyo State, Nigeria. Communication of service, reliability of service, timeliness of service and empathy are the standards established for measuring service quality of health information management professionals. The measures of preservation and conservation practices are record collecting, record organizing, record processing and record maintaining which include disposal or weeding of medical information while the measures for patient record retrieval strategies are record searching, record collecting, record reading and record writing. The geographical scope will include public tertiary, secondary and primary health institutions like Adeoyo Hospital Ibadan, University College Hospital and Oyo State Hospital Management Board in Oyo State, Nigeria while the respondents are health information management professionals in government health institutions. This population was chosen due to the high number of HIM staffs working in the chosen scope and also poor record keeping practices among the health information management professionals. The respondents were contacted through the help of the human resources staff, and research assistance.

## 1.8 Limitation of the Study

The limitations encountered in the course of this study include difficulty in getting attention and prompt response from health information management professionals on the subject of investigation (i.e. uncooperative attitude). Also, a lot of time was involved in distributing and retrieving the questionnaires. To ensure cooperation from health information management professionals, head of departments were involved including influence at association level was also used and these assisted the study.

## 1. 9 Operational Definition of Terms

**Service Quality:** This is a metric used to assess how well health information management professionals in public health institutions in Oyo State, Nigeria perform health information services.

*Communication of Service:* is the technique through which health information management professionals in public health institutions in Oyo State transmit information to patients and good manner of approach to enable simple flow of information without barrier.

*Reliability of Service*: It refers to the capacity of health information management professionals in public health institutions in Oyo State to deliver the promised service with dependability and accuracy.

*Timeliness of Service*: is the promptness and awareness used by health information management professionals in public health institution in Oyo State when caring and attending to patients in the hospital or health institution.

*Empathy:* It the ability of health information management professionals in public health institution in Oyo State to be able to comprehend and share the feelings or emotions of patients.

**Preservation and Conservation Practices:** ***Preservation Practice*** aims to foresee, prevent, stop, or slow mutilation of patient health records by health information management professionals. It can also be referred to as the art of foreseeing and preventing deterioration of patient records by them in public health institutions.

***Conservation Practice:*** of patient health records is the treatment of patient health record by health information management professionals through interventive procedures like binding, microfilming, applying insecticides where necessary etc. Also, it is a measure to

keep patient health records in a useful manner which is the chronologic written account that includes patients' initial complaints and medical history. Physical examination and results of diagnostic tests of patients in public health institution in Oyo State, Nigeria were reported in their health records.

Therefore, preservation and conservation practices reflect how health information management professionals foresee, stop and prevent deterioration of patients' health records also applying the preventive measure or treatment as applicable.

*Collecting Information:* it entails how health information management professionals assemble patient data and information from which reliable health-related decisions can be made. Moreover, it refers to all manually or digitally created data or documents pertaining to a person's health status from birth to death while in contact with a doctor which are collated by health information management professionals. They become tangible patients' information organized in a record facility maintained or arranged by health information management professionals in public health institution in Oyo State, Nigeria.

*Organizing Information:* This is the process of arranging patient health records/information systematically by health information management professionals, putting patient health records in order for easy accessibility and retrieval when needed. Record organizing is the creation of efficient relationships between generated patient health records for effectiveness that aids in the prompt matching of some stated users query (request) against a set of free text records of patients which can be arranged manually or electronically.

Records organizing by health information management professionals is also the defining and classifying patient health records for easy access and retrieval.

*Processing Information*: This is the process whereby health information management professionals involves in gathering and modifying patient health data or records to produce insightful knowledge that will support effective treatment. Record Processing is also the act of taking patient data or information through a series of established procedures to aid continuity of care, research and training etc. by health information management professionals.

*Retrieving Information:* this defines the process whereby health information management professional's matches of some stated users query against a set of free text records of patients in Oyo State, Nigeria. Retrieving record or patient information is to regain, obtain and bring in systematically stored patient records/information as at when requested by health information management professionals.

*Maintaining Information:* Keeping patient health records in their current condition, protecting them, or preserving them is the process of maintaining them by health information management professionals. It refers to any activity involved with respect to the planning and establishment of methods for the preservation of patients records by health information management professionals in public health institution in Oyo State.

Record Maintenance by Health Information Management Professionals also involves weeding and disposal of patients records depending on the hospital policy and regulation.

**Patient Record Retrieval Strategies:** These are methods, techniques and processes health information management professionals in public health institution in Oyo State adopt in obtaining patients' record when necessary.

*Record Searching:* This stage of the trace-back process is done by health information management professionals which involve conducting a search to find the patient's health

record in accordance with the patient's request or inquiry. A patient hospital number is the required unique identification for quick record searches in health records departments in public health institution in Oyo State.

*Record Collecting:* It entails gathering by health information management professionals either manually prepared or computer-generated records relating to patient health record, information and data i.e., bio-data, diseases notification, health histories of etc in public health institutions in Oyo State, Nigeria.

*Record Reading:* It is the procedure through which health information management professionals' access, analyses and interpret patients' health records in public health institution in Oyo State, Nigeria.

*Records Writing:* It is the method through which health information management professionals in public health institution in Oyo State put in writing health complaints and observations (data) made by patients for health-related activities i.e. assigning clinical code numbers to disease conditions and procedures.

## Endnotes


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# Chapter Two

## Literature Review

This chapter reviewed related literature that enabled the researcher broaden her understanding on the research problem. The chapter is presented under the following headings:

### 2.1 Conceptual Review

2.1.1 Service Quality of Health Information Management Professionals

2.1.2 Preservation and Conservation Practices

2.1.3 Patient Record Retrieval Strategy

### 2.2. Theoretical Framework

2.2.1 SERVQUAL Theory of Service Quality by Parasuraman et. al. (1988)

2.2.2 Marchand's Information Orientation Theory

2.2.3 The Scholarly Primitive Theory

## 2.3 Review of Empirical Studies

### 2.3.1 Preservation and Conservation Practices and Service Quality of Health Information Management Professionals

### 2.3.2 Patient Record Retrieval Strategy and Service Quality of Health Information Management Professionals

## 2.4 Conceptual Model

## 2.5 Summary of Literature Reviewed

## Endnotes

## 2.1 Conceptual Review

### 2.1.1 Service Quality of Health Information Management Professionals

In the recent era of globalization, healthcare sustainability has attracted more attention due to its market size, investments, technological advancements, quality patient services, rise in medical tourism, rising patient safety consciousness, and government initiatives[1]. The difficulties of complexity, co-production, and service intangibility inherent in service delivery in healthcare organizations may make research in healthcare service quality and healthcare services valuable. The inherent complexity in healthcare organizations can provide a useful context for operations management scholars to study organizational processes in such a complex setting[1]. An important, and occasionally ignored, aspect in the discussion over healthcare reform is the quality perspective. The results of implementing service quality practices in the healthcare sector, however, are conflicting and do not clearly illustrate how successful quality service is in raising healthcare quality. While many healthcare organizations had major difficulties in successful implementation of quality management, there are examples of successful and effective implementation in the literature. Due to the limitations of these studies in terms of their small sample size, concentration on a few departments in a healthcare organization, and focus on narrow

aspects of organizational performance, it is unclear whether service quality can enhance healthcare quality. Research in quality healthcare was encouraged by development of national and international quality standards such as the European Foundation for Quality practices excellence model, and ISO-9001[2]. These quality models give a framework for organizations to evaluate the effectiveness of service quality management practices, and to determine areas of development targeted at achieving balanced results for all the stakeholders.

One initiative designed to enhance service quality in healthcare practices that has not received empirical scrutiny is the Malcolm Baldrige National Quality Award (MBNQA), arguably the most prestigious quality award that can be obtained by healthcare providers. The MBNQA is awarded yearly by the National Institute of Standards and Technology (NIST), a division of the Department of Commerce, to applicant organizations across six industry sectors (manufacturing, service, small business, education, healthcare, and non-profit). "Today's honorees serves as the examples of innovation, sound management, employee and customer satisfaction, and results. These inspire organizations in every industry to imitate their lead." Since the award expanded to the healthcare sector, healthcare providers have been particularly eager to apply for the MBNQA, with healthcare providers currently make up 50% of the applicants. However, currently, there is little proof about the program's effectiveness in enhancing healthcare service quality. This is primarily because the data regarding the Baldrige evaluation of healthcare organizations was treated as confidential and, as a result, was not made available to the general public.

A survey of the literature in service quality reveals the intrinsic complexity of quality in the healthcare industry, which makes healthcare sector unique in terms of how service quality management practices should be put into effect. First, providing a distinct

treatment path for each patient, given the diversity of customers (patients), requires a highly tailored level of care that add to the complexity of the quality of care as it rises. Second, the knowledge asymmetry (knowledge gap) between the healthcare provider and the patient increases the complexity of the overall healthcare process. Although healthcare organizations have made an effort to control this complexity by involving patients and their families in the process, it adds additional complexity to healthcare delivery and ensuring service quality. Third, compared to other industries, both patients and the organizations (healthcare providers) are exposed to high risks and costs related to the services rendered, where the cost of failure is considerable and significant. Fourth, in order to guarantee that clients receive high-quality service, healthcare organizations should follow specified regulatory procedures and regulations. Finally, unlike other industries, service delivery may take place over a longer time frame, and may involve variety of treatments, which may affect how customers perceive the quality of care in the healthcare industry. Hence, both healthcare organizations and patients would be significantly impacted by understanding the antecedents and drivers of service quality results [3].

Service quality has emerged as an essential aspect for high customer industries like hospitals. In essence, building a reputation of quality service practices to the patients could be key to supporting companies in the service industry gain a competitive edge and sustain long-term profitability. The relevance of service quality in the service sector is important since it supports how important it is for enhancing corporate performance. Patients demand quality, so healthcare institutions must implement a system that will assist in meeting the expectations of the patients who are healthcare consumers. Quality originated from the Latin word, quails, which means ‘what kind of’. Quality is an abstract and illusive idea, with different meanings and interpretations. Usually, the definition of

the quality varies depending on the viewpoint and the context it is taken. Consequently, quality has been referred to as excellence, adherence to standards and patient satisfaction[4]. Notably, according to several authors service quality is defined as going above and beyond what the client requires by ensuring that the organization's processes and services are up to design standards. While the definition of service quality used in the literature is non-uniform, it is even more varied when considered from the perspective of healthcare.

In essence, it is challenging to define within the healthcare context. For instance, defining service quality definition within healthcare context is challenging due to the fact that its characteristics like simultaneity of usage, indescribability and heterogeneity. Service Quality meaning in the healthcare industry is even more challenging due to the nature of the services, the variety professionals and ethical practices that support healthcare delivery. One of the common healthcare service quality definitions indicated in the literature is that the healthcare services whose elements and traits adhere to predetermined specifications and standards. In this regard, it is known as "conformance to specifications or requirements". In light of this, service quality in this research paper is recognized as conformity to specifications. Accordingly, service quality is acknowledged as conformance to service specifications or requirements. To sum up, the use of the aforementioned definition in defining service quality in healthcare practices is the best because it is straightforward in assessment[5]. In other words, assessment of service quality in healthcare practices only necessitates that the services offered be compared against the established criteria and requirements to see whether there is conformance.

Notably, in the age of globalization, adherence to specified standards has become important. Particularly, this assists organizations to benchmark their services against those provided by the peers in the other parts of the world. The requirements or the standards are interpreted base on customers' needs. Therefore, when patients are happy

with their healthcare services, it suggests that the set of requirements were met and satisfied. Notably, this approach of service quality from the standpoint of addressing patients' demands is also implied in numerous quality improvement models. However, some have developed a more robust view and understanding of quality. For instance, service quality was considered to be multi-dimensional encompassing aspects such as trustworthiness, responsiveness, politeness, and the ability to maintain of a service. He claimed that quality is dynamic in nature because of the fact that clients' beliefs, attitude and values are liable to change[6].

Service Quality in healthcare practices refer to the outcome of various services rendered by health information management professionals in healthcare facilities[6]. Service quality in healthcare can also be defined as a collective output of series of care given to patients as either outpatient or inpatient in the hospital. It deals with result of actions, tasks and different type of healthcare received by the patients during their encounter with healthcare facilities. Service quality in healthcare practice is the central process inside a health system; the delivery of services is the immediate result of all the inputs into the delivery system. The organization of this practice greatly influences whether the inputs result into the desired output such as access to high-quality care. The production of health service delivery occurs at the population's interface. The communication between a single healthcare provider and patient is the most atomized result of this. However, from the standpoint of a health system, it includes all services in a given area. Healthcare services refer to any services that are primarily intended to improve of health[7]. The phrase refers to both general health care and services targeted at particular health issues, as well as disease control interventions and services that respond to individual suffering, preventive and curative services; personal health services and population-based activities. Healthcare practices can be categorized according to a variety of features or nature, and these

services are thereby provided to the population through a highly diverse manner using a variety of modes and channels as healthcare practices can be classified along different characteristics. The level of transactional complexity in health services can be used to categorize them economically.

The populace can receive healthcare services through specific routes, modes and channels. As examples, consider the various forms of healthcare faculties providing health services (such as clinics, health posts, health centres), as well as retailers of healthcare-related products and other entities (such as mobile teams, community health workers, and vaccination campaign teams). These can be categorized in a number of different ways. Examples include family-oriented community-based services; population-oriented schedulable services; individual-oriented clinical services at different levels (primary level, first referral level and second referral level). Another title for these channels or modes is delivery platforms[7]. It is anticipated that efficient use of electronic health records will have a significant impact on how various healthcare facilities deliver services. An electronic health record is used for different purposes in service-rendering by health information management professionals. It is used for health data capturing of all new patient, along with registration of follow-up patient, identification tracking and other vital patients' information. Among other uses and advantages, it is also used for e-clinical coding and procedure for both outpatient and inpatient care, tracer data input for every patient, e-appointment scheduling, e-indexing of diagnoses and procedures, e-daily ward statement, and e-storage of various statistical data and information which can help greatly to inform managerial decision making. However, the organization of patient health records and accessibility to health information have remained inadequate, frequently leading to poor clinical and managerial decisions and some medical errors[8]. The use of

paper-based health records systems has been cited as the main contributing factor to this issue.

Subpar or unsatisfactory services as a result of hospital's manual health records system may trigger medico-legal action by the patients against health information management professionals, doctors, nurses and other members of healthcare team. Vicarious liability against the hospital management may result from this as well[9]. To improve or prevent some undesirable trends in the hospitals such as persistent patient complaints, delays in retrieving patient health records, delays the submitting health statistical reports to the management, poor clinical research activities, longer patient waiting time, unnecessary congestion in the clinics, high morbidity and mortality. One of the methods for accomplishing this high-quality service delivery is thought to be the use of electronic health records systems. Health records management system is essential in assisting to eliminate some of the difficulties associated with the conventional method of record operation, and hence, improving accessibility and the effective management of patient health information.

Service quality among health information professionals is a purposeful obligatory decision by the elected or appointed officials to serve or provide goods and services to the recipients. Service quality among health information professional's framework is a set of principles, standards, policies and constraints used to direct the design, development, deployment, operation and retirement of services provided by a service provider with the goal of providing a consistent service experience to a particular user community in a specific business context. The framework for service quality among health information professionals serves as the setting for the organization as service provider's skills are organized into services. Healthcare practice is a conscious mandatory decision by the elected or appointed officials to serve or provide goods and services to the recipients[10].

Service quality among health information professionals refers to the internationalization of even service goals and norms in an attitudinal or dispositional sense. In order to optimize patient satisfaction, mechanisms must be put in place as part of patient care. It is more directly significant in some roles than others.

Poor service quality among health information professionals continues to be a major overwhelming problem in most African countries a number of variables have been identified as having an impact on this industry, including the following, among others: Healthcare practices are significantly impacted by infrastructure. For instance, in Nigeria, the availability of better infrastructures has lagged behind over years. There are inferior medical equipment, limited energy supply and hence Nigeria still requires stronger information technical infrastructure to support the delivery of high-quality healthcare services among medical personnel[11]. Public procurement, at the healthcare level, is believed to be one of the primary areas where corruption in Nigeria occur. Any government department's ability to function properly suffers greatly from corruption. Corruption has proven to be an unsolvable issue in many developing countries; particularly where it has become systematic to the point where many members of the government are directly affected. It transfers decision- making and the provision of services from those who need them to those who can pay for them.

Service quality among professionals in health information management is view as a key weapon in the fight to set themselves apart from their rivals. Academics and practitioners have given service quality among health information professionals a lot of attention, and healthcare service literature defined service quality among health information professionals as the overall evaluation of a service by the customer/patient[12]. Patients' expectations of what healthcare workers should provide and their evaluations of the performance of the healthcare workers delivering the services influence service quality

among health information professionals. When patients compare their expectations and perceptions, it results in service quality among health information professionals. Patients' expectation constitutes the basis for evaluating high-quality healthcare practice because, quality is high when they outperform patients' expectations and quality is low when they fall short of those expectations. The result of how patients perceive the technical and functional service dimensions is the perceived service. It is very crucial to remember here that, service quality among health information management professionals is not only judged in just in terms of final results but also in terms of how it is provided throughout service process and how it ultimately affects patient's opinions[13]. Patient satisfaction, financial performance, and the success of healthcare practitioners are all strongly correlated with high-quality healthcare practice. Organizations operating within the service sector regard service quality to be a strategic element of their marketing strategy and plan. Organizations can attain a higher degree of service quality, a higher level of patient satisfaction, and can sustain a persistent competitive edge by engaging in high-quality healthcare practices.

In the evolving healthcare scenario of 21st century, hospitals needed a distinctive identity in order to deliver top-notch services. Hospitals today have to be of world-class standard, dedicated to excellence in patient's satisfaction and to play a significant part in the expanding and diversifying financial sector[14]. There has been a notable change in how healthcare is provided in the past few years. Patients have also rightly expected top-notch services from healthcare workers. With various available options, patients are unwilling to settle for anything less than the best or greatest options. Hospitals are aware of the necessity to fulfill patient expectations. As a result, the hospital healthcare services are being propelled up the high technology ladder by quality healthcare practices. Hospitals have to rebrand their corporate image to the one that prioritizes service quality because

doing so offers a number of benefits to the hospital, including the ability to stand out from its competitors by enhancing the quality practices, increase opportunities for more public patronage, improving patients relations that boost the corporate image, reliability, responsiveness, credibility and communication outcomes in the satisfaction and retention of patients and employee, thus reducing turnover rate.

Service quality among health information management professionals has consistently been enabled by the strategic tool use that enables a hospital service to be standout from others in a competitive service industry which is seen as a key predictor of service competitiveness[16]. In common parlance, Service quality among health information management professionals is a term used to describe the level of perfection of service delivery and is viewed that healthcare practice is subjective. As a result, based on how well patients feel the service meet their requirements and expectations and they compare the actual service with the expected service. With this viewpoint, a number of authors explained quality service in healthcare practice as different types of patient attitude that results from the comparison between patient expectations of the services provided and the performance received from those services. In particular, regarding quality service in healthcare practice, the literature identified two schools of management thought. One is based on a gap model, or a comparison between, and it relates to SERVQUAL. Some of the dimensions of service quality in healthcare include: reliability, timeliness, communication and empathy. Despite its widespread use, it has been contested by a number of researchers, who have questioned its real-world applications. Whether to measure it—before or after receiving the service—as well as the claim that the model employs perceptions and expectations as a subtractive "gap" (P-E) as a measure of quality are both problematic. In response to the aforementioned criticisms, The SERVPERF scale was created, in which expectations (E) are disregarded and as a result, service quality is

assessed using patients' perceptions of how well the service was performed using the same five dimensions of SERVQUAL[17].

However, the efficiency of standardizing a scale is debatable because it differs depending on the environment of private hospitals throughout different time periods. Therefore, this article aims to close the research gap in service quality in healthcare practice literature by examining the dimensions of patients' perceived service quality and their associations with patient satisfaction in context of retail banking in the following section of hypothesis development[18]. An action that is intended to benefit a patient is referred to as a practice. As a result, service quality in healthcare practice is considered to be the gap between the service's actual performance and what was anticipated. The degree to which a particular service meets the expectations of the patients is regarded as a sign of a high-quality service in healthcare practice. Typically, it establishes a patient's perception of a certain service. Below is basic description of various dimensions. Tangibles: Are things that can be seen or handled and have a physical existence. In relation to dependability and service quality: Reliability means the ability of a service provider to perform the promised services in an honest and consistent manner. Patients seek reliable services they can rely on. Assurance: Assurance is the amount of expertise and courtesy demonstrated by the healthcare professionals as they provide services, as well as their capacity to instill trust and confidence. Empathy: Empathy means is the ability to care for the sick by attending to them on a personal level. It entails listening to their issues and resolving their demands and complaints in a timely manner.

One attribute or characteristics that has drawn the interest of researchers in services marketing is quality healthcare practice. The extant literature suggests that service quality is assessed by the discrepancy between patient expectations of service provider's performance and the assessments of the actual service received. Service quality among

health information professionals has also been conceptualized as a focused assessment or evaluation that represents the patient's view of a particular dimensions of service. High service quality in healthcare practice is the degree and direction of differences that exist between patient's perception and expectations in terms of several but relatively important aspects of service. Until today, several scholars have created service quality concepts and principles across various industries and countries. For instance, emphasize how patients assess various aspects of offered e-services to create an overall assessment of e-service quality. The results conclude that the aspects of e-service quality, i.e. environment quality, delivery quality and outcome quality are antecedents to global e-service quality measurement[19]. Similar to this, five metrics to gauge e-service quality were proposed by a researcher which include; access, web interface, trust, attention, and credibility, and came into conclusion that patients specified and agreed with the idea or notion that service quality in e-banking is largely and heavily influenced by web components. Additionally, three aspects of service quality that affect quality service delivery in the healthcare sector were explored and investigated which are; reliability, responsiveness and empathy of healthcare workers in the sector[20].

According to a scholar, service quality in healthcare practice is a crucial concept in the service industry like hospital especially government owned ones who struggle and have difficulty in showing their patients service differentiation[21]. Moreover, numerous research studies have been focusing service quality, and several numbers of theories and models have been created to address this issue and emphasize the significance of implementation and various characteristics and dimensions. In addition, there are multiple definitions and metrics of service quality, but there is no consensus on a single definition. Quality of service in healthcare practice has been defined as well as refers to an overall assessment or evaluation made by the healthcare worker while some scholars have described the

healthcare workers service as the extent to which services match patients' needs, expectations, and requirements. In addition, service quality in practice is defined as the gap between patients' normative expectations for service and their perceptions of the services performance. The definition of service quality was further developed and added as "the overall evaluation of a specific service firm that is derived from comparing that firm's performance with the patient's general expectations of how hospitals should function.

Health information management professionals base service quality more on what the patient receives and is prepared to pay for than on what the supplier invests. As a result, service quality is typically defined among health information management workers as the gap between the perceived service's actual performance and its intended performance. Service can be defined as an act or action that benefit the patient[22]. Hence, providing patients with excellent service quality in today's business environment is very crucial and significant because of the intense market rivalry. Service quality among health information management professionals is also be defined as the degree to which the service fulfills and meets the wants or expectation of the patient. Service quality in healthcare practice can be seen as the degree to which a service satisfies patient's wants and expectations. If expectations are higher than performance then perceived quality is subpar or less than satisfactory and hence discontentment by patient happens. Excellent service quality in healthcare practices are known to have the potential to improve operational effectiveness and profitability in addition to bringing about strategic benefits.

Reliability of service is the capacity to accurately carry out service promises such as offering quick and secured treatment, a variety of products and services and more counters open during peak hours. One of the key factors influencing the hospital's service

quality is discovered to be reliability. Reliability increases the effectiveness of healthcare services and has a beneficial impact on patient satisfaction and speed of recovery. Assurance is the collective term for all spoken and written interactions between healthcare service providers and their patients. It additionally covers good manners, attitudes, courtesy, and knowledge of healthcare service workers. Service quality in hospital is impacted by a good degree of assurance. Therefore, good service quality requires employees to be polite with patients, competent, work on offering appropriate medical advice[23].

High-quality, patient-centered care delivery is a key objective in medical practice. In order for patients to have more control over their own health, the idea of patient-centered care entails paying closer attention to patients' perspectives on care and encouraging patient involvement in their own healthcare. A patient-centered approach is preferred by more than 75% of patients. Several definitions of the term "patient-centered care" have been presented for consideration in a variety of ways, but all involve the key elements or enablers of patient-centered communication, as well as empathy of the physician as an absolutely necessary attribute. Patient-centered communication in an ideal manner includes six dimensions: exploring both the disease and the illness experience; understanding the whole person; establishing a common ground between the physician and patient; incorporating prevention and health promotion; strengthening the doctor–patient relationship, and 'being realistic' about personal limitations and issues such as the availability of time and resources'. Empathy can be described as 'the capacity to comprehend the predicament, viewpoint, and feelings of patients and to convey that comprehension to the patient[24].

In the past, studies on patient-centered communication have produced favorable results in terms of patient satisfaction, adherence, and a number of (mental) health outcomes. The

results of numerous studies on empathic communication also point to higher patient satisfaction, better therapeutic adherence, better patient health outcomes, lower physicians' burnout, and higher physician well-being. For instance, a randomized controlled trial looked at how interactions between doctors and patients affected how long a common cold lasted. They came to conclusion that positive patient perception of practitioner's empathy is substantially connected to the duration and intensity of common cold-symptoms. Furthermore, another study discovered a link between empathic capacity of doctors (as determined by the doctors themselves) showed a positive correlation between doctors' empathy rates and glycated hemoglobin control of diabetes patients. Despite these benefits of empathy, there are researches that drop a hint on a declining trend regarding empathic communication skills of physicians during medical residency. According to a longitudinal study, third-year medical students' mean empathy scores significantly decreased from those of first-year students in medical school. During residency training, this drop persists. Lack of role models, worry about making mistakes, lack of sleep, a large amount of material to learn, time constraints, and patient and environmental issues are only a few reasons why empathy is eroding[25]. An opportunity to enhance patient-centered care appears to be to train residents in both patient-centered communication and empathy. It is well established that communication training can enhance patient-centered communication, empathy and relational skills.

Prior studies among general practitioners (GPs) and practice nurses, nurses demonstrated considerable gains in patient-centered communication abilities through the use of video feedback. As a result, a three-day training program was created to enhance residents' communication abilities by emphasizing the fundamentals of patient-centered communication and empathy. We proposed that training residents in patient-centered communication and empathy would raise residents' empathy and consequently improve

the quality of patient-centered care in an academic medical or health center in the Netherlands. To assess the training a tri-focal perspective will be employed[26].

Empathy is a fundamental component of every therapeutic relationship, and there is strong evidence about the benefits in patients including improved satisfaction, and health state. Likewise, several authors highlight the relation between empathy and therapeutic adherence of the patients. Besides, greater empathy encourages employee wellness in their interactions with patients and co-workers. Empathy is associated with a lower risk of burnout apparition and vice versa, a decline in violent behavior, an improvement in leadership skills, and a reduction in workplace conflicts. It is also linked with lower incidences of malpractice suits and the usage of resources is reduced, which lowers the cost of health care[26].

Numerous patients have complained that the health professionals that they dealt with show an attribute of low practice of empathy, respect, and support and they did not give them enough information. As long as clinical practice among healthcare professionals continues to rise, the literature has demonstrated a decline in empathy for students and professionals. The students' lower empathy was attributed to a number of reasons, including challenging patient assignments, contact with unfavorable staff, time constraints, and mistakes-related anxiety. Health workers should develop empathy, which is an intrinsic capacity that may be strengthened via training and practice. Empathy is an innate skill what can be improved through instruction and practice that professionals should acquire in health programmes[27]. In the field of empathy learning, we can distinguish two major pedagogical currents: experiential vs. humanist. Humanistic learning is focus upon the growth of the student's self-concept. The approach takes into account that artistic abilities or skills are all important focuses for learning. The process of learning by experience is known as Experiential learning (lived or shared).

Empathy is the ability to comprehend and share the experiences of another. It is a fundamental idea because, in accordance with the psychodynamic, behavioral and person-centered approaches, it promotes the formation of a therapeutic alliance or relationship with the healthcare user, providing the basis for therapeutic transformation. Empathy was first mentioned in a psychotherapeutic context in the 1950s. The person-centered approach described it as the transient state that a health professional goes through in his/her endeavor to comprehend a health care user's life without developing a personal relationship with them. The modern understanding of empathy is multidimensional and includes of affective, cognitive, and behavioral components. Throughout history, the development and integration of this notion evolved along three distinct stages of time or periods. Up until the 1950s' end, the cognitive dimension dominated. From 1960 onwards, the affective dimension has received the most attention, but since 1970, empathy has been described in all of its complexity, adding the behavioral component to the routine work of healthcare professionals. The affective dimension is makeup of the notions of concern and sincere, unconditional acceptance of the health care user (congruence)[28]. Support and aid that come as a result of an emotional contact are referred to as caring. Full and true unconditional acceptance is the idea of people accepting the "other" and coming to an agreement without prejudice or stereotypes. The interpersonal sensitivity and the ability to comprehend the situation that the other person is in fall under the cognitive dimension (perspective taking).

Interpersonal sensitivity entails having an unbiased awareness of the other person's circumstance. Knowing someone requires a thorough process based on both verbal and nonverbal signs. The ability to understand the other person's circumstance refers to the flexibility and the objective comprehension of other person's point of view (walk in their shoes, comprehending the way they perform cognitively, emotionally, and mentally).

Altruism and the therapeutic alliance both fall under the behavioral dimension which develops empathy into action or practice. Altruism is a socially motivated behavior that aims to ease suffering brought on by problems and challenges associated with them. The term sympathy, empathy, and compassion are all interrelated and frequently used together. According to definitions, sympathy is an emotional response of pity toward the suffering of another, particularly when such suffering is thought to be unjust. Empathy is viewed and understood as a more complicated interpersonal construct that requires awareness and intuition, while compassion is a 'complementary social emotion, triggered by observing the suffering of others' and is coupled with the feelings of concern, warmth associated with impulses of support. Empathetic listening may produce compassion fatigue due to extended exposure to stress and all that it entails. Self-care practice, well-being, and self-awareness are essential component in enhancing empathy and lowering compassion fatigue[29].

In many subfields of psychology, as well as in fields like neuroscience, ethology, and the health professions, empathy is a principal field of study or topic. There is no question that the concept of empathy provides a broad umbrella under which many kinds of researchers can pursue the origins, processes, and outcomes of humane social emotions, attitudes, and behavior. The broad term "empathy" is generative and unifying, to be sure. However, as the empathy field expands the lack of conceptual coherence and clarity challenges advancement. Over the years, empathy has had many definitions. The multiple and sometimes conflicting empathy definitions are accompanied by inconsistent measurement approaches that compromise the ability to compare study designs and outcomes. The diversity of definitions and tools continues to proliferate across both basic and applied research fields. Studies explore empathy's relationship to traits, group memberships, socio demographics, psychopathology, interpersonal behaviors and outcomes, and

physiological/neurological processes, among others. Clearly, researchers believe in the concept of empathy, and its ubiquity speaks to the crucial role it is perceived to play in social interactions and human well-being[30].

Empathy constitutes an essential component for successful interpersonal skills and is considered as a fundamental trait in the process of communication with patients and in patient-centred care. It is generally perceived as having three dimensions: cognitive, emotional and behavioural. Cognitive empathy is the ability to accurately recognise a patient's emotional state; emotional empathy describes the ability to imagine the emotional experience one patient has and share his/her feelings; the therapeutic or behavioural dimension refers to the ability to communicate those feelings to the recipients of care and respond to their emotions and needs. However, there is considerable controversy about its appropriate definition. Some researchers underline that empathy is a multidimensional construct including the cognitive, affective and behavioural aspects, while others focus on the significance of one or two of these aspects. As expected, this controversy yields different approaches to studying and measuring empathy[31].

In a qualitative research study, nurse students, who were asked their opinion on empathy, emphasized the three dimensions of the concept. Participants described it as the nurse's ability to understand and experience other people's feelings, thoughts, and wishes, as well as the nurse's capacity to comprehend the emotional and cognitive state of the person they work with. To sum up, empathy is perceived as a combination of the emotional, cognitive and practical skills involved when caring for a patient. Empathy is one of the fundamental tools of the therapeutic relationship between the carers and their patients and it has been proven that its contribution is vital to better health outcomes. As it allows the health care providers to detect and recognize the users' experiences, worries, and

perspectives, it strengthens the development and improvement of the therapeutic relationship between the two parts. It is widely acknowledged that the health professional's empathetic ability leads to better therapeutic results. The empathetic relationship of the health professionals with their health care users reinforces their cooperation towards designing a therapeutic plan and a tailor-made intervention, increasing thus the patient's satisfaction from the therapeutic process. This way, quality of care is enhanced, errors are eliminated, and an increased percentage of health care recipients positively experience therapy[32].

Furthermore, it has been noted that the empathetic relationship developed during the process of care reinforces the therapeutic results, as the users better comply with the therapeutic course of action. Studies performed in various groups of patients with different health problems generated positive results regarding the progress of their health. Specifically, studies of patients with diabetes showed that there is an association between empathy and the positive therapeutic course of disease. Moreover, patients with cancer demonstrate less stress, depression, and aggressiveness when receiving empathetic nursing care. The empathetic relationship between a midwife and a future mother increases the latter's satisfaction and lessens the stress, the agony, and the pain of the forthcoming labor as the mother feels security, trust, and encouragement. Understanding based on empathy is critical to the relationship between the health professional and the recipient of care. When that happens, health care users feel secure and trust the professional's abilities. Therefore, the distance between the expert and the patient shortens and both of them come closer, enjoying mutual benefits[32].

Moreover, a relationship based on empathy helps the therapists lessen their stress and burnout in the workplace and adds to their quality of life. It has been shown that

physicians who have higher levels of empathy experience less burnout or depression. Empathy is especially important to the social care professions. It has been noted that the ability of the social worker for empathy and understanding of the users' experiences and feelings plays a crucial role in social care as empathy is one of the most important skills that these professionals may employ to develop a therapeutic relationship. Health care users who experience empathy during their treatment exhibit better results and a higher possibility for a potential improvement. Moreover, social workers with higher levels of empathy work more efficiently and productively as to the fulfillment of their role in creating social change. This happens because empathy helps the social worker understand and feel compassion towards their health care users so as the latter can feel secure to express their thoughts and problems. This way, a basis for trust is created, one that leads to therapeutic change and the improvement of the care recipient's overall social functionality. Social functionality levels are assessed by the social worker and refer to the ability of a person to accomplish their everyday activities (preparing and keeping meals, seeking accommodation, taking care of their selves, commuting) as well as their ability to fulfill social roles (parent, employee, member of a community) according to the requirements of their cultural environment. Empathy contributes to the precise assessment of the situation the health care user is in. It offers the therapists the chance to make good use of non-verbal cues (behavior modeling, body movements, tone of voice, etc.) and helps them manage the user's emotions. What is more, empathy enhances the user's ability to comprehend reality and improve the quality of their life.

Although both health care users and health professionals consider empathy as very important for the development of the therapeutic relationship and a necessary skill for a therapist, studies show a reduction of empathy in professional relationships. Often, health care users believe that health professionals do not understand the situation that health care

users are in, whereas research findings showed that health professionals and health care users have different views on the communication abilities of the former, as if they come from different worlds. It is especially important that according to research findings deriving from medical student samples empathy seems to increase in the first year of studies, but starts decreasing around the third year and remains low up to graduation. As mentioned before, there are different dimensions, but also levels of empathy. Accordingly, there are different assessment scales for professionals and patient-users[33].

One of the most important tools for the quantitative assessment of empathy is the Jefferson Scale of Empathy (JSE) which was originally used to evaluate empathy in medical students. Subsequently, its use was extended to other professional groups also, for example physicians, health professionals in general and students of other health professions. The Jefferson scale has been used in many countries, such as the USA, Poland, Korea, Italy, Japan and has been standardized for its validity and reliability. It is self-administered and completed by physicians and other health professionals who provide care to patients in clinical settings. Moreover, students of medical, nursing, and other health care sciences may also complete it. The scale includes 20 questions and the overall score ranges from twenty to one hundred and forty; higher scores indicate a better empathic relationship in the medical and therapeutic care. More specifically, for social work, the Empathy Scale for Social Workers (ESSW) is a questionnaire designed for the quantitative assessment of empathy in social care professionals and students. It can be very useful in practice settings to support decision making processes, assist career choice decisions, continuing education, and supervision needs in the field of social care. Its usefulness is also underscored for potential social work supervisors, as it helps identifying the types of empathy needed while supervising clinicians and staff. The scale is a screening and self-evaluation tool completed by social work students and practitioners. It

consists of 41 questions and every question is marked on a five point scale and higher scores indicate higher levels of empathy[34].

As mentioned before, although research has showed the value of empathy, there are still many difficulties in regards to its implementation in the clinical practice. A relatively high percentage of health professionals, about 70%, find it difficult to develop empathy with their health care users. Age, self-reflection, appraisal, and emotions' expressions were associated with women's social workers empathy. Social workers had a higher score of empathy whenever they had previous work experience. Additionally, there are studies that support that being female is associated with higher levels of empathy. Research outcomes suggest that protective factors of social workers' empathy are prosocial behavior toward work and positive personal and environmental resources. Self-esteem, work engagement, and emotional regulation are also positively associated with empathy. On the other hand, empathy is limited due to daily stress that is a risk factor for burnout and compassion fatigue. Empathy is positively correlated with reflective ability and emotional intelligence both in professional social workers and social work students. According to a study in social work students in India, empathy and emotional intelligence were extracted as predictors of resilience through regression analysis. The authors underlined the need to enhance these attributes in social work students through the provision of appropriate curricular experiences[34].

The lack of empathy or the low empathy levels depends on several reasons. The most important are the large number of health care users that professionals have to deal with, the lack of adequate time, the focus on therapy, the predominant culture in medical schools, and the lack of training in empathy. Further reasons include presumptions, a sense of superiority from the health professionals, and a fear of boundary violation. Time

pressure, anxiety, a lack of self-awareness, and a lack of appropriate training, as well as the different socio-economic status, all the above do not favor empathy either. According to scientific views from the Medicine field, empathy can be learned and Medical schools should educate their students in this respect. Many studies have pointed out the necessity for future professionals to receive training in order to enhance their empathetic skills. Although empathy is a core, quality principle for the health care professions, there are studies that show that health professionals cannot adequately express it and implement it. According to studies in undergraduate nursing students, empirical education through learning processes can positively influence empathy. Education is considered, both by students and professionals, as especially important for the reinforcement of empathetic skills[35].

Nevertheless, research data on the effectiveness of education in empathy are limited. In a research study, conducted in the USA regarding the effect that empathy education has on health professionals, it was found that education contributes a great deal to the improvement of the therapeutic relationship. In the same study, trained professionals are more likely to detect the emotion and progress of their health care users and therefore further explore and meet their needs. Education can be offered through hands-on work, multimedia use, role play, and experiential learning[36]. In a qualitative study, health professionals made suggestions regarding the enhancement of empathy. These suggestions included more holistic, educational interventions in behaviors that are central to the patient's needs, with an emphasis on personal development, professional training, and supervision programs, rather than education in behavioral and communication skills. 'Diversity Dolls' is a hands-on educational method for the reinforcement of empathy that is used among social care students in a Greek university, so that students can instill empathetic skills in socially vulnerable populations. It is believed that the use of such

based-on-art methods helps social care students to feel safe, to explore, and give meaning to the real circumstances people live in, through pleasant, participatory, interactive activities.

Globally, creative educational methods such as journaling, art, role-play, and simulation games globally are becoming more popular in the health and social care fields helping students to increase their knowledge and skills in relation to empathy. Teaching techniques and classroom methodologies familiarize social workers to empathetic skills. In a study, among social work students, the results suggest that empathetic modeling from professors and field supervisors enhance social work students' empathy. Social work educators should not focus on traditional teaching but they ought to concentrate on interactive and creative education that enhances the empathetic modeling and relationship between educators and students. Apart from teaching social work students with mental flexibility, regulation of emotional and perspective taking, social workers should be taught empathy throughout the phenomenological psychological approach (seminars that utilize transcribed audio recordings of interactions)[36]. Additionally, regular supervision has a key role in enabling social workers to process their own feelings and to deal with empathy.

Although empathic communication, as described above, has a positive impact on nursing care this is not always implemented due to several barriers. Some of the factors impeding the integration of empathy in nursing care are situational and cultural. For instance, nurses often work in environments inhibiting or devaluing compassionate practice. Despite the progress achieved, the current paradigm of health care organisation and delivery continues to emphasise curing over caring and technical knowledge and procedural skills over the development of humanistic qualities of the staff such as

empathy. Moreover individual factors, such as personality traits, gender, and/or education may also influence the levels of empathy. For example, data show that female nursing and medical students display more empathy compared to their male counterparts. It is noteworthy that recent data indicate lower levels of empathy in nursing students compared to those in other healthcare disciplines underscoring the need to revisit the role of empathy in educational settings and in the context of current health care delivery. Empathy in the ICU context It is well known that ICU patients and their families often experience powerlessness, vulnerability, anxiety and stress[37].

Therefore nursing empathy and empathic care is critical for these clinical settings as it can enhance communication with the patient and the family. Also as ICU nurses do the majority of patient assessment and care, empathy will help them collect more accurate information and incorporate it into meaningful patient care. Nevertheless the operationalisation of patient-centred nursing and empathic care in ICU encounters many obstacles. In this context empathic communication is seriously hindered as the ability to practice with compassion is a complex interaction between the patient, the healthcare provider and the work environment. In these units patients are usually sedated and thus, unable to communicate or contribute to their treatment plans. Additionally, empathy may be affected by various organisational barriers and working conditions. The healthcare team has to face a demanding work environment with daily challenges that may generate stress or influence negatively the quality of their work and job satisfaction[38]. They are constantly exposed to chronic occupational stressors, including high patient acuity, high levels of responsibility, working with advanced technology, caring for families in crisis and involved in morally distressing situations. Hence, the development of compassion fatigue and burnout in such stressful environments may result to empathy's reduction as a self-protection mechanism.

### 2.1.2 Preservation and Conservation Practices

Preservation and conservation of patient health records is an often overlooked and underrated activity at many hospital. While a strong, well-thought out records preservation and conservation plan can make hospital efficient and effective, neglect of preservation and conservation activities can lead to mutilation of important patient health record and loss of information. Poor health records management can cripple a hospital, halting efficiency, sucking up precious time, and causing unnecessary stress for employees. Hospitals with poor preservation and conservation plan oftentimes waste excessive amounts of time sorting through messy filing cabinets, waste valuable office spaces to store paperwork, forcing the hospital to pay premium prices for document storage, vital health record are misplaced, buried, and lost, communication between coworkers erodes, and employee stress levels rise as their ability to find and share information becomes unnecessarily challenging[39]. Preservation and conservation of medical information is one of the most crucial factors that can help develop the medical sector which is responsible for saving lives. Records preservation activities include storage, retrieval, maintenance, careful use and disposal or weeding of medical information. While conservation practice involves the treatment and techniques put in place to slow down damage or decay. Health workers in the public health institutions, such as medical doctors and nurses, are usually not able or are struggling to render timely and effective health services to citizens due to a lack of effective records management systems. Poor Medical record preservation and conservation practice and plan is often the case in resource-limited settings, which threatens the quality of health care.

Ineffective records management systems usually lead to long patient waiting times before patients receive health service. Result obtained from a recent study indicate that in healthcare institutions where records are not properly preserved and conserved, the health workers end up not rendering certain services because the health history of the patient is not contained in medical files. This is due to the fact that, if health workers proceed to treat patients without enough information about the patients' health background, he/she may end up rendering poor health service that might be risky to patient's health. Besides many health challenges persist because of lack of medical information. The management and preservation of the hospital records in Indian context present a very gloomy picture. Despite the intensive effort at national and international level, the fundamental health care needs of the population of the developing countries are still unmet. The lack of basic health data renders difficulties in formulating and applying a rational for the allocation of limited resources that are available for patient care and disease prevention[39].

Many large medical facilities spend a lot of time searching for patient's records and sometimes some records were never found again. Non availability of potentially life-saving health information is a significant risk that damaged or lost medical records could present. A lack of management direction with regard to preservation and conservation of patients health record is inevitably costly both the patient and the hospital management at large. The onus of preservation and conservation generally, is concerned with keeping something the same way it is or preventing it from being damaged with suitable techniques and treatment methods. In library and information profession, it implies the protection of information bearing materials through activities that bring to the barest minimum mutilation agents (such as biological, environmental, chemical and physical), thereby prolonging their existence. Preservation involves routine maintenance activities such as proper handling of records to prevent environmental hazards or physical damages,

the use of physical and chemical treatments which will not adversely affect the integrity of the original records in order to resist further mutilation, and the repair of already damaged records to ensure that their contents are not lost, methods of preserving medical records include cleaning of records, careful handling, use of effective storage media, photocopying, using air filter systems to control air pollution, sun shield, use of energy saving light, air-conditioners for controlling temperature and relative humidity, using papers with low acidity, fumigation against insects and rodents attack, fire extinguishers and sand buckets, microfilming of records, ensuring adequate security of records to prevent unauthorized access to records.

Medical records are very important documents in patient management. They explain the details about each patient's history, clinical findings, diagnostic test results, pre and postoperative care, patient's progress and medical history and care over a period of time within one health care institution. Medical information comprises of a variety of notes entered over time by health care professionals, recording observations and administration of drugs and therapies, test results, x-rays, reports, mediations and medical allergies, immunization records, surgical history, etc. Keeping accurate medical record is a vital tool for the delivery of quality healthcare. As such, preservation and conservation of medical information is a core practice in clinical environment. The goal of preservation and conservation practice is to ensure that important information is retained over a period of time and having it good useable condition. Irrespective of the format of medical information (i.e. electronic or paper), good record keeping enables continuity of care and enhances communication between different healthcare professionals. The responsibility of documenting medical information involves all members of the multidisciplinary team that are involved in a patient's care namely, physicians, surgeons, nurses, pharmacists, physiotherapists, occupational therapists, psychologists, chaplains, administrators etc. The

responsibility of organizing, preserving and conserving medical information is the duty of the health information management professional, librarian or archivist[40].

Healthcare Facilities Healthcare facilities generally refer to any location or setting where healthcare services are provided. They range from small clinics and doctor's offices to urgent care centers and large hospitals with elaborate emergency rooms and trauma centers. Healthcare centers may be owned and operated for profit and non-profit purposes by governments. Examples of healthcare facilities in Nigeria are: 1. Hospitals: A hospital's primary task is to provide short-term or long term care for people with severe health issues resulting from injury, disease or genetic anomaly. Open 24 hours a day, seven days a week, hospitals bring together physicians in assorted specialties, a highly skilled nursing staff, various medical technicians, health care administrators and specialized equipment to deliver care to people with acute and chronic health conditions. Many hospitals offer a wide range of services, including emergency care, scheduled surgeries, labour and delivery services, diagnostic testing, lab work, and patient education. Depending on their health situation, patients may receive inpatient or outpatient care from a hospital. 2. Primary Health Centers: The primary health care system is a grass-root approach meant to address the main health problems in the community, by providing preventive, curative and rehabilitative services. These centers are usually found in communities in Nigeria. 3. Nursing Home: A nursing home is designed for patients who require constant care but do not need to be hospitalized and cannot be cared for at home. Often associated with seniors who require custodial care in a residential facility, it can actually serve patients of all ages who require this level of care. Nursing homes have medical personal onsite 24 hours a day. A physician, skilled nurses and therapists are staff that oversee and provide medical care, assistance with medications, and services like physical, speech and occupational therapy. In addition, the nursing home's staff offers

help with basic tasks that can be challenging for individuals with health issues, including feeding, bathing and dressing. 4. Ambulatory Healthcare Services: This segment includes outpatient care center and medical and diagnostic laboratories. These establishments are diverse including kidney dialysis centers, outpatient mental health and substance abuse centers, blood and organ banks, and medical labs that analyze blood, do diagnostic imaging, and perform other clinical tests. 5. Pharmacies and Drug Stores: Pharmacies and drug stores comprise establishments engaged in retailing, prescription or non-prescription drugs and medicines and other types of medical and orthopedic goods. Regulated pharmacies may be based in a hospital or clinic or they may be privately operated and are usually staffed by pharmacists, pharmacy technicians and pharmacy aides. 6. Medical Laboratories: A medical laboratory, or lab, completes diagnostic tests ordered by physicians and primary care providers. Using biological specimens, such as blood, urine, or saliva, medical technicians run tests to help diagnose, treat, and monitor a patient's health. Clinical lab facilities can be organized by function or test specialization. General clinical labs run common tests, while other labs, such as cancer clinics, run disease-specific tests.

Preservation and conservation are sometime confused to be synonymous, although the precise definitions of the two concepts (Preservation and Conservation) are endlessly arguable, both preservation and conservation involved a rigorous respect for the integrity of the information resources and on appreciation of its role as an object of cultural heritage. They further note that it was a commitment to prolonging the life of the information resources through preventive action and through the use of stale materials and appropriate techniques of treatment. In line with the above view, a scholar see the two concept differently, he defined Preservation As 'all managerial, technical and financial considerations applied to retard mutilation and extend the useful life of

(collection) materials to ensure their continued availability, while Conservation is the treatment of information resources by interventive procedures. It should be seen as one option in a programme of collection care[40].

Similarly, Preservation is the action taken to anticipate, prevent, stop, or slow mutilation. It can also be described as the art of anticipating and preventing decay. Preservation is seen to involves all activities that serve to prolong the life of information resources in a library's collection, while conservation is a field of knowledge concerned with the coordination and planning for the practical application of the techniques of binding, restoration, paper chemistry, and other material technology, as well as other knowledge pertinent to the preservation of information resources. Conservation in other words deals with all the activities that involve physical treatment of individual item by professional conservator or conservation technicians. Preservation is a branch of library and information science that is concerned with maintaining and restoring continued access to records and archives collections. It is the study, diagnosis, treatment and prevention of mutilation, decay and damage to those collections in cultural heritage institutions. Conservation on the other hand is the treatment and repair of individual items in the collection in order to slow their decay and damage and to restore them to a usable state. A more precise and comprehensive definition of preservation is the one given by IFLA Principles for the Care and Handling of Library Material to include "all the managerial and financial considerations including storage and accommodation provisions, staffing levels, policies, techniques, and methods involved in preserving library and archival material and the information contained in them". While conservation is specific practices taken to slow down mutilation and prolong the life span of an object by direct intervening in its physical or chemical make-up.

Preservation involves both the direct and indirect action. In preservation consideration is given to every element that promotes the protection of the materials including the housing, storage system and security against such threats as theft, mutilation and poor handling. Preservation is, therefore, a more embracing concept and it includes conservation. From the foregoing discussions, it can be deduced that Preservation and conservation are two related concepts that are often used interchangeably, though they have the same objectives to achieve, Information resources cannot be conserve without making effort to preserve, and preservation cannot be done without learning how to conserve. Thus, Preservation is the means by which information resources/records (right from their creation, up to their disposition) are protected from all forms of mutilation, mutilation and lost, for the use of present and future generations, While conservation is the direct application of appropriate techniques and treatment to already deteriorated information resources/records. However, the aims of preservation and conservation are to increase the longevity of active materials through careful storage and use. He further argued that among the essential missions of Archives and Museums, two are complementary: preservation and access. Preserving for the sake of preserving is useless and giving access lavishly to all documents without taking into account preservation measures will, sooner or later, lead towards making the documentary heritage inaccessible for future generations Similarly, IFLA-PAC China Centre puts it: the core activity of preservation and conservation is to ensure that significant library and archive materials, published and unpublished, in all formats, will be preserved in accessible form for as long as possible. Thus, preservation and conservation are core function of any record office. It is central to a record office's role as guardians of archival heritage. Preservation and conservation helps to ensure that all of us have an equal opportunity to see and enjoy unique and important records[41].

Based on the literatures consulted, preservation and conservation policy varies from one institution to another depending on the nature of their collections and nature of their institutions, as well as their goals. Preservation and conservation policy sets out appropriate practice for the care and management of the collection and guidance for the preparation of master plans and detailed management plans. Similarly, preservation policy should explain how preservation can serve the major needs of an institution and state some principles and rules on specific aspects which then laid the basis of implementation. Any institutional policy should be directly connected to the aims and goals of the institution and the preservation policy is no exception. Clearly establishing the benefits of a preservation strategy at an early stage will allow these benefits to be measured and will spell out the need for organizational commitment in preservation measures. It further posited that it is important that a preservation policy is implemented as soon as possible. It is best practice to have a preservation strategy in place even before any material is preserved, so that everything can be captured to standards spelled out in the policy. Similarly, Public Record Office of Northern Ireland submitted that the formulation of a preservation policy for information centres is therefore an essential step in fulfilling all their responsibilities and gives them the direction it requires to initiate measures which are necessary for the protection of its information resources. The policy also enables staff to meet, or extend, nationally and internationally agreed standards for the preservation of archival materials. Sharing this view, preservation policies for cultural materials as indispensable tools for organizations that are committed to facilitating the survival of materials in their custody. Policies are important because they set out goals to be achieved as well as guidelines for implementing them[42].

On the other hand, codified and stipulated or prescriptive policies facilitate a creative allocation of funds and staff, and specify other aspects of implementation and monitoring.

However, most African countries do not have a national information policy which makes the formulation of preservation and conservation policies in the libraries and information centers out of the question. Although the existence of preservation policies does not guarantee their implementation, so without funding and personnel with expertise, the implementation of preservation policies would be extremely difficult, but all the same efforts must be made to formulate policies that encompass all activities that are fundamental to the preservation of documentary materials into the future. Based on the above views, most of the literatures reviewed did not specifically define the concept of preservation and conservation policy. Thus, Preservation and conservation policy can be seen as all those processes aimed at ensuring the continuity of heritage materials for as long as they are needed[43].

In terms of preservation and conservation guidelines and standards, Preventative measures for information resources/records are generally consistent with the accepted guidelines for a professional preservation policy. Such a policy should include: Measures to minimize the rate of mutilation; Housekeeping routines to clean, protect and extend the life of information resources; Staff and user training programmes to promote and encourage correct handling and transport of information resources; Security measures and contingency plans for disaster control and recovery; Protective measures, such as boxing, binding, and wrapping, to reduce wear and tear on information resources; A substitution programme for replacing valuable or very brittle originals with surrogates such as microforms etc. Conservation treatments to repair damaged originals; Disposal programmes for information resources of no further use; Procedures for reproducing originals; Procedures for the exhibition of information resources within the institution or while on loan to another organization. Sound preservation and conservation programmes are multifaceted.

The starting point of conservation programmes which is the creation of a policy document specifying, among other things: Preventive measure to minimize mutilation in storage and handling, Staff and user training programmes, housekeeping routines to clean, protect, and extend the life of materials, Security measure and contingency plan for disaster control and recovery, Substitution programmes, Conservation treatment for repair of damaged originals, Procedures for exhibitions and loans. Chapman further posited that it is doubtful that many Nigerian information centres have such policy documents. Conservation-Preservation Projects to be carried out in house or by external conservators should be based on the following principles: All materials must be of archival standards, all repairs must be reversible, all repairs should respect the integrity of the original object, no repairs should conceal documentary evidence, No repairs should attempt to restore missing information, and no repairs should attempt to restore to an original condition. But generally preservation and conservation programs appeared to be the same all over the world. Supporting this view, the principle of preservation and conservation are the same all over the world and apply to all type of information centres[44].

Preservation is concerned with maintaining or restoring access to artifacts, document and records through the study, diagnosis, treatment and preservation of materials to reduce the rate of decay and damage. While conservation refers to the treatment and repair of individual item to reduce decay or restore them to a usable state. Libraries acquire materials to meet the informational or recreational needs of their clientele. When the material in one's care is allowed to deteriorate unchecked or become damaged in anyway, it may be difficult to or unavailable for use. It is the responsibility of the library staff to keep these materials in good physical condition so that they are available for users at all times. Vast quantities of deteriorated books and documents have accumulated in many university's libraries especially in the era of economic recession. In order to solve the

problem of enormous and ever growing deterioration of books, it is necessary to introduce preservation and conservation services into various university libraries in Nigeria. The function of preservation and conservation of university library and information resources in Nigeria is to provide a suitable protection for each items added to the collection and to take action in preserving it for use and for the future generation. Preservation and conservation of library resources is a field which encompasses not only materials but includes other resources such as photograph, maps, slides, motion pictures and others. The role of preservation and conservation program will help to protect millions of publications from deterioration in Nigerian university libraries especially as education and Nigerian universities are facing financial problems arising from reduction in budgetary allocation[45].

Preservations are activities associated with maintaining library and archival materials for use either in their original physical form or in some other usable way. Preservation tends to include conservation, but also comprehends techniques of partial preservation of the physical object (e.g., a new binding), as well as procedures for the substitution of the original artifact by materials conversion, whereby the intellectual content of the original is at least partially preserved. Preservation is the totality of measures for maintaining the integrity of document and the information contained in them which includes all the managerial and financial considerations, storage and accommodation provisions, staffing level policies, techniques and methods involved in safeguarding documentary materials. In preservation, consideration is given to every element that promotes the protection of the materials including the housing, storage system and security against such threats as theft, mutilation and poor handling. Preservation is everything which contributes to the physical wellbeing of library resources and it includes the protection, maintenance and restoration of library and archival information resources. The term preservation also

includes all the managerial and financial considerations such as storage, accommodation provision, staffing levels, policies, Techniques and methods involved in preserving library and archival information resources.

Preservation allows for the continuity of the past with the present and the future", the knowledge and experience of human are irreplaceably accumulated in libraries and archives. However, it would be a waste of money if after institutions like school libraries spent a lot of money acquiring and processing information resources, these valuable resources were to remain unavailable to researchers and other bonafide users, particularly teachers, students and school alums. Due of the impact of information resources have on users, preservation methods are therefore necessary. Preservation of paper based documents means preserving the paper-based collection of the library for example- books, journals, maps etc. There are two principal methods for the preservation of paper based documents. The first is preservation in original format by number of techniques, such as good care and handling, combined with sound protective storage; cold storage for selected materials conservation and restoration treatment; and mass deacidification[46].

The second method of preservation is reformatting where complete conversion of the material into another format is done to preserve the library's collections. It includes microfilming & digitization. A hybrid approach can also be used for preservation of print materials, combining the usefulness of both the methods at the same time. It is the best preservation reformatting option to choose if fund is not a problem for the libraries. Preservation of a document in its original form, an enormously expensive and time consuming proposition, may be reserved for those very few documents selected for their intrinsic value. The goal of digital preservation is to ensure the accurate rendering of authenticated content over time. As a result of the deterioration of electronic and digital

materials, preservation strategies are formulated in order to prevent their deterioration beginning from the creation stage[46].

Digital document preservation is a process by which digital data is preserved in digital form in order to ensure the usability, durability and intellectual integrity of the information contained therein. Specific techniques and preservation strategies should be developed to preserve digital materials involving producers of digital information (including software) to include conservation as they design their products. Four approaches or strategies are currently advocated for preserving digital resources. These strategies include amongst others: refreshing (periodic copying from one physical medium to another), technology preservation (replicating any old configuration of hardware and software), encapsulation and migration. Moreso, Groups such as the Digital Preservation Network strive to ensure that "the complete scholarly record is preserved for future generations". The Library of Congress maintains a Sustainability of Digital Formats web site that educates institutions on various aspects of preservation: most notably, on approximately 200 digital format types and which are most likely to last into the future. The preservation strategies stated by UNESCO, the institution, government, organization, individual etc. should decide on the format that will be accepted for preservation. For the preservation of digital materials in data carriers/ storage media are: a. Negotiate with producers, if at all possible, to follow generally accepted standards and to supply sufficient documentation b. Store media / data carriers in proper conditions c. Copy data to more stable media and make backup copies, using high-quality media d. Store data securely, including offsite storage for backup if possible e. Check data for errors regular basis f. Set up a data refresh schedule appropriate for the life of the media g. Record information that will be required to provide short term access, such as the material's identity, access requirements, passwords etc. h. Retain necessary access

equipment and software, maintaining hardware and protecting software within license arrangements i. Make plan to transfer the digital materials to another suitable caretaker, which entails, liaising with organizations who share similar interest, responsibilities and experience in preserving or managing the type of materials that you are interested in and seeking their guidance and mentoring j. Alternatively, find ways to adequately reflect the material in a stable non digital form (such as printing out)[47].

However, irrespective of the type of records, library materials are a good source of information and as such, they are made to be used, read and studied. This requires that library materials be accessible to users, thus subjecting them to handling. Any form of use will exacerbate deterioration of the item and ultimately its destruction, if intervention does not occur. One of the major crises facing libraries throughout the world is the rate of deterioration of their collections. Since records are composed mainly of organic materials, they are subject to natural deterioration. Most of these old administrative records of the Etche L.G.A. are based on paper either in book or sheet form, bound volumes, newspaper, serials, manuscripts, maps, water colours, prints and drawings. The collections of modern materials such as sound tapes and electronically stored information such as CD ROMs and computer discs are growing rapidly; most records collections are essentially temporary. Conservation and preservation of deteriorating information resources are a global concern and must be aggressively responded to by record managers if their mission of providing information of their patrons would be realized.

Conservation and presentation are two words that have different implications, though they are coterminous. Preservation by definition involves activities associated with maintaining library and archival materials for use, either in their original physical form or in some other usable way, while conservation is an aspect of preservation activity that implies the active use of preventive measures or processes to repair damaged materials

and ensure the continued existence of the materials. Conservation and preservation are the processes of keeping or maintaining an object safe from harm, loss, damage or destruction, and keeping it in a reasonable sound condition for present and future use. Preservation deals with the regular or continuous maintenance aspect whereas conservation deals with the curative treatment. The term conservation was defined in the International Records Management Trust as the intrusive protection of archival materials by the minimal physical and chemical treatments necessary to resist further deterioration, which will not adversely affect the integrity of the original. It was further explained that it is a specific work to protect materials and improve the environment in which they are kept. Conservation is preservation at the item level. It embraces those activities that improve the condition of the physical object or protect it from damage[48].

Since the way and manner EIRs deteriorate differ from those of other print resources in the library, so also do the techniques and strategies for its preservation and conservation differ. Some of these techniques include: backup, refreshing, emulation, migration, conversion to paper format, preservation metadata and encapsulation. Backup, as a procedure, involves copying and storing contents in multiple locations to create availability and ready replacement of information in the case of failure or other catastrophes of EIRs to new storage media. It is a short term preservation technique for copying information to new media before the old media becomes unreadable. Emulation is a strategy for long term preservation of EIRs; here, old media are mimicked into new media environments. The digital archive will be able to pick the resources itself. It is essentially a way of preserving the functionality of an access to digital information, which might otherwise be lost due to technology obsolescence. Migration is a set of organized tasks designed to achieve periodic transfer of digital materials from one hardware/software configuration to another or from one generation of computer

technology to a subsequent generation[47]. EIRs can also be converted to paper format through printing, photocopying and scanning, and the hard copy would be kept.

This approach is however hinted at as digital objects become more complex and could contain features that can only be preserved in digital formats. Preservation of metadata is another technique; it is highly useful for long-term preservation of EIRs. Metadata is data associated with objects which relieves the potential user of having to have full knowledge of their characteristics. Another preservation strategy is encapsulation, which involves the grouping together of resources and whatever is necessary to maintain access to it. In contrast to the migration approach, the encapsulation approach retains the record in its original form, but encapsulates it with a set of instructions on how the original should be interpreted. Encapsulation is considered a key element of emulation. Many users handling electronic information resources (EIR) mishandle them, in terms of touching the reels of CDs, not putting them in their packs and shelves appropriately, among others. Hence, the users of electronic information resources should be properly guided to avoid loss or deterioration of valuable resources.

The following challenges to the preservation of health records are: Continuous migration: Another challenge of digital preservation, which arises from the challenge of rapid technological obsolescence, is the need for continuous migration which is the first challenge. Migration is a means of overcoming technological obsolescence by transferring digital resources from one hardware/software generation to the next. Continuous migration is an organized task designed to achieve periodic transfer of digital material from one hardware/software configuration to another or from one generation of computer technology to a subsequent generation. Migration then becomes a challenge in preservation and conservation of EIRs because the migration version of a document is never the same as the original resource. The second challenge is lack of knowledge on the

preservation of digital migration: The UNESCO draft charter on the preservation of digital heritage emphasized the need urgent for awareness, raising a case in favour of preservation of digital resources. It suggested influencing decision-makers and raising public awareness of both the possibilities of digital media and the realities of digital preservation. The third challenge is lack of legislation, policy and strategy: lack of legislation is a major challenge of preservation of digital materials. They stressed further that internal links bring additional challenges in terms of copyright of software required to access digital files, and the right to copy for preservation has not been adequately articulated in most national legislations[48].

Furthermore, most African countries including Nigeria do not have a National Information Policy (NIP), which makes the formulation of preservation policies in libraries and information centers difficult. The fourth challenge worth noting is lack of collaboration and partnership: Another major obstacle of digital preservation is lack of collaboration and partnership among stakeholders, as well as lack of clearly assigned responsibilities and resources for the long term preservation of digital materials. The UNESCO draft charter on the preservation of digital heritage also stressed the need for collaboration and partnership on the part of governments, creators, publishers, relevant industries and heritage institutions. According to her, in the face of the current digital divide, it is necessary to reinforce international cooperation and solidarity to help all countries to enable creation, dissemination, preservation and continued accessibility of their digital heritage. Industries, publishers and mass communication media are urged to promote and share knowledge and technical expertise. The fifth challenge also is deterioration and loss of EIRs: There is the possibility of digital media getting lost in the event of disasters such as fire, flood, equipment failure, or viral attack and system crash. The noted sixth challenge is absence of policy on disaster planning: The impact of the

absence of disaster planning and mitigation measures result in unnecessary and sometimes, permanent loss of valuable information resources. Seventh challenge is poor maintenance culture: Poor maintenance culture, is a major challenge facing African countries generally. The management of libraries and archives in Africa has poor maintenance culture of infrastructural facilities such as telephones, electricity, water supply, laboratory equipment, buildings, disaster control devices, computers, etc. meant for their preservation and conservation operations. And lastly is lack of training and retraining on preservation of EIRs: there were professional librarians in the university libraries in Nigeria whose knowledge of library automation had been rendered obsolete owing to lack of training and retraining courses; development poses challenges to their coping with modern library practices[48].

The wide range of clinical information seekers suggests that there is a strong demand for information, which makes it essential to consider this need when designing health information retrieval systems. In order to meet the general public's demand for health information from patients and their loved ones. Now a common and honourable duty done by people on the Internet, searching for health advice involves using health information retrievals. Previous studies on the retrieval of health information show that a significant portion of search engine users in the United States utilise the internet to look up health-related information. To efficiently meet patients' needs for health information who are not medical professionals, health information retrieval systems must be upgraded. The number and diversity of information are growing and getting more complex as health information retrieval systems are regularly used to enhance the quality of medical services provided in hospitals. It is now required to search clinical information retrieval systems for medical advice due to the enormous increase of health-related information available online. Searching online health-related web-forums and other sources for health

advice has become a habit due to the growing awareness of the examination of information retrieved from medical discharge records and clinical reports by layperson patients.

In order to prevent incorrect interpretations of medical prescriptions and diagnoses from health experts, which could deteriorate their health conditions, adequate consideration should be given to the information needs of layperson patients and their family. An important method advocated by earlier researchers is the analysis of users' search query logs from workable search engines, which demonstrates that the majority of the existing structures have no reservations for users' informational needs. The development of user-centered health information retrieval systems, however, that would produce and display online medical discharge reports and the results of medical searches in forms that laypeople and experts in medicine could understand is lacking. Because of this, it is exceedingly challenging for the current information retrieval techniques to meet the information needs of patients who are both medical experts and laypeople. The query logs and medical search results of non-medical patients showed that the contents of medical books are extremely professional and challenging to understand. As they still need to consult with medical professionals regarding the information contained in their search results. The information requirements of lay patients and their relatives should receive the proper consideration[49].

Showing medical search results in expert form is the exclusive focus of the functions for producing medical discharge reports and medical search query answers or results in expert forms. While the features for producing and showing medical discharge reports and the results of medical searches in layman's forms are solely focused on producing and showing medical discharge reports and the results of medical searches in layman's form. The design and integration of these four roles into our suggested enhanced concept-based

approach better addresses the information needs of patients who are both medical professionals and laypeople. The PubMed and LISTA databases were searched, using the search terms hospital-based health technology assessment OR hospital-based HTA OR HB-HTA OR HBHTA. A total of 268 abstracts were screened for relevance to HB-HTA and information retrieval, and 23 of them were read in full text. In addition, the books, Hospital-based Health Technology Assessment: The next frontier for Health Technology Assessment and The AdHopHTA handbook: A handbook of hospital-based Health Technology Assessment (HB-HTA) were read. Reference lists of relevant articles and book chapters were scrutinized, finding two more articles. However, only one of them (8) mentioned information retrieval. In all, eight articles, four book chapters, and one report were included in the review[49].

Most of the retrieved abstracts and articles did not mention libraries, librarians, information specialists, or information retrieval at all. Even in the included literature, there were limited descriptions of the roles of librarians and information specialists in different HB-HTA units. Many authors did not mention the profession at all, but a few HB-HTA units stated having access to library services. In some cases, the HB-HTA unit had a librarian or information specialist among its staff. Such units included the Center for Evidence-Based Practice at the University of Pennsylvania Health System in Philadelphia (9), Fondazione Policlinico "A. Gemelli" at the Catholic University of Rome (5), Sainte-Justine University Hospital in Montreal (14), and HTA-centrum (1). Other HB-HTA units collaborated with a library or an information specialist, with collaborations taking a variety of forms and described in varying ways in the literature. Some authors described in detail the roles of librarians or information specialists. The importance of access to library services so that mini-HTA (minimetodevurdering) in Norway could be successful. He suggested that literature searching could be best carried

out by librarians in hospitals, because the Norwegian hospital librarians were specialists in systematic literature search[49].

Among other HB-HTA units, and commented on the library not only performing searches, but also excluding and including publications. The role of librarians at HTA-centrum and concluded that the librarians' screening and initial selection of full-text articles saved a lot of time for the clinicians; librarians were also important when formulating answerable clinical questions. A case study in which Finnish hospitals collaborated with the national HTA unit: a typical assessment involved an information specialist from the national unit, providing expertise for the literature search. In Helsinki University Hospital where literature searches were performed in collaboration with the medical library of the University of Helsinki and the Helsinki University Hospital. At Odense University Hospital in Denmark, the library assisted the HTA unit with literature searches. Some authors described collaboration with libraries without specifying the role of the librarian or information specialist. Most HB-HTA units collaborated with, among others, university libraries, to cover unmet technical needs, not giving any examples of either HTA units or of the kind of technical needs they were referring to.

Through simulation, a system is intended to be imitated or represented by another based on a set of presumptions. In this situation, healthcare simulations serve a variety of functions which include education, assessment, research, and integration of the healthcare systems is done solely to enhance and improve patient care. Each of these objectives or purposes necessitates the right blending of different skills, low and high-tech equipment, and environments that could help professionals in resolving a variety of real-life instances. Insights into human behavior in the real-world environments in which professionals work may also gained from simulations. The imitation or representation of a situation or process, whether it be straightforward or extremely complex, is what ties these activities

together. In this regard, health care literature serves as an important source of knowledge. Among them, the Big Data paradigm has only recently emerged on the scene in an omnipresent way, prompting a sharp shift in the way that data analysis is viewed. Indeed, Traditional methods have actually lost their effectiveness as a result of the growing availability of enormous amounts of heterogeneous data that must be analyzed and accurately represented. Particularly when the data are heterogeneous and time varying, the traditional approaches used up until now do not perform well.

Define novel (Big) Data mining platforms, (Big) Data Semantics customized to Application Knowledge, and Big Data Mining methods in order to serve this study topic. High-performance computer platforms and carefully constructed algorithms are required to properly harness the power of Big Data, which calls for systematic architectures. The domains of healthcare and biomedicine can successfully use the findings of big data analytics research. Due to the vast amount of heterogeneous data generated and stored in these fields, it is necessary to develop specific processing techniques in order to extract the required information from the biomedical digitised data, such as signals, images, Electronic Health Records (EHRs), scientific publications, and others. In fact, the advancement of novel knowledge production processes depends on the development of knowledge extraction approaches that give meaning to biomedical data. Natural language texts play a critical part in medical big data since a sizable volume of manually written text is regularly created in hospitals and medical research systems, including textual components of EHRs, diagnoses, scientific articles, and others. The development of analytical tools that can increase the usefulness of this data by putting knowledge extraction approaches to use will give doctors and researchers tools for the study of this massive amount of data that would otherwise not be processed manually. The ability to

conduct a semantic search across texts is one of the many needs for biological text mining[50].

For instance, a doctor could need to look up all the Electronic Health Records that are semantically connected to their search in a hospital information system. The ability of actual information mining systems to fully comprehend the semantic meaning of a request from a human user is one of its limitations. Numerous approaches have been created as a result to meet this demand. Both Natural Language Processing (NLP) and Deep Learning (DL) techniques, enabled by Big Data frameworks, can be used to process biomedical big text data. Word Embedding (WE) model is a traditional DL NLP technique for text representation. Using this technology, a vast collection of unannotated textual documents may be converted into a vector space model, and the resulting word vectors show intriguing semantic properties: they are compositional and semantically related words are close to one another in the vector space. This work introduces a Big Data architecture for the processing of biomedical texts. In more detail, the architecture has been built specifically to implement a semantic similarity-based search tool that takes advantage of the previously mentioned WE-based technique, implementing the semantic search engine with the highest levels of performance.



### 2.1.3 Patient Record Retrieval Strategy

It has been well documented how crucial and noteworthy it is for medical practitioners to have access to timely information so they may make the finest diagnoses and decide on the most appropriate course of treatment. Electronic medical records (EMRs) have emerged as the preferred way for capturing, storing, accessing, and compiling health and medical data as a result of the development of digital technology. The potential

advantages of EMR have mostly been acknowledged. Medical personnel now use electronic medical records (EMRs) instead of the more traditional paper-based ones. The term "electronic medical record," or "EMR," refers to a continuous, real-time record of patient medical data that is created, gathered, managed, and consulted by authorised physicians and staff in any location for providing care. Computerised medical record (CMR), electronic patient record (EPR), and electronic health record (EHR), among other terms, are some of the names used to describe these records. These phrases are commonly used in the same sentence. Even though the term "EMR" was used interchangeably with "EHR" in this study, we have adopted the definition of an EMR provided by the National Alliance for Health Information Technology: "an electronic record of health related information on an individual that can be created, gathered, managed, and consulted by authorised clinicians and staff within one health care organization." An EMR ensures that the appropriate data is available when and where it is needed by making medical information available everywhere.

EMRs have the ability to offer significant advantages to physicians, clinical practices, healthcare organizations, and patients. These include allowing multiple clinicians to access patient records remotely and easily, enhancing the effectiveness, safety, and caliber of patient care, enhancing the precision and thoroughness of patient data, streamlining management and clinical review, enhancing clinician communication, and lowering the price of healthcare. Despite these well-documented potential benefits offered by EMRs, their use in conventional healthcare services is currently only slightly prevalent in many nations. Although numerous health systems throughout the world have sought to integrate EMRs widely, their successful usage in contemporary practice is still spotty and patchy. One reason for this is because putting EMR systems into place is a challenging process that involves many stakeholders and necessitates taking into account a wide range

of organizational elements, including clinical, structural, administrative, and cultural factors[50].

Numerous of these factors, according to studies, are responsible for this inconsistent achievement. Healthcare workers' lack of relevant knowledge, abilities, and competencies has been identified as a major barrier to successful EMR implementation and use. As more and more people use digital health technology and procedures, health workforces increasingly need specialized knowledge and abilities to perform in this new context. There is proof that medical practitioners can acquire the knowledge and confidence they need to use these systems through EMR education and training. The terms education and training are used interchangeably in the literature despite having different meanings and characteristics. While training is the act of teaching a person a certain skill or kind of behaviour, education is sometimes defined as the process of learning and obtaining information. The ability of healthcare professionals and students to use electronic medical records successfully is critical to achieving the desired therapeutic outcomes. A lack of training also adds to job repetition and duplication, a low rate of EMR adoption, and poor EMR use, according to research[50].

Studies have also showed that learning about EMRs has taken longer due to a lack of training. Planning, organizing, and educating users on how to utilize EMR properly have all been identified as crucial facilitators for maximizing the advantages of this tool. Therefore, effective technology introduction and continuous EMR system use are greatly influenced by training policies and tactics. Given significance of EMR the training, researchers have looked into several facets and forms of training in recent years, including on-the-job training and the effectiveness of various educational interventions. However, because each of these studies concentrated on a different component of training, they do not offer a comprehensive understanding of EMR training. We are not aware of

any review that lists the most recent methods and conceptual frameworks for EMR training for diverse target groups while taking varied training outcomes into account. Due to the variability of the published publications, we attempted to synthesize knowledge on EMR training for both students and healthcare professionals (HCP) in this review. This will serve as a road map for future research and a summary of the current data. The PCC (Population, Concept, and Context) components served as the foundation for the study question's formulation. This question covers all end users who already use or plan to utilize electronic medical records (participant groups), training interventions for using EMR in various training environments (context), and potential results of these users' EMR training (concept) [51].

With the growth of medical informatics, clinical staff can now readily obtain important information using queries because to the widespread usage of information retrieval (IR) techniques in EMR systems. It is noted that direct usage of formatted Structured Query Language (SQL) is challenging for clinical professionals, and that the majority of conventional EMRs should be formatted and kept in relational databases. In addition, unstructured documents that can't be readily retrieved by SQL still exist in EMR systems. Due to the widespread usage of full-text retrieval in EMR systems, users can now quickly access specific information by using query terms. However, due to its distinct features, EMR retrieval differs significantly from IR approaches in generic areas like retrieving journal publications. Firstly, compared to journal publications, EMRs have many more fields, and the significance of each field varies depending on how an EMR is retrieved. Currently, most IR techniques do not give this problem due consideration. Secondly, since there are many negative relationships in EMRs, such as "Exclude history of hypertension, diabetes," direct word matching may provide a large number of irrelevant documents. Thirdly, query expansion (QE), which increases the comprehensiveness of

findings, has been commonly used in IR algorithms. However, the professionalization and diversity of EMR records may result in the problem of query drift, which makes accurate retrieval difficult [51].

A suitable IR algorithm should be developed based on the aforementioned traits to ensure the performance of EMR retrieval and improve users' experiences. Three things should be taken into account by the retrieval method for EMRs: a. Field Weights: The relational databases used to hold EMRs have a large number of fields, and the submitted query terms may appear in several fields. As a result, these fields should be given distinct weights throughout the retrieval process to distinguish between the importances of the fields and produce more accurate results. b. Negation Detection: In Chinese EMRs, negative relations frequently arise; however, most retrieval algorithms are unable to recognize negative phrases, which may result in incorrect matches. Therefore, it is important to find negation relations in order to obtain accurate papers. c. Elimination of query drift: As was already indicated, QE may introduce unnecessary expansion words and reduce precision. Therefore, a novel approach should be developed to circumvent the drawbacks of QE in EMR retrieval. We propose an improved algorithm of EMR retrieval based on structure and language features to promote accuracy and comprehensiveness at the same time, to address the issues that most traditional retrieval algorithms ignore the unique characteristics of structures and languages in EMR documents.

The Delphi technique is used to allocate field weights after expert consultation. Second, a rule-based system for negation detection is developed. Third, the BM25 formulas are improved by the addition of field weights and negation detectors, yielding the original retrieval results. Fourth, re-ranking is done using temporal data (time information) from EMRs and the expansion terms from Pseudo-Relevance Feedback (PRF). Our system

takes into account the particular traits of EMRs, which improves the evaluation metrics significantly when compared to other techniques[51].

Choosing where and how to seek for records is part of the search process. The retrieval of a single health record or fact may be accomplished with a single query, but more frequently, it is a difficult and iterative process. It is a crucial component of the "starting" or "opening" stages of research that are mentioned in process models for finding records. The search activity itself may start in a variety of ways, such as with references to recent books or articles, suggestions from a colleague, or keywords intended to find specific information or explore a new topic. Direct searching, chaining, browsing, probing, and accessing are the primitives connected to the searching activity. These distinctions hold true for both the analog and digital record environments. Although online record searching is undoubtedly a common activity across disciplines, recent studies have tended to focus on it. As a result, it is currently impossible to determine how much of an influence switching to digital search tools has had overall. Researchers in science and medicine almost solely opted to conduct their searches using electronic resources, according to a recent campus-wide survey[52].

The availability of digital materials, according to about half of the interdisciplinary scientists polled in another study, had a significant impact on their search behaviors. Studies of academics have frequently revealed that they frequently use search engines, particularly Google, which enables continuous search across a broad and diversified variety of sources. A recent study that looked at decades' worth of citations and the effect of internet accessibility revealed that patterns have changed as online searching has supplanted print browsing. It issues a warning that scholars seem to be neglecting earlier but still relevant literature and concentrating solely on sources that have already and previously been referenced, leading to the usage of a more condensed and homogenized

variety of literature[52]. When a health information management professional has a clear objective, direct searching takes place. They might be seeking for information about a certain patient information, for instance. Direct searching is typically done in databases using well-known keywords, names, reference numbers, or other lead terms. A survey of users of a Finnish national digital resource revealed a high level of keyword searches in both journal databases (63%) and reference databases (53%), demonstrating the dominance of keyword searching in digital resources.

Researchers have discovered that keywords are crucial for both humanities scholars who routinely look for persons, places, job titles, and other proper nouns connected to well-known materials and historians who need to find artifacts that are known to be in archives. In the humanities, it has been demonstrated that developing efficient search strategies also requires the use of keywords that represent discipline-specific phrases and other domain-specific indicators. Direct searching is a technique used by academics to validate their theories and facts over the duration of a research endeavor. Humanities researchers use this type of confirmation searching to support their theories and make it easier to remember earlier research in a certain field. However, research on scientists has revealed that their direct searching is typically directed at specific queries or a problem at hand when carrying out an experiment or writing up results, or for verifying the accuracy of material in hand. Interdisciplinary researchers have been observed to conduct searches to verify the veracity of quotes and citations, and for women's studies researchers, it has been discovered that locating gaps in the literature is particularly crucial at the conclusion of a project. In a particularly interesting way, as interdisciplinary researchers frequently uncover data that is "intellectually distant or from unknown sources," a further layer of confirmation searching may be necessary "to interpret, verify, and anchor the new material"[53].

Online, users typically search more superficially and more quickly. One study of neuroscientists using PubMed revealed a typical search behavior. Large retrieval sets forced searchers to limit their selection to the first few pages of results, however some did transfer result sets into bibliographic software for subsequent examination. Few users modified their search terms or made use of advanced search options to improve their results. Although it is well known that search queries with vague terminology can produce extremely huge retrieval sets and that misspellings can produce no results at all, many databases and online catalogs do not provide users with recommendations for refining a query. Scholars in the humanities have expressed their continued gratitude for library card catalogs' tolerance of small terminology errors. Based on an assessment of the University of California's library services, recommendations for search systems have included adding multilingual spell-checking, increasing sensitivity to specialized terms, and providing options for related and alternative terms and themes. It was also proposed to offer search extensions into more catalogs, including WorldCat, Amazon, and other search engines, as well as access to librarian support by chat or email reference[53].

Chaining offers a crucial route to secondary materials for humanities academics via books, papers, and reviews. However, the technique of "mining" the expert bibliographies compiled by others has additional types of value built in. Chaining reduces research time for a project, aids in locating the most significant works on a subject, and helps to develop an awareness of the landscape of a field. According to one study, humanities scholars' use of "seed documents" for chaining made it especially easy to find sources that weren't included in normal indexes. Chaining has been demonstrated among scientists as a vital tactic for locating older information for use in both education and research. The concept of "chaining" can be expanded to include sources located through human interactions, where the "link" is an idea from a coworker or collaborator. Studies from several

academic fields have uncovered evidence of this kind of interpersonal chaining. It is also addressed below as a form of "consulting," a primordial activity connected to collaborative activities. Researchers in the fields of women's studies, libraries and information science, graduate humanities students, sociologists, multidisciplinary researchers, and astronomers have all been found to rely on their peers to propose pertinent books and articles[54].

According to a recent study, "using colleagues as information sources for journals was more typical in the humanities than in other fields," even if the process of chaining was generally a substantially more important method in economics and engineering compared to humanities and medical. For a while now, computer scientists have relied on email discussion lists to get references. Interdisciplinary scientists may engage in the technique less frequently, but the results can still be of very high caliber. A scenario where a researcher initiated "cold contact" with a prominent authority in a different subject and received a comprehensive and extremely useful bibliography in return was described in one study. Since chaining on the Web frequently mixes linking between multiple forms of digital information with search engine inquiries, it has been referred to as "quasi-footnote chasing." Studies have demonstrated how geographers chain, undertaking repetitive cycles of searching and working by following links in websites and online journal articles, tracking citations in book reviews and in print publications, and searching library catalogs. According to a study on how academics utilize e-texts, the distinction between traditional chaining and browsing vanishes in the online setting and is replaced by the practice of "netchaining," which creates "online information chains that link sources and people."

It has long been acknowledged that browsing is a significant and popular information behavior. In contrast to chaining and focused searching, browsing involves the searcher perusing through a collection of assembled or available information. The Web has had a

significant impact on what and how scholars browse, as well as on the speed at which they can navigate through digital content from a variety of sources, similar to how it has on other sorts of searching. For instance, a research that combined deep log analysis with surveys of Web usage discovered that users frequently participate in "bouncing" or "flicking," going quickly from site to site and infrequently returning to investigate content in greater depth. Other research support the idea that print browsing is still valuable for academics. According to a significant poll of academics in the humanities and social sciences, almost 80% thought perusing the library's shelves was an important, albeit infrequent, pastime. Studies of scholarly information consumption in general have found a substantial correlation between browsing and interdisciplinary and humanities subjects. In a brief study of interdisciplinary researchers in the humanities and social sciences, almost all of the respondents browsed in some way during their research[54].

There seems to be more variety in the sciences. For instance, surveys have shown that physicists, chemists, and biologists identify up to half of their reading material by browsing, whereas browsing among astronomers was far lower, at 20%, presumably because the field's online information systems are more extensive and integrated. Collections of all kinds are ideal for perusing. Geographers and humanities researchers have conducted studies to determine how much they value browsing in libraries, particularly the parts with the newest books and periodicals. Due in part to the less developed foundation of indexing and reference sources in younger multidisciplinary subjects, women's studies academics have mainly relied on reading publisher catalogs and bookstores. Case studies of neuroscience research have shown how the speed and adaptability of online surfing can stimulate reading of content that might otherwise be disregarded, including collections of conference poster abstracts that cover a variety of very recent research projects54. Web searching can also direct researchers to more

traditional library materials that they might not have found otherwise. Additionally, journal table of contents browsing has been easily adapted to the electronic environment, along with the related activities of accessing and evaluating, which are covered in more detail below.

More specifically, research suggests that whereas scientists scan journal titles before vertical leaping to the full text, social scientists retrieve recent articles of interest by vertical chaining—moving from the table of contents to the abstract and then the full-text. When it comes to searching methods, browsing stands out for its potential to lead to a lucky find. Because browsing is typically broad and flexible, scholars come across items that would not be discovered through searching or chaining, and the new information may spark fortuitous and unanticipated intellectual connections. A thorough study of academics in the UK revealed that while few scientists appreciated print collections for haphazard browsing, those who studied the arts, humanities, area studies, and languages were twice as likely to think so. The ability to browse is a clear advantage of having a library close by, according to several academics and interdisciplinary researchers who have shown that physical libraries are more conducive to serendipitous discovery than digital libraries. In fact, according to some humanities researchers, browsing is "difficult" to do in an electronic setting.

Due to the dispersion of information and the mismatch in vocabularies within areas, typical searching and browsing procedures can be insufficient for scholars looking for material across several domains. Interdisciplinary researchers employ probing, an exploratory technique, to locate pertinent data outside of their field of specialization. Probing is different from browsing in that it is investigative in character and seeks to identify information in foreign domains. It may be loosely oriented across a topic area, like browsing. A "deliberate expansion of information horizons to bring within range

different information types, sources, concepts, and disciplines" is included in breadth exploration. However, not all probing aims to enlarge or broaden the search area. While it is common for scholars to conduct extensive inquiries into other fields in order to broaden their perspectives and come up with fresh ideas, such inquiries can also be focused on a specific issue or the discovery of a specific piece of missing information[55].

Researchers from all disciplines engage in cross-disciplinary searching and probing. Studies across a number of academic fields have confirmed the practice. Examples include historians and musicologists looking for information across a broad range of fields, such as philosophy, anthropology, art history, literature, statistics, sociology, criminology, and geography. Molecular biologists conducting extensive searches in databases to learn about new topics and stay current. When a study emphasis is not yet clearly defined or understood, domain-specific searching might also take on a "probing" quality. Studies of the application of domain knowledge by users or the representation of domain knowledge in search tools have consequences for the support of scholarly inquiry. For instance, a study of humanities academics found that domain knowledge enhanced success with conceptual searches but that topic classifications were useless since they did not reflect how academics conceptualized their respective areas[55].

Information service providers are aware that merely making discoveries is insufficient since scholars want immediate access to the materials they locate. A recent study that found during a three-year period that scholars were less likely to regard libraries as a doorway to information, with the shift being noticeably bigger for the sciences and the social sciences compared to the humanities, may have represented this assumption. A study that demonstrated how chemists at one institution "created and relied upon their own list of relevant e-journals" rather than using those compiled by the library provides another example of access needs. This study demonstrated how personal tools "increase

efficient connections to what they consider to be their core literature." But when full-text digital library content is accessible, academics from all disciplines have taken advantage of its effectiveness and ease.

The slower acceptance of digital sources in the humanities is largely due to their lower levels of production and distribution. Researchers in the arts and humanities were found to be twice as likely as social scientists to believe that physical access to library collections is crucial to their work, compared to researchers in the physical, biological, and medical sciences. Studies of humanities researchers have also shown that they continue to rely on primary sources housed in archives, special collections, and museums, along with frequent travel to work in person with physical resources. E-journal use is prevalent and strongly favoured over print in the sciences. Many studies have indicated that scholars prefer to print out papers or other sources for later perusal, but other researchers preserve electronic copies for later access. For instance, astronomers printed out more over half of their readings before viewing them, and they read less than one-fourth on computer screens, despite accessing nearly 80% of their findings from electronic sources. In that survey, it was discovered that PDF format was chosen for printing while HTML was preferred for online reading. According to a "deep log analysis" of scholarly databases, Blackwell Synergy and Emerald Insight users respectively visited PDF files 56% of the time and twice as frequently as HTML publications. According to another study, 70% of the academics polled preferred PDFs to HTML. Improvements are required in e-text functionality enabling backward and forth navigation through pages inside a document and between separate publications, as print is still widely believed to offer a clear mobility advantage.

Researchers create personal collections that help their ongoing and future research as they look for and access information. The basic activities involved in scholarly material

collection include gathering and organizing. Unfortunately, there is little knowledge of patterns in content and use because so few early research have particularly looked at the personal collecting activity of scholars. Due to the accessibility of e-resources, the practice appears to be enduring across time with some change. For instance, studies conducted ten years apart found that medical and biological professionals used their personal journal collections to find papers and stay current on their fields' research. While reliance on library collections has grown as more e-journals are available, longitudinal surveys have shown a fall in scientists' yearly personal subscriptions, from an average of 5.8 titles in 1977 to 2.2 titles in 2002.

Reusing data collections is a topic of significant interest in LIS as well as information sciences and is seen to be particularly crucial for data-intensive fields in the sciences, as will be briefly explored below and again more completely in a subsequent section on data sharing. Although there is no proof of real sharing activities, personal scholarly collections that are mostly made up of documents rather than raw data have also been thought to offer potential use for other users. According to one research, one-third of fine arts respondents recommended resources from their own collections to their students because they were more valuable and applicable than those from their university's collection (Reed & Tanner, 2001). In a different study, over half of the academics believed that other researchers would find value in their own collections.

Collections may be created to enable ongoing work with a set of materials, to facilitate long-term accessibility, or for convenience. An early, extensive study of humanities, social, and scientific intellectuals revealed that the majority of participants kept some kind of personal collection, primarily composed of monographs and journals. Similar patterns of collection were found in a later study, although it turned out that social scientists were more likely to have bound reports, manuals, and loose leaf materials in

their collections. The RLG investigations included academic departments' disciplinary-specific collections, which contained items including monographs, journals, reports, prepublication papers, maps, and pictures. More particular, linguistics departments gathered important dissertations in the field and engineering labs frequently gathered technical reports[56].

A recent study found that 37% of humanities and social science researchers claimed to have assembled original research collections, while 56% said they had engaged in "personal archiving activities." It has been observed that humanities scholars in particular cultivate and take pride in their personal libraries of books and other print sources. Since rereading is a crucial component of their interpretative work, their collections "are a need. Numerous texts could need to be periodically or consistently read, and some might take years or decades to "read." Aside from books, journals, and conference papers, scientists also compile individual photocopies and digital articles. In one poll, between 85 and 95% of the scientists responded that they kept personal collections of reprints and article copies, with 63% of chemists reporting collections of more than 500 reprints. More recently, a survey found that 70% of science and medical professors maintained both paper and electronic article collections. The significant benefit of being able to compile several digital documents and have them portable on their computers has been noted by scientists.

For the aim of modeling, scientists also gather data from their own experiments and field investigations as well as data from other researchers. For instance, field note archives are kept up to date, paper and digital maps are gathered and used as primary and supplementary materials in geography, and "by mid-career, many have built substantial image collections of their own." Some researchers are getting interested in data repository and federation activities as data becomes more digitized and portable for various uses,

and some funding organizations are requiring long-term data management plans for programs they support.

In the humanities, primary sources are typically not created by the researcher but rather are gathered from a variety of sources in the form of texts, photographs, facsimiles, and objects. Manuscripts, letters, plays, and pictures are among additional primary sources that are commonly collected. Because they "have the advantage of being personally selected and indexed," the art reproductions in the researchers' personal collections "have the advantage of being compensated for inaccessible or deficient institutional collections," according to the qualitative study of art historians mentioned in the introduction. Literary theorists tend to buy the texts they analyze, rarely depending on borrowed copies, and fine arts faculty members amass collections of books, movies, plays, and musical scores. Since historians rely significantly on their own material kept in personal notebooks packed with notes, facts, and references as well as gathered cultural artifacts, such as objects discovered in junk shops that connect to the period, place, or object of study, historians' collections may be among the most diversified[57].

Scholars develop organizational frameworks and tools for organizing and managing the content as personal collections grow larger and more complicated over time. The majority of research on how personal collections are organized has been in the humanities or social sciences. In one university research, for instance, 98% of the humanities and social science faculty reported maintaining physical copies of print materials due to concerns about computer failure, a lack of technological know-how, and computer storage space issues. Currently, very little is known about how scientists manage their libraries of literature and data, maybe because organization is thought to be less of an issue or simpler in the sciences.

For their collections, humanities experts frequently create individualized organizational systems. Materials can be arranged and kept in a number of different ways, including detailed databases, orderly file folder systems, and mounds on the floor. According to one study, a historical biographer recorded every second of a person's life on a separate 3x5 card. In a different study, art historians emphasized a need for the creation of more thorough cataloging systems as well as established specialized methods for organizing materials in line with their requirements for both teaching and research. Reports have also shown that academics from a variety of disciplines are using citation management software to help organize digital content. At this point, scholars are aware that the data they amass may be useful to other researchers, but they see their peculiar organizational structures and copyright restrictions as obstacles to collaboration. On the other hand, some academics are developing extremely sophisticated digital collections based on their shared intellectual interests. For instance, the thematic research collections that humanities academics are creating are scholarly outputs that assemble specialized source material, tools, and skills to assist inquiry in a particular subject field.

Although reading is a very common information activity, it has only sometimes been the focus of a direct study in the field of information behavior. Thus, there is surprisingly little information available on the complicated and diverse reading processes used in research and study. The fundamentals of scanning, evaluating, and rereading have begun to appear in the literature, and aspects of scholarly reading have been documented as part of more broad studies of document or e-journal use. When information is first seen, it is initially scanned in some fashion, like when a researcher scans the bibliographic fields in an online catalog search or skims sections of a book at a library. According to the type of source, the researcher's aims, and the mode of inquiry, each source is evaluated to establish its relevance to the information problem at hand or to a longer-term information

requirement. When material is read more carefully, saved, and then read again later or over time, other reading processes come into play.

In longitudinal studies, general reading habits associated with e-journal consumption have been thoroughly recorded. The usage of e-journals has been customary in the fields of science and mathematics, where the format has been publicly accessible for a while and has been well-accepted. Business and economics have also reported high levels of use, while history, education, and the arts have transitioned more slowly—possibly because fewer e-journals are available in fields other than the sciences. These e-resource patterns are indicative but not exact indicators of real reading behavior.

When working with documents, researchers frequently scan them first before reading them in-depth. This method has long been prevalent with print documents, and in the digital context it is speeding and becoming more dynamic. For instance, research has shown that scientists and engineers frequently skim papers to find important details. They start with the abstract before going on to section titles, lists, summary clauses, definitions, and examples. This method has been applied to digital texts, where search functions make it simpler to locate certain sections for reading, such as explanations of experimental procedures or the use of theories. Recent large-scale transaction log studies, in example, have revealed that academics are using abstracts more frequently than full-text databases. The most abstract-only sessions were held by social scientists (41%), followed by mathematicians (40%), computer scientists (35%), economists (33%), life scientists (13%), engineers (13%), and chemists (12%), according to an analysis of ScienceDirect logs. Additional user surveys made it clear that, while valuable for quick access and download, abstracts did not replace reading the entire article.

Additional research has indicated that researchers frequently start with the introduction of a document and skim the complete text before printing it off for subsequent reading. The findings of current studies may be taken as proof that academics are reading more now than in the past. For instance, compared to the mid-1990s, the number of publications read by university medical professors increased by over 30% in 2006. The average reading time for articles by medical researchers decreased at the same period, coming in at around 24 minutes. The technique of "bouncing" from site to site, which is notably prevalent in medicine and the life sciences, is becoming more popular among scholars as they spend less time with more papers and more time quickly reviewing information on the Web. All of these trends imply that rather than reading more, researchers are scanning, examining, and exposing themselves to more sources. As they swiftly go through more information, spending less and less time with each item, they may really be engaging in active reading avoidance in an effort to evaluate and utilize stuff with the least amount of actual reading as possible[58].

Rereading books, articles, notes, and papers of all kinds can help you remember what you read, improve your understanding, and relate and incorporate prior research into a work in progress, for example. Rereading previously read material helps academics establish a foundation of knowledge, uncover knowledge gaps, and create new study directions[58]. One of the main causes for why academics create personal collections is rereading. Rereading a work is an important component of interpretation and analysis for humanities academics, and it may take place throughout the course of a whole project, several projects over time, or the duration of a lifetime. Astronomers were found to reread more frequently than other scientists in the sciences, "which may be due to the ease with which astronomers can retrieve older articles electronically, or they may reread more because they reuse older articles more frequently than other scientists," according to the study.

Writing and rereading go hand in hand. According to a survey of multidisciplinary humanities scholars, readings from a variety of sources served as a "prime" for writing exercises. In order to build writing skills, literary critics and music scholars both regularly review their accumulated primary and secondary research materials during the writing and revision stages of a project. However, contrast to journals, which can be read again later at their "leisure," historians may need to write a lot at an initial reading, particularly with primary sources that must be obtained in archives and special collections.

## 2.2. Theoretical Review and Framework

### 2.2.1 SERVQUAL Theory of Service Quality by Parasuraman

Service quality among health information professionals is a concept that has generated a lot of attention and discussion in the research literature because of numerous difficulties in both defining it and measuring it with no general agreement emerging on either. Besides, there are various definitions of what constitutes service quality in healthcare practice. The degree to which a service practiced or rendered satisfies patients' requirements or expectations is the definition of service quality in healthcare practice that is most frequently employed. The gap between patient expectations of service and actual service performed is another way that health information management professionals define service quality. Patient discontent results when expectations are too high and perceived quality is lower than performance[59].

The majority of researchers have acknowledged and utilized the service quality assessment model in a number of sectors, including healthcare, manufacturing, and education. The service quality model recommended using reliability of service, punctuality of service, communication of service, empathy, and multiple dimensional

structures of perceived quality healthcare practices as the metrics for gauging service quality. Reliability of service is based on managing patient service issues, providing services correctly the first time, doing so on schedule, and maintaining a history of error-free performance. Furthermore, they list reliability as the key component of traditional service. Additionally, reliability includes completing orders correctly, providing accurate patient health information, providing accurate quotes, including the correct price on the bill, and keeping service commitments. The most important aspect of healthcare practices is reliability. More specifically, SERVQUAL was used in a study by a scholar to collect data from several businesses, such as healthcare delivery centers and hospital health records. With the possible exception of some of the values connected with key dimensions, he discovered remarkable reliability in each of these companies. The "ability to perform the promised service dependably and accurately" is the definition of reliability.

Timeliness of service: it is defined as "the willingness to help patients provide prompt service". Furthermore, it can also be defined as speed and timeliness of service delivery. This consists of processing speed and service capabilities to respond promptly to patients' health issues, and wait a short and queuing time. More specifically, timeliness is defined as the willingness or readiness of healthcare workers to provide services. It contains the timeliness of service. It also contains understanding the needs and requirements of the patients, easy operation time, individual attention provided by the healthcare workers, attention to the problem and patients' safety in their dealings. Empathy is a caring and individual attention that the hospital provides to its patients. It contains giving individual attention to patients by health workers who understand the needs of their patients and patients' health. Empathy can be defined as the ability to make patients feel welcome, especially by health workers attention. Additionally, the SERVQUAL model indicates that satisfaction is related to the size and direction of disconfirmation of a person's

experience when he/she faces his/her initial expectations. Assurance is referred to as every oral and written exchange or communication between healthcare workers and their patients. It also includes good manners, attitudes, politeness, and knowledge of healthcare workers. This theory is crucial to the service quality in healthcare practices of health information management professionals in health institutions because it provided insight into the elements that must be taken into account in order to provide patients with high-quality care by responding quickly, showing empathy for them, and providing them with reliable services.

### 2.2.2 Marchand's Information Orientation Theory

Marchand's definition of Information Orientation Theory reveals an overall understanding about information management. The study of how interactions between people, information, and technology impact business performance is at the heart of information orientation theory. It aim to build an infrastructure of information technology application capacities within a business organization to enable effective information utilization and business performance improvement, this theory speak to preservation and conservation practice. Preservation and conservation practices are focused at ensuring that significant patient health records in all formats are preserved and conserved in accessible form for as long as possible as this affect the health institution activity. Preservation and conservation practice is the means of minimizing the physical and chemical deterioration of patient health records which is processed as information. Moreover, it is described as an umbrella term for an array of activities, principles, practices, and organization that ensure the usability, longevity, and accessibility of patient health records for improved quality healthcare services. Preservation and conservation practice activities entails: collections, repair, reformatting, microfilming, digitization, monitoring and control of the environment, proper care and handling of patient health

records (casenotes), binding, disaster preparedness and recovery and preservation and conservation education and training. In preservation and conservation of health records, consideration is given to every element that promotes the protection of patient health records including the housing, favourable and suitable environment, storage system and security which involves health information management professionals (people) as propounded by Marchand just to enhance service quality (performance) [60].

Information technology practices, information management practices, and information behaviors and valves are three information capabilities that were also deduced from the Information Orientation Theory. Information management practices describe the capabilities that manage information effectively over the life cycle of information utilization, which includes sensing information, gathering information, organizing information, processing information, and maintaining information as it compliment and go in line with patient health records life cycle under preservation and conservation practice.

How does the interaction of people, information, and technology affect business performance? is a question that Marchand, Kettinger, and Rollins attempted to address in 2001 by surveying over a thousand senior managers from 169 senior management teams in 98 companies operating in 22 countries and 25 industries. Information Orientation appears as the response to the question. They provide an explanation of information orientation, a brand-new metric for efficient information utilization. It gauges the degree to which senior managers believe their companies have the tools necessary to effectively use information to boost customer service. By assessing an organization's level of proficiency and synergy across the following three crucial information capabilities, information orientation helps an organization operate better. The three information

capabilities are the key traits that an organization should possess if it is information oriented [60].

Information Technology Practices (ITP) refers to an organization's capacity to efficiently manage IT applications and infrastructure to support their business operations, business processes, managerial decision-making, and innovation. The ability of an organization to effectively manage and employ information technology practices (ITP), information management practices (IMP), and information behaviors and values (IBV) is measured by information orientation. Information Management Practices (IMP) refers to the skills necessary to effectively manage information throughout the life cycle of information use, which includes gathering, organizing, processing, retrieving, and maintaining information. Information Behaviors/Values (IBV) refers to the skills that encourage people to act in certain ways and have certain beliefs in order to use information effectively. These three information capacities were valued by earlier scholars and consultants, but they were treated individually and at distinct times and in separate schools of thought. Senior managers in the information-oriented organization should bring together the three streams in their brains and adopt a new perspective on how to manage information, technology, and people to increase performance.

IT Operational Support By implementing computer systems, organizations were able to achieve automated control of the business tasks. This was made possible by the use of information technology, which includes hardware, software, application programs, telecommunications networks, and technical expertise that support the information processing and communications activities at all levels of an organization. The use of information technology helps lower-skilled personnel increase their operational effectiveness and consistently deliver high-quality work. There are three functions that IT for operational assistance in organizations could play: processing some fundamental

business transactions, scaling up operational activities of an organization. Keeping track on the staff's performance and behavior. However, IT focuses on institutionalizing and formalizing yesterday's strategic choice for both operational support and business process assistance.

Sensing information: This is the phase of the record life cycle in which records on the health of patients are found and identified. An investigation conducted more than 20 years ago found that the manager searches his or her surroundings for information, speaks with connections and subordinates, and receives unsolicited information. The network the manager built is made up of personal contacts. Some methods of gathering information include listening to consumers, keeping an eye on competitors, identifying changes in the larger social, economic, and political environment, and maintaining, sensing, collecting, organizing, and processing information to foresee patients' health issues after reviewing their records.

Collecting Information: In order to ensure that the proper record is sensed during the information collecting phase, people will: Profile employee information needs to ensure that the proper information is delivered to them at the proper time; Filter information for managers and employees to prevent information overload; Identify key knowledge sources so that employees can utilize the company's collective expertise; and Train and reward employees for accurately gathering information. There are still certain fundamental concerns that come up while gathering the information, even when new information technologies enable organizations to gather ever-increasing amounts of data and information about their clients, operations, process, and disseminate information more widely via internet technology:

Organizing Information: To facilitate access to patient records, the information organization phase of the information management life cycle focuses on indexing, categorizing, and connecting records and databases. Managers and other organizational members regularly make important decisions that affect how information is organized. It is first required to understand the categories that the chosen information can be employed in. Second, even if information is made "available" through networks and databases, it may not always be usable until organizational members can come to an agreement on a common language, nomenclature, and classification scheme for the arrangement of information sources and databases.

Processing Information: Before making decisions, people in an organization must have access to the appropriate databases and information sources. People must actively participate in the study of record sources in order to gain pertinent information that can be used as a decision-making input. Processing information is necessary for decision-making in organizations. Managers' and other organizational members' decisions have a big impact on how information is processed moving ahead. Managers must modify their decision-making standards to account for shifting business conditions. Since managers have limited time, attention, and resources, changes in the decisions that must be taken also impact the fundamental processes of detecting, gathering, organizing, and processing information into usable knowledge.

Maintaining Information: Maintaining information and records includes updating record databases to keep them up to date and refreshing data to ensure that medical staff is taking the best record for patients' attention. Reusing previously collected data helps avoid collecting the same information twice. The updated information will be gathered and compared to the database that has been kept current after keeping up with the patients' records. To ensure that the organization has access to the most recent, pertinent

information, the database must constantly update its information. Reusing information that doesn't need to redone could also result in financial saving for the organization[61]. The information management cycle is as a result a closed cycle. All metrics derived from the information orientation theory were used in the study, with exception of sensing information.

### 2.2.3 The Scholarly Primitive Theory

Scholarly primitives are fundamental skills shared by all types of scholarly work[62]. A list of primitives, including discovering, annotating, comparing, referring, sampling, illustrating, and representing, was used to clarify the notion. Examples from humanities computing initiatives were also used to further explain it. Although similar, our idea of scholarly information activities places more emphasis on the explicit part that information plays in the process of conducting research and producing scholarship[62]. At least within the humanities, where the concept was developed and applied, the notion of the primitive is unique in that it is meant to refer to activities that are common across disciplines. The examples given by Unsworth imply that the activities are relatively discrete in nature. In our application, we further develop the idea by highlighting a perception of the primitive as something at the origin or start of a more complex process. For instance, in our paradigm, browsing and chaining, which are more detailed actions that contribute to the overall search and discovery process, are viewed as primitives while information seeking is interpreted as a scholarly information activity.

A fundamental information science research subject that requires additional empirical examination is what constitutes technically speaking an information activity or a constituent primitive. For instance, when working to create a framework for evaluating

support for scholarship on their campus, the University of Minnesota Libraries adopted a different strategy. Discover, Gather, Create, and Share were named as the four general primitives that "described the range of activities undertaken by scholars throughout the research process". As a result, even though concrete standards for classifying things as primitives haven't been established, the idea has proven to be useful and intuitive in both LIS and digital humanities. The division between more general information activities and related primitives has proven useful for our objectives in organizing the variety of findings on scholarly information work that are currently found in the literature. We think that both actions and primitives are frequently shared across disciplines and essential to how scholars produce new works. They can also occur during the processes of data collection, analysis, and dissemination as well as in the earlier, more formative phases of a research effort. Our activity-centric methodology is similar to several of the information usage and search models already in use in LIS. One of the most well-known, created by Ellis and colleagues, identified six common processes based on a qualitative, comparative analysis of information seeking in the social sciences, physical sciences, and literature. These processes included starting, chaining, browsing, differentiating, monitoring, and extracting. The five core scholarly activities of searching, collecting, reading, writing, and collaborating are outlined in the literature on scholarly information work, which were absorbed also used for this research i. e. in describing how these elements will aid health information management professionals in locating patient records.

## 2.3 Review of Empirical Studies

### 2.3.1 Preservation and Conservation Practice and Service Quality of Health Information Management Professionals

The performance of the current information retrieval systems is impacted by their inability to meet the information needs of various end user groups (medical professionals and nonprofessionals) [63]. The inability to generate and show search outcomes for both medical experts' and laymen's formats makes it challenging for the current ways to respond to the questions that patients who conduct medical searches on their own typically ask after reading the results. Additionally, the approaches used today for information retrieval focus more on a particular group of people who have in-depth understanding of health. It is important to pay enough attention to and deal with the presenting problems that layman patients encounter while looking up information online that they have retrieved from their clinical reports and medical discharge paperwork. Nowadays, it is typical for information seekers to use the internet as a source for health-related information[64]. Information searchers frequently utilize search engines to find health-related content on the internet[65].

However, prior studies mainly focused on a particular group of users knowing health matters in depth, even if they met the users' various information demands, like looking for details on a certain ailment. One of the most frequently searched topics on the Internet nowadays is health-related information, which is also a key topic of study in the field of information retrieval. The difficulties in finding health-related information from various medical information sources, such as the general web, social media, and hospital records, have been widely addressed in recent years by the development of health information retrieval algorithms. Previous studies on medical information retrieval also revealed how

anxious patients are to understand the material in their clinical reports and medical discharge reports[66]. It was shown how the current information retrieval algorithms were unable to satisfy the diverse information needs of a wide range of users, including lay patients and their families, researchers, physicians, practitioners, etc. They also failed to address presentation concerns. The information requirements of various types of end users should be addressed by robust algorithms. The purpose of implementing the method of designating the most specific concept phrases during query expansion was to address concerns about presentation and similarity that layman patients encountered when examining information retrieval from the web.

Due to the large amount of information available, searching the Internet for relevant information in the medical field has become increasingly important. When users lack the skills to create effective search queries, the advantages of biological data retrievals may be severely limited. In addition, the result of the study also demonstrates that, the search engine's efficacy was evaluated gradually higher when the query approval features are turned on vs. off. To avoid issues with similarity and presentation, information retrieval systems should limit their search words to most specific idea keywords during query expansion. A study showed how appropriate health recommendations and easy access to current, accurate medical information could considerably lower a country's mortality rates from epidemic diseases like cancer. The results of the study also demonstrate that, in numerous countries, the death rates of epidemic diseases have dramatically grown as a result of national health authorities' failure to easily disseminate health information over multiple web channels[68]. The author stressed the value of using a patient-and family-centered approach when providing juvenile medical treatment, as well as focusing on getting teenagers to pay close attention. The study's findings enhanced awareness of the

reasons for using online channels to disseminate knowledge about childhood cancer and spread theoretical frameworks for developing new research in this area[67].

Studies were categorised according to whether or not the author provided a conceptual description of empathy in addition to only listing the operational definitions that were applied. We erred on the side of generosity while categorizing this item[69]. An author was tagged as providing a conceptual definition, for instance, if they summarized another author's conceptual definition without expressly declaring that it was also their own. Additionally, authors who gave definitions that we found difficult to understand were still coded as having done so. 42% of authors during the years 2001 to 2013 provided a conceptual definition. The percentage of people providing a conceptual definition increased significantly from 31% in 2001 to 49% in 2013, reaching 62% in 2017. Multidimensionality. Empathy is frequently described as a multidimensional notion that may be broken down into several dimensions, facets, factors, types, subscales, substrates, processes, aspects, etc. We categorize a study's author based on whether or not they expressly indicated that the idea of empathy can be multidimensional (might have numerous definitions or aspects). 33% of authors cited multidimensionality between 2001 and 2013; this number rose to 52% in 2017. Just those authors who provided a conceptual definition in 2017 cited multidimensionality 76% of the time, with affective and cognitive empathy being the most frequently mentioned distinction. Even though the IRI was created to represent several dimensions, only 51% of the 133 research that employed the IRI in the 2001–2013 sample conceptualized empathy as being multidimensional. 64% of the 37 authors who employed the IRI in the 2017 sample made references to the concept of empathy's multidimensionality. For example, assessing the IRI as a total score hides the conceptual multidimensionality of the instrument. We did not code whether authors

conducted analyses for individual dimensions of the instruments they employed versus using the instrument's overall score.

However, the majority of authors did make distinctions between the IRI scales in their study. Authors frequently refer to Empathic Concern and Perspective Taking as paradigmatically embodying affective and cognitive empathy, respectively, when just two of the four IRI scales were employed. Although this subscale has been acknowledged as problematic for many years (e.g., I sometimes feel helpless when I am in the middle of a very emotional situation; In emergency situations, I feel apprehensive and ill-at-ease), authors who included it frequently failed to acknowledge its contentious nature. This is because it measures aversive avoidance or dysfunctionality in the face of others' emotions rather than the prosocial orientation assumed by many writers. The Personal Distress scale is either not connected with other Accepted Manuscript 12 definitions of empathy, or it is correlated adversely with neurotic tendencies and other maladaptive qualities [71].

Even while interpersonal precision is linked to numerous desirable qualities and outcomes, researchers admit that it can be exploited for selfish as well as charitable purposes and should not be viewed as a fundamentally prosocial quality. Now let's talk about how many characteristics or components writers' definitions have single characteristics that define definitions. Examples include limiting the definition of empathy to prosocial concern for the wellbeing of others, or to comparable concepts such as sympathy or understanding other people's feelings. Empathy was also defined as emotion contagion, emotion sharing, and vicarious emotional experience[72]. Recognizing one's own and other people's emotions is necessary for the empathic reaction. Affective responsiveness, or the capacity to share and mimic other people's emotional states while simultaneously understanding that these emotions are not one's own, is also necessary. Additionally, it necessitates the capacity for emotional perspective taking, which is the ability to adopt

another person's viewpoint while maintaining the contrast between oneself and others. Similar to this, mentalization and theory of mind are overlapping entities. Emotion recognition, which is closely related to cognitive empathy, is the capacity to appropriately ascertain others' emotional states from their outward displays of emotion. Conceptually, affective empathy refers to emotional responses that are consistent with the emotions of the interaction partner. Additionally, emotional contagion was defined as an automated mimicking of another person's emotional response as a prelude to affective empathy.

### 2.3.2 Patient Record Retrieval Strategy and Service Quality of Health Information Management Professionals

There have been several proposed better retrieval algorithms as a result of years of study on the optimization of EMR retrieval methods. How to resolve the discrepancy between the EMR data and the queries provided by users is the primary difficulty of EMR retrieval[73]. In conclusion, three different types of improved retrieval algorithms have been the subject of popular research. These algorithms are based on feature matching, machine learning, and graph structures. Researchers extract features from queries and EMR documents based on clinical needs because EMR retrieval is complicated and ambiguous. EMR papers are then categorized based on these features. A researcher broadened the query terms and took into account the EMR ranking's relevance and uniqueness. When a researcher used MeSH concepts, retrieval results were obtained using a Markov random field model and a combination of relevance models. It used a multi-factor ranking model to enhance EMR retrieval and a semantics-based query expansion technique. As we can see, the majority of solutions employ QE techniques to get rid of semantic ambiguities and improve the EMR's feature ranking according to clinical requirements. It's unfortunate that these methods rarely take into account the distinctive features of Chinese EMR retrieval, such as many fields and negation relations, and query expansion may

result in query drift, which may reduce retrieval precision. Retrieval methods based on supervised learning have become very popular as machine learning has advanced. A popular retrieval technique is Learning to Rank (LTR). With labeled training datasets, the algorithm automatically extracts the characteristics of EMR documents and, using the learnt feature weights, produces retrieval results[74].

The retrieval scores by svmRank were calculated using the score weights of BM25, PL2, and BB2. Machine learning makes it easy for LTR to extract the right features from queries and EMR documents, which allows the corresponding retrieval algorithms to generate better logical scores than certain conventional techniques[75]. Considerable-quality training datasets are necessary for efficient learning to rank, but they come at a considerable cost in terms of hand labeling. It's challenging to guarantee the effectiveness of machine learning because there is no training dataset available for Chinese EMR retrieval. The graph notion has been incorporated into EMR retrieval as it gains popularity in natural language processing. The graph-based approaches, in contrast to earlier studies, convert electronic medical records (EMRs) into graph structures based on medical ideas in the documents, and the retrievals are completed by term frequencies and word correlations in the graph. Medical records as concept graphs to allow effective and rich information retrieval, using a graph-based technique and construction of a graph-based concept representation of EMR data based on ideas in SNOMED CT. It is clear that graph structures take the correlation of medical terms in EMRs into account and can improve retrieval performance, but the features of Chinese EMR retrieval have not been fully taken into account by existing graph-based approaches, and the retrieval process can still be made better. The information in query logs and the initial retrieval results can represent the users' retrieval goals and be used to improve the efficiency of information retrieval, it has been observed. As a result, approaches for relevance feedback are

suggested in order to enhance retrieval efficiency. In order to increase the efficiency of information retrieval, Singh and Sharan suggest a number of word selection techniques employing relevance feedback[74].

To increase the efficiency of pseudo-relevance feedback in medical retrieval, a researcher merges medical ontologies[75]. The frequent usage of Chinese EMR systems makes it challenging to gather sufficient query logs, and prior research has shown that using terms from the top retrieval results as expansion terms directly can result in query drift. As a result, approaches for EMR retrieval that are based on relevance feedback can be further enhanced. In conclusion, there are numerous ways to address the issues with EMR retrieval. These techniques enhance the retrieval from diverse aspects' accuracy and thoroughness. However, the majority of currently used algorithms neglect the distinct linguistic and structural characteristics of EMR texts. Additionally, the query drift brought on by query expansion is still present, which significantly reduces the efficiency of EMR retrieval. Therefore, the goal of our study is to examine these traits and enhance EMR retrieval performance[76].

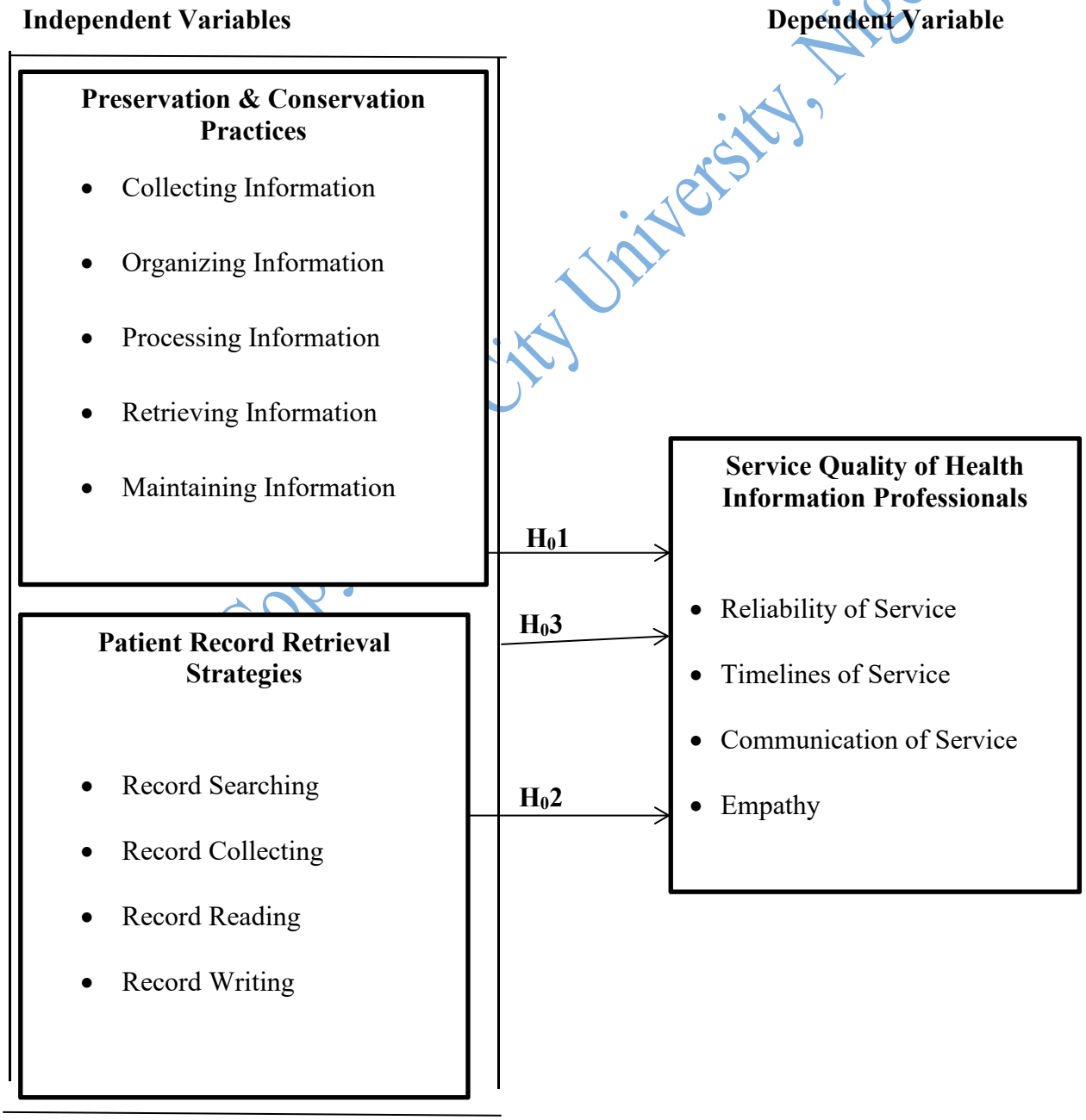
There have been several proposed better retrieval algorithms as a result of years of study on the optimization of EMR retrieval methods. Eliminating the discrepancy between EMR data and user-expressed queries is the main problem of EMR retrieval. In conclusion, three different types of improved retrieval algorithms have been the subject of popular research. These algorithms are based on feature matching, machine learning, and graph structures. Researchers extract features from queries and EMR documents based on clinical needs because EMR retrieval is complicated and ambiguous. EMR papers are then categorized based on these features.

The majority of EMR papers have been formatted internationally, and in most EMR systems, completely structured data and unstructured free text coexist[77]. According to The Criterion of the Documentation of the Medical Record published by the National Health Commission of the PRC1, EMRs must also be created based on clinical business categories and stored in logical databases. As a result, there are many fields in EMRs, and a single medical phrase may appear in several of them. In clinical settings, it is seen that the relevance of the various disciplines varies[78]. As an illustration, the fields of discharge diagnosis may have greater clinical value than the fields of principal complaint. However, the majority of EMR retrieval algorithms haven't taken it into account, which could lead to issues during retrieval. Despite the fact that enhanced retrieval can let users search in particular fields, clinical personnel frequently does not know the field range before retrieval. Weak relevant or irrelevant documents may be returned on top if the importance of fields is ignored in full-text retrieval, therefore the fields of EMRs should be given fair weights, and the weights are then applied to the process of EMR retrieval.

It is observed that field weight determination is arbitrary and intimately tied to therapeutic applications. We adopt the Delphi method's idea and use questionnaires to solicit advice from medical professionals so that the clinical needs can be fully taken into account when assigning weights. Following are the comprehensive steps: First, diseases, symptoms, medications, and operations are selected as the categories of retrieval keywords in our research by combining the common demands of Chinese EMR retrieval. Then, according to the categories of medical terms, the relevant fields from The Criterion of the Documentation of the Medical Record are compiled; all the fields that contain one category of medical terms are counted. The fields that carry temporal information are also compiled for the eventual reranking that will be taken into account. Unstructured free text is found in various fields, including the patient's main complaint, a history of their current

disease, and their family's medical history. The content of clinical notes has thus been included in the chosen areas, ensuring the success of EMR retrieval. Second, we create questionnaires and send them to 22 medical professionals. For each field in a questionnaire, the values "Extremely important," "General important," "Less important," and "Unimportant" are pre-set. Then, we disseminate the questionnaires to the same group of experts once more along with the prior round's statistical data. Based on the consensus in the initial survey, the experts can change their viewpoints. Following the second phase of the survey, 7 questionnaires that took too little time to complete and had significant result variances are eliminated, leaving 15 legitimate questionnaires to be collected[79].

## 2.4 Conceptual Model




**Source: Researcher's Conceptual Framework, 2022**

As conceptualized diagrammatically above, the dependent variable is service quality while the independent variables are preservation and conservation practices and patient record retrieval strategies. Service quality among health information management professionals has four measures which are communication, reliability, empathy and timeliness; these four measures were adopted[59]. And the measures for preservation and conservation practices are collecting information, organizing information, processing information, retrieving information and maintaining information which include careful use, weeding and disposal of medical information which were metrics from information orientation theory, while the measures for patient record retrieval strategies are record searching, record collecting, record reading, and Record writing[62]. In the first hypothesis, the measures of preservation and conservation practices were tested on that of service quality among health information management professionals while in the second hypothesis, patient record retrieval strategies were be tested on the measures of service quality among health information management professionals. Service quality among health information management professionals is the extent to which a service meets patients' needs or expectations as define by SERVQUAL theory by Parasurama which proves that health information management professionals are being reliable, communicate adequately and being able to provide timely information of patients when needed with empathy, resulting into patients being satisfied which would have exceeded their expectations and the patients will also trust every steps taken by the healthcare workers in resolving any complaint or issue and vice-versa.



## 2.5 Summary of Literature Reviewed

This chapter has reviewed related literature relevant to this research work. The reviewed literature on concept of service quality, preservation and conservation practices and patient record retrieval strategies explores empirical findings and discussed different

context and criteria of healthcare practices. Literature is replete with various meaning of service quality in healthcare sector with increased clamoring for quality service from all stakeholders involved especially the health information management professionals. Healthcare organization or institution provide health related services that encompasses preventive, curative and therapeutic service which are rendered to patients who are the healthcare consumers. As patients health needs differs with different health professionals possessing various professionals ability and ethics coming together to meet those health needs make healthcare as an institution or organization a complex one or sector. Service quality has reviewed in literature is rendering the best and optimal service to patient that meet their needs and expectations as it differs. Service quality is an essential aspect for high customer industries like hospitals as patients demand quality and healthcare institution are to implement a system that will meet patient expectations. Several studies as reveal that adherence to excellence standards and patient satisfaction is the quality and meeting the standard is challenging for both health institutions and health workers especially health information management professionals who are the public relation officers or window of the hospital. To satisfy patient, healthcare service elements and traits rendered by health information management professional must strictly adhere to predetermined specifications and standard i.e. conformance to specifications or requirements.

Service quality in healthcare is therefore known as collective output of services of care given to patients either as in-patient or out-patient; to meet up healthcare needs at different state, health institution is divided into primary, secondary and tertiary level to tackle health related needs respectively. Scholar reveal service quality in healthcare practice as a crucial concept in service rendering institutions (hospitals) especially government owned ones as they struggle in showing patient services differentiation. In

the literature for this study, it was revealed that several studies were conducted on service quality from which theories and models were created to address it. To provide suitable and acceptable service by health information management professionals, there are influencing factors that were exposed in the literature like suitable working condition, good pay, favorable management policies etc. resulting into high quality service delivery and on the other hand when health information management professionals has to face a demanding work environment with daily challenges that generate stress, exposure to health hazards, working with modern technology or equipment, insufficient qualified personnel, unfavorable management policies and working environment, these will influence negatively the quality of work, job performance and job satisfaction.

Service quality in healthcare practices is the result of different services offered to patients by health information management professionals. It entails collective output of series of health related care patients received through outpatient and inpatient services in the hospital. From literature, it is noted that quality of service depend greatly on the response of the patient who are the receiver of the service or consumer of healthcare products and services. It is the patients that can determine the extent to which the services meet their health needs as this will affect positively and negatively the subsequent visit of the patient to the hospital including the referral system. The extent to which the products or the services of the healthcare workers provided (reliability, communication, empathy and timeliness) meets the standards stipulated in the healthcare system's objectives. This view of service quality in healthcare services implies that quality cannot be measured by looking only at the outcome which is satisfaction but also with other dimensions such as considering the influence of preservation and conservation practices and patient record retrieval strategies on service quality among health information management professionals in public health institutions in Oyo State, Nigeria.

Patient health records (case note) is the primary and the most important tool as it serves the patient, health institution (hospital), management and the government at large. Health related data and information which are used for training, health planning, evaluation and monitoring, allocation of health resources and wealth are extracted from patient health records which contain all the activities involved in a doctor- patient relationship from birth to death, as this is important it should be treated and properly care for to ensure durability in any format. Patient health records can be in the traditional format (paper) or computerized format (electronic health records), because of continuous use, patient health records should be preserve and conserve appropriately. Immediately and health records (case note) is initiated in the health institutions, the need for preservation and conservation arises. Preservation and conservation of health data or information is one of the most crucial factors that can help develop the health sector which is responsible for saving lives. Records preservation involves all action taken to extend the useful life of health records in the hospital i.e. step to slow down mutilation or ability to foresee and prevent degradation while conservation is the organization, coordination and planning for the actual use of binding, restoring, paper chemistry and other material technology procedure. Conservation of health records involve bringing back to a useable state either the traditional or electronic format.

Record preservation activities include storage, retrieval, careful use, maintenance, weeding and disposal. A well-thought out records preservation and conservation plan can make hospital effective and efficient. Studies reveal preservation and conservation practice of records are overlooked and underrated in the hospitals, this result into mutilation of important patient health records, loss of data or information, wasting up precious time, creating unnecessary stress for employees, wasting money, sorting through messy filing cabinet etc as health information management professionals are not able or

struggle to render timely and effective health services due to poor records management systems. Therefore to enhance quality services preservation and conservation practice should be in place as shown in the existing literatures. The goal of preservation and conservation practice is to ensure that important information is retained over a period of time in a useable condition irrespective of the format (paper or electronic), it will enhance continuity of care and communication among healthcare professionals. The responsibility of documenting health information involves all member of multi-disciplinary team that are involved in patient's care namely physician, surgeon, nurses, pharmacists, physiotherapists etc while the responsibility of organizing, preserving and conserving patient health records or information is the duty of health information management professionals in health institutions be it primary, seconday and tertiary level.

Record retrieval strategy is the second independent variable that influence service quality of health information management professional. Record retrieval strategy is known as the process of locating records or resources from diverse collections that are pertinent to a record's demand. Record retrieval strategy in health information management has to do with bringing back to use already existing patient records that are kept chronological either in traditional or electronic format for authorized users. Record retrieval strategy is a science of locating a specific patient health records using a unique identifier which in most cases is the hospital reference number. It was shown in several studies that the strategy in record retrieving is a process that begins with health information management professional entering a query into the system for electronic records and using the reference number on the patient reference card to search for the health records (case note) in traditional records keeping (paper-based records). In a paper-based records keeping, the number on the reference card of the patient is use to locate the case note on the filing cabinet sorting through the range of numbers that the number in question falls in, while in

an electronic records the retrieval process is through a query that search through various collection looking for the match to the query via the unique identifier which is the hospital number. The number allocated to the patient is one number to one case note to a patient for a life time and this makes it very easy in sorting out patient health records by health information management professionals for the appropriate use i.e. treatment, training, monitoring and evaluating, disease coding and indexing etc.

It is therefore noted from various studies that when patient health records are initiated, it is very important to preserve and conserve properly for easy retrieval and use as it will influence service quality positively resulting into patient satisfaction and dissatisfaction of patient when records cannot be located or retrieved as when needed and it will also affect patients perception of the hospital and health care services as well as this cause for further investigation health information management professionals in public health institutions in Oyo State.

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# Chapter Three

# Methodology

This chapter focuses on the research design that was employed, population studied, sample and sampling technique used as well as the process of collecting data through the research instruments adapted in existing studies with analysis techniques.

## 3.1 Research Design

Descriptive cross-sectional study design was adopted for this study as it attempts to study a subset of population at a point in time and to investigate the influence of preservation and conservation practices and patient record retrieval strategies on service quality among health information management professionals in public health institutions in Oyo State, Nigeria. The advantage of the design is robustness as it helps with the distribution of data to compute the detailed information that can be derived from the test.

## 3.2 Population of the Study

The population of this study consists of three hundred and twenty-two (322) health information management professionals working in Health Records Department in public health institutions in Oyo State, Nigeria. The health institution includes University College Hospital (86), Ladoke Akintola University Teaching Hospital (Lautech) (30),

public health post and health centres under primary health board (111), and health institutions under state hospital management board (95) that cut across all the thirty-three (33) local government. The research cover all health information management professionals in public healthcare institutions in Oyo State[1,2,3,4].

**Table 3.1: Population Distribution of health information management professionals per facility**

| S/N | Facility Name | Male | Female | Total |
|---|---|---|---|---|
| 1 | Oyo State Primary Health Board | 23 | 88 | 111 |
| 2 | State Hospital Management Board | 17 | 78 | 95 |
| 3 | LAUTECH Teaching Hospital, Ogbomoso | 5 | 25 | 30 |
| 4 | University College Hospital, Ibadan | 29 | 57 | 86 |
| Grand Total | | **74** | **248** | **322** |

***Source: Oyo State Primary Healthcare Board, Oyo State Hospital Management Board, Health Records Department UCH, Health Records Department, LAUTECH. 2022***

### 3.3 Sample Size and Sampling Technique

The sample size of this study is three hundred and twenty-two (322) which comprises of health information management professionals from health information management department in public primary, secondary and tertiary health institutions in Oyo State. Total enumeration was employed for this study as this give room for generalization in the studied population.

### 3.4 Description of Research Instrument

Total enumeration of all health information management professionals in public health institutions in Oyo State that cut across the primary, secondary and tertiary health institution was be adopted for this study. A sample frame of all health information management professionals that participated in this study was gotten through Oyo State Hospital Management Board, Lautech Teaching Hospital, University College Hospital and Primary Healthcare Board. Therefore, no sampling involved.

The instrument used was tagged Service Quality, Preservation and Conservation Practices, and Patient Record Retrieval Strategies scale (SQPCPPRRS). Structured questionnaire was used to gather data from the respondents which helped to analyze the structured questions and responses easily to achieve the study's objective. The study adopted likert scale design which allowed the researcher in listing options where respondents choose from. The instrument of the study was made up of three sections.

**Section A:** As developed by the researcher, this section was structured to collect demographic information of respondents and this contain bio-data of respondents measured through four factors; gender, age, educational qualification and years of experience.

**Section B:** Service Quality (SQ) is a 19-items scale which consists of four dimensions or measures; communication, reliability, empathy and timeliness which is aimed at examining the quality of practices rendered by health information management professionals in public health institutions in Oyo State. The items were adapted from existing literatures as a guide in formulating the questions using SERVQUAL Theory[5,]. The scale used a four-point response format of 4= Very Satisfied, 3=Satisfied, 2=Dissatisfied, 1=Very Dissatisfied. Example of questions are; I perform the promised practices dependably and accurately, I keep error free records.

**Section C:** Preservation and Conservation Practices (PCP) is a 22-item scale which consists of five sections which are collecting information, organizing information, processing information, retrieving information and maintaining information which include careful use, weeding and disposal of medical information. The items were adapted from information orientation theory/model. The scale will use a four-point response format of Strongly Agree = 4, Agree = 3, Disagree = 2, Strongly Disagree = 1. Examples of questions are; I am allowed to share patient information among ourselves, Patients records are unexposed to other patients and unauthorized users.

**Section D:** Patient Record Retrieval Strategies (PRRS) is a 12– item scale which consists of four measures or dimensions: record searching, record collecting, record reading and record writing. The items were adapted from existing literatures on patient record retrieval strategies[6]. The scale used a four point likert scale of 4= Strongly Agree, 3=Agree, 2=Disagree, 1=Strongly Disagree. Examples of questions are; Types orders are clear to read leading to less error, Understanding health information well enough to know what to do.

### 3.5 Validity of the Research Instrument

The validity of the research instrument was done through gathering of related literature review and adaptation from questionnaires that have been used by other researchers. Content and construct validity was done. Content validity was used to assess the internal validity of the research instruments which were ascertained through the supervisor and other experts in information management field**.** Corrections made was incorporated in constructing the final questionnaire which was given out to the respondents for the study.

### 3.6 Reliability of the Research Instrument

In ensuring validity of the data, questionnaire was tested by subjecting it to the inspection of directors among the health information management professionals in the Hospitals, Oyo State who gave their opinions as to whether the hypotheses used to measure the concepts were valid so as to ensure it covers all variables under study. The researcher subjected the questionnaire to a reliability test to check the internal consistency of all items measuring each variable in the study. The reliability of the instrument was done through a pilot study using thirty-two (32) copies of the questionnaire that was administered to health information management professionals at Obafemi Awolowo Teaching Hospital Complex (OAUTHC), Ile-Ife which is not part of the study. This is because it is a tertiary health institution with more staff strength. Data obtained was subjected to Cronbach's alpha reliability test to establish internal consistency of the items. This was done on section by section at 0.5 level of significance and the result follows: Service quality – 0.918, Preservation and conservation practices – 0.919, Retrieval strategies – 0.968

### 3.7 Distribution of the Research Instrument

A primary data was collected to address the objectives of the study through a structured questionnaire in line with existing literatures and the appropriate selected theories. This instrument works well with a cross-section survey design mainly because it supports the collection of data regarding opinion and perception of respondents at a point in time on current issues.

A letter of introduction and project attestation was obtained from the Department of Information Management, Lead City University which was used to gain permission to conduct the survey from the Oyo State Ministry of Health. Due to number of respondents from the health institutions, a three (3) day training was conducted for four (4) research

assistants to ease the administration, retrieval and initial sorting of copies of the questionnaires. In all, 322 copies of questionnaires was administered to health information management professionals in public health institutions in Oyo State and their response been duly filled was retrieved for analysis.

### 3.8 Method of Data Analysis

The researcher analyzed the data collected using the descriptive statistic for the research questions and inferential statistic for the hypotheses. The use of the descriptive statistics is appropriate because it helps to describe and summarize data in terms of frequency distribution, mean, standard deviation, and percentage of response about variables under study, thereby answering the research questions. To test the hypotheses formulated, inferential statistics using regression analyses was mainly used to test the hypotheses. The data collected for the study was analyzed using Statistical Package for Social Sciences (SPSS), version 24. All hypotheses in the study were tested at level of 0.05significance.

**Endnotes**

1. Oyo State Primary Healthcare Board, Ibadan. Health Data and Statistics Unit. 2022

2. Oyo State Hospital Management Board, Ibadan. Health Records Unit. 2022

3. University College Hospital, Ibadan. Health Records Department. 2022

4. Ladoke Akintola Univsersity Teaching Hosptial, Ogbomoso (LAUTECH). Health Records Department. 2022

5. A. Parasuraman, V. A. Zeithaml, & L. L. Berry, *Refinement and Reassessment of SERVQUAL Scale.* **Journal of Retailing.** 67(4); 1991. 114.

6. H. Lee, & D. Griffith, *The Balancing of Country-Based Interaction Orientation and Marketing Strategy Implementation Adaptation/Standardization for Profit Growth in Multinational Corporations.* **Journal of International Marketing.** 27(2); 2019. 22-37.

7. K. Golub, & Y. Liu, *Information and Knowledge Organization in Digital Humanities: Global Perspectives.* **Taylor and Francis.** 2022. 314.

# Chapter Four

## Results and Discussion of Findings

This chapter dealt with data presentation, analysis and interpretation of results. The analysis was subject to guidance by clearly defined objectives and the hypotheses that were afore formulated in the study. First section presents the descriptive analysis using tables that shows the percentages with the interpretation below the tables. Second section also presents inferential statistics (ANOVA) showing the model summary and multiple regression tables including the discussion of findings that comes at the end of the chapter. The results presentation was based on the research questions and hypotheses that the study set out to expatiate on and to provide answer to accordingly. Collated data was analyzed using SPSS. A total of three hundred and Twenty-two (322) copies of questionnaire were administered and the same were returned. The questionnaires were sorted and all the copies were checked for proper filling and considered useable for the study. Based on the available questionnaires, the response rate was 100%, this high

responses rate was gotten by the research through the help of research assistants who harness all efforts in contacting health information management professionals to participate in this study. The demographic characteristics of the respondents are presented in Table 4 below.

**Table 4.1: Demographic Characteristics of Respondents**

| Variables | Category | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| **Gender** | Male | 74 | 23.0 | 23.0 | 23.0 |
| | Female | 248 | 77.0 | 77.0 | 100.0 |
| | **Total** | **322** | **100.0** | **100.0** | |
| **Age** | 20-25 | 29 | 9.0 | 9.0 | 9.0 |
| | 26-30 | 39 | 12.1 | 12.1 | 21.1 |
| | 31-35 | 68 | 21.1 | 21.1 | 42.2 |
| | 36-40 | 90 | 28.0 | 28.0 | 70.2 |
| | 41-45 | 68 | 21.1 | 21.1 | 91.3 |
| | 46 and above | 28 | 8.7 | 8.9 | 100.0 |
| | **Total** | **322** | **100.0** | **100.0** | |
| **Educational Level** | Technician | 60 | 18.6 | 18.6 | 18.6 |
| | OND | 42 | 13.0 | 13.0 | 31.7 |
| | HND | 119 | 37.0 | 37.0 | 68.6 |
| | Bachelor's Degree | 89 | 27.6 | 27.6 | 96.3 |
| | Master's Degree | 11 | 3.4 | 3.4 | 99.7 |
| | Ph.D. | 1 | 0.3 | 0.3 | 100.0 |
| | **Total** | **322** | **100.0** | **100.0** | |
| **Work Experience** | 5-10years | 111 | 34.5 | 34.5 | 34.5 |
| | 11-15years | 104 | 32.3 | 32.3 | 66.8 |
| | 16-20years | 76 | 23.6 | 23.6 | 90.4 |
| | 21-25years | 31 | 9.6 | 9.6 | 100.0 |
| | **Total** | **322** | **100.0** | **100.0** | |

The above table 4.1 reveals the gender distribution of health information management professionals in public health institutions in Oyo State, Nigeria. The table reveals that there are 74 male health information management professionals and 248 female health information management professionals. The table above also reveals the age distribution of health information management professionals in public health institutions in Oyo State, Nigeria. 29 of the respondents expressed the fact that they are between the ages of 20 and 25 years of age. 39 of them indicated that they are within the age range of 26 to 30 years of age while 68 of the health information management professionals reported that they are between the ages of 31 and 35 years of age. 90 of the respondents indicated that they are within the range of 36 to 40 years of age and 68 of them reported that they are within the age of 41 and 45 years of age. Finally, 28 of the health information management professionals reported that they are within the age range of 46 years and above.

The next demographic factor considered in the above table is educational level of health information management professionals in public health institutions in Oyo State, Nigeria. 60 of the respondents reported that they possess technical certification while 42 indicated that they possess OND degree. 119 of the health information management professionals expressed that they have HND degree while 89 possess bachelor' degree. Those that have master's degree and Ph.D. were 11 and 1 respectively while the last demographic factor that considered the years of experience of health information management professionals in public health institution in Oyo State, Nigeria. 111 of the health information management professionals in the survey revealed that they have between 5 and 10 years of experience. 104 of the respondents reported that they have between 11 and 15 years of experience. 53 of them indicated that they have worked for 16 to 20 years and 31 said they have experience of within the range of 21 and 25 years.

**Table 4.2 Analysis of Research Questions**

**Research Question One:** What is the level of service quality among health information management professionals in public healthcare institutions, Oyo State, Nigeria?

**Table 4.2: Service Quality among Health Information Management Professionals in Public Health Institution in Oyo State**

| **Reliability of service** | **VS** | **S** | **D** | **VD** | **Mean** | **Standard Deviation** |
|---|---|---|---|---|---|---|
| I perform the promised practices dependably and accurately | 223 (69.3%) | 96 (29.8%) | 1 (0.3%) | 2 (0.6%) | 3.68 | 0.513 |
| I influence my colleague's work positively | 211 (65.5%) | 103 (32.0%) | 6 (1.9%) | 2 (0.6%) | 3.62 | 0.557 |
| I keep error free records | 201 (62.4%) | 107 (33.2%) | 8 (2.5%) | 6 (1.9%) | 3.56 | 0.639 |
| Patients have very high confidence healthcare Workers | 179 (55.6%) | 127 (39.4%) | 4 (4.3%) | 2 (0.6%) | 3.50 | 0.613 |
| I am sincere in solving patients' problem | 220 (68.3%) | 97 (30.1%) | 2 (0.6%) | 3 (0.9%) | 3.66 | 0.542 |
| | **Mean: 3.60** | | | | | |
| **Timeliness of service** | | | | | | |
| I have the willingness to help patients and provide prompt record | 229 (71.1%) | 89 (27.6%) | 2 (0.6%) | 2 (0.6%) | 3.69 | 0.513 |
| Personal attention is given to patients by physicians and other | 199 (61.8%) | 113 (35.1%) | 8 (2.5%) | 2 (0.6%) | 3.58 | 0.576 |

| | | | | | | |
|---|---|---|---|---|---|---|
| medical staff with their records | | | | | | |
| I respond to patients' request and complaints almost immediately | 197 (61.2) | 113 (35.1%) | 8 (2.5%) | 4 (1.2%) | 3.56 | 0.610 |
| I deliver prompt services without an appointment to our patients | 188 (58.4%) | 108 (33.5%) | 17 (5.3%) | 9 (2.8%) | 3.48 | 0.724 |
| I give adequate information about our patients' health status | 219 (68.0%) | 90 (28.0%) | 11 (3.4%) | 2 (0.6%) | 3.63 | 0.582 |
| **Mean: 3.59** | | | | | | |
| **Communication of service** | | | | | | |
| Adequate information regarding treatment and admission was provided by the health information management professionals | 208 (64.6%) | 100 (31.1%) | 13 (4.0%) | 1 (0.3%) | 3.60 | 0.584 |
| There is a clarity in staff communication | 192 (59.6%) | 120 (37.3%) | 6 (1.9%) | 4 (1.2%) | 3.55 | 0.600 |
| During admission, I and/or patients family members were given proper counselling to make informed decisions | 177 (55.0%) | 105 (32.6%) | 31 (9.6%) | 9 (2.8%) | 3.40 | 0.776 |
| Alarm systems and communication systems were in place and functioning | 176 (54.7%) | 98 (30.4%) | 43 (13.4%) | 5 (1.6%) | 3.38 | 0.773 |
| **Mean: 3.48** | | | | | | |
| **Empathy** | | | | | | |
| I individualized attention given to | 194 | 101 | 22 | 5 | 3.50 | 0.694 |

| | | | | | | |
|---|---|---|---|---|---|---|
| my patients | (60.2%) | (31.45) | (6.8%) | (1.6%) | | |
| I am always willing to help our patients | 201 (62.4%) | 108 (33.5%) | 9 (2.8%) | 4 (1.2%) | 3.57 | 0.614 |
| I understand the specific needs of our patients | 196 (60.9%) | 107 (33.2%) | 10 (3.1%) | 9 (2.8%) | 3.52 | 0.707 |
| The management provide safe feeling of patients during treatment | 92 (59.6%) | 11 (34.5%) | 7 (5.3%) | 2 (0.6%) | 3.53 | 0.627 |
| I provide the needed attention to patient at all time | 204 (63.4%) | 106 (32.9%) | 9 (2.8%) | 3 (0.9%) | 3.59 | 0.596 |
| **Mean: 3.54** | | | | | | |
| **Grand Mean: 3.55** | | | | | | |

**Source: Field Work**

**Key: Very Satisfied (VS) = 4, Satisfied(S) = 3, Dissatisfied (D) = 2, Very Dissatisfied (VD) = 1**

**Decision Rule: 1.00 – 1.49 (very low), 1.50 – 2.49(low), 2.50 – 3.49 (High), 3.50 – 4.00 (Very High)**

The first research question in this study has to with determining the level of service quality among health information management professionals in public health institutions in Oyo State. Four indicators were used to determine the level of service quality among health information management professionals in public health institutions in Oyo State. The indicators are Reliability of service, Timeliness of service, Communication of service and Empathy. Each indicator has a mean of 3.60, 3.59, 3.48 and 3.55 respectively on a scale of 4 point scale. Out of these indicators only communication of service fell under

high and the rest (reliability of service, timeliness of service and empathy) falls under very high. Overall, from the grand mean score of 3.55, we could say that the health information management professionals in public health institutions in Oyo State gives very high-quality service to their patients.

**Research Question Two:** What are the various preservation and conservation practices prevalent among health information management professionals in public health institutions in Oyo State, Nigeria?

**Table 4.3: Preservation and Conservation Practices among Health Information Management Professionals in Public Health Institutions in Oyo State**

| Collecting information | SA | A | D | SD | Mean | Standard Deviation |
|---|---|---|---|---|---|---|
| I am allowed to collate patient health records among ourselves | 228 (70.8%) | 77 (23.9%) | 9 (2.8%) | 8 (2.5%) | 3.63 | 0.663 |
| Patients health records are unexposed to other patients and unauthorized users | 225 (69.9%) | 78 (24.2%) | 2 (0.6%) | 17 (5.3%) | 3.59 | 0.757 |
| Patients' health records collected include biodata, social and medical history | 238 (73.9%) | 77 (23.9%) | 0 (0%) | 7 (2.2%) | 3.70 | 0.586 |
| Patients' health records are bedrock to their health care service(treatment) | 238 (73.9%) | 73 (22.7%) | 3 (0.9%) | 8 (2.5%) | 3.68 | 0.622 |
| I collect information from patients that involves expressing it in their | 227 (70.5%) | 81 (25.2%) | 5 (1.6%) | 9 (2.8%) | 3.63 | 0.657 |

| | | | | | | |
|---|---|---|---|---|---|---|
| mother language for understanding | | | | | | |
| **Mean: 3.65** | | | | | | |
| **Organizing information** | | | | | | |
| I organize patient information with focus on indexing, classifying and connecting information and database to provide quick access | 216 (67.1%) | 90 (28.0%) | 10 (3.1%) | 6 (1.9%) | 3.60 | 0.644 |
| In organizing patient information, it is necessary I know where the categories of the selected information can be used | 208 (64.6%) | 101 (31.4%) | 6 (1.9%) | 7 (2.2%) | 3.58 | 0.642 |
| I possess the required and appropriate skills, expertise and work habits that managers must have in organizing patient health information | 229 (71.1%) | 85 (26.4%) | 4 (1.2%) | 4 (1.2%) | 3.67 | 0.566 |
| I organize patient health record to enhance quick processing, retrieving and maintenance | 230 (71.4%) | 81 (25.2%) | 4 (1.2%) | 7 (2.2%) | 3.66 | 0.618 |
| **Mean: 3.65** | | | | | | |
| **Processing information** | | | | | | |
| Patients' health records are accessed only through health information professionals from appropriate sources and database | 216 (67.1%) | 99 (30.7%) | 2 (0.6%) | 5 (1.6%) | 3.63 | 0.582 |
| With patients' health records, HIM | 222 | 87 | 8 | 5 | 3.63 | 0.613 |

| | | | | | | |
|---|---|---|---|---|---|---|
| professionals are actively engage in analyzing information sources to get useful knowledge to make decision | (68.9%) | (27.0%) | (2.5%) | (1.6%) | | |
| Patients' health records are vital tools for analysis, health related decision making and health resources allocation | 229 (71.1%) | 87 (27.0%) | 3 (0.9%) | 3 (0.9%) | 3.68 | 0.540 |
| Patients' health records processing involves time, attention, and qualify HIM professionals | 210 (65.2%) | 102 (31.7%) | 4 (1.2%) | 6 (1.9%) | 3.60 | 0.614 |
| **Mean: 3.64** | | | | | | |
| **Retrieving information** | | | | | | |
| Limited access for patients to view some of their health information | 198 (61.5%) | 97 (30.1%) | 8 (5.6%) | 9 (2.8%) | 3.50 | 0.729 |
| Each health information management professionals are provided with the ICT access | 174 (54.0%) | 94 (29.2%) | 35 (10.9% | 19 (5.9%) | 3.31 | 0.888 |
| The system that contains patient health information time out after it specific time of inactivity | 179 (55.6%) | 103 (32.0%) | 30 (9.3%) | 10 (3.1%) | 3.40 | 0.784 |
| There are procedures for granting access to patients' health information | 208 (64.6%) | 106 (32.9%) | 3 (0.9%) | 5 (1.6%) | 3.61 | 0.593 |
| Ability to retrieve patients' health records completely is paramount | 209 (64.9%) | 99 (30.7%) | 4 (1.2%) | 10 (3.1%) | 3.57 | 0.676 |
| **Mean: 3.48** | | | | | | |

| **Maintaining Patient's health Records/Information (Disposal or Weeding)** | | | | | | |
|---|---|---|---|---|---|---|
| Maintaining patient's health record/information involves reusing existing information to avoid collecting same information again | 207 (64.35) | 95 (29.5%) | 13 (4.0%) | 7 (2.2%) | | |
| Updating patient's health records in the shelves and database for update and security | 204 (63.4%) | 109 (33.9%) | 6 (1.9%) | 3 (0.9%) | 3.60 | 0.579 |
| Easy to maintain confidentiality of patients' health records | 222 (68.9%) | 91 (28.3%) | 5 (1.6%) | 4 (1.2%) | 3.65 | 0.578 |
| Getting output that will ensure that best information is available for medical practice | 206 (64.0%) | 105 (32.6%) | 7 (2.2%) | 4 (1.2%) | 3.59 | 0.600 |
| **Mean: 3.60** | | | | | | |
| **Grand Mean: 3.60** | | | | | | |

**Source: Field Work**

**Key: Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, Strongly Disagree (SD) = 1**

**Decision Rule: 1.00 – 1.49 (very low), 1.50 – 2.49(low), 2.50 – 3.49 (High), 3.50 – 4.00 (Very High)**

The second research question in this study has to with determining the level of preservation and conservation practices among health information management

professionals in public health institutions in Oyo State. Five indicators were used to determine the level of preservation and conservation practices among health information professionals in public health institution in Oyo State. The indicators are collecting information, organizing information, Processing information, Retrieving information and maintaining information. On a 4 -point scale, collecting information has a mean score of 3.65, organizing information has mean score of 3.65, processing information has 3.64, and retrieving information has 3.48 while maintaining information has 3.60 as a mean score. Out of these indicators only retrieving information fell under high and the rest – collecting information, processing information and maintaining information - falls under very high. Overall, from the grand mean score of 3.60, we could say that the health information management professionals in public health institutions in Oyo State gives very high level of preservation and conservation practice of health information management practices.

**Research Question Three:** What are the different patient record retrieval strategies that exist among health information management professionals in public healthcare institutions, Oyo State, Nigeria?



**Table 4.4: Patient Record Retrieval Strategies among Health Information Management Professionals in Oyo State**

| Record Searching | SA | A | D | SD | Mean | Standard Deviation |
|---|---|---|---|---|---|---|
| Customizability of the system according to users' needs | 178 (55.3%) | 98 (30.4%) | 23 (7.1%) | 23 (7.1%) | 3.34 | 0.893 |
| Additional time for data entry affects utilizing the record system | 154 (47.8%) | 114 (35.4%) | 35 (10.9%) | 19 (5.9%) | 3.25 | 0.873 |
| Distributing patient-doctor communication | 153 (47.5%) | 108 (33.5%) | 36 (1.2%) | 25 (7.8%) | 3.21 | 0.926 |
| **Mean: 3.26** | | | | | | |
| **Record Collecting** | | | | | | |
| Availability of records to support patients' healthcare services | 183 (56.8%) | 107 (33.2%) | 11 (3.4%) | 21 (6.5%) | 3.40 | 0.838 |
| Social support for patients to enhance wholesome care | 169 (52.5%) | 114 (35.4%) | 16 (5.0%) | 23 (7.1%) | 3.33 | 0.867 |
| Understanding health information enough to know what to do | 197 (61.2%) | 99 (30.7%) | 6 (1.9%) | 20 (6.2%) | 3.47 | 0.813 |
| **Mean: 3.40** | | | | | | |
| **Record Reading** | | | | | | |
| Legible medical practitioners handwriting | 194 (60.2%) | 93 (28.9%) | 16 (5.0%) | 19 (5.9%) | 3.43 | 0.837 |
| Types orders are clear to read leading to less error | 175 (54.3%) | 108 (33.5%) | 20 (6.2%) | 9 (5.9%) | 3.36 | 0.844 |
| All orders are done in one place using electronic record | 175 (54.3%) | 91 (28.3%) | 30 (9.3%) | 26 (8.1%) | 3.29 | 0.938 |
| **Mean: 3.36** | | | | | | |

**Record Writing**

| | | | | | | |
|---|---|---|---|---|---|---|
| Benefits of electronic record outweighs records' remote access | 179 (55.5%) | 103 (32.0%) | 19 (5.9%) | 21 (6.5%) | 3.37 | 0.862 |
| Electronic record increase practice productivity | 194 (60.2%) | 97 (30.1%) | 11 (3.4%) | 20 (6.2%) | 3.44 | 0.831 |
| Electronic information equipment give help in better Writing | 185 (57.5%) | 96 (29.8%) | 20 (6.2%) | 21 (6.5%) | 3.38 | 0.368 |
| **Mean: 3.40** | | | | | | |
| **Grand Mean: 3.36** | | | | | | |

**Source: Field Work**

**Key: Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, Strongly Disagree (SD) = 1**

**Decision Rule: 1.00 – 1.49 (very low), 1.50 – 2.49 (low), 2.50 – 3.49 (High), 3.50 – 4.00 (Very High)**

The third research question in this study has to do with determining the patients' records retrieval strategies that exist among health information management professionals in public health institutions in Oyo State. Four indicators were used to determine the patients' records retrieval strategies among health information professionals in public health institutions in Oyo State. The indicators are Record searching, Record collecting, Record reading and Record writing. On a scale of 4 record searching has a mean score of 3.26, record collecting has mean score of 3.40, record reading has 3.36, record writing has an average score of 3.40. All of these indicators fell under high. Overall, from the grand mean score of 3.36 we could say that the health information management professionals in

public health institutions in Oyo State have high level of patients' records retrieval strategies.

**Presentation of Test of Hypotheses**

The null hypothesis is the one that states that there will be no significant influence of preservation and conservation practice on service quality among health information management professionals in public healthcare institutions, Oyo State, Nigeria was tested using regression analysis and results are presented in the tables below

**Hypothesis One:** There will be no significant influence of Service quality on Preservation and Conservation Practices among Health Information Management Professionals in public health institutions in Oyo State

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .667[a] | .445 | .444 | 5.182 |

a. Predictors: (Constant), PRESERVATION AND CONSERVATION PRACTISES

**ANOVA[a]**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 6900.356 | 1 | 6900.356 | 256.935 | .000[b] |
| | Residual | 8594.054 | 320 | 26.856 | | |
| | Total | 15494.410 | 321 | | | |

a. Dependent Variable: SERVICE QUALITY

b. Predictors: (Constant), PRESERVATION AND CONSERVATION PRACTISES

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | 21.849 | 2.652 | | 8.239 | .000 |
| | PRESERVATION AND CONSERVATION PRACTISES | .558 | .035 | .667 | 16.029 | .000 |

a. Dependent Variable: SERVICE QUALITY

The first hypothesis in this study is about investigating the influence of preservation and conservation practices of patients records on service quality among Health Information management Professionals in public health institutions in Oyo State. The outcome of this null hypothesis is that preservation and conservation practice is an indicator of service quality. The probability value was 0.000 at 5% significance level. This is lesser than the actual level of significance (0.05) this study adopted to determine how an independent variable will determine a dependent variable. The relationship between preservation and conservation practice on service quality was at 0.667. This is indicated in the model summary table. This implies that there is 66.7% relationship between preservation and conservation practice and service quality. It also means that the relationship is positive and strong. The adjusted $r^2$ value is at 0.444. This means that preservation and conservation practice has significant contribution or influence on service quality among Health Information management Professionals in public health institutions in Oyo State.

**Hypothesis Two:** There will be no significant influence of Patient Record Retrieval Strategies on Service quality among Health Information Management Professionals in public health institutions in Oyo State

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .421[a] | .177 | .175 | 6.312 |

a. Predictors: (Constant), RECORD RETRIEVAL STRATEGIES

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 2746.678 | 1 | 2747.678 | 256.935 | .000[b] |
| | Residual | 12747.732 | 320 | 39.837 | | |
| | Total | 15494.410 | 321 | | | |

a. Dependent Variable: SERVICE QUALITY

b. Predictors: (Constant), RECORD RETRIEVAL STRATEGIES

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | 50.295 | 1.700 | | 29.585 | .000 |
| | RECORD RETRIEVAL STRATEGIES | .343 | .041 | .421 | 8.304 | .000 |

a. Dependent Variable: SERVICE QUALITY

The second hypothesis in this study investigates the influence of patients record retrieval strategies on service quality among Health Information management Professionals in public health institutions in Oyo State. The outcome of this null hypothesis is that patients record retrieval strategies is an indicator of service quality. The probability value was at 0.000. This is lesser than the actual level of significance (0.05) this study adopted to determine how an independent variable will determine a dependent variable. The relationship between patients record retrieval strategies and service quality was at 0.421. This indicated in the model summary table. This implies that there is a 42.1% relationship between patients record retrieval strategies and service quality. It also means that the relationship is positive and fair. The adjusted $r^2$ value is at 0.175. This means that record retrieval strategies has less significant contribution to service quality among Health Information management Professionals in health institutions in Oyo State.

**Hypothesis Three:** There will be no significant influence of both Preservation and Conservation Practices and Patient Record Retrieval Strategies on Service quality among Health Information Management Professionals in public health institutions in Oyo State.

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .693[a] | .481 | .477 | 5.022 |

a. Predictors: (Constant), PRESERVATION AND CONSERVATION PRACTISES, RECORD RETRIEVAL STRATEGIES

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 7447.937 | 2 | 3723.969 | 147.636 | .000[b] |
| | Residual | 8046.473 | 319 | 25.224 | | |
| | Total | 15494.410 | 321 | | | |

a. Dependent Variable: SERVICE QUALITY

b. Predictors: (Constant), PRESERVATION AND CONSERVATION PRACTICES, RECORD RETRIEVAL STRATEGIES

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | 19.941 | 2.603 | | 8.239 | .000 |
| | RECORD RETRIEVAL STRATEGIES | .165 | .035 | .202 | 4.659 | .000 |
| | PRESERVATION AND CONSERVATION PRACTISES | .495 | .036 | .593 | 13.652 | .000 |

a. Dependent Variable: SERVICE QUALITY

The third hypothesis in this study investigates the influence of both preservation and conservation practice and patients record retrieval strategies on service quality among Health Information management Professionals in public health institutions in Oyo State. The outcome of this null hypothesis is that the combination of preservation and conservation practice and record retrieval strategies is an indicator of service quality. The probability value was at 0.000. This is lesser than the actual level of significance (0.05) this study adopted to determine how an independent variable will determine a dependent variable. The relationship between the combination of preservation and conservation practice and record retrieval strategies and service quality was at 0.693. This indicated in the model summary table. This implies that there is a 69.3% relationship between the combination of preservation and conservation practice and record retrieval strategies and

service quality. It also means that the relationship is positive and strong. The adjusted $r^2$ value is at 0.447. This means that the combination of preservation and conservation practice and record retrieval strategies has significant contribution to service quality among Health Information management Professionals in public health institutions in Oyo State.

**Discussion of Findings**

The outcome of three research questions in this study will be extensively expatiated upon using empirical findings to support this discussion. The first research question has its main subject of attention on service quality among health information management professionals. The four components or measures examined in this study determining service quality are; reliability of service, timeliness of service, communication of service and empathy. All the components surrounding service quality had high mean scores which remarkably are very satisfactory. The outcome of this study is in line with the statement that people who work in hospitals, in particular health information management professionals to all patients should render patient-centered services[1].

The second research question was centered on preservation and conservation practice among health information management professionals. There are five measures or components examined in this context, it includes collecting information, organizing information, processing information, retrieving information and maintaining patient's health records/information. All the components had approximately equal high mean scores indicating strongly agreed with positive protocol of practice except retrieving component that recorded simple agreement with positive protocol of practice. This is in line with the empirical assertion that Professionals in health information management

carry out responsibilities such as ensuring that hospital patients' health information is not disclosed to third parties without the management of the hospital's prior consent. They are equipped because of the type of information that is generated and present in hospitals which is given that there is regulatory authority to oversee their activities and that the information is so sensitive. Therefore, it is fundamental that records preservation and conservation activities include collecting, organizing, processing, storage, retrieval, maintenance, careful use and disposal or weeding of medical information [2,3].

The third research question had to do with patient record retrieval strategies among health information management professionals. There are four indicators or measures used to examine this context, it includes record searching, record collecting, record reading and record writing. All the indicators had approximately equal high mean scores indicating agreement with positive patient record retrieval strategies. This corresponds with a statement that a record retrieval strategies begins when a health information management professional enters a query into the system. Queries are formal statements of health record needs, for example search strings in web search engines[4]. In record retrieval a query does not uniquely identify a single object in the collection. Instead, several objects may match the query, perhaps with different degrees of relevancy.

As regards the null hypothesis being tested in this study, three null hypotheses were tested. The first null hypothesis has it that "Preservation and conservation practice among health information management professionals will not significantly influence the Service quality". According to the outcome of the study, it comes out to be significant, that is, the service quality of health information management professionals has serious influence on their practice of preservation and conservation of patient health record. Many of the studies discussed in this study were in line with this discovery[5, 6, 7, 8]. The second

hypothesis is about “Patient record retrieval strategies will not significantly influence the service quality”. On this, the outcome of the study comes out significant, therefore, it means that the service quality of health information management professional significantly are influenced by the practice of patient record retrieval strategies. Several studies have reported positive significant effect of record retrieval strategies on service quality [9, 10, 11, 12]. The third hypothesis has it that “the combination of health information management professional practice of record preservation and conservation practices also with patient records retrieval strategies will not influence the service quality”. Then, according to the outcome of this study, there exist positive significance of the combination of preservation and conservation practice and patient record retrieval strategies on service quality of health information management professional. The outcome is in line with previous discussion in the study [13, 14, 15, 16].

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# Chapter Five

# Conclusion

## 5.1 Summary of Findings

This study was carried out to investigate the preservation and conservation practices, patient record retrieval strategies on service quality among health information management professionals in public health institutions in Oyo State, the study covered all the three hundred and twenty-two (322) health information management professionals working in Health Records Department in public health institution in Oyo State, Nigeria. The health institution includes University College Hospital, Ladoke Akintola University Teaching Hospital (LAUTECH), Oyo State Teaching Hospital, public health post and health centres that cut across all the thirty-three (33) local government in Oyo State. The major findings of the study include:

1. Very highly satisfactory service quality among the health information management professionals in public health institutions in Oyo State
2. The preservation and conservation practices among health information management professionals in public health institutions in Oyo State was very high
3. Patients' record's retrieval strategies of health information management professionals in public health institutions in Oyo State were rated above average.
4. The preservation and conservation practices of health information management professionals in public health institutions in Oyo State significantly influence the high satisfactory in service quality
5. Patients' record's retrieval strategies of health information management professionals in public health institution in Oyo State had positive significant to influence the high satisfactory in service quality.

6. The combination of preservation and conservation practices, patient record retrieval strategies of health information management professionals in public health institutions in Oyo State significantly influence the high satisfactory in service quality

## 5.2 Conclusion

This study revealed that service quality of health information management professional can be very satisfactory with adequate practice of preservation and conservation and diligent patient record retrieval strategies. It also showed from the study that preservation and conservation practices are very essential and being a vital tool delivering acceptable services, patient health records must keep in useable condition or format to serve both the patient and the health institution and the retrieval strategy should be improve on because both independent variables studied in the research has a great influence on dependent variable i.e. positive effect if both independent are properly taken care of and negatively if the independent variables (preservation and conservation practices and patient records retrieval strategy) are not in suitable state and this falls back on the dependent variable (service quality).

Therefore to have a satisfactory service quality in health institution, patient's health records should be preserved and conserved, retrieved as when needed by the authorized user using all modern technology suitable and applicable.

## 5.3 Recommendations

The following recommendations are hereby postulated considering the findings of this study:

1. Health institution management should provide appropriate technology and modern equipment needed in all health records department to aid patient

satisfactions as they access healthcare services in public health institutions in Oyo State (i.e. electronic or digital measures).

2. Health Information Management Professionals working in public health institutions in Oyo State should be encouraged with seminars, conferences and other health related trainings that will broaden their mind and equip them in rendering a patient-centered service that can meet up with international standard
3. Modern techniques on both preservation and conservation practice of patient health records and retrieval strategy should be exposed to health information management professionals through training
4. Health information management professionals in public health institutions should be motivated and recognized for performing patient-centered services (i.e. financial and non-financial reward)
5. Health institution management in charge of public health institutions are to provide suitable working environment for health information management professionals that will enhance more service quality.



## 5.4 Contribution to Knowledge

This study has vividly revealed that service quality in healthcare rendered by health information management professional is known to be patient centered service that is acceptable and satisfactory to patient and patient relatives. The outcome of this service is high and satisfactory when it met the patient needs and is low or unsatisfactory when patients needs are not met and the measures like reliability, timeliness, empathy and communication service contributes greatly to service quality and any decline in the measures will after the outcome of service negatively in health institutions. Also this

study showed that adequate and proper keeping of patient health records (i.e. preservation and conservation practice) along with getting back or retrieving patient health records when needed by the authorized user (i.e. patient records retrieval strategy) with promptness are vital responsibility of health information management professional as these are key factors that influence service quality positively making it satisfactory and acceptable to patient and other authorized users in public health institutions.

Therefore providing suitable working environment, information technology equipment, motivation, training and conference will enhance service quality from very satisfactory level to excellent level.

## 5.5 Suggestions for Further Studies

Other researchers can elaborate the scope of this research work by attempting to carry out research or study in the following:

1. Comparative study on preservation and conservation practice and records retrieval strategy on service quality among health information management professionals in public health institutions in other geo-political zones of Nigeria.
2. Private health institutions can be studied to extend the findings of this study.
3. Adoption and effect of digital or electronic measure on preservation and conservation practice and record retrieval strategy on service quality among health information management professionals in Oyo State or Nigeria can be examine.
4. Hospital management style on service quality of health information management professionals in health institutions in Oyo State or Nigeria could be explore.
5. Comparative studies between federal and state government owned health institutions can also be examine.

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**Appendix**

**Questionnaire**

**Lead City University**

**Faculty of Communication and Information Sciences (FCIS)**

**Department of Information Management**

Dear Respondent,

I am a master student of the above named institution gathering data for the purpose of academic research on the topic "preservation and conservation practices, patient record retrieval strategies on service quality among health information management professionals in public health institution in Oyo State, Nigeria". To achieve this, your optimum cooperation is needed; there are no right or wrong answers. All your responses will be kept confidential and used for research purpose alone.

Thank you.

**Section A: Demographic Information**

Instruction: Please carefully read and tick (√) the relevant box as applicable

Gender: Male ( ), Female ( )

Age: 20-25 ( ), 26-30( ), 31-35( ), 36-40( ) 41-45( ), 46 and above ( )

Educational level: TECHNICIAN ( ) OND ( ) HND ( ) Bachelor's degree ( ) Master's degree ( ) Ph.D ( ).

Experience: 5 – 10 ( ) 11 – 15 ( ) 16 – 20 ( ) 21 – 25 ( )

**Section B: Service Quality among Health Information Management Professionals in Oyo State.**

The statement in this section concerns service quality as observed by health information management professionals of the Hospitals in Oyo State. Using the four-point likert scale provided below. Please tick the appropriate choice that indicates your opinion on the service quality of practices delivered. Very Satisfied =4, Satisfied =3, Dissatisfied =2, Very Dissatisfied =1

***Instruction: Pleases indicate your opinion on the level of service quality of practices in your department***

| S/N | *Items* | VS 4 | S 3 | D 2 | VD 1 |
|---|---|---|---|---|---|
| | ***Reliability of Service*** | | | | |
| 1 | I perform the promised practices dependably and accurately | | | | |
| 2 | I influence my colleague's work positively | | | | |
| 3 | I keep error free records | | | | |
| 4 | Patients have very high confidence in healthcare workers | | | | |
| 5 | I am sincere in solving patients' problem | | | | |
| | ***Timeliness of service*** | | | | |
| 6 | I have the willingness to help patients and provide prompt record | | | | |
| 7 | Personal attention is given to patients by physicians and other medical staff with their records. | | | | |
| 8 | I respond to patients' request and complaints almost immediately | | | | |
| 9 | I deliver prompt services without an appointment to our patients | | | | |
| 10 | I give adequate information about our patients' health status | | | | |
| | ***Communication of service*** | | | | |
| 11 | Adequate information regarding treatment and admission was provided by the health information management professionals | | | | |
| 12 | There is a clarity in staff communication | | | | |
| 13 | During admission I and /or patient family members were given proper counseling to make informed decisions | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 14 | Alarm systems and communication systems were in place and functioning | | | | |
| | ***Empathy*** | | | | |
| 15 | I individualized attention given to my patients | | | | |
| 16 | I am always willing to help our patients | | | | |
| 17 | I understand the specific needs of our patients | | | | |
| 18 | The management provide safe feeling of patients during treatment | | | | |
| 19 | I provided the needed attention to patient at all time | | | | |

**Section C: Preservation and Conservation Practices among Health Information Management Professionals of Hospitals in Oyo State**

The statement in this section concerns level of Preservation and Conservation Practices among health information management professionals in Oyo State. Using the four-point likert scale provided below. Please tick the appropriate choice that indicates your opinion on preservation and conservation practices. Strongly Agree = 4, Agree = 3, Disagree = 2, Strongly Disagree = 1.

***Instruction*: Pleases indicate your opinion on how your hospital engage in the following**

| S/N | Items | SA<br>4 | A<br>3 | D<br>2 | SD<br>1 |
|---|---|---|---|---|---|
| | **Collecting Information** | | | | |
| 1 | I am allowed to collate patient health records among ourselves | | | | |
| 2 | Patients' health records are unexposed to other patients and | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | unauthorized users | | | | |
| 3 | Patients' health records collected include bio-data, social and medical history | | | | |
| 4 | Patients' health records are bed rock to their health care service (treatment). | | | | |
| 5 | I collect information from patients that involves expressing it in their mother language for understanding | | | | |
| | **Organizing Information** | | | | |
| 6 | I organize patient information with focus on indexing, classifying and connecting information and database to provide quick access | | | | |
| 7 | In organizing patient information, it is necessary I know where the categories of the selected information can be used | | | | |
| 8 | I possess the required and appropriate skills, expertise and work habits that managers must have in organizing patient health information | | | | |
| 9 | I organize patient health record to enhance quick processing, retrieving and maintenance | | | | |
| | **Processing Information** | | | | |
| 10 | Patients' health records are accessed only through health information professionals from appropriate sources and database | | | | |
| 11 | With patients' health records, HIM professionals are actively engage in analyzing information sources to get useful knowledge to make decision | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 12 | Patients health records are vital tools for analysis, health related decision making and health resource allocation | | | | |
| 13 | Patients' health records processing involves time, attention and qualify HIM professional | | | | |
| | **Retrieving Information** | | | | |
| 14 | Limited access for patients to view some of their health information | | | | |
| 15 | Each health information management professionals are provided with the ICT access | | | | |
| 16 | The system that contains patient health information time out after is specific time of inactivity | | | | |
| 17 | There are procedures for granting access to patients' health information | | | | |
| 18 | Ability to retrieve patients' health record completely is paramount | | | | |
| | **Maintaining Patient's Health Record/Information (Disposal or Weeding)** | | | | |
| 19 | Maintaining patient health record/information involves reusing existing information to avoid collecting same information again | | | | |
| 20 | Updating patient health records in the shelves and database for update and security | | | | |
| 21 | Easy to maintain confidentiality of patients' health record | | | | |
| 22 | Getting output that will ensure that best information are available for medical practice | | | | |

**Section D: Patient Record Retrieval Strategies among Health Information Management Professionals in Oyo State, Nigeria.**

The statement in this section concerns patient record retrieval strategies in Hospital, Oyo State. Using the four-point likert scale provided below. Please tick the appropriate choice that indicates your opinion on Patient Record Retrieval Strategies. Strongly Agree = 4, Agree = 3, Disagree = 2, Strongly Disagree = 1.

***Instruction:*** **Pleases indicate your opinion on how your hospital engage in the following**

| S/N | Items | SA 4 | A 3 | D 2 | SD 1 |
|---|---|---|---|---|---|
| | **Record Searching** | | | | |
| 1 | Customizability of the system according to users' needs | | | | |
| 2 | Additional time for data entry affects utilizing the record system | | | | |
| 3 | Distributing patient-doctor communication | | | | |
| | **Record Collecting** | | | | |
| 4 | Availability of records to support patients' healthcare services | | | | |
| 5 | Social support for patients to enhance wholesome care | | | | |
| 6 | Understanding health information well enough to know what to do | | | | |
| | **Record Reading** | | | | |
| 7 | Legible medical practitioners handwriting | | | | |
| 8 | Types orders are clear to read leading to less error | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 9 | All orders are done in one place using electronic record | | | | |
| | **Record Writing** | | | | |
| 10 | Benefits of electronic record outweighs records' remote access | | | | |
| 11 | Electronic record increase practice productivity | | | | |
| 12 | Electronic information equipment give help in better writing | | | | |

## Bio-Data

### A. Personal Data

| | |
|---|---|
| Name: | Temitope Elizabeth OJO |
| E-mail: | lizzyaboveall@gmail.com |
| Phone Number: | 07039295031, 07085541248 |
| Date of Birth: | 6th March, 1984 |
| State of Origin: | Oyo State |
| Local Government: | Oluyole |
| Nationality: | Nigerian |
| Sex: | Female |
| Marital Status: | Married |

### B. Institutions Attended with Dates

- Lead City University, Ibadan — on-going
- Institute of Personality Development & Customer Relationship Management — 2020
- New Horizons Computer Learning Centers — 2020
- New Horizons Computer Learning Centers — 2019
- Lead City University, Ibadan — 2018
- School of Health Information Management, UCH, Ibadan — 2007
- School of Health Information Management, UCH, Ibadan — 2005
- Prospect School of Computer & Secretarial Studies, Ibadan — 2001
- Yejide Girls' Grammar School, Ibadan — 2000

- Community Primary School, Olomi, Ibadan 1994

**C. Qualifications Obtained With Dates**

- M.Sc. Health Information Management In view
- B.Sc. Health Information Management 2020
- IPD-CRM (Graduate Member) 2020
- IBM Statistical Package for Social Science 2020
- Internet & Computing Core Certification 2019
- Higher National Diploma 2007
- National Diploma 2005
- Diploma, Desktop Publishing 2001
- National Examination Council 2000
- First Primary School Leaving Certificate 1994

**D. Working Experiences with Dates**

- University College Hospital, Ibadan 2017 Till date

  **Post Held:** Health Information Management Officer
- Our Lady of Apostles Catholic Hospital, Oluyoro, Ibadan 2008–2017

  **Post Held:** Health Information Management Officer
- Obafemi Awolowo University Teaching Hospital, Ile Ife 2006 -2006

  **Post Held:** Assistant Health Information Management Officer
- University of Ilorin Teaching Hospital, Ilorin 2004-2004

  **Post held:** Assistant Health Information Management Officer (SIWES)

**E. Membership of Professional Bodies**

- Association of Health Information Management Professionals Nigeria (AHRIMPN) UCH Chapter

- Nigerian Union of Allied Health Professionals (NUAHP) UCH Chapter

**F. Publications** On-going

**G. Major Conferences Attended With Dates**

- Regional Conference of Health Information Managers' Association of Nigeria, UCH, Ibadan 2017
- Regional Congress of Nigeria Health Information Management and Biostatistics, UITHC, Ilorin, Kwara State 2007
- Workshop on Pharmcovigilance, UCH, Ibadan 2007

**H. Referees**

**Prof. Kolapo A.L.**

St. Augustine University,

Epe, Lagos.

07031100114

**Mr. Oyejide D.O.**

University of Ibadan,

Ibadan, Nigeria

08023451177

**Dr. (Mrs) Adeyeye S.V.**

HOD Department of Information Management,

Lead City University, Ibadan.

08061127708

**Signature** **Date**

**The University Compliance Certification**

This is to certify that this thesis by Temitope Elizabeth OJO with Matric No. LCU/PG/002192 in the Department of Information Management, Lead City University, Ibadan, is in full compliance with the approved university format and style.



…… ……

**Signature** **Date**

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