PATIENTS' SATISFACTION WITH CLINICAL LABORATORY SERVICES IN A SECONDARY HEALTH CARE FACILITY, ONDO WEST LOCAL GOVERNMENT AREA, NIGERIA

By

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B.Sc. Microbiology (Akungba)

A Dissertation in the Department of Health Policy and Management,
Submitted to the Faculty of Public Health
In partial fulfilment of the requirement for the Degree of

MASTER OF HEALTH SERVICES ADMINISTRATION (MHSA)

Of the

UNIVERSITY OF IBADAN

APRIL, 2015

DEDICATION

This work is dedicated to God Almighty

ABSTRACT

Patients' satisfaction with clinical laboratory services is essential as laboratory service plays a key role in patient management. Under-utilisation which could be due to dissatisfaction of clinical laboratory services can contribute to a worsened state of morbidity or mortality among patients. Information on satisfaction with clinical laboratory services is essential for policy and development of interventions to improve patient's satisfaction. This study was therefore conducted to assess patients' satisfaction with the clinical laboratory services in a secondary health care facility in Ondo West Local Government Area, Ondo State.

Using a cross-sectional study design, 426 patients utilising clinical laboratory services of the General Hospital, Ondo were recruited, using a systematic sampling technique. Respondents' information was collected using pre-tested, semi-structured, interviewer-administered questionnaire. The questionnaire was used to obtain information on socio-demographic characteristics and satisfaction with the domains of clinical laboratory services (accessibility, hygiene of the environment, patient waiting time, patient-provider communication, availability of requested tests, and availability of laboratory space, competence and attitude of laboratory staff). Using the 50^{th} percentile as cut-off, patients were classified as satisfied if they scored 50^{th} percentile and above, while those scoring less than the 50^{th} percentile were classified as dissatisfied. Chi-square test was used to determine the relationship between independent variables (sex, marital status, educational level) and the level of patients' satisfaction. Logistic regression was used to determine predictors of patients' satisfaction with the clinical laboratory services; level of significance was set at 5%.

Respondents' mean age was 34.7$\pm$12.4 years. Most of the respondents were females (62.4%), currently married (59.4%), Christians (87.1%), had secondary education (70.4%) and self-

employed (51.4%). Majority of the respondents were satisfied with the confidentiality attached to the result of their tests (89.7%), the cost of the laboratory tests (67.6%), competence of the laboratory staff (78.0%), patient waiting time (81.9%) and the environmental hygiene of the laboratory (68.1%). Respondents also expressed satisfaction with the availability of space in the laboratory (84.5%), the availability of required tests (87.9%), patient-provider communication (77.2%), the respect and courtesy shown by laboratory staff (82.6%) and accessibility of the laboratory (71.8%). Overall, 79.0% of the patients were satisfied with clinical laboratory services. A significantly higher proportion of respondents who were males (61.6%), not married (64.6%) and had tertiary education (70.4%) were satisfied with the clinical laboratory services. Being male was found to be a predictor of patients' overall satisfaction with clinical laboratory services (OR: 2.1; 95% CI: 1.1-4.3). Other predictors were not married (OR: 2.6; 95% CI: 1.2-4.1) and having a tertiary education (OR: 4.3, 95% CI: 2.1-6.5).

Patients' satisfaction with clinical laboratory services in the secondary health care facility was high. Subsidising the cost of laboratory tests, and improving the environmental hygiene of the laboratory could further improve patients' satisfaction.

Keywords: Patients' satisfaction, Clinical laboratory services, Secondary health care facility, waiting time

Word count: 446

ACKNOWLEDGEMENTS

My sincere thanks go to God Almighty for his mercy and kindness towards me throughout the period of my study.

I wish to express my sincere gratitude to Dr. K.O. Osungbade for supervising the project and reading through the manuscript .His encouragement, Inspirational supports are truly appreciated.

My sincere appreciation also goes to Dr. Seun Akinyemi, Dr. T. Ogunniyan and Dr. A.O. Obiagwu for their contributions towards the success of this project. Also, I wish to thank my loving husband Barrister A. A. Thomas and my parents Mr. & Mrs. R.O. Akintujoye for their financial and moral support.

I sincerely appreciate my children Peter, Victoria and Mary for their patience, understanding and support during the course of my study.

My gratitude also goes to my sister Judith for being there for my children during my period of study, to my Uncle F. B. Akinnuoye and Uncle S. Bolarinwa you are highly appreciated.

I deeply appreciate everyone who has contributed in one way or the other to the success of this write-up. I say a big thank you, may God Almighty bless you all. Amen.

CERTIFICATION

I certify that this work was carried out by THOMAS, Juliet Yejide in the Department of Health Policy and Management, Faculty of Public Health, College of Medicine, University of Ibadan, Ibadan, Nigeria.

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BARQA	-	British Association of Research Quality Assurance
CLIA	-	Clinical Laboratory Improvement Amendments
GCLP	-	Good Clinical Laboratory Practices Guidelines
IHC stains	-	Immuno Histochemical Stains
JCAHO	-	Joint Commission on Accreditation of Health Care Organisations
NISLT	-	Nigerian Institute of Science Laboratory Technology
PHC	-	Primary Health Care
WHO	-	World Health Organisation

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Accurate diagnostic tests have a key role in patient management and the control of most infectious diseases (Sahbir et al, 2006). A medical laboratory also called clinical laboratory is a designated place in an hospital where tests are done on clinical specimens in order to get further information about the health of a patient as pertaining to the diagnosis, treatment, and prevention of disease (Farr et al, 2004). Laboratory testing and services have an important role in the provision of health care and in utilisation and reimbursement. When laboratory services are conducted for patients, it serves as a means of early determination for commencement of treatment. This reduces the risk of developing long-term complications of diseases for the index patient and also prompt treatment after diagnosis reduces further transmission of the disease to other members of the community (Lundberg, 1981).

In health care delivery, patient satisfaction has been defined as the patient's perception of care received compared with the care expected (Agrawal, 2006). Ware et al, (2008) also defined patients' satisfaction as the extent to which patients feel their needs and expectations are met by the health care service provided. Patients' satisfaction is one of the established yardsticks to measure success of the services being provided in the health facilities. It is a multidimensional aspect, which represents a vital key marker for the quality of health care delivery and this is an internationally accepted factor which needs to be studied repeatedly for smooth functioning of the health care systems (Ahmad et al, 2010). The client here does not technically assess their own health status after receiving care but the degree of satisfaction with the services delivered (Quadri et al, 2012). Interest in assessing patient satisfaction with healthcare arose with the consumer movement of the 1960s (Reeder, 1972).

Studies by health service researchers have shown that satisfied and dissatisfied patients behaved differently; satisfied patients were more likely to comply with treatment (Linn et al, 1982; Wilson and McNamara, 1982), keep follow up appointments (Hertz and Stamps, 1977; Hulka et al, 1997) and utilise health services (Quadri et al, 2012). Such behavioural consequences related to satisfaction could affect outcome of care (Tabriz et al, 2004) and health-seeking behaviour (Quadri et al, 2012). As a means of ensuring patients' satisfaction with the laboratory services received, the World Health Organisation (WHO) published the Good Clinical Laboratory Practices Guidelines (GCLP) in 2003 through a working party of the Clinical Committee of the British Association of Research Quality Assurance (BARQA) (WHO, 2004). These guidelines were to serve as a set of standards to guide good practices as well as identify required systems and procedures to be followed within an organisation conducting clinical trials in compliance with the requirements of Good Clinical Practice (GCP).

In developed countries, health services are in state of constant and rapid development in response to technological and social and economic changes, both domestically and internationally. This was found to be largely influenced by growing consumer consciousness in health care and expectations for higher quality consumer oriented services, growing awareness of the medico-legal implications of services etc (Mohan and Kumar, 2011). However, for developing countries, there still exists a lack of up-to-date laboratory infrastructure and competent scientists qualified to render effective services to patients. Thus, the problem of relying on clinical diagnosis in some African regions with high prevalence of infectious diseases has led to misdiagnosis and consequently treatment failure or delay; this has potentially increased mortality (Evans et al, 2004). For instance, a study conducted in Nigeria showed that the accuracy of clinical diagnoses of typhoid fever, when compared with laboratory culture confirmation, was approximately 50% (Ngwu et al, 2003).

Studies on patients' satisfaction with laboratory services have identified key areas or components within the laboratory system which should be assessed in patient satisfaction surveys. These key areas or components include accessibility to the laboratory, hygiene of the environment, waiting time, patient-provider communication, availability of requested tests, availability of space in laboratory, attitude and competence of laboratory staff (Muhonda et al, 2008; Mekonnen et al, 2011; Sodani and Sharma, 2011; Iloh et al, 2012). Approaches to measuring patient satisfaction can be indirect or direct. In the indirect method, periodic field surveys are conducted among the general population. The direct approach is to ask patients to evaluate their satisfaction with their encounters in particular health care facilities or with specific providers in form of exit interviews. The direct method is less cumbersome, more widely used and provides a more robust and wholesome information for total quality management (Pope, 1978; Ware and Hays, 1988).

1.2 PROBLEM STATEMENT

According to Cathy et al (2006) **"**clinical laboratory service globally is fraught with various challenges such as ineffective laboratory utilisation (over-utilisation, mis-utilisation and under-utilisation) and un-improved patient outcome. These are to the detriment and inconvenience of the patients and result in poor satisfaction with clinical laboratory services (Tabriz et al, 2004).

A study conducted among patients using primary health care services in India revealed that only 38.3% of the total respondents labelled laboratory services as good while a higher number 80% ranked private laboratory as superior to government health services because of the timeliness to access laboratory service (Hossain, 2012). Findings from another study carried out in India also revealed that a mismatch between patient expectation and the service received were related to a decrease in patient satisfaction with the health care service

received (Rao et al, 2006). According to WHO (2000) the state of clinical laboratory in Sub-Saharan Africa is characterised by lack of national policy and strategy for laboratory services, insufficient funding, inadequately trained laboratory staff, weak laboratory infrastructure, old or inadequately serviced equipment, lack of essential reagents and consumables, and limited quality assurance and control protocols. Access to reliable diagnostic testing is severely limited in this region, and misdiagnosis commonly occurs (Uzochukwu et al, 2004; Cathy et al, 2006).

Laboratory services in Nigeria, especially at public health facilities, is generally perceived by patients as being very poor (Afolabi and Erhun, 2003; Olusina et al, 2004). In the delivery of laboratory services, just as in other areas of health care delivery, patients are faced by various problems such as overcrowding, long waiting time, poor provider-patient communication, to mention a few that leads to patient dissatisfaction. Nowadays, the patients are looking for hassle-free and quick services in this fast growing world (Llewelyn, 1996; Srinivasan, 2000).

Findings from a Nigerian study assessing patient's satisfaction with the care received at the clinical laboratories of a secondary and a tertiary health care facility in Enugu indicated that patients visiting the tertiary health facility were dissatisfied with confidentiality of their data and time to access the laboratory service compared to those visiting the secondary health facility (Nwabueze et al, 2010). In another Nigerian study conducted among HIV patients, aspects of the laboratory services which patients expressed dissatisfaction with were the timeliness of the laboratory tests and the confidentiality attached to the test results (Nwabueze et al, 2010).

1.3 JUSTIFICATION

In designing and implementing clinical laboratory services, meeting the needs and expectations of patients is always given due consideration. This is because patient satisfaction is one of the established yardsticks to measure the success of the services being provided in the health facilities (Agrawal, 2006). It is now being opined that it is easier to evaluate patients' satisfaction towards the health service received than the quality of health service received. An example is in the area of HIV care, where there is now a consensus that patients' satisfaction survey should be an essential and integral part of HIV care and policy making (Nwabueze et al, 2010; Nazish et al, 2012).

Disregard for patients' feedback may cause persistent disruption of testing because a patient has to return several times for the results and treatment. If not well handled, patients' laboratory experience can turn them off from seeing the physician. It is an important assessment that gives patient a voice, and overall service assessment can make public health services more responsive to peoples need and expectations (WHO, 2000; Rao et al, 2006) Thus, monitoring patient satisfaction is an important and useful quality improvement indicator and is required by clinical laboratories (Joint Commission on Accreditation of Health care Organisations, 2005).

The State Specialist Hospital, Ondo is one of the few government-owned secondary health facilities equipped to offer comprehensive clinical laboratory services in Ondo State. These services are provided to patients receiving medical care at the hospital as well as patients referred from primary health care centres, secondary health facilities and private health facilities in various parts of the state requiring clinical laboratory services. It is therefore essential to assess if patients are satisfied with the clinical laboratory services

received as the continuous utilisation of this important health service and other services provided under the state health care system could be hindered if there are patient concerns with the clinical laboratory services (Spreng et al, 1996; Mckinley et al, 2001; Jenkinson et al, 2002; Sodani et al, 2011).

The limited data on patients' satisfaction with clinical laboratory services in Nigeria and Ondo State in particular, the huge importance attached to patients' satisfaction with the provision of health services further necessitates a study on this topic. This study was therefore conducted to provide insight, from the patients' view point, on the quality of clinical laboratory services provided at the State Specialist Hospital, Ondo. The findings obtained from this study could help in appropriate policy formulation and the development of clinical laboratory service improvement plans which would lead to improved clinical laboratory service provision by the state.

1.4 OBJECTIVES OF THE STUDY

1.4.1 General Objective: To determine patients' satisfaction with clinical laboratory services at the State Specialist Hospital in Ondo West Local Government Area, Ondo State.

1.4.2 Specific Objectives:

1. To assess patients' satisfaction with the aspects/domains of laboratory services provided at the State Specialist Hospital, Ondo.
2. To determine patients' overall satisfaction with the laboratory services at the State Specialist Hospital, Ondo
3. To identify factors influencing patient satisfaction with the clinical laboratory services at the State Specialist Hospital, Ondo.

1.5. RESEARCH QUESTIONS:

1. What is the patients' satisfaction with the aspects/domains of laboratory services provided in the laboratory at the State Specialist Hospital, Ondo?
2. What is the overall patients' satisfaction with clinical laboratory services at the State Specialist Hospital, Ondo?
3. What are the factors influencing patients' satisfaction with clinical laboratory services at the State Specialist Hospital, Ondo?

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Clinical laboratory services involve biological, microbiological, serological, chemical, immunological, haematological, biophysical, cytological, pathological or other examinations of materials derived from the human body for the diagnosis, prevention or treatment of a disease or assessment of a medical condition (American society for clinical pathology, 2008). Clinical laboratories help in making diagnosis and treatment of patients easy for the medical practitioners. The benefit of the clinical laboratory is not only to provide accurate test results for the patients but also to do so within a reasonable turn-around time with traceability of laboratory procedures, a respect for ethics and to assure the safety of patients and staff (Farr et al, 2004; Sahbir et al, 2006). The role of the clinical laboratory therefore in the provision of health care and the utilisation of existing health services is crucial (Smith et al, 2006).

Though clinical laboratory services are an essential part of the health institution, it is not devoid of problems and challenges. The problems related to clinical laboratory services are aggravated particularly at peripheral level due to lack of properly designed laboratory rooms, shortage of short term and long term training for laboratory staff, lack of water and electricity, shortage of equipment and supplies, absence of effective maintenance and spare parts and lack of follow-up and supervision (Salkie, 1994; Carter, 1999; Kassu and Aseffa, 1999; Hassemer, 2003).

2.2. Key Laboratory Personnel and Their Specific Roles

Clinical Pathologist: Clinical pathologists are medical doctors. In some countries in South-America, Europe, Africa or Asia, this specialty can also be practiced by non-physicians, who have Ph.D or Pharm.D after a variable number of years of residency. Clinical pathologists work in close collaboration with clinical scientists (clinical biochemists, clinical microbiologists, etc.), medical technologists, hospital administrators to support the diagnosis of diseases by using laboratory testing of blood, other body fluids and microscopic evaluation of individual cells to ensure accuracy and optimal utilisation of laboratory testing (Duke University Health System, 2013).

Clinical Biochemist: Clinical biochemists analyse and interpret data relating to patients' samples to assist with the investigation, diagnosis and treatment of diseases. Clinical biochemists work with other health professionals, such as biomedical scientists, to detect changes in the complex biochemistry of body fluids, for example, increases in glucose levels in diabetes mellitus. They develop and implement new techniques, interpret results and liaise with and advise clinical staff. They are responsible for the evaluation and quality assessment of diagnostic tests and play a role in developing and managing hospital and community analytical services (Duke University Health System, 2013).

Pathologist Assistant: Pathologist Assistants work under the direct supervision of a board certified anatomical pathologist, who ultimately render a diagnosis based on the pathologist assistant’s detailed gross description and/or tissue submission. In addition, pathologist assistants may also perform following tasks- prepare tissue samples for flow cytometry, immunohistochemical (IHC) stains, genetic testing, microbiology culture, and various other laboratory evaluations; gross specimen photography; train other pathologist

assistants, pathology residents, and other pathology laboratory personnel (Duke University Health System, 2013). According to a study conducted on the duties of pathologist assistants, pathologist assistants perform gross examinations on about 56.5% of the total number of specimens, with majority being biopsies (Grzybick et al, 1999).

Biomedical Scientist: The specific activities of the biomedical scientist can differ in various parts of the world and vary with the level of education. Generally speaking, biomedical scientists conduct research using living organisms as models to conduct experiments. These can include cultured human or animal cells grown outside of the whole organism, small animals such as flies, worms, fish, mice, and rats, or, rarely, larger animals and primates. Biomedical scientists may also work directly with human tissue specimens to perform experiments as well as participate in clinical research (Duke University Health System, 2013).

Medical Laboratory Scientist: Also referred to as a medical technologist, or clinical scientist, or clinical laboratory technologist, is a healthcare professional who performs chemical, haematological, immunologic, microscopic, and bacteriological diagnostic analyses on body fluids such as blood, urine, as well as other specimens. They are also responsible for confirming the accuracy of test results, and reporting laboratory findings to pathologists and other physicians. The information provided by a medical laboratory scientist is critical as it influences the medical treatment a patient will receive (Duke University Health System, 2013).

Medical Laboratory Assistants: These are laboratory personnel that prepare, and in some cases process samples within a pathology laboratory. They also utilise pre-analytical systems to enable biomedical scientists or medical laboratory scientific process the biochemical tests requested on the sample. The majority of a medical laboratory assistant's

time is spent in processing specimens. As such, they need to have excellent knowledge of their particular sample acceptance policy, whilst obeying the data protection act and patient confidentiality (Duke University Health System, 2013).

Phlebotomist: A phlebotomist is a medical professional that is specially trained to draw blood samples from patients, perform basic laboratory examinations, set up samples for laboratory analysis. Depending on the technological capability of the health facility, they may be involved in entering the laboratory results into the institution's computer system. The phlebotomist is in most cases, the only laboratory personnel having direct contact with the patients inside the laboratory (Duke University Health System, 2013).

Laboratory Director: The Laboratory Director is responsible for the overall operation, leadership, direction, and administration of the clinical laboratory in accordance with the regulations guiding clinical laboratories. He or she plans, develops, organises, implements, directs and evaluates the laboratory operations and performance. The Laboratory Director must possess a current licence as a laboratory director issued by the state the laboratory is located, he or she must be satisfied in anatomic or clinical pathology. He or She is responsible for the overall operation and administration of the laboratory, including the employment of competent personnel. The Laboratory Director also ensures that quality laboratory services are provided, environmental conditions of the laboratory are appropriate for carrying out tests, as well as provide a safe environment in which employees are protected from physical, chemical and biological hazards (Duke University Health system, 2013).

Laboratory Manager: The duties of a laboratory manager may be very different depending on the type and size of the laboratory. In most settings, the lab manager should be familiar with regulatory requirements and compliance, develop and implement quality assessment plans and activities, demonstrate professionalism and manage daily laboratory

operations, in addition to possessing advanced laboratory technical skills (Duke University Health system, 2013).

Technical Supervisor: The technical supervisor is responsible for the technical and scientific oversight of the laboratory. The technical supervisor is not required to be on site at all times; however, he or she must be available to provide supervision on many functions whenever needed (Duke University Health system, 2013).

2.3. Concept of Quality in Health Care Delivery

Health care quality is a global issue and is gaining momentum in health care literature. The health care industry is undergoing a rapid transformation to meet the ever-increasing needs and demands of its patient population. Hospitals are shifting from viewing patients as uneducated and with little health care choice, to recognising that the educated consumer has many service demands and health care choices available. Respect for patient's needs and wishes, is central to any humane health care system (Nguyen et al, 2002). Quality of health services was traditionally based on professional practice standards, however over the last decade; patient's perception about healthcare has been predominantly accepted as an important indicator for measuring quality of health care and a critical component of performance improvement and clinical effectiveness (Woodring et al, 2004). Increasingly, health care stakeholders such as governments, health authorities and consumers are attaching importance to health care quality (Lapsley, 2000; Smith et al. 2006).

2.4. Laboratory Services in Nigeria

Laboratory services in Nigeria are diverse and operate under various settings. There are laboratories in medical institutions, educational institutions, research institutions, industrial organisations and private institutions. Despite the diversity, these laboratories also share commonalities with respect to laboratory resources, personnel, materials and environment. A general policy is that laboratories need to be available at all levels of the health care delivery system providing support for prevention, detection, diagnosis, treatment and management of diseases. At the tertiary level, laboratory services are also required to support teaching and research. Stand-alone laboratories (i.e., those not attached to hospitals or clinics) are usually owned by private laboratory professionals. There are many of these and they are available throughout the country. At the primary health centres, laboratory services are not readily available but services are available through private providers. The common forms of laboratory tests performed on a routine basis include clinical chemistry, haematology, microbiology, histology and cytology. In view of the availability of diagnostic kits, performance of tests has become relatively faster and cheaper although they have been associated with some inherent errors (Mbonu, 2007; Audu et al, 2012).

Regulation of clinical laboratory services

Regulation and accreditation of laboratory services are performed by the federal or state government, established regulatory agencies and professional bodies at various levels depending on the types and functions of the laboratories. These statutory bodies make rules and regulations and perform oversight functions to uphold the principles of Good Laboratory Practices (GLP). The Good Clinical Laboratory Practices (GCLP) concept possesses a unique quality however, as it embraces both the research and the clinical aspects of GLP. The development of GCLP standards encompasses applicable portions of GLP and Clinical Laboratory Improvement Amendments (CLIA). Due to the ambiguity of some parts of the

CFR regulations, the GCLP standards are described by merging guidance from regulatory authorities as well as other organisations and accrediting bodies. The intent of GCLP guidance is that when clinical laboratories adhere to this process, it ensures the quality and integrity of data, allows accurate reconstruction of experiments, monitors data quality and allows comparison of test results regardless of performance location. Despite the known benefits of GLP, it cannot be said that its principles and requirements have been fully institutionalised in most laboratories in Nigeria. The oversight functions of regulatory bodies on laboratory services have not made the desired positive impacts (Audu et al, 2012).

Factors responsible for non-compliance with International Organisation for Standardisation

Based on the work of the Nigerian Institute of Science Laboratory and Technology, many factors are responsible for non-compliance with ISO requirements in Nigerian laboratories. One area of particular concern is the inadequate energy source to power the laboratories. This is a national problem and is being addressed by the Federal Government. Most laboratories operate on power sourced from generators that are erratic and cause damages to sensitive equipment. Biological samples cannot be stored for long periods due to lack of reliable power supply. Another area of great concern is the poor laboratory infrastructure although some programmes and initiatives are attempting to address the issue (Iliyasu et al, 2010).

Improving laboratory infrastructure

As part of the infrastructure development reforms being undertaken by the government at various levels, health facilities, including laboratories, are being renovated, upgraded and equipped across the country. The government is also increasing direct funding to academic departments in institutions to acquire laboratory equipment and materials under a

programme titled *Direct Laboratory and Teaching Costs*. In addition, the government has proposed establishing a central laboratory with state-of-the-art equipment in each of the six geo-political zones in Nigeria. Universities are similarly establishing central laboratories with pooled resources in an attempt to improve services and research. To assist laboratories in standardising and calibrating their test systems, the Nigerian Institute of Science Laboratory Technology (NISLT) established a model laboratory for performing standardised laboratory tests in biological and chemical areas. International organisations are also helping to address the poor laboratory infrastructure in Nigeria. In addition, trans-national corporations are assisting some universities by building and furnishing their laboratories (Audu et al, 2012; Obansa and Orimisan, 2013).

2.5. Challenges of Clinical Laboratories in Nigeria

The provision of high-quality, affordable, health care services is an increasingly difficult challenge. Due to the complexities of health care services and systems, investigating and interpreting the use, costs, quality, accessibility, delivery, organisation, financing, and outcomes of health care services is key to informing government officials, insurers, providers, consumers, and others making decisions about health-related issues (Aharony and Strasser, 1993; Koplan, 2005).

One of the challenges of clinical laboratories in Nigeria is lack of implementation of the National Policy and Strategic Development Plan for laboratory services. Insufficient funding and old or inadequate equipment, reagents and consumables also contribute to the challenges of clinical laboratories. This observation by Obansa et al (2013) was noted in many states of Nigeria with most of the laboratories in the primary and secondary health care centers requiring infrastructural upgrading to provide a safe, secure and appropriate working environment. Some basic health centre laboratories were also better equipped than those in

comprehensive health centers and some secondary level hospitals. Most laboratory staff in the secondary facilities qualified as medical laboratory scientists or technicians, whereas most of those in the primary health care facilities qualified as science laboratory technicians, thereby lacking appropriate professional supervision.

2.6. Concept of Patients' Satisfaction

Over the past few decades, patient satisfaction has taken a prominent position in the medical service research literature. The attention being paid to patient satisfaction has been justified since patient satisfaction has become a key criterion for evaluating the quality of health service and the encounters between health professionals and patients. In fact patient satisfaction reflects not only patients' judgment and assessment of their medical experience but also their perception of the gap between what they want and what they receive. The patient's satisfaction with the health service provided involves satisfaction with health provider-patient interaction, satisfaction with treatment process, satisfaction with waiting time in hospital, satisfaction with health facilities and hospital environment, and satisfaction with medical costs (Tang, 2011).

Many concepts have been used to explain patient satisfaction. It has been interpreted as the art of care, technical quality of care, accessibility and convenience, efficacy of outcomes of care, cost of care, physical environment, and availability and continuity of care (Josephine, 2008). According to Crow et al (2003), something that satisfies will adequately fulfil expectations, needs or desires, and by giving what is required, leaves no room for complaint. Pascoae (1983) and Erden et al, (2006) defined patient satisfaction as a health care recipient's reaction to salient aspects of the context, process, and result of their service experience, further reiterated that satisfaction only occurs when services meet or exceed the customer's expectations or perceptions and it is therefore imperative that health care providers know the customers perceptions and expectations.

As a "patient-centered" process measure, patients' satisfaction reflects the patients' personal responses to, and evaluation of, care. For many, satisfaction is a statement about the match, or mismatch, between what they received and what they expected. In addition, satisfaction is the psychological state that results from confirmation or disconfirmation of expectations with reality as satisfaction is achieved when the patient/client's perception of the quality of care and services that they receive in healthcare setting has been positive, satisfying, and meets their expectations (Josephine, 2008).

2.7. Patients' Satisfaction and Quality of Health Care

While satisfaction with quality of health care provided to patients can be conceptualised as the degree of congruency between patients' expectation of services and their perception of the services and care received, it is accepted as a standard measure of quality of care, and is steadily gaining in popularity (Abolaji, 2010). Evaluating the perception of patients concerning the quality of care they receive is imperative as patients are and will remain the best source of information about a health facility's communication, processes, and whether they were treated with dignity and respect. Their experiences often reveal how well a health facility is operating and can stimulate important insights into the kinds of changes that are needed to close the chasm between the care provided and the care that should be provided. Satisfaction studies can also give health care providers some idea of how they would have to modify their provision of services in order to make their patients more satisfied and institute policies for health improvement. This is because patient satisfaction is highly dependent on the health service delivery structure (Benhart et al, 1999; Keegan et al, 2003).

2.8. Relationship between Patients' Expectations and Satisfaction

A patient's expectation is assumed to influence the patient's perception of the outcome, which can be said to be satisfactory or unsatisfactory. Expectations are an important influence on the patient/client's overall measurement of satisfaction with a health care experience. Patient/client satisfaction is influenced by the degree to which the health care fulfils the patients' expectation. Crow et al, (2003) in their review of literature identified that patient satisfaction was linked to granting of the patients' desires. Some researches however suggest that a link between satisfaction and fulfilment of patient/client expectations is not necessarily the case, since it is possible that the patient/client's evaluation of a service may be largely independent of actual care received (Williams, 1994; Rao et al, 2006; Zineldin, 2006).

In a theoretically-based investigation of social psychological variables, values and feelings of entitlement were not related to satisfaction, although expectations were (Linder-Pelz, 1982). There is also some support for the discrepancy statement which states that satisfaction is highest when favourable experiences match favourable expectations and lower when negative occurrences reinforce negative expectations or contradict positive ones (Linder-Pelz, 1982; Swan et al, 1985). Thus, this has led to the conjuring of good and bad "surprises" experienced in hospital and have been observed to affect satisfaction, with bad events more significant than good ones (Nelson and Larson, 1993).

2.9 Measurement of Patients' Satisfaction

Monitoring and evaluating patient satisfaction with health care is a crucial input to improving the quality of the health system as well as providing feedback for health care professionals and policy makers. This is because measuring patient satisfaction with health care delivery can provide an important assessment of the quality of health care not adequately

captured by other health service statistics such as patient waiting times, consultation times and proximity (Bara et al, 2002).

In times past, patient outcomes received special emphasis as a measure of quality of health care. Assessing patient outcomes has merit both as an indicator of the effectiveness of different interventions and as part of a monitoring system directed to improving quality of health care as well as detecting its deterioration (Aldana et al, 2001). Many advantages are gained by using patient outcome as the criterion of quality in medical care. The validity of patient outcome as a dimension of quality is seldom questioned. Moreover, patient outcomes tend to be fairly concrete and, as such, seemingly amenable to more precise measurement. However, a number of considerations limit the use of patient outcomes as measures of the quality of care. The first of these is whether the outcome of care is, in fact, the relevant measure. This is because outcomes reflect both the power of medical science to achieve certain results under any given set of conditions, and the degree to which "scientific medicine," as currently conceived, has been applied in the instances under study. Sometimes a particular outcome may be irrelevant, as when survival is chosen as a criterion of success in a situation which is not fatal but is likely to produce suboptimal health or crippling conditions. All these limitations to the use of patient outcomes make information about patient satisfaction an indispensable assessment of quality of health care which can influence the design and management of healthcare systems (Santillan, 2000).

2.10 Importance of Patients' Satisfaction

Patients' satisfaction is a representative method of capturing the perspectives of patients on their experiences with a healthcare provider, system or services that involve with their healthcare plan (Harris et al, 1999). This is buttressed by the Joint Commission on Accreditation of Healthcare Organisations (JCAHO) which stated that total organisational commitment to continuously improve the quality of patient care is the central concern and

this act is an ongoing, comprehensive system that supports and promotes continuous improvement in the quality of patient care and is one that seeks feedback on the quality of care from patients, practitioners, employees, as well as the community (JCAHO, 2005).

Patient satisfaction represents a key marker for the quality of health care delivery and this internationally accepted factor needs to be studied repeatedly for smooth functioning of the health care systems. Furthermore, research has shown that patient's satisfaction is a determinant of other patient behaviours, such as choice of healthcare provider or system, use of services, complaints, and malpractice suits (Andaleeb, 2001). Thus, patient's satisfaction is an important issue for evaluation and improvement of healthcare service. This is because user evaluations would be used to educate health staff about their achievements as well as their failure, assisting them to be more responsive to their patients' needs. Patient's assessment, therefore, would assist in suggesting guidelines for improving the attitudes of health staff in better serving the patients thereby improving the health services (Al-Eisa et al, 2005; Al-Qatari and Haran, 2008).

Adherence to views of patients' satisfaction surveys has the capacity to improving quality of healthcare services and enhances policy redesign and implementation by healthcare providers (Rogers and Smith, 1999). Also, their perceptions are beneficial in bench marking, policy making, resources allocation, shaping physician behaviour (Baba, 2004), measurement of changes and identifying patients' dissatisfaction (Patro et al, 2008). Patients' satisfaction surveys not only provide feedback to the performance and facilitate quality improvement; they also act as a stage for healthcare consumers to express their concerns (Danish et al, 2008). In Africa, patient satisfaction with health care services is one of the most important factors determining the utilisation of services (Ige and Nwachukwu, 2010).

2.11 Patients' Satisfaction with Clinical Laboratory Services

Satisfaction has been said to be a major predictor of use of services; it is essential if clients were to utilize services, comply with treatments and maintain a continuing relationship with practitioners (Larsen et al, 1976; Patro et al, 2008). Following this thinking, there has been growing interest in measuring clients' satisfaction, mostly through collecting the views of service users. These views have become important in the evaluation of healthcare delivery and have become a tool for health service performance evaluation.

Client satisfaction is now viewed as an important measure of protection against potential problems in healthcare delivery, and is linked to changes in service delivery policies (Hall and Dornan 1988; Carr-Hill 1992; Marshall et al, 1993; Strasser et al, 1993). Nevertheless it is somehow difficult to measure the satisfaction and gauge responsiveness of the health systems as not only the clinical but also the non-clinical outcomes of care do influence the patients' satisfaction (Agrawal, 2006). In another sense, Nazish et al, (2012) opined that it is easier to evaluate patients' satisfaction towards the service than the quality of medical services that they received. Such studies can provide useful input to health planners about the problems in the existing health services.

Patient satisfaction depends upon many factors such as: quality of clinical services provided, availability of medicine, behaviour of doctors and other health staff, cost of the services, hospital infrastructure, physical comfort, emotional support and respect for patient preferences (WHO, 2000). Mismatch between patient expectation and the service received is related to decreased satisfaction (Rao et al, 2006). Evaluating to what extent patients are satisfied with health services is clinically relevant, as satisfied patients are more likely to comply with treatment (Sodani et al, 2011), take an active role in their own care (Spreng et al, 1996), continue using medical care services and stay within a health provider (where there are some choices) and maintain with a specific system (Sodani et al, 2011). On the other hand, clients who are not satisfied with a service may have worse outcomes because they are

likely not to comply with recommendations given by health care personnel (Mckinley et al, 2001; Jenkinson et al, 2002).

The modern approach to healthcare seeks to engage the attention of both patients and the public in developing healthcare services and equity of access, but this is not easy to achieve, requiring time, commitment, political support and cultural change to overcome barriers to change (Aharony, 1993). Improvement in selected aspects of health care delivery through quality assurance and outcome assessment has been driven by political expediency. While this is important, a 'bottom up' assessment of patient satisfaction seems preferable if service improvement is to be translated into outcomes meaningful to patients, especially improved quality of life (Von Essen, 2002).

Providing comprehensive quality laboratory services is a challenging process which needs multiple sources of supports from clients, providers, managers, and other stakeholders. Failure to get patients' feedback as regards the clinical laboratory services being received may cause persistent disruption of laboratory testing because a patient may have to return several times in the process of carrying out the laboratory tests and being treated. Thus monitoring patient satisfaction is an important and useful quality improvement indicator and is required by clinical laboratories (Joint Commission on Accreditation of Health Care Organisations, 2005). Measuring patient satisfaction can therefore help identify problems in the health care delivery as well as help resolve these problems (Oja et al, 2006; Jones et al, 2009).

Clinical laboratories play an essential part in health institutions in the provision of health services. Patients' satisfaction surveys have therefore not only focussed on general health services provided at either at the outpatient or inpatient departments, but also on clinical laboratory services (Salkie et al, 1994; Hassemer, 2003). The problems related to clinical laboratory are aggravated particularly at peripheral level due to inadequate laboratory equipments/infrastructure, shortage of short term and long term training for laboratory staff,

absence of effective maintenance and spare parts and lack of follow up and supervision (Carter, 1999; Tegbaru et al, 2004).

In a previous study in Ethiopia, Tegbaru et al (2002) found a shortage of manpower, equipment, chemicals and others supplies, absence of quality assurance programme network and problems in maintenance of equipment as causes of dissatisfaction among patients accessing the clinical laboratory. Evidence from a Nigerian study on patient satisfaction levels in diagnosis and treatment of HIV/AIDS in secondary and tertiary health care facilities in Enugu indicated that the patients visiting the tertiary health facility were more satisfied with access to care and services received from doctors than those visiting the secondary health facility. On the other hand, their secondary health facility counterparts were more satisfied with the laboratory, pharmacy, adherence counseling and other staff than the patients in the tertiary institution. Furthermore, they felt that their confidentiality was better respected and time spent in accessing care shorter than what obtained among their tertiary health facility counterparts (Nwabueze et al, 2010).

***Accessibility of patients to laboratory tests*:** This could affect the assurance and confidence patients have in the availability of the health services they desire. However, in developing countries there are contrasting evidences to this effect. A satisfaction survey in Egypt noted that the unavailability of laboratory investigations caused dissatisfaction in about a quarter of patients (25.87%) in the study (Adel et al, 2009). Often, the tests and analysis ordered by the examining physician were unavailable at the primary health care facilities. Another study in two Egyptian districts reported that 28.2% and 21.5% of studied samples recorded unavailability of laboratory investigations when requested in the primary health care facilities (Gadallah et al, 2003).

Turnaround time: Long waiting time before carrying out a laboratory investigation and/or receiving the laboratory result has negative implications as it may result in the worsening of the illness, permanent disability and/or death (Okolo et al, 2002). One of the most distressing things that patients have to contend with is hospital waiting time (Ofili and Ofovwe, 2005). For patients who are severely ill or in pains, this can be quite an ordeal. A Nigerian study noted dissatisfaction with time to access laboratory services and privacy of the laboratory result among patients accessing care at a tertiary hospital in Eastern Nigeria (Nwabueze et al, 2010). In another study in United States conducted in 500 hospitals, the turnaround time for a test on myocardial infarction revealed an extra time beyond the recommended time for 11% of such tests (Steindel, 1999).

***Confidentiality*:** This means that the health provider keeps the patient's health care issues in strict confidence between the patient and the health provider. This imperative need to guard the patients' confidentiality extends, to every staff of the health facility, including receptionists and technicians (Sue, 2009). Laboratory test results, reports and specimens are released for the benefit of the patient and to ensure appropriate medical care. The privacy and rights of the patient are primary in the health care system. All aspects of the health care provider-patient relationship are confidential from the time the patient first sees the health provider until all investigations are completed. The laboratory, as an intermediary in the delivery of health care, must maintain this confidentiality with respect to the laboratory results of patients (Hutchinson et al, 2003).

In developed countries laboratory practice is relatively immune to litigation however the laboratory is vulnerable to lawsuits on sensitive issues such as human immunodeficiency virus (HIV) antibody testing, employee drug abuse and drug screening among athletes. Certain results, such as the blood glucose level, the prothrombin times and the hematologic profile, are currently given directly to patients by some laboratories. Other results, including the glycosylated haemoglobin level, culture results and post-mortem findings, are given to

attorneys, physicians, patients and other interested groups (Canadian Association of Pathologists, 1990).

Studies done on issues of patients' satisfaction with HIV/AIDS diagnosis in Africa differ statistically. As revealed by Mindaye et al (2012), 98.3% of patients were satisfied that health care providers treated their test results with confidentiality in a study assessing patients' satisfaction with laboratory services at antiretroviral therapy clinics in public hospitals, Addis Ababa, Ethiopia. However, a study by Nwabueze et al (2010) showed a contrary result as 67.5% of HIV/AIDS patients utilising a secondary healthcare facility in Enugu state showed dissatisfaction with the confidentiality of their laboratory details.

Cleanliness of sample collection spots, laboratory and hospital environment: There has been recent concern from the public, media and infection control staff over perceived in-adequacies in hospital cleaning. Increasing numbers of hospital-acquired infections have generated much attention over the last decade. The public has linked the so-called 'superbugs' with their experience of dirty hospitals (Dancer, 2003).

According to WHO (2000), the sources of infection in a health-care facility, and of the preceding contamination, may be the personnel, the patients, or the inanimate environment. The hospital environment can be contaminated with pathogens. *Salmonella* or *Shigella* spp., *Escherichia coli* O157:H7 or other pathogens may be present in the food and cause an outbreak of disease just as they can in a community outside the hospital. If the water distribution system breaks down, waterborne infections may develop. In more sophisticated premises, the water cooling system of air conditioning equipment may become contaminated with *Legionella pneumophilia*, causing Legionnaires disease in susceptible patients.

A study by Ofili et al (2005) showed that as high as 46% of the patients expressed dissatisfaction with the cleanliness of the laboratory environment within a tertiary health facility in Nigerian. This is in tandem with a study conducted by Mekonnen et al (2011) on

patients' satisfaction with cleanliness of the laboratory in selected hospitals in Eastern Ethiopia where 43.1% of the patients expressed dissatisfaction with the cleanliness of the laboratories.

2.12 Overall Patients' Satisfaction with Clinical Laboratory Services

One of the factors that influences patients' satisfaction is efficiency of services rendered to patients (Hornsby et al, 2000). The "efficiency" of service refers to the promptness of the care given to patients, including issues like waiting time before consultation, duration of consultation, amount of time spent with the doctor subsequently, quick response to emergencies, quick dispensation of drugs, fast and accurate laboratory tests (Santillan, 2000). The overall patients' satisfaction of medical services entails ease with which patients' accessed care, perception of waiting time, patient-provider relationship, payment and hospital facilities/environment. A sum of all these areas of service is fundamental in determining the absolute improvement of the efforts put in place by health managers for the welfare of the intended persons seeking care.

Generally patients' satisfaction rating of overall healthcare services is usually very high. A study in India revealed that overall patients' satisfaction of laboratory services alone stood at 87.6% (Bhargava et al, 2012). Another study conducted in Ethiopia revealed that 87.6% of patients were satisfied with overall laboratory services in the selected healthcare centres (Mekonnen et al, 2011). A study in Nigeria on patients' satisfaction with laboratory services by Ofili et al, (2005) also estimated that 73.2% and 85% of patients were satisfied with the laboratory and X–ray services respectively.

2.13 Factors Influencing Patients' Satisfaction

Individuals' perspectives of health services may vary and this could influence how they judge satisfaction with healthcare services they obtained. Some socio-demographic characteristics could be responsible for this such as patients' educational status, geographical location of patients and socioeconomic status etc. The literature shows that characteristics such as age, educational level, health status and amount of information conveyed by the health care provider are significant predictors of health care satisfaction (Hall and Dornan, 1988; Cohen, 1996; Chahal et al, 2004).

Crow et al (2003) in their review of literature on this subject identified 61 studies which examined and stated the existence of a relationship between patients' socio-economic and demographic characteristics and their reported satisfaction with healthcare. In another study on the relationship between patients' socio-demographic characteristics and satisfaction with healthcare, findings revealed that that the patient's health quality assessment appeared to change with the introduction of patient's socio-demographic characteristics (Tucker, 2001).

Education

Patient-related factors associated with satisfaction of laboratory services in a study by Mekonnen et al (2011) did not include educational status or location of respondents but it singled out the hospital being utilised by patients as the only determining factor. However, another study in Ethiopia among HIV patients determined educational status to be significantly associated with the satisfaction of HIV clinical laboratory services (Million et al, 2013).

Economic status

Some studies have revealed that the patient's economic status influences patient satisfaction. Upper economic status patients appear more concerned with personal health delivery such as answers they receive to medical queries, waiting time for appointments and

medical care. Lower economic status patients, on the other hand, are more concerned with costs and overall physical facilities, indicating value orientation (Aditi, 2009; Ige and Nwachukwu, 2010)

Gender

No firm conclusions may be drawn about the relationships between reported satisfaction with health care and gender. In the report by Crow et al, (2003) and among the 39 studies that investigated the hypothesis between gender and satisfaction with health care, (15.4%) of the women were significantly more satisfied in six studies with healthcare received while (17.9%) of the men were significantly more satisfied with healthcare services received in seven of the studies, although the relationship was not significant. It was found in a previous study that females have less general satisfaction compared to male caregivers because they have higher expectation of health care services. However, it is still debatable whereby one of the studies found that males tend to be more satisfied than females towards the healthcare services yet a positive association was established by Ige and Nwachukwu (2010).

Age

Older patients tend to be more satisfied (Sitzia and Wood, 1997; Hayes, 2007; Ige and Nwachukwu, 2010) and generally record higher satisfaction than younger respondents. Various explanations are advanced for the reason why older people generally report higher satisfaction and it may reflect generational or lifecycle effects, lower expectations of health care and reluctance to articulate their dissatisfaction. The concept is that older people are more stoical and accepting than the young, or that they engender more respect and care from their providers. Alternatively, it may be a cohort effect and that they have lower expectations based on prior experiences when standards were lower.

Ethnicity

In the report by Crow et al (2003), a total of 29 studies were carried out that investigated the relationship between race or ethnicity and satisfaction. This was found to be significant in 15 cases. In 11 (73.3%) of these studies, black and other visible minority groups were found to be less satisfied. In two studies of chronically sick outpatients, non-white people (terminology used by article) were more satisfied. One study showed significant differences between various ethnic groups.

Patient – Health Provider Relationship

There is consistent evidence across settings that the most important health service factor affecting satisfaction is the patient-health provider relationship, including information and technical competence (Crow et al, 2003). Another study also revealed a similar finding as the health provider -patient relationship was also closely related to patient satisfaction (Al-Doghaither et al, 2000).

Other determinants of patient satisfaction, quality of care and utilisation of health services identified the following determining factors; attitude of staff, affordability of cost of care, time spent at the hospital, as well as availability of doctors, drugs, equipment and laboratory facilities (Ofili and Ofovwea , 2005; Zaky et al 2007).

Patients' satisfaction with phlebotomy services

Specimen collection is one of the few areas of laboratory medicine that involves direct contact with patients. As a result, phlebotomy services provide opportunity to measure patients' perception of their experience with laboratory services. In a study on patients' satisfaction with phlebotomy services, 15% of the patients stated that they were not satisfied with the procedure (Dale et al, 1996). A similar result was observed in a study by Howanitz et al (1991) where patients were dissatisfied with the phlebotomy services. A review of

studies in the United States revealed that hospital laboratories have lower rankings compared to other health services with respect to patients' satisfaction surveys of these services. Reasons were that many patients were uncomfortable, anxious and afraid of needles and these factors make interaction between clinicians and patients critical (Hutchinson et al, 2003). Growing numbers of hospitals and health systems are recognising that this is an opportunity for improving patient satisfaction. An improved patients' satisfaction of phlebotomy and other laboratory services begins with the understanding by laboratories that patients perception of services is based on what they hear, touch and feel. A patient focused approach and hospital laboratories having this new service orientation has seen their clients' satisfaction scores improve from 4% to as high as 90% (American Society for Clinical Pathology, 2008).

Consumer cost and Cost of laboratory/Medical Services:

Cost of laboratory/medical services are the charges credited to patients as applied to the nature of their illnesses and the healthcare services being utilised. The amount paid for medical services may influence utilisation of laboratory and other medical services by the patients. This relationship will depend upon the patients' perception of the expensiveness of the particular laboratory tests and medical care. In addition, there is much evidence to suggest that distance to facilities imposes a considerable cost on individuals and that this may reduce demand (Terra de Souza et al, 2000). Studies reviewed showed the proportion of transport cost from the total patients cost as 28% in Burkina Faso, 25% in northeast Brazil and 27% in the United Kingdom (Sauerborn et al, 1995; Frew et al, 1999; Terra de Souza et al, 2000). A study in Vietnam found that distance to the laboratory service is a major consideration by patients before accessing health care. This is especially so when the laboratory service is not within their easy reach (David, 2011).

CHAPTER THREE

METHODOLOGY

3.1. STUDY AREA

Ondo West Local Government Area (LGA) is one of the 18 Local Government Areas in Ondo State and it has a landmass area of 970km^2. Its economic strength is derived largely from its oil and agricultural reserves and the major occupation of the people include trading, farming, and blacksmithing. There are 39 public primary health care centres, one public secondary health facility (State Specialist Hospital, Ondo) and 33 private hospitals approved by the government within Ondo West Local Government Area (Ondo State Ministry of health, 2014).

The State Specialist Hospital, Ondo, is located in Ondo town within Ondo West LGA. The hospital is staffed with a wide range of health care workers including doctors, nurses, pharmacists and laboratory scientists and provides medical, surgical, laboratory services to mention a few on both an inpatient and outpatient basis. The hospital provides health care services to residents within its surroundings and also serves as a referral centre for patients from lower level health facilities.

The clinical laboratory section of the hospital has 5 medical laboratory scientists, 13 laboratory technicians and 3 laboratory attendants. It carries out various laboratory tests which relate to medical microbiology, parasitology, pathology, haematology, virology/serology etc. It provides comprehensive clinical laboratory services and caters for patients receiving medical care within the hospital and patients referred from other health facilities.

3.2. STUDY DESIGN

The study was a cross-sectional descriptive study.

3.3. STUDY POPULATION

The population for this study consisted of male and female patients who made use of the clinical laboratory services of the secondary health care facility.

Inclusion Criteria: (1) All consenting patients (2) Adults aged 18-60yrs

Exclusion Criteria: Seriously ill patients who did not have the strength to respond to the questions.

3.4. SAMPLE SIZE DETERMINATION

Sample size for this study was estimated from the Leslie Kish formula for single proportions

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

N= minimum sample size

Z_α= standard normal deviate set at 1.96 (which correspond to the 95% confidence interval and error rate of 5%).

p = 50% (Patients satisfaction with laboratory services at a NHIS clinic in Eastern Nigeria, Iloh et al, 2012)

q = 1-p = 50%

d = degree of accuracy set at 0.05 (precision set at 5%)

Therefore, sample size $N = \frac{(1.96)^2 \times 0.5 \times (1-0.5)}{(0.05)^2}$

$$N = \frac{3.8416 \times 0.5 \times 0.5}{0.0025}$$

$$N = \frac{0.9604}{0.0025} = 384$$

To estimate for non-response rate;

Non-response rate at 10% = 100/90 = 1.11

NR = 384 x 1.11 = 426.

Therefore, minimum sample size needed (n) = 426

3.5 SAMPLING TECHNIQUE

A systematic sampling technique was used in selecting patients for this study. Following a review of the monthly laboratory attendance record, an average of 820 patients was seen on a monthly basis. On the basis that the study was to be conducted over a period of one (1) month and a sample of 426 patients was to be interviewed, a sampling interval of 2 was arrived at. In determining the initial patient to be selected among the first two patients presenting at the laboratory, balloting was done. Subsequently, every 2nd patient from the selected patient was recruited to participate in the study.

Unit of Inquiry

The unit of inquiry are the patients accessing laboratory services.

3.6. STUDY INSTRUMENT

Data was collected using a semi-structured, interviewer-administered questionnaire. The questionnaire was designed to elicit information based on the objectives of this study.

Section A – Socio-demographic characteristics

Section B – Utilisation of clinical laboratory services

Section C - Satisfaction with clinical laboratory services)

The questionnaire was designed in English and then translated into Yoruba language, the dialect of the study subjects. Thereafter, it was translated back into English to ensure that the original meanings were not distorted.

Patients' satisfaction with laboratory services was assessed using questions adapted from a previous study on the quality of laboratory services provided at a National Health Insurance Scheme (NHIS) clinic of a tertiary hospital in Eastern Nigeria (Iloh et al, 2012). The domains of laboratory services assessed in this study include (1) accessibility, (2) hygiene of the environment including cleanliness of toilet, (3) patient waiting time, (4) patient-provider communication, (5) availability of requested laboratory tests, (6) needle stick attempt, and availability of space in phlebotomy, (7) laboratory staff competence,(8) privacy, (9) respect, (10) courtesy and (11) confidentiality.

Validity and Reliability

A pre-test among 43 patients (10% of minimum sample size) utilising clinical laboratory services at General Hospital, Bolorunduro in Ondo East Local Government Area, Ondo State was done following which ambiguous questions were refined. Also, the reliability of the study instrument was checked by conducting a Cronbach-alpha statistical test on the results obtained from the pre-test.

3.7 DATA COLLECTION PROCEDURE

Three research assistants, trained on the appropriate use of the questionnaire and ethical concerns, administered the questionnaires during the study. Information was obtained only from patients who gave their consent to participate in the study.

Information was obtained after the health workers had finished attending to the patients (exit interview). To ensure confidentiality, the names and addresses of the respondents were omitted from the study questionnaire and each respondent was interviewed separately.

The questionnaires were administered over a period of one month by the research assistants.

3.8 DATA MANAGEMENT AND ANALYSIS

All questionnaires for the study were returned daily to the researcher for data cleaning, data editing, coding and recoding, and data entry. Double entry of the questionnaires was carried out to minimize entry errors. For this study SPSS version 15.0 was used for analyses of the data.

Frequency tables and charts were used to summarise variables such as socio-demographic characteristics, patients' satisfaction with domains of laboratory service as well as levels of satisfaction with laboratory services. Chi-square was used to explore the relationship between independent variable (socio-demographic) and the levels of perception (satisfaction) of laboratory services among the patients.

Each satisfaction item was scored on a Likert scale ordinal response as follows: completely satisfied=5, highly satisfied=4, satisfied=3, fairly satisfied=2 and not satisfied=1. Based on the 11 questions assessing the domains of clinical laboratory services, the highest possible obtainable score was 55 while the lowest possible obtainable score was 11.Using the

50^{th} percentile as cut-off, Patients' satisfaction was classified into two categories- satisfied and dissatisfied. Patients scoring 50th percentile and above were considered to be satisfied. Patients scoring less than the 50^{th} percentile were considered to be dissatisfied.

Lastly, logistic regression was applied to factors found to be significant at cross tabulation, so as to detect and measure their strength of relationship with patients' satisfaction with the laboratory services. Level of significance was set at 5%.

3.9 ETHICAL CONSIDERATION

Ethical approval was obtained from Ethical Review Committee of the Ondo State Ministry of Health. Permission was also obtained from the management of the secondary healthcare facility used in this study. All respondents were fully informed about the study and consent obtained prior to interviewing them. Respect for autonomy of the participants and confidentiality of all information given was strictly ensured. There was also avoidance of the use of traceable variables such as names and addresses of respondents. Dissemination of the study findings to the secondary healthcare facility, the local government authorities and the State Ministry of Health will be done to allow for appropriate interventions to be carried out.

CHAPTER FOUR

RESULTS

Four hundred and forty (440) patients were approached to participate in this study of which 426 gave their consent giving a response rate of 96.8%.

4.1 Background Characteristics of Respondents

The mean age of the respondents was 34.7 ± 12.4 years, with respondents below 30 years of age constituting 42.3%. Most of the respondents were females 266(62.4%), currently married 253(59.4%), had secondary education 300(70.4%), Christians 371(87.1%), Yoruba in origin 354(83.1%) and were self-employed 219(51.4%). Other findings are highlighted below in Table 4.1.

Table 4.2 showed the types of test conducted for patients. Out of 153 patients who utilised the services of Haematology unit, 91(59.4%) had Fbc done. Out of 97 patients that made use of the blood serology services, 86.6% of the patients had Blood Group test done while all the 108 patients (100%) who utilised Microbiology unit services were tested for Malaria parasite. In Chemical pathology unit, 55 respondents (80.9%) had Electrilyte Urea and Creatine test done.

Table 4.1: Background characteristics of respondents (N=426)

Variables	Frequency (n)	Percentage (%)
Age		
Below 30 years	180	42.3
30-39 years	104	24.4
40 years and above	142	33.3
Sex		
Male	160	37.6
Female	266	62.4
Marital status		
Married	253	59.4
Not married	173	40.6
Highest educational level		
Primary and below	43	15.1
Secondary	300	70.4
Tertiary	83	19.5
Religion		
Islam	55	12.9
Christianity	371	87.1
Tribe		
Yoruba	354	83.1
Igbo	55	12.9
Hausa	17	4.0
Occupation		
Unemployed	88	20.7
Self-employed	219	51.4
Government employed	119	27.9
Laboratory section utilised		

Haematology	153	35.9
Blood Serology	97	22.8
Microbiology	108	25.3
Chemical Pathology	68	16.0

Table 4.2: Types of test conducted for patients

Unit/ Tests	Frequency (n)	Percentage (%)
Haematology Unit (n=153)		
FBC	91	59.4
Hb Genotype	21	13.7
HbsAg	29	18.9
Grouping and Matching	4	2.6
Blood Serology Unit (n=97)		
Blood Group	84	86.6
Rh Antibodies	4	4.1
HIV Screening	2	2.1
Microbiology Unit (n=108)		
Malaria Parasite	108	100
Urinalysis	46	42.6
MCS	22	20.4
ZN Stain(AFB)	4	3.7
Stool Analysis	3	2.7
Widal Reaction	8	7.4
Chemical Pathology Unit (n=68)		
Random Blood Sugar(RBS)	17	25
E/U/Cr (Electrolyte Urea and Creatine)	55	80.9
Fasting Blood Sugar(FBS)	21	30.9
PSA	2	2.9
2HPP	7	10.3
Lipid Profile	4	5.8

4.2 Patients' satisfaction with the domains of laboratory services at the Haematology unit

Table 4.3 below highlights patients' satisfaction with the domains of laboratory services at the Haematology unit of the laboratory. Most of the respondents were satisfied with the measures put in place for confidentiality of test results (88.3%), ability of the laboratory staff to answer questions asked by patients (85.4%) and the courtesy and respect shown by staff of the laboratory (82.6%). Other findings are as highlighted below.

Table 4.3: Patient's satisfaction with the domains of laboratory services at the Haematology unit of the Laboratory (N=153)

Variables	Level of satisfaction	
	Satisfied n (%)	Dissatisfied n (%)
The state of hygiene of laboratory environment	118 (77.3)	35 (22.7)
Courtesy and respect shown by staff of the laboratory	126 (82.6)	26 (17.4)
Waiting time before sample is collected	106 (69.5)	47 (30.5)
Time taken to process test and give the result	120 (78.9)	33(20.1)
Availability of the test(s) requested for at the laboratory	121 (79.1)	32 (20.9)
Ability of the staff not to cause unnecessary pain when taking samples	126 (82.1)	27 (17.9)
Ability of the laboratory staff to answer questions asked by patients	131 (85.4)	22 (14.6)
Confidentiality of test results	135 (88.3)	18 (11.7)
Laboratory space	122 (79.8)	31 (20.2)
Ease in locating the laboratory	107 (69.9)	46 (30.1)
Cost of laboratory test(s)	110 (72.2)	43 (27.8)

4.3 Patients' satisfaction with the domains of laboratory services at the Blood Serology unit

Table 4.4 highlights patients' satisfaction with the domains of laboratory services at the Blood Serology unit of the laboratory. Most of the respondents were satisfied with the measures put in place for confidentiality of test results (88.2%), ability of the staff not to cause unnecessary pain when taking samples (87.1%) and the ability of the laboratory staff to answer questions asked by patients (81.9%). Other findings are highlighted below.

Table 4.4: Patient's satisfaction with the domains of laboratory services at the Blood Serology unit of the Laboratory (N=97)

Variables	Level of satisfaction	
	Satisfied n (%)	Dissatisfied n (%)
The state of hygiene of laboratory environment	73 (75.3)	24 (24.7)
Courtesy and respect shown by staff of the laboratory	78 (80.6)	19 (19.4)
Waiting time before sample is collected	63 (64.5)	34 (35.5)
Time taken to process test and give the result	79 (81.9)	18 (18.1)
Availability of the test(s) requested for at the laboratory	78 (79.0)	19 (21.0)
Ability of the staff not to cause unnecessary pain when taking samples	84 (87.1)	13 (12.9)
Ability of the laboratory staff to answer questions asked by patients	79 (81.9)	18 (18.1)
Confidentiality of test results	86 (88.2)	11 (11.8)
Laboratory space	75 (77.8)	22 (22.2)
Ease in locating the laboratory	64 (65.9)	33 (34.1)
Cost of laboratory test(s)	68 (70.2)	29 (29.8)

4.4 Patients' satisfaction with the domains of laboratory services at the Microbiology unit

Regarding patients' satisfaction with the domains of laboratory services at the Microbiology unit of the laboratory, most of the respondents reported been satisfied with the ability of the staff not to cause unnecessary pain when taking samples (87.1%) and the time taken to process test and give the result (86.9%). (Table 4.5)

Table 4.5: Patient's satisfaction with the domains of laboratory services at the Microbiology unit of the Laboratory (N=108)

Variables	Level of satisfaction	
	Satisfied n (%)	Dissatisfied n (%)
The state of hygiene of Laboratory environment	86 (79.4)	22 (20.6)
Courtesy and respect shown by staff of the laboratory	87 (79.6)	21 (20.4)
Waiting time before sample is collected	72 (66.4)	36 (33.6)
Time taken to process test and give the result	94 (86.9)	14 (13.1)
Availability of the test(s) requested for at the laboratory	92 (85.1)	16 (14.9)
Ability of the staff not to cause unnecessary pain when taking samples	95 (87.1)	13 (12.9)
Ability of the laboratory staff to answer questions asked by patients	89 (82.4)	19 (17.6)
Confidentiality of test results	90 (85.5)	18 (14.5)
Laboratory space	89 (82.4)	19 (17.6)
Ease in locating the laboratory	68 (62.9)	40 (37.1)
Cost of laboratory test(s)	77 (71.3)	31 (28.7)

4.5 Patients' Satisfaction with the domains of laboratory services at the Chemical Pathology unit

Table 4.6 highlights the patients' satisfaction with the domains of laboratory services at the chemical pathology unit of the laboratory. Most of the respondents were satisfied with the courtesy and respect shown by staff of the laboratory (89.6%), time taken to process test and give the result (88.9%) and the ability of the staff not to cause unnecessary pain when taking samples (86.4%). (Table 4.6)

Table 4.6: Patient's satisfaction with the domains of laboratory services at the Chemical Pathology unit of the Laboratory (N=68)

Variables	Level of satisfaction	
	Satisfied n (%)	Dissatisfied n (%)
The state of hygiene of Laboratory environment	51 (75.3)	17 (24.7)
Courtesy and respect shown by staff of the laboratory	61 (89.6)	7 (10.4)
Waiting time before sample is collected	45 (66.3)	23 (33.7)
Time taken to process tests and give the result	60 (88.9)	8 (21.1)
Availability of the test(s) requested for at the laboratory	52 (76.1)	16 (23.9)
Ability of the staff not to cause unnecessary pain when taking samples	59 (86.4)	9 (13.6)
Ability of the laboratory staff to answer questions asked by patients	58 (85.1)	10 (14.9)
Confidentiality of test results	57 (83.8)	11 (16.2)
Laboratory spaces	53 (77.3)	15 (22.7)
Ease in locating the laboratory	45 (66.7)	23 (33.3)
Cost of laboratory test(s)	48 (70.9)	20 (29.1)

4.6 Patients' satisfaction with the domains of laboratory services received

Table 4.7 below summarises patients' satisfaction with the domains of laboratory services for all sections of the laboratory. Most of the respondents were satisfied with the confidentiality observed by the laboratory staff on the result of their tests (89.7% vs. 10.3%), the cost of the laboratory tests (67.6% vs. 32.4%), the competence of the laboratory staff (78% vs. 22%), patient waiting time (81.9% vs. 18.1%) and the environmental hygiene of the laboratory (68.1% vs. 31.9%). Other findings are as highlighted below.

Table 4.7: Patients' satisfaction with the domains of laboratory services for all the sections of the laboratory (N=426)

Variables	Level of satisfaction	
	Satisfied n (%)	Dissatisfied n (%)
Courtesy and respect shown	352(82.6)	74(17.4)
Confidentiality of test results	382(89.7)	44(10.3)
Cost of laboratory tests	288(67.6)	138(32.4)
Competence of laboratory staff	332(78)	94(22)
Availability of space	360(84.5)	66(15.5)
Availability of required laboratory tests	374(87.9)	52(12.1)
Patient-Provider communication	329(77.2)	97(22.8)
Patient waiting time	374(87.9)	52(12.1)
Environmental hygiene	290(68.1)	136(31.9)
Accessibility of laboratory	306(71.8)	120(28.2)

4.7 Patients' overall satisfaction with the laboratory services received

As regards patients' satisfaction with the quality of laboratory service, a higher proportion of the patients 337(79%) were satisfied with the laboratory service received compared to 89(21%) who were dissatisfied (Table 4.7).

Table 4.8: Patients' overall satisfaction with the laboratory services received (N=426)

Variables	Level of satisfaction	
	Satisfied n (%)	Dissatisfied n (%)
Laboratory service received	337(79.0)	89(21.0)

4.8 Factors Influencing Patients' Satisfaction with Haematology Services

A higher proportion of patients who were not married (64.6%) were satisfied with the haematology laboratory services compared with 50.4% of patients who were married and this observed difference was statistically significant ($p<0.05$). Regarding educational status, a significantly higher proportion of patients with tertiary education (68.4%) were satisfied with the haematology laboratory services received compared with 55.6% and 48.4% of patients with secondary and primary education respectively ($p<0.05$). In addition, a significantly higher proportion of male patients (62.2%) were satisfied with the haematology laboratory services received compared with the proportion of females (50.6%) who were satisfied ($p<0.05$). No significant association was observed between other variables and patients' level of satisfaction. (Table 4.9)

Table 4.9: Factors Influencing patients' satisfaction with haematology services (N=153)

Variables	Level of satisfaction		X^2	p-value
	Satisfied n(%)	Dissatisfied n(%)		
Age				
Below 30 years	48(56.5)	32(43.5)	1.178	0.258
30-39 years	15(49.3)	15(50.7)		
40 years and above	24(52.1)	19(47.9)		
Sex				
Male	39(62.2)	24(37.8)	3.752	0.043
Female	48(50.6)	42(49.4)		
Marital status				
Married	41(50.4)	40(49.6)	4.131	0.014
Not married	46(64.6)	26(35.4)		
Highest educational level				
Primary and below	13(48.4)	15(51.6)	7.147	0.009
Secondary	44(55.6)	37(44.4)		
Tertiary	30(68.4)	14(31.6)		
Religion				
Islam	34(61.9)	21(38.1)	0.433	0.621
Christianity	53(54.3)	45(45.7)		
Tribe				
Yoruba	63(55.6)	53(44.4)	0.827	0.626
Others*	24(58.0)	13(42.0)		
Occupation				
Unemployed	25(62.4)	16(37.6)	1.553	0.073
Self-employed	40(58.3)	31(41.7)		
Government employed	22(56.4)	19(43.6)		

Statistically significant at p<0.05 Others* - Igbo, Hausa

4.9 Factors Influencing Patients' Satisfaction with Blood Serology Services

A significantly higher proportion of male patients (61.2%) were satisfied with the blood serology laboratory services received compared with the proportion of females (50.6%) who were satisfied ($p<0.05$). A higher proportion of patients who were not married (64.6%) were satisfied with the blood serology laboratory services compared with 50.6% of patients who were married and this observed difference was statistically significant ($p<0.05$). No significant association was observed between other variables and patients' level of satisfaction. (Table 4.10)

Table 4.10: Factors Influencing patients' satisfaction with blood serology services (N=97)

Variables	Level of satisfaction		X^2	p-value
	Satisfied n(%)	Dissatisfied n(%)		
Age				
Below 30 years	17(55.5)	12(44.5)	1.175	0.128
30-39 years	17(53.6)	15(46.4)		
40 years and above	21 (58.1)	15(41.9)		
Sex				
Male	28(61.2)	17(38.8)	3.541	0.041
Female	27(50.6)	25(49.4)		
Marital status				
Married	32(50.6)	31(49.4)	5.736	0.017
Not married	23(64.6)	11(35.4)		
Highest educational level				
Primary and below	14(48.4)	15(51.6)	2.357	0.082
Secondary	23(56.1)	17(43.9)		
Tertiary	18(57.1)	10(42.9)		
Religion				
Islam	15(61.1)	7(38.9)	0.543	0.602
Christianity	40(55.3)	35(44.7)		
Tribe				
Yoruba	42(55.6)	34(44.4)	0.971	0.786
Others*	13(58.0)	8(42.0)		
Occupation				
Unemployed	14(57.4)	9(42.6)	1.782	0.113
Self-employed	23(52.3)	19(47.7)		
Government employed	18(56.8)	14(43.2)		

Statistically significant at $p<0.05$ Others* - Igbo, Hausa

4.10 Factors Influencing Patients' Satisfaction with Microbiology Services

A higher proportion of patients who were not married (73.9%) were satisfied with the laboratory services compared with 64.5% of patients who were married and this observed difference was statistically significant ($p<0.05$). A significantly higher proportion of patients with tertiary education (74.0%) were satisfied with the laboratory services received compared with 67.6% and 58.9% of patients with tertiary and primary education respectively ($p<0.05$). Also, a significantly higher proportion of male patients (73.8%) were satisfied with the laboratory services received compared with the proportion of females (60.4%) who were satisfied ($p<0.05$). No significant association was observed between other variables and patients' level of satisfaction. (Table 4.11)

Table 4.11: Factors Influencing patients' satisfaction with microbiology services (N=108)

Variables	Level of satisfaction		X^2	p-value
	Satisfied n(%)	Dissatisfied n(%)		
Age				
Below 30 years	29(72.5)	11(27.5)	1.175	0.218
30-39 years	22(71.7)	9(28.3)		
40 years and above	23(63.1)	14(36.9)		
Sex				
Male	48(73.8)	17(26.2)	5.342	0.018
Female	26(60.4)	17(39.6)		
Marital status				
Married	40(64.5)	22(35.5)	4.367	0.024
Not married	34(73.9)	12(26.1)		
Highest educational level				
Primary and below	14(58.9)	10(41.1)	6.957	0.011
Secondary	23(67.6)	11(32.4)		
Tertiary	37(74.0)	13(36.0)		
Religion				
Islam	30(71.1)	12(28.9)	0.539	0.069
Christianity	44(66.3)	22(33.7)		
Tribe				
Yoruba	42(70.6)	18(29.4)	0.993	0.788
Others*	32(66.0)	16(34.0)		
Occupation				
Unemployed	22(67.4)	8(32.6)	1.451	0.213
Self-employed	31(66.3)	16(33.7)		
Government employed	21(64.8)	10(35.2)		

Statistically significant at $p<0.05$ Others* - Igbo, Hausa

4.11 Factors Influencing Patients' Satisfaction with Chemical Pathology Services

A higher proportion of male patients (52.7%) were satisfied with the chemical pathology services received compared with the proportion of females (50.1%) who were satisfied. This observed difference was however not statistically significant ($p>0.05$). A higher proportion of patients who were not married (62.9%) were satisfied with the chemical pathology services compared with 50.6% of patients who were married and this observed difference was statistically significant ($p<0.05$). No significant association was observed between other variables and patients' level of satisfaction. (Table 4.12)

Table 4.12: Factors Influencing satisfaction with chemical pathology services (N=68)

Variables	Level of satisfaction		X^2	p-value
	Satisfied n(%)	Dissatisfied n(%)		
Age				
Below 30 years	12(73.5)	5(26.5)	1.205	0.338
30-39 years	17(70.6)	7(29.4)		
40 years and above	17(67.1)	10(32.9)		
Sex				
Male	23(69.7)	10 (30.3)	2.381	0.057
Female	23(65.6)	12(34.4)		
Marital status				
Married	20(62.9)	13(37.1)	4.198	0.029
Not married	26(74.6)	9(25.4)		
Highest educational level				
Primary and below	13(61.4)	8(39.6)	2.502	0.071
Secondary	21(71.3)	8(28.7)		
Tertiary	12(66.8)	6(33.2)		
Religion				
Islam	19(63.1)	10(36.9)	0.583	0.537
Christianity	26(68.3)	12(31.7)		
Tribe				
Yoruba	27(55.6)	14(44.4)	0.988	0.446
Others*	19(58.0)	8(42.0)		
Occupation				
Unemployed	11(67.4)	7(32.6)	1.959	0.228
Self-employed	19(66.3)	8(33.7)		
Government employed	16(64.8)	7(35.2)		

Statistically significant at $p<0.05$ Others* - Igbo, Hausa

4.12 Factors Influencing Patients' Overall Satisfaction with Laboratory Services

Age was not significantly associated with the patients' satisfaction with clinical laboratory services received as a higher proportion (55.5%) of patients below 30 years of age were satisfied with the laboratory services compared with 49.6% and 53.1% of patients aged the 30-39 years and at least 40 years respectively ($p>0.05$). A higher proportion of patients who were not married (64.6%) were satisfied with the laboratory services compared with 50.6% of patients who were married and this observed difference was statistically significant ($p<0.05$). Regarding educational status, a significantly higher proportion of patients with tertiary education (70.4%) were satisfied with the laboratory services received compared with 61.6% and 48.4% of patients with secondary and primary education respectively ($p<0.05$). In addition, a significantly higher proportion of male patients (61.2%) were satisfied with the laboratory services received compared with the proportion of females (50.6%) who were satisfied ($p<0.05$). (Table 4.13)

Table 4.13: Factors influencing overall satisfaction with laboratory services (N=426)

Variables	Level of satisfaction		X^2	p-value
	Satisfied n(%)	Dissatisfied n(%)		
Age				
Below 30 years	108(55.5)	72(44.5)	1.075	0.218
30-39 years	49(49.6)	55(50.4)		
40 years and above	75(53.1)	67(46.9)		
Sex				
Male	98(61.2)	62(38.8)	3.111	**0.046**
Female	135(50.6)	131(49.4)		
Marital status				
Married	128(50.6)	125(49.4)	5.530	**0.019**
Not married	112(64.6)	61(35.4)		
Highest educational level				
Primary and below	21(48.4)	22(51.6)	6.957	**0.011**
Secondary	185(61.6)	115(38.4)		
Tertiary	58(70.4)	25(29.6)		
Religion				
Islam	34(61.1)	21(38.9)	0.433	0.510
Christianity	205(55.3)	166(44.7)		
Tribe				
Yoruba	197(55.6)	157(44.4)	0.97	0.756
Others*	42(58.0)	30(42.0)		
Occupation				
Unemployed	59(67.4)	29(32.6)	1.451	0.213
Self-employed	145(66.3)	74(33.7)		
Government employed	77(64.8)	42(35.2)		

Statistically significant at p<0.05 Others* - Igbo, Hausa

4.13 Predictors of Patients' Overall Satisfaction with Laboratory Services

Multivariate analysis using binary logistic regression as shown in Table 4.13 revealed that after controlling for other variables, sex, marital status and educational level were significantly associated with the patients' overall satisfaction with the quality of laboratory service received. Male patients were two times more likely to be satisfied with the laboratory services received than female patients (OR: 2.07; 95%CI: 1.055- 4.306). Unmarried patients were also more likely to be satisfied with the laboratory services they received compared to patients who were married (OR: 2.59; 95%CI: 1.237-4.063). Patients with primary education and below and those with secondary education were about 4 and 1.5 times less likely to be satisfied with the laboratory services respectively compared to respondents with a tertiary education (OR: 0.234, 95%CI: 0.091-0.467; OR: 0.684, 95%CI: 0.343-0.798).

Table 4.14: Binary logistic regression of overall satisfaction with laboratory services

Variables	Odds Ratio	95%CI	p-value
Sex			
Male	2.07	1.055-4.306	**0.038**
Female(ref)	1		
Marital status			
Not married	2.593	1.237-4.063	**0.028**
Married(ref)	1		
Highest educational level			
Primary and below	0.234	0.091-0.467	**0.01**
Secondary	0.684	0.343-0.798	
Tertiary(ref)	1		

CHAPTER FIVE

DISCUSSION

This study assessed patients' satisfaction with the services provided in the clinical laboratory at the General Hospital, Ondo, Ondo State as well as the factors associated with the patients' satisfaction with the laboratory services.

In this study, majority of the respondents were satisfied with the confidentiality observed by the laboratory staff on the result of their tests. This finding is similar to that obtained in a study conducted in Southern Ethiopia where as high as 91% of the patients were satisfied with the results of their tests been kept confidential at the laboratory (Million et al, 2013). Similar findings of satisfaction with the confidentiality observed on test results were also reported by Mekonnen et al (2011) and Sodani et al (2011). A possible explanation for the high degree of satisfaction as regards the confidentiality observed by the laboratory staff in this study is that patient issues are meant to be kept secret by staff of health facilities. This rule is accepted worldwide and guides the operations of all health providers, irrespective of job description or location.

Most of the patients were satisfied with the cost of the laboratory tests performed in this study. A possible reason is the subsidized costs of the laboratory services by the government making them relatively affordable. This is similar with the result obtained from the study conducted by Pathak et al (2012) in India where most of the patients were satisfied with the cost of the laboratory service they had received. This finding however contrasts that observed a study conducted in Northern Nigeria where the cost of laboratory services was unsatisfactory for most of the patients (Iliyasu et al, 2010). Cost of health care has a significant influence on utilisation of health care services. Satisfaction with this domain of

laboratory services is therefore encouraging as it has the potential to improve utilisation of this service and a consequent improvement in diagnosis and treatment of health conditions.

Regarding the competence of the laboratory staff in not causing unnecessary pain while collecting patients' sample, 78% of the patients in this study were satisfied with this aspect. Pathak et al (2012) in their study in a tertiary health care centre also demonstrated similar findings where 83.5% of the respondents at the laboratory expressing their satisfaction with the technical competence of the laboratory staff. A similar finding was also reported by Adebasi and Ahmed (2011) in their study. This high value might not be out of place as secondary health care centres (of which the study site is one) act as referral centres and so would be well equipped and manned by highly trained personnel. This is good for the health sector as it would increase patronage of quality health facilities by patients and therefore improve the health status of the population.

Patient waiting time at the laboratory was shown in this study to be mainly satisfactory to the patients and this finding is in tandem with results obtained in some other studies (Pathak et al, 2012; Teklemariam et al, 2013). This finding however contrasts that observed in some other studies where the major complaint of the patients was the unnecessarily length of time they had to spend in waiting to receive their results (Oja et al, 2006; Iliyasu et al, 2010). Satisfaction with the patient waiting time in this study is commendable as it has a positive implication on the continuous utilisation of the health care service by patients.

The importance of laboratory environments such as sample collection site, site where samples are analysed, laboratory surroundings and toilet on client satisfaction has resulted in this aspect being researched into by numerous studies. Contrary to findings observed in some studies which reported a major dissatisfaction among the patients as regards the environmental hygiene of the laboratories where their tests were carried out (Bhargava et al,

2012; Million et al, 2013; Teklemariam et al, 2013), majority (68.1%) of the respondents in this study were satisfied with the level of cleanliness of the laboratory environment. This finding speaks volumes as health facilities are meant to provide health care as well as promote health among patients.

Majority (82.6%) of the respondents in this study were satisfied with the courtesy and respect shown by laboratory staff. This is also consistent with that observed by some other studies on patient satisfaction with laboratory services (Sodani et al, 2011; Million et al, 2013). This finding might not be surprising as health care workers are expected to be compassionate and the exhibit a human face in the process of discharging their duties.

This study showed that majority of the patients were satisfied with the patient-provider communication which existed in the laboratory with similar findings reported in some other studies (Sodani et al, 2011; Pathak et al 2012; Million et al, 2013). This finding is not out of place as health care providers are trained to be good communicators so as to provide adequate, quality care to their patients. With this finding, there is a likelihood of increased utilisation of this health care facility which is beneficial to the population.

From this study, it was discovered that 71.8% of the respondents were satisfied with the accessibility of the laboratory. Million et al (2013) in their survey among patients utilising the laboratory also reported a similar finding with most of the respondents expressing satisfaction with the accessibility of the laboratory. Likewise, most of the respondents in this study were satisfied with the availability of required tests to be done in the laboratory. In tandem with this are findings documented in some other studies (Iliyasu et al, 2010; Adebasi et al, 2011; Pathak et al, 2012). These findings are welcoming as they promote appropriate health seeking behaviour among the populace.

The overall patients' satisfaction with the laboratory services was 79% in this study, showing that majority of the patients were satisfied with the laboratory services. A possible explanation for this could be attributed to the financial investments by the state government to improve health care delivery at its health facilities. Furthermore, being a secondary health facility, clients are also likely to benefit from increased financial resource allocation, available human resources, equipments and other important resources to the health facility. A similar result which showed satisfaction with laboratory services among the majority of patients, was documented by Million and colleagues in a study conducted in Ethiopia (Million et al, 2013). Also in tandem with this result are the findings reported from a study in Tanzania (Muhonda et al, 2008) and in India (Bhargava et al, 2012) where overall patients' satisfaction with the laboratory services was high.

Findings from this study showed that the degree of satisfaction was not statistically different by age. In comparison with this result are findings documented in some other studies conducted among patients utilising laboratories (Abdosh, 2006; Mekonnen et al, 2011; Million eta al, 2013; Georgieva et al, 2014).

Educational status was statistically associated with patient satisfaction in this study. Similar findings showing that the patients' educational status influenced their been satisfied or not with the health care service received were reported by Million et al, (2013) and Fekadu et al (2011). This probably points to the impact education has on the decision-making ability of individuals as well as the improved and better understanding associated with being educated. Contrasting findings were however reported in some other surveys (Abdosh, 2006; Mekonnen et al, 2011; Georgieva et al, 2014).

The sex analysis of patients' overall satisfaction with the laboratory services in this study revealed that more male patients were more satisfied in comparison with female patients. While Mohan et al (2011) in their study demonstrated a similar finding of a higher proportion of males being satisfied with the laboratory services received, Million et al (2013)

however reported a contrasting finding showing no difference between both sexes. A possible explanation might the difference in type of tests undergone by females as compared to males with the manner with which the tests are conducted and the invasiveness different.

In this study, marital status was significantly associated with the degree of satisfaction with the laboratory services received with patients who were not married being more likely to be satisfied with the laboratory services received compared to respondents who were married. Some other studies assessing satisfaction among patients utilising laboratory services however reported no relationship between the patients' marital status and their degree of satisfaction with the services (Fekadu et al, 2011; Million et al, 2013; Teklemariam et al, 2013).

Religion was shown not be significantly associated with patients' satisfaction with laboratory services in this study. This is in line with findings from some other studies which also reported no association between the religion of the patient and patients' satisfaction with the laboratory service received (Abdosh, 2006; Mekonnen et al, 2011; Million eta al, 2013; Teklemariam et al, 2013). This might not be surprising as individuals irrespective of religious beliefs generally utilise health facilities as they consider prompt treatment of their ailments a matter of importance.

Occupation was also not significantly associated with patients' satisfaction with the laboratory services in this study. Similar findings were documented by Million et al (2013) in Ethiopia and Georgieva et al (2014) in Bulgaria. This might not be far-fetched as the occupation of the patient is not a consideration in assessing and improving the quality of laboratory services offered by stakeholders.

5.2. CONCLUSION

An important and effective method of evaluating health services, including services in the clinical laboratory is by assessing patients' satisfaction with such services. In this study, patients' overall satisfaction with laboratory services in this study was high. Confidentiality of test results, availability of required tests, patient waiting time and courtesy shown by the laboratory staff were the aspects of the laboratory services where most patients expressed satisfaction. However, patient satisfaction was lowest with the cost of the laboratory tests, environmental hygiene of the laboratory and the patient-provider communication. Factors which were significantly associated with patients' satisfaction with laboratory services were the sex, educational level and marital status.

5.3. RECOMMENDATIONS

1. The cost of laboratory services should be made more affordable to patients by increased government investment and budgetary allocation which can help subsidise the cost of the services.
2. Measures should be put in place to maintain cleanliness of the laboratory and its surroundings.
3. A satisfactory rapport between the laboratory staff and the patients should be maintained. Recruiting more personnel and providing enough time for the patients to discuss and solve their queries could be employed to achieve this.
4. Periodic patient satisfaction surveys should be institutionalised to provide feedback for monitoring and continuous quality improvement of the laboratories.
5. Patient satisfaction should be viewed as an important issue in health care delivery by laboratory staff. This can be achieved by periodically organising seminars and workshop in this regard.
6. Finally, further studies on patient satisfaction are recommended as these studies can uncover more details associated with patient satisfaction with the health care service received, thereby leading to improved overall medical care o f the patients.

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APPENDIX I

PATIENTS' SATISFACTION WITH CLINICAL LABORATORY SERVICES IN GENERAL HOSPITAL, ONDO, ONDO STATE

Informed Consent Form

I am a postgraduate student undergoing training in the department of health policy and management, Faculty of Public Health, University of Ibadan, and presently carrying out a research on the topic; 'Patients satisfaction with clinical laboratory services in State Specialist Hospital Ondo, Ondo west local government area of Ondo State. The aim of this study is to assess satisfaction of laboratory services by patients visiting the healthcare facility.

Participation in this study is voluntary; Participants will be required to provide accurate and correct information to enhance the validity of the results of the study. Any information provided will be treated with confidentiality and not be used against you. No names will be required in the study. To give your consent to participate, read the line below and sign on the dotted lines.

Thanks for your cooperation.

Thomas, Juliet Yejide

Read carefully: I hereby give consent to participate in this study having read and understood the study objectives provided above and I am willing to provide accurate information as it concerns the topic being studied.

Signature ……

SECTION A: Patients Socio –demographic and laboratory utilization characteristics

Instruction: For most of the questions in this section, please write down the number of the response that corresponds to the options in the box provided. In some cases, simply put down additional information in the blank spaces

1. Age (years) at last birthday ……

2. Sex 1.Male 2**.** Female

3. Marital status of respondents: 1. Single 2**.**Married 3. Divorced 4**.**Widow/Widower

5.Others Specify) .....

4. Religion: 1. Christianity 2.Islam 3 Traditional religion4.Others……..

5. Place of residence …….....

6. Occupation: .....

7. Ethnic background: 1.Yoruba 2.Igbo 3. Hausa 4.Others ……..

8. Educational status of respondent: 1. No formal education 2.Primary

3. Secondary 4. Tertiary

9. Estimated monthly income of respondent……

HEMATOLOGY SECTION

For most of the questions in this section, please write down the number among the options given that corresponds with the response of respondents. In some cases, simply put down additional information in the blank spaces

10. Have you been tested in this laboratory? 1. Yes 2. No

11. If yes to above how many times have you come here for test? .....

12. Test currently requested (tick all that is applicable)

1.FBC	iv. ESR	vii. Microfilariae
ii. Hb Genotype	V. G.6.P.D	viii. Others(Specify)……
iii. Hbs Ag	vi. Grouping and Matching	

13. How much did it cost you to get to this facility? …….....

14. How far is the walking distance between your household and this laboratory?

1. Less than 10mins 2 .30mins 3 .1hour 4.2hour and above

SECTION B: Satisfaction with laboratory services

***Instruction*:** For each question in the table below simply tick (√) for responses that to the options provided in the box

1. Not satisfied at all **2**.Fairly satisfied **3**.Satisfied **4.**Hihgly satisfied **5**.Completely satisfied

S/N	Variables	1	2	3	4	5
16	What is your satisfaction of the state of hygiene of i. The waiting area ii. Sample collection point iii. Toilet iv. Laboratory environment					
17	How satisfied are you with the courtesy and respect shown to you by staff of the laboratory?					
18	Rate your satisfaction of the waiting time before your sample was collected					
19	Rate your satisfaction of the time it took the laboratory to process your test and give you the result					
20	How satisfied are you of the availability of the test(s) you/physician requested for at the laboratory?					
21	How satisfied are you with the services of the sample collector in not causing you unnecessary pain when taking your blood sample?					
22	Rank your satisfaction of the ability of the laboratory staff to answer questions you and any other patients asked.					
23	Rate your satisfaction with measures put in place for confidentiality of your result					
24	How satisfied are you with the availability of space in the laboratory?					
25	How satisfied are you of the ease you had in locating this clinical laboratory					
26	Rate your satisfaction of the cost to your laboratory test (s)					

BLOOD GROUP SEROLOGY SECTION

For most of the questions in this section, please write down the number among the options given that corresponds with the response of respondents. In some cases, simply

Put down additional information in the blank spaces.

10. Have you been tested in this laboratory? 1. Yes 2.No ☐

11. If yes to above how many times have you come here for test? .....

12. Test currently requested (tick all that is applicable)

i.Blood Group ii.Rh Antibodies iii.HIV Screening iv.Others(Specify)

13. How much did it cost you to get to this facility? ……..

14. How far is the walking distance between your household and this laboratory? ☐

1. Less than 30mins 2 .30mins 3 .1hour 4. 2hour and above

SECTION B: Satisfaction with laboratory services

***Instruction*:** For each question in the table below simply tick (√) for responses that corresponds to the options provided in the box

1. Not satisfied at all **2**.Fairly satisfied **3**.Satisfied **4.**Hihgly satisfied **5**.Completely satisfied.

S/N	Variables	1	2	3	4	5
16	What is your satisfaction of the state of hygiene of i. The waiting area ii. Sample collection point iii. Toilet iv. Laboratory environment					
17	How satisfied are you with the courtesy and respect shown to you by staff of the laboratory					
18	Rate your satisfaction of the waiting time before your samples was collected					
19	Rate your satisfaction of the time it took laboratory to process your test and give you the result					
20	How satisfied are you of the availability of the test(s) you/physician					
21	How satisfied are you of the services of the sample collector in not causing you unnecessary pain when taking your blood sample					
22	Score your satisfaction of the ability of the laboratory staff to answer questions you and any other patients asked.					
23	Rate your satisfaction with measures put in place for confidentiality of your result					
24	How satisfied are you with the availability of space in the laboratory					
25	How satisfied are you of the ease you had in locating this clinical laboratory					
26	Rate your satisfaction of the cost to your laboratory test (s)					

MICROBIOLOGY SECTION:

For most of the questions in this section, please write down the number among the options given that corresponds with the response of respondents. In some cases, simply put down additional information in the blank spaces

10. Have you been tested in this laboratory? 1. Yes 2.No ☐

11. If yes to above how many times have you come here for test? .....

12. Test currently requested (tick all that is applicable)

i.Malaria Parasite	ii.Urinalysis	iii.MCS	iv.Gram Stain
v.ZN Stain(AFB)	vi.Stool Analysis	vii.Widal Reaction	viii.VDRL
ix.Ear Swab	x.Skin Snip	xi.Wound Swab	xii.HVS Others(Specify)

13. How much did it cost you to get to this facility? …….....

14. How far is the walking distance between your household and this laboratory? ☐

1. Less than 30mins 2 .30mins 3 .1hour 4. 2hour and above

SECTION B: Satisfaction with laboratory services

***Instruction*:** For each question in the table below simply tick (√) for responses that corresponds to the options provided in the box

1. Not satisfied at all **2**.Fairly satisfied **3**.Satisfied **4.**Hihgly satisfied **5**.Completely satisfied

S/N	Variables	1	2	3	4	5
16	What is your satisfaction of the state of hygiene of i. The waiting area ii. Sample collection point iii. Toilet iv. Laboratory environment					
17	How satisfied are you with the courtesy and respect shown to you by staff of the laboratory					
18	Rate your satisfaction of the waiting time before your samples was collected					
19	Rate your satisfaction of the time it took the laboratory to process your test and give you the result					
20	How satisfied are you of the availability of the test(s) you/physician requested for at the laboratory?					
21	How satisfied are you of the services of the sample collector in not causing you unnecessary pain when taking your blood sample					
22	Score your satisfaction of the ability of the laboratory staff to answer questions you and any other patients asked.					
23	Rate your satisfaction with measures put in place for confidentiality of your result					
24	How satisfied are you with the availability of space in the laboratory					
25	How satisfied are you of the ease you had in locating this clinical laboratory					
26	Rate your satisfaction of the cost to your laboratory test (s)					

CHEMICAL PATHOLOGY SECTION

For most of the questions in this section, please write down the number among the options given that corresponds with the response of respondents. In some cases, simply put down additional information in the blank spaces

10. Have you been tested in this laboratory? 1. Yes 2.No ☐

11. If yes to above how many times have you come here for test? .....

12. Test currently requested (tick all that is applicable)

i.Random Blood Sugar(RBS)	v.Cholesterol	viii.SGOT	xi.2HPP
ii.E/U/Cr(Electrolyte Urea and Crytine	vi.Bicarbonates	ix.PSA	xii.Lipid Profile
iii.Fasting Blood Sugar(FBS)	vii.Urine(Protein)	x.Sodium	xiii.Others(Specify)…….
iv.Liver Functioning Test(LFT)			

14. How much did it cost you to get to this facility? ……

15. How far is the walking distance between your household and this laboratory? ☐

1. Less than 30mins 2 .30mins 3 .1hour 4. 2hour and above

SECTION B: Satisfaction of laboratory services

***Instruction*:** For each question in the table below simply tick (√) for responses that corresponds to the options provided in the box

1. Not satisfied at all **2**.Fairly satisfied **3**.Satisfied **4.**Hihgly satisfied **5**.Completely satisfied.

S/N	Variables	1	2	3	4	5
16	What is your satisfaction of the state of hygiene of i. The waiting area ii. Sample collection point iii. toilet iv. laboratory environment					
17	How satisfied are you with the courtesy and respect shown to you by staff of the laboratory					
18	Rate your satisfaction of the waiting time before your sample was collected					
19	Rate your satisfaction of the time it took the laboratory to process your test and give you the result					
20	How satisfied are you of the availability of the test(s) you/physician requested for at the laboratory?					
21	How satisfied are you of the services of the sample collector in not causing you unnecessary pain when taking your blood sample					
22	Score your satisfaction of the ability of the laboratory staff to answer questions you and any other patients asked.					
23	Rate your satisfaction with measures put in place for confidentiality of your result					
24	How satisfied are you with the availability of space in the laboratory					
25	How satisfied are you of the ease you had in locating this clinical laboratory					
26	Rate your satisfaction of the cost to your laboratory test (s)					

APPENDIX II

ITELORUN AWON AGBAWOSAN PELU SISE AMULO AWON ILE AYEWO EJE NI ILE IWOSAN AKOSEMOSE TI IPINLE ONDO

Foomu gbigba ase

Moje akeeko ti eka eko to nrisi akoso ati ibojuto eto ilera tie ka to nri si ilera gbogbogbo ti Fasiti ti ilu Ibadan ati wipe mo se iwadi lori akori yii: "itelorun awon agbawosan pelu sise amulo awon ile ayewo eje ni ile iwosan akosemose ti ipinle ondo ni ijoba ibile iwo-orun ti ilu ondo" gegebi ara eko to ye ki un ko. Idi ise iwadi yii ni lati mo boya awon olugbawosan ni itelorun lori sise awon ayewo ti won un se ni ile ayewo eje nipa lilo si ileto ilera.

Kikopa yin ninu ise iwadi yii ko je dandan ati wipe ko si eni ti a fi ipa mu lati kopa. Kikopa nilo fifun wa ni idahun ti o peye ti o si ku oju osuwon. Olukopa yio funwa ni idahun ti o peye lati le mu esi to moyan lori jade fun ise iwadi yi. Gbogbo ohun ti e ba so fun wa ni a o se lojo ati wipe ako ni fi tako yin. Ako nilo oruko fun ise iwadi yi. Lati le fun wa ni ase ati kopa, e ka oro isale yii, ki e si fi owo bowe lori ila sile yi.

E se fun ifowosowopo yin

Thomas, Juliet Yejide

Akaye: mo finufindo kopa ninu ise iwadi yii leyin igba ti mo ti ka ati mo nipa idi ti ako soke yii ati wipe o wumi lati fun won ni oro to kun oju osunwon toni ise pelu ise iwadi yii

Bibuwoluwe …….

IPIN A: IGBE AYE OLUKOPA ATI SISE AMULO ILE AYEWO EJE

Alaye: Fun opo ibeere ni abala yii, e jowo e ko nomba ti o nii se pelu idahun yin ninu apoti ti a pese sile. E sile ko oro afikun yin sile ni aye ofifo ti a pese sile fun yin

1. Ojo ori (odun) ti e se gbeyin ……
2. Eya okunrin tabi obinrin 1. okunrin 2. obinrin
3. Ipo igbeyawo oludahun: 1. Apon 2.gbeyawo 3 ikosile ti waye 4.Opo binrin/opokunrin 5.Omiran (Salaye) .....
4. Esin: 1. Onigbagbo 2.musulumi 3. Esin ibile 4. Omiran……..
5. Ibugbe …….....
6. Ise: 1. akeeko 2. Oloja 3. Osise ijoba 4.osise ilepo 5. agbe 6. Omiran salaye.....
7. Eya 1.Yoruba 2.Ibo 3. Awusa 4.Omiran ……..
8. Ipo eko: 1. Mi o kawe rara 2.alakobere 3. iwe giga 4. Fasiti
9. Oye owo ti e un gba losu……

IPELE AYEWO EJE

Fun opo ibeere ni abala yii, e jowo e ko nomba ti o nii se pelu idahun yin ninu apoti ti a pese sile. Ni igba miran, e le ko oro afikun yin sile ni aye ofifo ti a pese sile fun yin.

10. Nje eti se ayewo ninu ile isayewo eje ri?

1. Beeni 2. Beeko

11. To ba je beeni si ibeere oke yii, o to igba melo ni e ti wa se ayewo eje? .....

12. Iru ayewo ni e fe se bayi (e mu eyi ti o to)

1. Hb	iv.WBC	vii.G.6.P.D
ii. HCV	V. Platelets	viii. Blood Screening
iii. PCV	vi.ESR	ix. Microfilariae
x. Hb Genotype	xi.FBC	xiv.Others(Specify)……
Xii. Hbs Ag	xiii. Grouping and Matching	

13. O ti to igba melo ni e ti se amulo ile isayewo eje laarin odun meji seyin?

1. Eemeta 2. emerin 3. emarun 4. >o ju emarun lo

14. E lo to elo ki e to de ibi isayewo yii? …….....

15. Bawo ni ile yin se jina si ibi ise ayewo yii?

1. Ko to iseju mewa 2 .ogbon iseju 3 .wakati kan 4.wakati meji ati abo.

IPIN B: ITELORUN PELU ISE TI WON SE NINU ILE ISAYEWO YII

***Alaye*:** Fun awon ibeere inu apoti wonyi e fala (√) si awon idahun yin ninu apoti ti a pese sile fun yin

Nomba	**Ibeere**	**Odun momi patapata**	**Odun momi gan-an**	**Odun momi**	**Odun momi die**	**Kodun momi rara**
16	Bawo ni o se dun mo yin to nipa imototo ibi i. Ti awon eniyan duro si ii. ibi igba ayewo eje sile iii. ile igbonse iv. ohun elo isayewo					
17	Bawo ni o se dun mo yin ninu si nipa ibowofun awon osise ile isayewo.					
18	Bawo ni o se dun mo yin si nipa wakati ti e lo ki won to se ayewo eje fun yin					
19	Nje akoko ti won lo seto ayewo ati igba ti esi ayewo yin jade te yin lorun bi?					
20	Nje e dunnu si riri esi ayewo ti e se gba ni ile ayewo eje fun dokita yin lasiko ti o bere fun te yin lorun bi					
21	Bawo ni o se dunmo yin ninu nipa ihuwasi awon to gba eje sile fun ayewo eje nipase ki e ma ba ni irora nigba ti e ba fe se ayewo					
22	Nje e le bi e se ni itelorun nipa bi awon osise ile ayewo eje ma dayin lohun ibeere ti e ba beere tabi ti agbawosan miran ba beere					
23	Nje e le so bi e se ni itelorun si pelu bibo asiri laarin awon osise alayewo eje ti esi ayewo ba jade					
24	Nje o teyin lorun iru aye to wa si ni ile isaye eje					
25	Bawo ni e se ni itelorun si nipa oye igba ti e lo lati de ile isayewo					
26	Nje o teyin lorun nipa oye ti e san lori ayewo eje ti e un se					

ABALA IPO EJE NI IPIN SEROLOGY

Fun awon ibeere inu apoti wonyi e fala (√) si awon idahun yin ninu apoti ti a pese sile fun yin

10. Nje eti se ayewo ninu ile isayewo eje ri? 1. Beeni 2. Beeko

11. To ba je beeni si ibeere oke yii, o to igba melo ni e ti wa se ayewo eje? .....

12. Iru ayewo ni e fe se bayii (e mu eyi ti o to)

i.Blood Group ii.Rh Antibodies iii.HIV Screening iv.Omiran (e salaye)

13. O ti to igba melo ni e ti se amulo ile isayewo eje laarin odun meji seyin?

1. Eemeta 2. emerin 3. emarun 4. >o ju emarun lo

14. E lo to elo ki e to de ibi isayewo yii? …….....

15. Bawo ni ile yin se jina si ibi ise ayewo yii?

1. Ko to iseju mewa 2 .ogbon iseju 3 .wakati kan 4.wakati meji ati abo.

IPIN B: ITELORUN PELU ISE TI WON SE NINU ILE ISAYEWO YII

***Alaye*:** Fun awon ibeere inu apoti wonyi e fala (√) si awon idahun yin ninu apoti ti a pese sile fun yin

Nomba	**Ibeere**	**Odun momi patapata**	**Odun momi gan-an**	**Odun momi**	**Odun momi die**	**Kodun momi rara**
16	Bawo ni o se dun mo yin to nipa imototo ibi i. Ti awon eniyan duro si ii. ibi igba ayewo eje sile iii. ile igbonse iv. ohun elo isayewo					
17	Bawo ni o se dun mo yin ninu si nipa ibowofun awon osise ile isayewo.					
18	Bawo ni o se dun mo yin si nipa wakati ti e lo ki won to se ayewo eje fun yin					
19	Nje akoko ti won lo seto ayewo ati igba ti esi ayewo yin jade te yin lorun bi?					
20	Nje e dunnu si riri esi ayewo ti e se gba ni ile ayewo eje fun dokita yin lasiko ti o bere fun te yin lorun bi					
21	Bawo ni o se dunmo yin ninu nipa ihuwasi awon to gba eje sile fun ayewo eje nipase ki e ma ba ni irora nigba ti e ba fe se ayewo					
22	Nje e le bi e se ni itelorun nipa bi awon osise ile ayewo eje ma dayin lohun ibeere ti e ba beere tabi ti agbawosan miran ba beere					
23	Nje e le so bi e se ni itelorun si pelu bibo asiri laarin awon osise alayewo eje ti esi ayewo ba jade					
24	Nje o teyin lorun iru aye to wa si ni ile isaye eje					
25	Bawo ni e se ni itelorun si nipa oye igba ti e lo lati de ile isayewo					
26	Nje o teyin lorun nipa oye ti e san lori ayewo eje ti e un se					

IPIN MAIKIROBAOLOJI:

Fun awon ibeere inu apoti wonyi e fala (√) si awon idahun yin ninu apoti ti a pese sile fun yin

10. 10. Nje eti se ayewo ninu ile isayewo eje ri? 1. Beeni 2. Beeko ☐

11. To ba je beeni si ibeere oke yii, o to igba melo ni e ti wa se ayewo eje? .....

12. Iru ayewo ni e fe se bayii (e mu eyi ti o to)

i.Malaria Parasite	ii.Urinalysis	iii.MCS	iv.Gram Stain
v.ZN Stain(AFB)	vi.Stool Analysis	vii.Widal Reaction	viii.VDRL
ix.Ear Swab	x.Skin Snip	xi.Wound Swab	xii.HVS Others(Specify)

13. O ti to igba melo ni e ti se amulo ile isayewo eje laarin odun meji seyin?

1. Eemeta 2. emerin 3. emarun 4. >o ju emarun lo ☐

14. E lo to elo ki e to de ibi isayewo yii? …….....

15. Bawo ni ile yin se jina si ibi ise ayewo yii? ☐

1. Ko to iseju mewa 2 .ogbon iseju 3 .wakati kan 4.wakati meji ati abo.

SECTION B: Satisfaction of laboratory services

***Alaye*:** Fun awon ibeere inu apoti wonyi e fala (√) si awon idahun yin ninu apoti ti a pese sile fun yin

nomba	**Ibeere**	**Odun momi patapat**	**Odun momi gan-**	**Odun momi**	**Odun momi die**	**Kodun momi rara**
16	Bawo ni o se dun mo yin to nipa imototo ibi i. Ti awon eniyan duro si ii. ibi igba ayewo eje sile iii. ile igbonse iv. ohun elo isayewo					
17	Bawo ni o se dun mo yin ninu si nipa ibowofun awon osise ile isayewo.					
18	Bawo ni o se dun mo yin si nipa wakati ti e lo ki won to se ayewo eje fun yin					
19	Nje akoko ti won lo seto ayewo ati igba ti esi ayewo yin jade te yin lorun bi?					
20	Nje e dunnu si riri esi ayewo ti e se gba ni ile ayewo eje fun dokita yin lasiko ti o bere fun te yin lorun bi					
21	Bawo ni o se dunmo yin ninu nipa ihuwasi awon to gba eje sile fun ayewo eje nipase ki e ma ba ni irora nigba ti e ba fe se ayewo					
22	Nje e le bi e se ni itelorun nipa bi awon osise ile ayewo eje ma dayin lohun ibeere ti e ba beere tabi ti agbawosan miran ba beere					
23	Nje e le so bi e se ni itelorun si pelu bibo asiri laarin awon osise alayewo eje ti esi ayewo ba jade					
24	Nje o teyin lorun iru aye to wa si ni ile isaye eje					
25	Bawo ni e se ni itelorun si nipa oye igba ti e lo lati de ile isayewo					
26	Nje o teyin lorun nipa oye ti e san lori ayewo eje ti e un se					

CHEMICAL PATHOLOGY SECTION

Fun awon ibeere inu apoti wonyi e fala (√) si awon idahun yin ninu apoti ti a pese sile fun yin

10. 10. Nje eti se ayewo ninu ile isayewo eje ri? 1. Beeni 2. Beeko ☐

11. To ba je beeni si ibeere oke yii, o to igba melo ni e ti wa se ayewo eje? .....

12. Iru ayewo ni e fe se bayii (e mu eyi ti o to)

i.Random Blood Sugar(RBS)	v.Cholesterol	viii.SGOT	xi.2hpp(2 hours post pandia)
ii.E/U/Cr(Electrolyte Urea and Crytine	vi.Bicarbonates	ix.PSA	xii.Lipid Profile
iii.Fasting Blood Sugar(FBS)	vii.Urine(Protein)	x.Sodium	xiii.Others(Specify)…….
iv.Liver Functioning Test(LFT)			

13. O ti to igba melo ni e ti se amulo ile isayewo eje laarin odun meji seyin?

1. Eemeta 2. emerin 3. emarun 4. >o ju emarun lo ☐

14. E lo to elo ki e to de ibi isayewo yii? ……..... ☐

15. Bawo ni ile yin se jina si ibi ise ayewo yii? ☐

1. Ko to iseju mewa 2 .ogbon iseju 3 .wakati kan 4.wakati meji ati abo.

SECTION B: Satisfaction of laboratory services

***Alaye*:** Fun awon ibeere inu apoti wonyi e fala (√) si awon idahun yin ninu apoti ti a pese sile fun yin

Nomba	**Ibeere**	**Odun momi patapata**	**Odun momi gan-**	**Odun mo mi**	**Odun momi die**	**Kodun momi rara**
16	Bawo ni o se dun mo yin to nipa imototo ibi i. Ti awon eniyan duro si ii. ibi igba ayewo eje sile iii. ile igbonse iv. ohun elo isayewo					
17	Bawo ni o se dun mo yin ninu si nipa ibowofun awon osise ile isayewo.					
18	Bawo ni o se dun mo yin si nipa wakati ti e lo ki won to se ayewo eje fun yin					
19	Nje akoko ti won lo seto ayewo ati igba ti esi ayewo yin jade te yin lorun bi?					
20	Nje e dunnu si riri esi ayewo ti e se gba ni ile ayewo eje fun dokita yin lasiko ti o bere fun te yin lorun bi					
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25	Bawo ni e se ni itelorun si nipa oye igba ti e lo lati de ile isayewo					
26	Nje o teyin lorun nipa oye ti e san lori ayewo eje ti e un se					

APPENDIX III

ONDO STATE GOVERNMENT
MINISTRY OF HEALTH
Office of the Permanent Secretary
State Secretariat, Alagbaka Quarters, Akure, Ondo State.
www.ondostatemoh.gov.ng

AD. 4693/119

2nd April, 2014.

Thomas, Juliet Yejide
Dept. of Health Policy & Mgt.,
Faculty of Public Health,
College of Medicine,
University of Ibadan,
Ibadan.

APPROVAL OF ETHICAL REVIEW COMMITTEE

The proposal on "Patient Satisfaction with Clinical Laboratory Services in State Specialist Hospital, Ondo, Ondo State" has been reviewed.

The Committee found the research proposal to be in compliance with guidelines for research study.

In view of the foregoing, the Committee has given approval for the conduct of the study as proposed.
Best regards.

Dr. E.T. Oni
Permanent Secretary/Chairman
(Research Ethical Review Committee)

APPENDIX IV

TELEGRAMS.....
PRIVATE MAIL BAG No. 781

TELEPHONE.....

HOSPITALS' MANAGEMENT BOARD

AKURE, ONDO STATE, NIGERIA.

Your Ref. No.....
All Communications should be addressed
to the Permanent Secretary quoting

Our Ref No. G .8061/42

Date: 25th March, 2014

The Principal Investigator,

''Patient Satisfaction with Clinical Laboratory Services

in State Specialist Hospitals Ondo, Ondo State''

Department of Health Policy and Management,

Faculty of Public Health, College of Medicine,

University of Ibadan.

Ibadan.

Attention: Thomas Juliet Yejide

Ethical Approval

The Ethical Review Committee of the Hospitals' Management Board, Akure had critically evaluated your request to conduct a research at State Specialist Hospitals, Ondo.

I am pleased to inform you that the Committee is satisfied with your study proposal and its instrument. In view of this, you have been granted permission to carry out the study at the State Specialist Hospital, Ondo.

However, you are to adhere strictly to the instrument presented to this Committee without breaching any of the ethical issues discussed with you during the last ethical approval interview held with you on 27th March, 2014. The committee will also monitor the progress and conduct of this research. In addition, you are to forward to this office the important findings and recommendations of this study.

Best regards.

Permanent Secretary
Hospitals Management Board
P.M.B. 781, Akure

Dr. F.A. Akanbiemu. **MBBS (Benin), MPH (Ib.), FWACP (Comm. H)**
(Consultant Community Physician) DPR&S, HMB.
For: Permanent Secretary & Chairman, HMB Ethical Review Committee

CC: *Chief Medical Director, State Specialist Hospital, Ondo.*
Medical Director, General Hospital, Bolorunduro