

**HUMAN AND ENVIRONMENTAL FACTORS AFFECTING THE
USAGE OF MEDICAL LIBRARY BY UNDERGRADUATES IN
NIGER-DELTA, NIGERIA**

BY

OYIBO, FAVOUR OGHENEKARO

PG/11/12/205156

**A DISSERTATION PROPOSAL SUMMITTED TO THE
POSTGRADUATE SCHOOL, IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE
(M.Sc.) DEGREE IN LIBRARY AND INFORMATION SCIENCE,
DELTA STATE UNIVERSITY, ABRAKA.**

NOVEMBER, 2016

DECLARATION

I, Oyibo, Favour Oghenekaro declare that this is an original research carried out by me in the Department of Library and Information Science, Faculty of Education, Delta State University, Abraka.

Oyibo, Favour Oghenekaro
Researcher

Date

CERTIFICATION

I certify that this dissertation is an original research carried out by **Oyibo, Favour Oghenekaro** under my supervision in the Department of Library and Information Science, Faculty of Education, Delta State University, Abraka.

Prof. E.E. Adomi
Supervisor

Date

Prof. M.O. Ogbomo
Head of Department

Date

DEDICATION

This research is dedicated to the Almighty God for his unending love, care and enablement throughout my postgraduate programme.

ACKNOWLEDGEMENT

I wish to express my gratitude to my dissertation supervisor, Prof. E.E. Adomi for his candid advice and professional input geared toward the success of research.

I am also grateful to the Head of Department of Library and Information Science, Dr. M.O. Ogbomo and other academic and non-academic staff which includes: Prof. S.O. Uwaifo, B.E Iwhiwhu, (Ph.D), Dr. B.A, Akporhonor; Dr. E.F Ogbomo; Mr. F.E, Ejedafiru; Dr. I.E, Achugbue; Mr. I. Odede; Mrs. M.E, Igere; Mrs. O.N, Alakpodia; Dr. R.T, Enakrire and Mrs. J.O. Palmer, for their encouragement and constructive contributions towards the success of this research. Also, worthy of thanks is Prof. J.N. Odili of the Department of Guardians and Counselling in Delta State University, Abraka.

My appreciation goes to my husband Shell Oyibo, for his effort in helping me to edit this work and to my children; Divine Favour, Praise God, Glory and Eseoghene Oyibo for their understanding and prayers. I thank my parents Mr. and Mrs. M.T Ahininahwi whose parental counsel and encouragement helped me so much to put this work together.

I am also grateful to Mr. John Kelegha for his financial support, my principal Mrs. Ojede and Mrs. Duku, also my colleagues at my working place for their cooperation and understanding.

TABLE OF CONTENT

TITLE PAGE	-	-	-	-	-	-	-	-	-	i
DECLARATION	-	-	-	-	-	-	-	-	-	ii
CERTIFICATION	-	-	-	-	-	-	-	-	-	iii
DEDICATION	-	-	-	-	-	-	-	-	-	iv
ACKNOWLEDGEMENT	-	-	-	-	-	-	-	-	-	v
LIST OF FIGURES	-	-	-	-	-	-	-	-	-	vi
LIST OF TABLES	-	-	-	-	-	-	-	-	-	vii
ABSTRACT	-	-	-	-	-	-	-	-	-	viii
CHAPTER ONE:										
INTRODUCTION	-	-								1
1.1 Background to the Study	-	-	-	-	-	-	-	-	-	1
1.2 Statement of the Problem	-	-	-	-	-	-	-	-	-	6
1.3 Research Questions	-	-	-	-	-	-	-	-	-	7
1.4 Research Hypotheses	-	-	-	-	-	-	-	-	-	8
1.5 Purpose of the Study	-	-	-	-	-	-	-	-	-	8
1.6 Significance of the Study	-	-	-	-	-	-	-	-	-	9
1.7 Scope and Delimitation of the Study	-	-	-	-	-	-	-	-	-	10
1.8 Operational Definition of Terms	-	-	-	-	-	-	-	-	-	11
CHAPTER TWO:										
REVIEW OF RELATED LITERATURE										12
2.1 Conceptual Framework	-	-	-	-	-	-	-	-	-	12
2.2 Frequency Usage of information resources in medical library										15
2.3 Reasons undergraduates use the medical library	-									18
2.4 How information is retrieved from the medical library by undergraduates	-	-	-	-	-	-	-	-	-	23
2.5 Human factors affecting the usage of medical library by undergraduates	-	-	-	-	-	-	-	-	-	28
2.6 Environmental factors affecting the use of medical library by undergraduates	-	-	-	-	-	-	-	-	-	31
2.7 Appraisal of the reviewed literature	-	-	-	-	-	-	-	-	-	32

CHAPTER THREE: RESEARCH METHODS AND PROCEDURES	34
3.1 Research Design - - - - -	34
3.2 Population of the Study - - - - -	34
3.3 Sample and Sampling Technique - - - - -	35
3.4 Research Instrument - - - - -	36
3.5 Validity of the Research Instrument - - - - -	37
3.6 Reliability of the Research Instrument - - - - -	37
3.7 Method of Data Collection - - - - -	37
3.8 Method of Data Analysis - - - - -	37
CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND DISCUSSION OF FINDINGS	39
4.1: Questionnaire Response Rate - - - - -	39
4.2: Analysis of the Demographic Information of the Respondents - - - - -	40
4.3: Answering of the Research Questions and Discussion of Findings	42
4.4: Testing of the Research Hypotheses - - - - -	47
4.5: Discussion of Findings - - - - -	50
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS	56
5.1 Summary of the Study - - - - -	56
5.2 Conclusion - - - - -	58
5.3 Recommendations - - - - -	59
5.4 Contributions to Knowledge - - - - -	60
References - - - - -	62
Appendix I: (Questionnaire) - - - - -	71
Appendix II: Reliability Result - - - - -	74
Appendix III: Detailed SPSS Output - - - - -	76

ABSTRACT

The study investigated the human and environmental factors affecting the usage of medical libraries by undergraduates in Niger-Delta Region, Nigeria. The specific objectives of the study is to find out how frequent undergraduates make use of information resources in the medical library, determine why the undergraduates use the medical library, explore how undergraduates retrieve information from the medical library, identify the human factors affecting use of medical library by undergraduates, identify the environmental factors affecting use of medical library by undergraduates, establish the relationship between human factors and use of medical library by undergraduates, determine the relationship between environmental factors and use of medical library by undergraduates and to find out the composite relationship between human, environmental factors and the use of medical library by undergraduates. The descriptive survey research design was used to carry out the study with a population of 618 undergraduates drawn from three universities medical libraries. The systematic random sampling technique was used to select 248 respondents as the sample size using the questionnaire as the sole instrument. The data collected were analyzed using descriptive and inferential statistics. The findings reveals that undergraduates use the medical libraries to read medical text books, consult research on medical materials, study, read newspapers for current information on health issues, prepare for examinations, write assignments, etc. Majority of the undergraduate medical students retrieve information resources from the medical library through different access points such as manual card catalogue, shelve browsing and direction given by medical library staff and friends. Different human factors affect the usage of medical libraries by undergraduates. Majority of the undergraduates agreed to the statement that environmental factors affect the usage of medical libraries. It was also revealed from the study that both human and environmental factors jointly affect the usage of medical libraries by undergraduates. The findings from this study have helped to disclose that undergraduates of medical sciences rarely or never consult health related information resources in the library. Therefore, it was recommended that librarians and library management should put in place plans, programmes and strategies that will encourage undergraduates to frequently consult the different health related information resources that are available in the library.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Medical libraries are designed to serve both health professionals and students of health sciences. They are involved in the twin purpose of providing learning resources for students and evidence based practice resources to help health professional make good decisions in their clinical practice (Collins & Stone, 2014). As noted by Anyaoku (2015), medical libraries of today are operating in the age of electronic and remote access to information. Technology has fundamentally altered library usage pattern. These changes are seen in the notable preference and propensity for electronic resources and remote access to these collections. Buttressing on this view point, Franklin and Plum (2004) pointed out that the fact that more literature in the medical sciences is available electronically may help to account for why medical library users and especially faculty, staff, and fellows, choose to use electronic services remotely. There is need to help medical undergraduates imbibe good library use culture which involve the use of information resources that are in the library. This is because there are many benefits in the use of medical library's information resources which has institutionalized access to health information.

Smith (2002) and Epstein (2004) observed that it has become imperative for medical students to make active use of the health related information resources in the library due to information explosion which has caused a change in the delivery of medical education and the shift from traditional educative approaches to a non-didactic problem based philosophy. In the lecture-based conventional teaching, students are passive recipients of information whereas in an evidence-based learning curriculum,

they are active participants in the learning process with emphasis on the use of the library and its resources. They are expected to use different learning resources to collect relevant information and literature for their study. With such emphasis on information gathering and evaluation, the use of the library becomes a dynamic powerful learning resource for the students (Smith, 2002; Epstein 2004). In a nutshell, for students to achieve their self-directed learning targets in the evidence-based learning curriculum, they would be expected to make active use of the health related information resources in the library and its e-resources.

Chatterjee, Joarda, Bhattacharria, Nandy and Misra(2006) observed that the major purpose of the library is to provide information in addition to the traditional function of collecting, organizing and providing access to information in print and none print format. It is worthy of note that medical undergraduates may not be able to learn all that they have to know only from formal classroom lectures. They also must learn to collect information by their own efforts, to develop adequate professional competence.

The medical library also fosters information literacy and provides resources to both medical undergraduates and staff. It provides numerous services to users, addressing their diverse needs, characteristics and interest (Andaleeb, 2001). Fowowe (1999) noted that a library can fulfill its function best by pursuing a policy of constant self-evaluation in order to be alert on the changing needs of its users. Library services must create a balance between specific research and information needs and a usable collection of information materials to meet the needs of the institutions' programmes (Osaghale, 2008). It is important to note that the value of a library's collection lies in its effective utilization by the user community. It would be pertinent to discover

whether the medical libraries are indeed living up to their objectives. Its effectiveness and efficiency of services provided in library are mainly determined by how frequent undergraduates consult the library.

Library use involves the consulting, reading and borrowing of library resources. It also involves obtaining information from library staff. Library use can be in form of visit to library to consult the collections or remote access to library digital collections. Various variables used to define library usage pattern include number of items borrowed, number of library visits, hours logged into library PC, hours logged into e-resources, number of PDF downloads and total number of e-resources accessed (Collins & Stone, 2014). Frequent assessment of library use pattern is important in determining the value of the collections and also to improve on services rendered to the library users. Library use study help the library authority to determine the extent of use of the collections and measure users' satisfaction with the collections. However, as noted by Braude (as cited in Anyaoku, 2015), it is incorrect to measure library services on the size of the collections, but the library should be evaluated based on its programmes and services, its ability to access and manage information for its clients. A library that is not being utilized is as good as dead as it cannot justify its existence. It is therefore the use to which the library is put that infuses life into its resources and services.

Medical libraries may have the best stocked health related information resources comprising of books, periodicals, pamphlets, manuscripts, reports, audiovisual, disc, cassettes, tape recordings, CD-ROM, film and filmstrips, slides, posters, pictures and maps and information services (Fayose, 2000). Its utilization by

the undergraduates need not simply depend on the number of books and journals in the library.

Medical science is an evolving discipline and as such much attention should be given to how students learn, where and how they get access to health related information resources. Undergraduates use the medical library for various reasons. Undergraduates visit the library to consult textbooks, prepare for examination, to complete their assignment, to borrow and return textbooks, etc. In the same vein, Yusuf and Iwu (2010) in their opinion on the use of library by undergraduates, asserted that undergraduate use the library in order to consult textbooks, prepare for seminar presentations, write assignments, prepare for examinations, etc. whatever reason(s) that is accountable for the use of the library by medical undergraduates, it is worthy of note that medical libraries are indispensable in an academic environment (Oyesiku & Oduwole, 2004).Guskin (as cited in Yusuf &Iwu, 2010) noted that the use of university libraries promotes active learning, thus, contributing to students' ability to think critically and work well independently or in group. Hence, this study seeks to investigate the human and environmental factors affecting the usage of medical libraries by undergraduates in Niger-Delta, Nigeria.

Lushington (2002) stated that individuals use libraries and as such, libraries should be designed with individuals in mind. Libraries must be designed for the widest possible spectrum of tastes; inquiries; informational and cultural needs; and provide assistance to individuals in utilizing materials in all formats. There is also the need to reduce barriers to library usage such as bad design of facilities and buildings. Lombardo and Condic (2001) emphasized that the library needs to be a comfortable place for the library users. Otherwise, students will decide to use alternative methods

to gather the information they need. This remark was borne out of their observation of students' growing dependence on electronic resources and students' lack of understanding that some of the best sources that they could use for research are in print format. Franscotti, Levenseler, Weingarten and Wiegand (2007) conducted a survey to establish the services of the library staff as an introduction of better environment and availability of relevant collections which will enable the students to use the library, more students will watch movies and use the internet. They stated that, the time of opening and closing also affect students' library use. If the library is opened for use for the whole day, lecturers will have more opportunities to do their lessons in the library and students can go into the library to work and do whatever they are interested in doing in the library.

Another major factor affecting the use of medical library information resources by medical undergraduates is the human factor which can be presumed to be the influence of what is called 'nature' and 'nurture'. The nature is what one has inherited from his or her parents, while the nurture is the environment in which the individual lives. Some human factors that can influence the use of the library by medical students in the library situation include; gender or marital status of the users: who could be male or female, married or single. Other aspects include library opening hours; lending policy, staff attitude, users' preference on the use of the medical library, information retrieval skills of library staff and students, etc(Gojeh, Dutse & Daudu, 2013).

Toying the same line of argument on the human factors affecting the use of library by medical students, George (as cited in Ossai, 2009) noted that undergraduates library use pattern amongst others is influenced by the attitude of the University library staff. When the library staff's attitude is encouraging, then, students are motivated toward

using the library more frequently. Staff behaviour or attitude is of great importance as it influences the use of the library by undergraduates. Poor staff performance or attitude can only serve to accentuate an already poor image of services of the library (Health code as cited in Gojeh, Dutse&Daudu, 2013).

For any meaningful and effective utilization of library and information services by medical students, the environment which could be human or physical should be favourable or conducive to the users. The academic library environment encompasses all the circumstances, people, things and events around the library and can have potential effects, positive or negative, on the library usage. The design of a library can influence users' behaviour and satisfaction in the same way that the physical environment and organization of a library can (Amusa & Iyoro, 2013). In the same vein, Campbell and Shlecter (as cited in Amusa & Iyoro, 2013) conducted a study on the effects that the environment can have on the use of library. They scanned the total environment to see how it can influence user behaviour and satisfaction. Their study concluded that the design of a library can influence user behaviour and satisfaction. Most of the constraints identified in their study are on the physical environment and library organization, staff disposition and resources of the libraries.

1.2 Statement of the Problem

The need to make adequate use of medical libraries by undergraduates in medical sciences is of paramount importance in the fulfilment of their education, especially now that emphasis has been shifted from traditional educative approaches (teacher centered learning) to a non-didactic problem based philosophy (student centered learning/self-directed approach). This approach call for medical students to be a life-long learner who at all times can learn independently. Libraries that are

established in higher institutions of learning are saddled with the responsibility of providing educational materials that are supportive of the teaching, learning and research activities of both staff and students alike. Hence, the need for medical students to constantly visit the library in order to make avail of the available of health related information resources that is stocked in the library.

From the preliminary observations by the researcher through interactions with medical undergraduate, medical students do not use the library as they are suppose to. This maybe as a result of human factors (such as users' attitude towards the use of library, lack of attendance of library user education, insecurity of library users properties and insufficient staff, etc) and environmental factors (such as inadequate books loaned out to students, lack of library software, unsuitable library hours, incessant power outage, poor maintenance of facilities and untidy environment etc).

However, the researcher's observation is not final, hence, this study seeks to investigate the human and environmental factors affecting the usage of medical library by undergraduate in Niger – Delta, Nigeria as well as to profer solution to ameliorate the situation.

1.3 Research Questions

The following research questions were raised to guide this study:

- i. How frequent do undergraduates make use of information resources in the library in Niger Delta, Nigeria?
- ii. For what reasons do the undergraduates use the medical library?
- iii. How do the undergraduates retrieve information from the medical library?
- iv. What are the human factors affecting the use of medical library by the undergraduates?

- v. What are the environmental factors affecting the use of medical library by the undergraduates?

1.4 Research Hypotheses

The following research hypotheses were raised to guide this study and were tested at 0.05 alpha level;

- i. There is no significant relationship between human factors and use of medical library by undergraduates in Niger-Delta, Nigeria.
- ii. There is no significant relationship between environmental factors and use of medical library by undergraduates in Niger-Delta, Nigeria.
- iii. There is no composite significant relationship between human, environmental factors and the use of medical library by undergraduates in Niger-Delta, Nigeria.

1.5 Purpose of the Study

This study explored the human and environmental factors affecting the use of medical library by undergraduates in Niger-Delta, Nigeria. Specifically, the objectives of this study are to:

- i. Find out how frequent undergraduates make use of information resources in medical library in Niger-Delta, Nigeria;
- ii. Determine why the undergraduates use the medical library;
- iii. Explore how undergraduates retrieve information from the medical library;
- iv. Identify the human factors affecting use of medical library by undergraduates;
- v. Identify the environmental factors affecting use of medical library by undergraduates;

- vi. Establish the relationship between human factors and use of medical library by undergraduates;
- vii. Determine the relationship between environmental factors and use of medical library by undergraduates and to
- viii. Find out the composite relationship between human, environmental factors and the use of medical library by undergraduates.

1.6 Significance of the Study

The findings of this study will be beneficial to medical undergraduate, Health professionals, Librarian, library managements, universities administrators and researchers.

The work will be beneficial to medical students because it will help to ascertain both the human and environmental factors they may face during the course of seeking for information. Which will inturn make them to avoid such situations.

The work will help in assisting librarians to have an understanding of human and environmental factors affecting undergraduate usage of the medical library and information services in Niger Delta Region.

The work will help relevant authorities / library managements and university administrators on how to find solutions in assisting users to have a better access to library resources. The work are important information resources that will assist stakeholders on how to formulate policy that will guide the authority in acquiring library resources.

The outcome of this study will serve as reference material to researchers that may want to embark on similar research work. The study will add to the body of literature on human and environmental factors affecting the usage of medical library.

1.7 Scope and Delimitation of the Study

This study was directed towards investigating the human and environment factors affecting the use of medical library by undergraduate in Niger-Delta, Nigeria. The study has explored how frequent the undergraduates make use of medical library, why undergraduates use medical library, information resources in the medical library used by the undergraduates, how undergraduates retrieve information resources from the medical library, human factors affecting the use of medical library by undergraduates and the environment factors affecting the use of medical library by undergraduates.

The study is limited to medical schools in the Niger-Delta region, not insignificantly include DELSUTH, UBTH & NDUTH, wherefore other medical schools such as UPTH, UCTH, AKSUTH, IMSUTH, ABSUTH, etc have been removed from this study. This is because they are not evenly spread. Therefore DELSUTH, UBTH & NDTH which are in close proximity had been chosen. Also, they have been chosen because of the limited time to complete this research and limited fund on the part of the researcher.

Therefore the scope comprises 400 to 600 level medical undergraduates of Delta State University, teaching hospital Oghara campus, University of Benin Teaching Hospital, Benin City and Niger Delta University Teaching Hospital, Wilberforce Island.

Pre clinical students (i.e 100L, 200L, and 300L) has been removed from this study because the focus on this study is on clinical (i.e 400L, 500L, and 600L) medical undergraduates.

1.8 Operation Definition of Terms

The following terms were defined as used in the study:

Environment Factor: This has to do with the physical condition or surrounding of the library that is capable of influencing positively or negatively the use of the medical library by undergraduates.

Human Factors: This has to do with the library staff/ students and how their attitude, skills policies and dispositions affects the use of the medical library by undergraduates.

Medical Library: This is a building set aside for the selection, collection, organization and dissemination of health related information resources to medical undergraduates.

Use: to consult, read, borrow/ loan health related information resources that are stock in medical library.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter is devoted to review of literature that is related to the topic under investigation. The review of the related literature is organized under the following sub-headings:

- 2.1 Conceptual framework
- 2.2 Use of information resources in the medical library by undergraduates
- 2.3 Reasons undergraduates use the medical library
- 2.4 How information is retrieved from the medical library by undergraduates
- 2.5 Human factors affecting the use of medical library by undergraduates
- 2.6 Environmental factors affecting the use of medical library by undergraduates
- 2.7 Appraisal of the reviewed literature

2.1 **Conceptual Framework**

The theoretical framework adapted for this study is the ‘Five Factors Model (FFM)’ proposed by Andaleeb and Simmonds (1998). This framework explains the access and use of information resources by library users. The Five Factors Model with its attendance measures, attempt to explain why library users’ access and use of information resources in the library. The theory tends to visualize the factors that affect the use of information resources among library users focusing on factors on human and environmental factors as a pre-requisite to the effective use of library and its resources. These factors are explained as follows:

Factor I: The higher the level of availability and perceived quality of the information resources in the library, the greater the level of the use by library users. The quality of information resources has a significant relationship with the degree of the use of

information resources. When users perceive information resources to be qualitative, they tend to use the information resources frequently. Andaleeb and Simmonds (1998) affirmed that the quality of information resources whether printed or non-printed has a significant influence on library users' utilization of information resources.

Factor II: the greater the level of awareness of the information resources in the library, the greater the level of the use by library users. The level of awareness of information resources influences the use of the information resources by users. When users are aware of available information resources in the library, they tend to use the information resources frequently.

Factor III: The greater the perceived competence of library users through user education, the greater the level of use of information resources in the library. In the context of competence, library users need to be skilled in the use of library catalogue, indexes and other library resources access points and that can only be made possible through the training of library staff which is one of the human factors affecting the use of information resources by users.

Factor IV: The more users are friendly with the library and its resources, the greater the level of the use of the information resources. The general friendliness of librarians to the library users influences the accessibility level of the information seekers. This implies that, library users prefer information resources that are user friendly and easy to access.

Factor V: The better the perceived overall physical appearance of the library environment and information resources, the greater the level of use by the library users. The physical attribute of library environment and information resources in terms of attractiveness is a major factor to the effective use of the library and information

resources by users. Attractiveness is quite influential with regard to information resources option among library users.

Conceptual Model

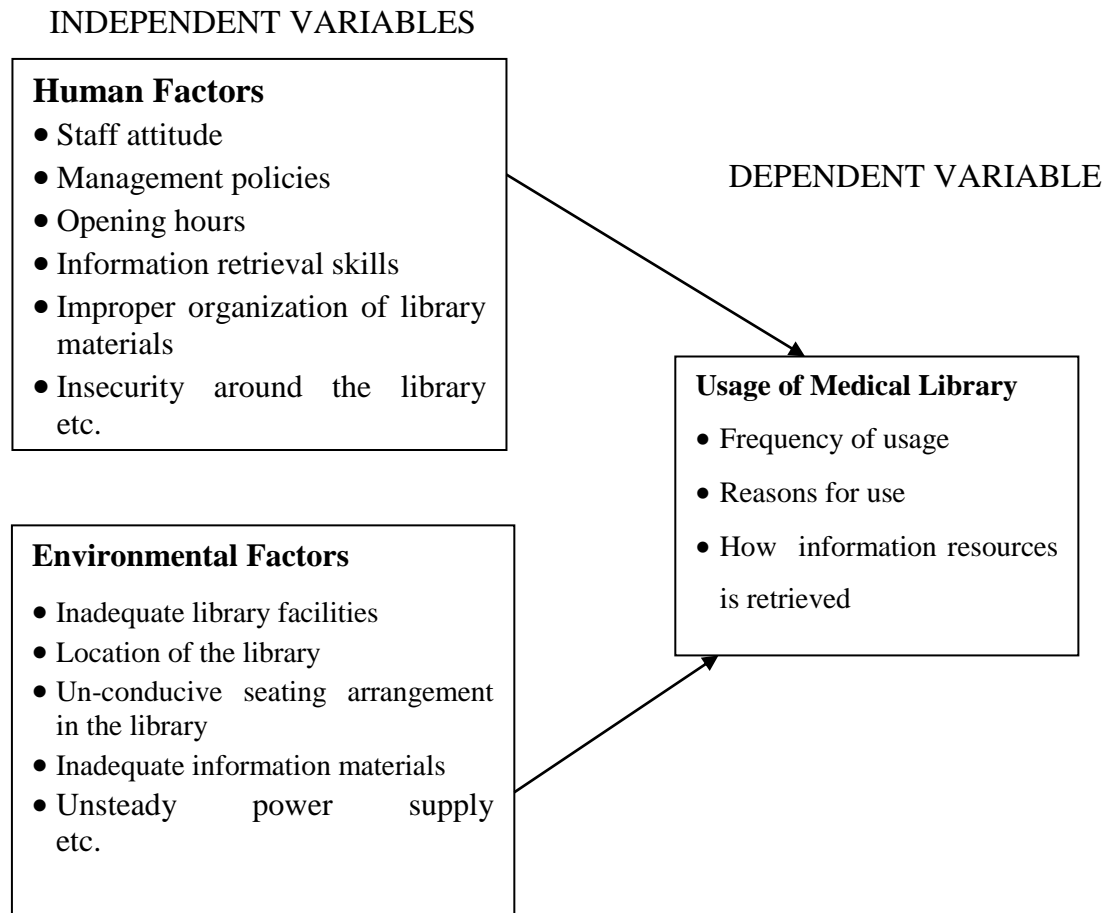


Figure 1: Shows the Conceptual model of human and environmental factors affecting the usage of medical library.

The five factor model was adapted for this study because it has shown that some factors are responsible for the medical library use pattern by medical undergraduates. As depicted in Figure 1, human and environmental factors affecting the use of medical library by undergraduates. Human factors such as staff attitude, management policies, library opening hours, information retrieval skills possessed by undergraduates and staff, improper organization of library materials, insecurity around the library, etc. influence the usage of medical libraries by medical undergraduates for study,

examination purposes, for carrying out assignments, to prepare for seminar presentations, to consult reference materials, etc.

In the same vein, environmental factors such as: inadequate library facilities, location of the library, un-conducive seating arrangement in the library, inadequate information materials, unsteady power supply, etc. also determine to a great extent the use pattern of the medical library by undergraduates for study, examination purposes, for carrying out assignments, to prepare for seminar presentations, to consult reference materials, etc.

In a nutshell, the usage of medical library by undergraduate is influenced by human and environmental factors. Human factors such as: staff attitude towards medical undergraduates, unfavourable management policies, library opening hours, information retrieval skills of the medical students, improper organization of library materials, insecurity around the library, etc. Environmental factors such as: inadequate library facilities, location of the library, un-conducive seating arrangement in the library, inadequate information materials in the library, unsteady electricity power supply, etc. determine to a great extent the usage of medical libraries by undergraduate students.

2.2 Frequency Usage of Information Resources in Medical Library

Oyesiku and Oduwole (2004) asserted that in academic communities, libraries are indispensable. They also noted that the use of university libraries promote active learning, thus, contributing to students' ability to think critically and work well independently or in group. An academic environment without a library is tantamount to a person without a brain. It would be pertinent to discover whether academic libraries are indeed living up to their objectives. The effectiveness and efficiency of

services provided in academic libraries are mainly determined by library users. Behling and Cudd (cited in Suleman Musa, 2009) asserted that the library user is regarded as the most logical source to determine whether the library is playing its role satisfactorily or not. Perera (2005) submitted that satisfying users' information needs is essential to the management of libraries. The management staff of a library should be aware of the current needs of their users, which may vary from one library to another as well as from time to time. Therefore, carrying out regular surveys on users' needs at regular intervals on various aspects of library usage will be an invaluable guide in determining the future directions of library developments. Popoola (2001) observed that information availability does not mean accessibility and use and that academic libraries should stimulate primary demand for their products and services. This view is upheld by Mason (2010), who opined that librarians must be sympathetic and helpful to all students on the one hand and that on the other hand, students must be aware that librarians and faculty members are there to instruct and encourage their intellectual odyssey and should be seen as facilitators. Several authors have written on the use of academic library. In a study on students and faculty use of academic libraries in Nigeria, with particular reference to Delta State University, Okiy (2000) found that respondents used books more than other materials and that they browsed the shelves to locate these materials.

A survey by Pelzer, Leysen, Parks and Parks (as cited in Sahak & Saad, 2010) among veterinary medical undergraduates in the University of Iowa measured the frequency of usage of information resources by daily, 2-4 times per week, once per week, less or none. Similarly, study by Martin (2003) also measured the frequency of usage information resources among medical students. Renwick (2004) studied the

knowledge and use of electronic information resources by medical sciences faculty at the University of the West Indian. Most of previous studies identified books and textbooks as commonly used by the students as sources for their study (Okoye, 2000; Dee and Stanley, 2005; Ajiboye & Tella, 2007 and Popoola, 2008). Most of previous works measured the frequency of library usage and information resources by time period such as daily, weekly, monthly, once a semester and never (Martin, 2003; Renwick, 2004 and Dee & Stanley, 2005). Eskola (2005) in his study revealed that medical students used frequently printed sources such as books and journals, electronic resources such as databases and the Internet, media sources such as TV and radio, and people. Similarly, Dee and Stanley (2005) revealed that electronic journals and books were among the top sources listed by nursing students and other health professionals

In a study conducted by Onifade, Ogbuyi and Omeluzor (2013) on the library resources and services utilization by students in Nigeria, the frequency of usage of these resources by the undergraduate was investigated. Analysis of data indicates that all the identified resources are regularly used except LAN. 152 respondents (73%) often use the library database, 56 of them (26%) use them occasionally, and only one (1) respondent (.5%) has never used the facility. The use of OPAC is less popular among the respondents because only 58% of the respondents (122 of them) regularly use it, 83 of them (40%) occasionally and 4 of them (2%) rarely use it. The reason for relatively high number of respondents who occasionally use OPAC may be due to the fact that these respondents desire for browsing the shelves to find information source they want. The internet facility and its offshoots (email) etc, are commonly used by the respondents. 188 respondents 90% regularly use the Net, and 21 of them use it occasionally. Local Area Network Facility of the library is the less used among the

resources. 178 respondents (85%) occasionally use it, and 31 of them (15%) have never used it. In a related study that was carried out by Onyekweodiri and Agbo (2015) on the utilization of library resources by veterinary medicine students in two federal universities in South-East zone of Nigeria. It was revealed that the extent to which veterinary medicine students require information resources, in a descending order of their mean score range from books related to veterinary medicine (3.51), getting information online related to veterinary medicine (3.45), data base materials related to veterinary medicine (3.21), Newsletters related to veterinary medicine (3.03), thesis, projects, technical report and dissertations (2.98), Reference Sources (2.91), conference/ seminars papers (2.90), Journals (2.82), Current Awareness Services of the library (2.82).

2.3 Reasons Undergraduates Use Medical Library

The sole aim for a Medical undergraduate to use a library or in this case a medical library is mainly to retrieve information. When a physical library structure which comprises of a well-furnished library facilities and comfortable atmosphere for study is available, medical students, lecturers and other university personnel will find such a medical library environment adequate for the purpose of research and study. The major purpose of the library is to provide information in addition to the traditional function of collecting; organizing and providing access to information in print and non-printing information materials (Aderibigbe & Emmanuel, 2012). Medical students may not be able to learn all that they have to know only from formal classroom lectures. They also must learn to collect information by their own efforts in order to develop adequate professional competence.

Information is vital to the overall academic development of university students. Libraries are established in the universities to cater for the information needs of students, staff and other people in the community. In order to make library collections widely accessible to users, librarians create as many access points as may be required in the form of catalogues. To justify the huge expenses, labour and time expended on library catalogue production, maximum use of the library catalogue is very much desired. A study carried out by Aderibigbe and Emmanuel (2012) on the use of library by undergraduates in Nigeria, the respondents were asked to state their reasons for visiting the library; the result revealed that majority of the respondents 15(20%) visited the library mainly to consult materials for research, 12(16%) of the respondents used the library to prepare their seminar presentation and only 7(9%) respondents visited the library to read newspapers. In the same vein, a study that was carried out on nursing students by Dee and Stanley (2005) reported that they used medical articles from quality databases for school assignments. This implies that since the university library is to assist the university achieves its aim; its acquisition development policy must be able to support the research programmes of the university and it should be adequately funded so that it would be able to build strong collections needed for research.

Mausumi and Palash (2012) found out from their research of undergraduate medical students of a tertiary institution of West Bengal that the primary reason for going to the library was to study (91.53%), to read text-books (81.28%). In another study, it was deduced that the primary reason students visit the library was to study (91.7%) and to read text-books (81.3).

A study conducted in north India showed that the majority of students (82%) only consulted textbooks. The authors found there was a need to train and motivate

undergraduates to make better use of library resources. A study conducted in Kolkata University found that the majority of interns (62%) visited the library to prepare for examination. Other reasons for coming to the library were: seminars; to consult manuscripts /dissertation /project reports; and lack of personal books. The primary reason for visiting the library was for borrowing/reading books which are in line with findings of study carried out at Bhavnagar. Many university lecturers obtain and prepare their course contents from the books and materials available in the medical library. This in turn drives undergraduate students into visiting and using the library whether it is localized for their department only, or generalized for use for the entire institution, as shown in the study conducted in Kolkata University amongst teachers, the majority (72%) came to the library to prepare lectures or for seminars; 42% came because they did not have their own books; and 39% were preparing manuscripts /dissertation /project reports. Various reasons were adduced by respondents for using the library. 195 (92.8%) student respondents visited the library to photocopy materials. 185 (88%) student respondents used the library to read for examinations while just 8 (3.9%) of them read journals and 10 (4.7%) used the online resources. In contrast, 69 (76.6%) faculty respondents read electronic journals and 67 (74.4%) read printed journals.

As Mausumi and Palash remarked (2012) remarked, few people ever use libraries willingly. He stresses that most people have to be persuaded or prodded into using it. In the study of university literacy of undergraduate students of the University of Northern Colorado, Stamatoplos and Mackoy (1998) it was found that students' confidence level increased with increased exposure to the library and its services. However, 7% of the students believed that bibliographic instruction was the primary influence in their development of library skills. Another very important reason for the undergraduate to use

the medical library is the ease and simplicity with which information can be retrieved. With library automation gaining popularity worldwide, some libraries in Nigeria, particularly university libraries have introduced On-line Public Access Catalogue (OPAC) services. The advantages of OPAC use was attested by Lancaster (1998) who wrote that "the introduction of On-Line subject searching (capabilities), increase the proportion of subject searches performed by library users as well as increase in catalogue use. Akinade (2000) also affirms that the usage of electronic database aids easy access and reduces the time spent while searching for materials compared to traditional service method. She added that availability of Information Technology (IT) has revolutionized operations and services.

A direct effort can also be designed by lecturers, university staff and the library department to encourage the undergraduate medical students' use of the library. If properly structured, such a programme designed will not only lead undergraduate students to using a medical library, but will also ensure they gain sufficient library usage knowledge and help them to appreciate library resources relevant to their medical career. This kind of program design was utilized by the Department of Zoology at the University of Florida --Between 1996 and 2001, the Health Science Center Libraries and Department of Zoology at the University of Florida partnered to provide a cohesive and comprehensive learning experience to undergraduate students in PCB3063, "Genetics." During one semester each year, a librarian worked with up to 120 undergraduates, providing bibliographic and database instruction in the tools that practicing geneticists use (MEDLINE, GenBank, BLAST, etc.). Students learned to evaluate and synthesize the information that they retrieved, coupling it with information provided in classroom lectures, thus resulting in well-researched short papers on an assigned genetics topic. Exit surveys of students indicated that the majority found the library sessions and librarian's instruction to be useful.

Responses also indicated that the project facilitated increased understanding of genetics concepts and appreciation for the scientific research process and the relevance of genetics to the real world. The library benefited from this partnership on a variety of fronts, including the development of skilled library users, pre-trained future clientele, and increased visibility among campus research laboratories. The course and associated information instruction and assigned projects can be considered models for course-integrated instruction and the role of medical libraries in undergraduate education.

In another instance, Adikata and Anwar (2006) ascertained the perceptions of faculty members on the students' library use and their role in motivating students to use libraries. Their findings revealed that teachers played an important role in promoting the use of libraries by students. Authors were not satisfied with students' library use skills, available information resources and expected from librarians to provide a comfortable academic environment in library. According to studies that was confirmed in the National University of Lesotho which deduced that, 6% of medical students indicated the use of the medical library to socialize and for personal pleasure, while 6.4% indicated that library skills enhanced their intellectual development, also in an evaluative study of undergraduate students it was deduced that they did not use the medical library effectively in pursuing their studies. She revealed that 76% used the libraries to check library materials, 85% used indexes and abstracts, 57% used non-print media, and 42.2% approached the collection in a wrong way due to ignorance, while 18.9% study in the library without using library materials (Popoola, 2001).

2.4 How Information are Retrieved from the Medical Library.

The field of information retrieval (IR) is generally concerned with the indexing and retrieval of knowledge-based information. Although, the name implies the retrieval of any type of information, the field has traditionally focused on retrieval of text-based documents (Redman, 1997), reflecting the type of information that was initially available by this early application of computer use. However, with the growth of multimedia content, including images, video, and other types of information, Information retrieval (IR) has broadened considerably. The proliferation of IR systems and on-line content has also changed the notion of libraries which have traditionally been viewed as buildings or organizations. However, the developments of the Internet and new models for publishing have challenged this notion as well, and new digital libraries have emerged. The contemporary method for handling or dealing with information is mainly in digital format. According to Romanov and Aarnio (2006), over the last several decades, studies have shown that the use of computerized information systems and information resources by medical professionals can improve the quality of health care, enhance the use of evidence based treatments and maintain and update knowledge. It has also been shown that even though doctors generate various questions during patient care, many of these questions remain unanswered because physicians typically search for answers to only one third of the questions using different information resources. One of the major goals of medical education is to encourage undergraduate students to maintain their knowledge of medical science by becoming lifelong learners. Adequate skills information seeking and regular use of original scientific sources are key elements in this process (Romanov & Aarnio 2006).

Popoola (2001), observed that information availability does not mean accessibility and use and that academic libraries should stimulate primary demand for their products and services. This view is upheld by Mason (2010), who opined that librarians must be sympathetic and helpful to all students on the one hand and that on the other hand, students must be aware that librarians and faculty members are there to instruct and encourage their intellectual odyssey and should be seen as facilitators. Several authors have written on the use of academic library. Amkpa (2000) in his study of the use of the University of Maiduguri Library discovered that majority of students did not use the library effectively because they did not use the library catalogues. In a study on students and faculty use of academic libraries in Nigeria, with particular reference to Delta State University, Okiy (2000) found that respondents used books more than other materials and that they browsed the shelves to locate these materials. Julien (2000) on the other hand, observed that regular library users are active learners. In a similar study on the use of Olabisi Onabanjo University Libraries, Oyesiku and Oduwole (2004) discovered that male students used the library more frequently than their female counterparts.

Don (2006) discovered that library computer access is utilized by students far more than faculty, while interlibrary loan services are used more by faculty members. He also noted that both undergraduates and faculty members appeared to be confident about finding needed print materials and accessing electronic resources at their institutions' libraries. An effective catalogue system makes books retrieval easier. Many a time, the students of Obafemi Awolowo University make use of Author and title entries to locate books in the library. This is because books are popularly known to the users by authors name or the title of the book. It should be known that the use of

catalogues to search often yielded positive result (Akande, 2003). Greater numbers of undergraduates are aware of the existence of library catalogues as the first part of call in searching and retrieving library materials. The effectiveness of the library catalogue in locating and retrieving library materials is affirmed as 83% of respondent successfully use catalogues. Therefore, there is need for both librarian and faculty staff to co-operate and agree to a unified syllabus that will enhance studies, optimize learning. According to Akande (2003) access to documents at the University of Ibadan Libraries is made possible to users through the various catalogues in the libraries which serve as indexes to the library holdings. Education is the process of turning information to knowledge.

Popoola (2001), remarked that the maximization of the library resources are possible where lecturer and librarian share objectives. In order to make library collection widely accessible to users, librarians should create as many access points as may be required in forms of catalogues. To justify the huge expenses, labour, time expended on library catalogue production, maximized usage of the library catalogue system will be crucial. According to Akande (2003), access to document at the University of Ibadan libraries is made possible to users through the various catalogues in the libraries which serve as indexes to the library holdings. Ogunsheye (2011) asserted that users' education causes behavioural and developmental changes and these changes can be observed in attitude towards knowledge and its utilization. In the study carried on catalogue use at the Latunde Odeku medical library of the clinical medical student, Ezomo (1998) found that about 5% of the Students were not aware of the location of the library catalogue not to talk of using it. This situation was hinged on the fact that most of the students were absent from the library orientation programmes and

many would not ask for assistance as regards catalogue use. Ezomo (1998) study revealed poor use of the catalogue as only 33% of the respondent claimed to have used them. Only 11% of the student made use of the subject access, 21% of them made use of author access while 25% of the student made use of the title access.

Akin-ojo (1994) stated that library instructions would produce intelligent library users if frequently accessed. Review from studies among Ohio- State University student reported that library instruction programmes improved the attitude of students toward librarians and library services (Pearson & Tiefel, 1996). Braimoh, Jegede and Chadzinwa (1997) believed that exposure to library enable users to develop their talent, potential and capabilities both academically and socially. Popoola (2001) also suggested good liaison between the medical students utilization of the medical library and the concerted efforts of university staff (including the librarian) at academic growth, as was confirmed in the National University of Lesotho which deduced that, 6% of medical students indicated the use of the medical library to socialize and for personal pleasure, while 6.4% indicated that library skills enhanced their intellectual development, also in an evaluative study of undergraduate students it was deduced that they did not use the medical library effectively in pursuing their studies. She revealed that 76% used the libraries to check library materials, 85% used indexes and abstracts, 57% used non-print media, and 42.2% approached the collection in a wrong way due to ignorance, while 18.9% study in the library without using library materials.

Oyesuki and Oduwole (2004) argued that majority of students are not well skilled, in locating information using the catalogues. Their findings also showed that searching of information through manual library catalogue consumes time. Akinade

(2000) affirmed that the usage of electronic database aids easy access and reduces the time spent while searching for materials, compared to traditional method. She added that availability of information technology (IT) has revolutionized operations and services. Information Retrieval (IR) systems and digital libraries store and disseminate knowledge-based information. And this is unarguably one of the best and most efficacious methods of retrieving information for a medical student. Romanov and Arnio (2006) reported that, majority of undergraduate medical students preferred electronic source especially electronic textbooks as primary resources. Also availability of full-text articles and other data bases have a major impact on the selection of information resources among undergraduate medical students. In the same study, the use of library resources among undergraduate medical students, full-text articles online were the most valued resources. Results from a study carried out in Orlando by Tanner (2002) indicated that students used and found value in websites as an information resource. The number of MEDLINE searches as well as full-text journals also increased. 33% of medical students read full-text articles and 39% never used electronic full-text articles. In the study, the score of search skills was 40%, while 11% did not use MEDLINE or other full-text articles. The non-users expressed significantly less interest in further training in information retrieval. They also used other information resources.

In a similar study on the information resources used by undergraduate student respondents were asked about a recent search for information, which had involved use of a computer and were asked to indicate the reason for their search for information. 23% of students responded that they need information to complete assignments, 25% need available resources to improve the quality of their work, 94% of the searches

used. Search engines and Websites were visited for important information. Use of OPAC was 7%, databases 6% and e-journals 9%, CD ROM 42%, e-books 22% and subject indexes 19%. When asked about the sources they would use to solve their information problem, the first result was printed sources. According to research by Lee (2012), the most useful and credible sources, such as research reports, lecture notes, librarians, experts and institutional repositories, were not frequently selected, on the contrary, some resources were frequently used even though the participants perceived them as less useful and credible, such as search engines, individual Websites, Wikipedia, colleagues/friends and social question & answer services. Undergraduates preferred information sources such as: Online databases, professors/lecturers, organizational Websites, and books were ideal sources because they were frequently selected as well as perceived as useful and credible. There are a number of options in the nature of information resource used by undergraduate students; generically speaking they can be broadly grouped into Offline and Online resource.

2.5 Human Factors Affecting the Use of Medical Library by Undergraduates

According to Gojeh, Dutse and Daudu (2013), the human factors affecting students' utilization of library resources include, lack of student attendance of library use education, improper organization of library materials, shelf guidance and arrangement, insufficient staff, users' attitudes, crowded students timetable, unfriendly attitude of staff, insecurity of library users' properties, unfavourable rules and regulations for library users and lack of students' encouragement by lecturers. The organization culture, library leadership and trained library personnel play a pivotal role in determining the role and status of academic libraries (Gojeh, Dutse & Daudu, 2013),

have also identified that lack of trained personnel and negative attitude of university management on IT as a major factors that impede effective adoption of ICT in university libraries. Hence, the dwindling use pattern of the medical library by undergraduates. Kamba (2011) acknowledged the existence of crunch trained and experienced technical personnel, who manage, control and maintain available ICT resources in academic libraries as another human factor affecting the use of medical library by undergraduates. Emanuel and Sife (2008) added that many libraries have inadequate qualified ICT personnel with most traditional librarians having low ICT skills and sometimes have technology phobia.

Ani as cited in Williams, H. (2013) opined that lack of trained personnel and negative attitude of university management on ICT are important factors that also militate against effective adoption of ICT in university libraries. Without adequate supply of appropriately trained and skilled personnel, the ability to provide information bearing materials to medical undergraduate become an illusion.

In the same vein, the findings from the study carried out by (Mutsiak, 2012) on factors affecting the utilization of electronic health information resources in universities in Uganda. It was revealed that there were various factors that influenced e-resources usages. The majority, 43 (41%) of the respondents cited poor internet connectivity as the main factor affecting access to and use of e-resources. This was a common challenge across the three institutions studied. The study found that library users had no control over how many internet access points the libraries could have. Ideally, they should be as many as the number of users but this was not the case in the institutions studied. With limited bandwidth and lack of internet in some offices, it

becomes difficult for staff to readily access internet, leading to poor usage of the resources.

User education was found to be one of the strategies employed by librarians in educating undergraduates on the nitty-gritty of the library system (Mutsiak, 2012). It is essential because it will help to publicize library and information services and improves the image of the library. User education is considered a marketing and welcoming activity and usually forms part of the libraries orientation programmes for first year students. But the attitude and response of undergraduates toward the attendance of library user education organized by university management has not been encouraging in time past (Mutsiak, 2012).

Kudkarni and Deshapande (2013) considered service to include, document leading, reference services, current awareness services, newspaper clippings, etc. The user expect that the record of the holdings of the library are accurate, properly organized with self-guides for easy access. The study also found insufficient staff attitude and insecurity of library users' properties as well as unfavourable rules and regulations for library users, which are considered as staff human factors. Library staff is the most important factor affecting the service quality of a library. The attitude, behaviour, etiquettes, decorum and dress code of the staff is also important. While staff plays important role in service delivery, continuous training of the library staff enhances positive attitude and how rules and regulations could be managed for user adherence, knowledge about library collection, users properties and skills to tackle problems effectively (Gojeh, Dutse & Daudu , 2013).

Users' attitude towards the use of the library, crowded students timetable, unfriendly attitude of the library staff and lack of students' encouragement by lecturers

to use the library, constitutes some of the human factors affecting the use of the medical library by undergraduates (Gojeh, Dutse & Daudu , 2013). Fidzani, (as cited in Gojeh, Dutse & Daudu, 2013) pointed out that students who are based off campus are faced with transportation problem and in such a case, accessing the library remotely will be their priority rather than going to the medical library to consult information resources that are stocked in the library.

2.6 Environmental factors affecting the use of Medical Library by Undergraduates.

Physical factors affecting the usage of medical libraries are categorized as; inadequate books loaned out to students, inadequate facilities and equipments, students' preference of hostel use than library, poor maintenance of facilities and untidy environment (Gojeh, Dutse & Daudu, 2013). Other physical environmental factors that are capable of affecting the usage of medical libraries as observed by Gojeh, Dutse and Daudu (2013) are tangible elements of service quality like availability of computers, OPAC terminals, cleanliness, adequate lightings, proper ventilation, functional furniture, suitable library hours, library software and place for reading. Infrastructure which includes exclusive calm, quiet and well-furnished study area, display of periodicals, internet browsing facilities, comfortable seating arrangements, proper lighting/ ventilation and studious atmosphere will discourage students' use of library and information services.

Ansari and Jilani (2008) investigated the general environment in the library and asserted that inconveniences of the working hours, distance from the place of residence, etc. influence the use of the library by medical undergraduate.

In Nigeria, some studies have revealed that the environmental factors like physical facilities in some federal university libraries are inadequate for effective learning. Nock (as cited in Oyedum, 2006) observed in a similar study that about 53.17% of the respondents indicated that the reading areas of the library are inadequate while 46.33% of them disagreed with the statement. Similarly, Oyedum (2006) indicated that 81.4% of the respondents are dissatisfied with the reading areas of their university library, while 18.6% of them are satisfied with the reading areas of the library.

In the same vein, a study conducted by Amusa and Iyoro (2013) on the influence of library environments, instructional programmes and user-librarian collaborations on library use by undergraduate students in Nigeria. It was revealed that majority (1,926; 72%) of the undergraduates strongly agree with the statements that library environments such as conducive reading atmosphere, location of the library, seating arrangement, shelve guidance and arrangement, etc. affects the use of the library. While 617 (23%) agree and only 133 (5%) disagree to this statement.

2.7 Appraisal of the Reviewed Literature

The literature reviewed dwelt on different aspects of human and environmental factors affecting the usage of medical library by undergraduates. Review of literature that is related to the topic of this work deals primarily on all related research concerned with library usage especially as it affects undergraduates in various institutions. The review centered on a wide range of issues like frequency usage of medical library by undergraduates, reasons undergraduates use the medical library, how information resources is retrieved from the medical library, human factors affecting the usage of

the medical library by undergraduates and environmental factors affecting the usage of the medical library by undergraduates.

Several studies in different countries including Nigeria have explored the human and environmental factors affecting the usage of academic libraries by undergraduates but only few researches are available on this subject in Nigeria. The review could not reveal any study that has been conducted on human and environmental factors affecting the usage of medical libraries by undergraduates in Niger- Delta Region of Nigeria.

This research gap therefore, is filled by this study.

CHAPTER THREE

RESEARCH METHODS AND PROCEDURES

This chapter describes the methods and procedures employed in carrying out this study which was discussed under the following sub-headings:

- 3.1 Research Design
- 3.2 Population of the Study
- 3.3 Sample and Sampling Technique
- 3.4 Research Instrument
- 3.5 Validity of the Research Instrument
- 3.6 Reliability of the Research Instrument
- 3.7 Method of Data Collection
- 3.8 Method of Data Analysis

3.1 Research Design

This research is a descriptive survey design and therefore employed descriptive research design. Etukah (2004) stated that descriptive survey design focuses on the people and their belief, opinions, perceptions and motivation and makes it easier for the situation to be described exactly as they exist. The descriptive design is considered appropriate because it would enable the researcher to explore the current status of human and environmental factors affecting the use of medical library by undergraduates in Niger-Delta region, Nigeria and does not involve manipulation of variables.

3.2 Population of the Study

The population of this study is 618 medical undergraduates drawn from 400,500 and 600 level Clinical Medical students of Delta state University Teaching

hospital, Niger Delta University Teaching Hospital and University of Benin Teaching Hospital. The breakdown of the study population is presented in Table 3.1.

Table 3.1: Population of the study

Name of Medical Schools	Level	Population	Total Population
Delta State University Teaching Hospital, Oghara.	400	70	234
	500	64	
	600	100	
Niger-Delta University Teaching Hospital, Amasoma, Bayelsa	400	65	143
	500	48	
	600	30	
University of Benin Teaching Hospital, Benin City	400	64	241
	500	69	
	600	108	
Total			618

Source: Faculty of Clinical Medicine of each of the Institutions under the Study (2016).

3.3 Sample and Sampling Techniques

The sample size for the study is 248 respondents drawn from the three Universities in the Niger-Delta region, from the total population of 618 respondents, the researcher used 40% as the sample size for the study.

According to korodudu (2013) “As a rule of thumb, the minimum sample values of 10%, 15%, 20%, 25%, 30%, 35%, 40%, 45%, 50% and above may be used and considered as appropriate and adequately serve as representative sample sizes of a giving population”

The breakdown for the sample size for the study is presented in Table 3.2.

Table 3.2: Sample size for the Study

Name of Medical Schools	Level	Population	Sample (40%)
Delta State University Teaching Hospital, Oghara	400	70	28
	500	64	26
	600	100	40
Niger-Delta University Teaching Hospital, Amasoma, Bayelsa	400	65	26
	500	48	19
	600	30	12
University of Benin Teaching Hospital, Benin City	400	64	26
	500	69	28
	600	108	43
Total		618	248

3.4. Research Instrument

A self-constructed questionnaire was used as instrument of data collection in this study. The choice of questionnaire as instrument for data collection in this study was informed by the fact that effort would be focused on the events that had taken place without recourse to variable control or manipulation. The research instrument was entitled: Human and Environmental Factors Affecting the use of Medical Library by undergraduates questionnaire (HEFAUMLUQ). The questionnaire was made up of six sections: Section A – Contains item on demographic information of the respondents, Section B – Frequency usage of information resources in the medical library by undergraduates, Section C – Reasons undergraduate uses the medical library, Section D – How information resources is retrieved from the medical library, Section E – Human factors affecting the use of medical library by undergraduates, Section F – Environmental factors affecting the use of medical library by undergraduates,

3.5 Validity of the Research Instrument

To determine the validity of the research instrument, copies of the questionnaire was given to my supervisor and other experts in the Department of Library and Information Science, Delta State University, Abraka.

This was to ensure face and content validity of the instrument. Their critics help the researcher in removing ambiguity and ensuring that only relevant items were included in the final instrument.

3.6 Reliability of the Research Instrument

To determine the reliability of the research instrument, the test re-test method was employed. This was carried out using 30 respondents from Lagos State University Teaching Hospital, Ojo. The paired scores generated over the period of two weeks were analyzed using Pearson's Product Moment Correlation Coefficient (PPMCC), which yielded a reliability index of $r = 0.91$. Hence, the instrument was considered appropriate to carry out the study. See appendix II for details of the computation of the analysis for the reliability of the instrument.

3.7 Method of Data Collection

The copies of the questionnaire were administered to the respondents by the researcher with the aid of research assistants. The copies of the questionnaire were personally administered to each of the respondents by the researcher and research assistants and were retrieved immediately after the completion in order to ensure high response rate.

3.8 Method of Data Analysis

The data generated from the administration of the copies of the questionnaire were analyzed using descriptive and inferential statistical tools. The simple percentage

and frequency counts were used to analyze the demographic information of the respondents and research question one. Statistical mean and standard deviation were used to answer research questions two, three, four and five. The Pearson Product Moment Correlation Coefficient (PPMCC) was used to test hypotheses one and two. PPMC was used because the hypotheses sought to test the relationship between one dependent variable and one independent variable.

Hypothesis three was tested using linear regression.2.50. Linear regression was used because the hypotheses sought to test the relationship between one dependent variable and two independent variables.

The three hypotheses were tested at 0.05. alpha level. The statistics tested was carried out using the statistical package for social sciences (SPSS version 22)

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSION OF FINDINGS

This chapter is concerned with data presentation, analysis and discussion of findings. This chapter is discussed under the following sub-headings, which are:

- 4.1: Questionnaire Response Rate
- 4.2: Analysis of the Demographic Information of the Respondents
- 4.3: Answering of the Research Questions
- 4.4: Testing of the Research Hypotheses
- 4.5: Discussion of findings

4.1: Questionnaire Response Rate

The questionnaire response rate is discussed under this section

Table 4.1: Questionnaire Response Rate

Name of Medical Schools	No. of Questionnaire Administered	No. of Questionnaire Retrieved	Percentage of Questionnaire Retrieved (%)
Delta State University Teaching Hospital, Oghara	94	91	37
Niger Delta University Teaching Hospital, Amosama	57	76	31
University of Benin Teaching Hospital, Benin City	97	57	23
Total	248	222	91

Table 4.1 shows the questionnaire response rate. As shown in the Table, a total number of 248 copies of the questionnaire were administered, while

222 copies were retrieved. This indicates a questionnaire response rate of 91% which is adjudged adequate to carry out this study. As a rule of thumb 60% and above response rate is adequate for a study.

4.2 Demographic Information of the Respondents

The demographic information of the respondents with respect to the name of the medical school, level of study, sex and age range are treated in this section.

Name of Medical School of the Respondents

Data pertaining to the name of the medical school of the respondents is presented in Table 4.2

Table 4.2: Name of Medical School of the Respondents

Name of Medical Schools	Frequency	Percentage (%)
Delta State University Teaching Hospital, Oghara	91	41
Niger Delta University Teaching Hospital, Amosoma	55	25
University of Benin Teaching Hospital, Benin City	76	34
Total	222	100

Table 4.2 shows the name of the medical schools that were used for this study. It revealed that 91(41%) of the respondents were Delta State University Medical undergraduates, 55(25%) of the respondents were Niger Delta University Medical students, while 76(34%) of the respondents were University of Benin Medical students. These revealed that majority of the

respondents representing 41% were Delta State University Medical undergraduates.

Level of Study of the Respondents

Data relating to the level of study of the respondents is presented in Table 4.3

Table 4.3: Level of Study of the Respondents

Level of Study	Frequency	Percentage (%)
400	59	27
500	88	40
600	75	33
Total	222	100

Table 4.3 revealed the distribution of the level of study of the respondents. It shows that 59(27%) of the undergraduates under this study were 400 Level Medical students, 88(40%) of the undergraduates were 500 Level Medical students, while 75(33%) of the undergraduates were 600 Level Medical students. This indicates that majority (88, 40%) of the undergraduates under this study were 500 Level Medical students.

Gender Distribution of the Respondents

Data relating to the gender distribution of the respondents is presented in Table 4.4

Table 4.4: Gender of the Respondents

Gender	Frequency	Percentage (%)
Male	129	58
Female	93	42
Total	222	100

Table 4.5 showed the gender distribution of the respondents. It was shown that 129 of the respondents representing 58% were males, while 93 of the respondents representing

42% were females. This means that majority (129, 58%) of the respondents were male students.

Age Distribution of the Respondents

Data relating to the age distribution of the respondents is presented in Table 4.5.

Table 4.5: Age Distribution of the Respondents

Age	Frequency	Percentage (%)
18-22 years	62	28
23-27 years	132	59
28-32 years	27	12
31 years and above	1	1
Total	222	100

Table 4.5 revealed the age range of the respondents. It was shown that 62(28%) of the respondents were within the age range of 18-22 years, 132(59%) of the respondents were within the age range of 23-27 years, 27(12%) of the respondents were within the age range of 28-32 years, while 1of the respondents representing 1% falls within the age range of 31 years and above. These indicate that majority (132, 59%) of the undergraduates under this study were within the age range of 23-27 years.

4.3 Answering of the Research Questions

This section of the study provides answers to the research questions raised in chapter one of the study. The results are presented in Tables 4.6 to 4.10.

Research Question One: How frequent do undergraduates make use of information resources in the library in Niger Delta, Nigeria?

Data relating to research question one is presented in Table 4.6.

Table 4.6: Frequency Usage of Information Resources in the Medical Library by Undergraduates

Medical Materials used in the library	Mean
Medical textbooks	2.57
Medical journals	1.93
Encyclopedias of medicine	2.09
Medical dictionaries	2.34
Health related articles on newspapers	1.94
Health related magazines	1.98
Medical bulletins	1.85
Thesis/ projects	1.59
Health related e-journals	1.61
Maps	1.60
Health related audio tapes and videos	1.75
Internet	1.60
Aggregate mean	1.90
Criterion mean	2.50

Table 4.6 revealed the frequency usage of information resources in the medical library by undergraduates. It was revealed that the aggregate mean is 1.90, which is lower than the criterion mean of out of 2.50. This indicates that the frequency of usage of information resources in the medical library by undergraduates is low. As revealed in the Table, the undergraduate medical students do not frequently use medical journals, encyclopedias of medicine, medical dictionaries, health related articles on newspapers, health related magazines, medical bulletins, thesis/projects, health related e-journals, maps, health related audio tapes and videos and internet services that are available in the medical libraries under this study. However, medical undergraduates consult medical textbooks frequently in the library.

Research Question Two: For what reason do the undergraduates use the medical library?

The data in Table 4.7 is used to answer research question two.

Table 4.7: Usage of Medical Library by Undergraduates

Reasons	Agreed		Disagreed		Total	
	No.	%	No.	%	No.	%
Read medical textbooks	187	79.6	34	14.5	221	94.1
Consult medical materials for the purpose of carrying out research	180	76.6	42	17.6	222	94.2
Study	201	85.5	21	8.9	222	94.4
Read newspapers for current information on health issues	114	48.5	107	45.5	221	94
Prepare for examination	191	81.3	31	13.2	222	94.5
Write assignment	183	77.9	39	16.6	222	94.5
Prepared seminar presentations	150	63.8	72	30.6	222	94.4
Borrow and return health related information materials	138	58.7	84	35.7	222	94.4
Consult monographs	91	38.7	131	55.7	222	94.4
Consult reference materials	141	60.0	81	34.5	222	94.5
Use abstract	113	48.1	109	46.4	222	94.5

From Table 4.7, the undergraduate medical students under this study agreed that they use the medical library in order to: read medical textbooks (187, 79.6%), consult medical materials for the purpose of carrying out research (180, 76.6%), study (201, 85.5%), read newspapers for current information on health issues (114, 48.5%), prepare for examination (191, 81.3%), write assignment (183, 77.9%), prepare for seminar presentations (150, 63.8), borrow and return health related information materials (138, 58.7%), consult reference materials (141, 60.0%) and to use abstract (113, 48.1%). However, the undergraduates do not use the medical library to consult monographs (131, 55.7%).

Research Question Three: How do the undergraduates retrieve information from the medical library?

The data presented in Table 4.8 was used to answer research question three.

Table 4.8: How information is retrieved from the medical library by undergraduates

How undergraduate retrieve information from the medical library	Agreed		Disagreed		Total	
	No.	%	No.	%	No.	%
Through manual card catalogue	134	57.0	88	37.4	222	94.4
Through OPAC	79	33.6	143	60.9	222	94.5
Through Shelve browsing	147	63.4	73	31.1	220	94.5
Through Direction given by medical library staff and friends	140	59.6	82	34.9	222	94.5
Through Internet	80	34.0	142	60.4	222	94.4

As shown in Table 4.8, the undergraduate medical students agreed that they retrieve information from the medical library through the use of manual card catalogue (134, 57.0%), shelve browsing (147, 63.4%) and through direction given by library staff and friends (40, 59.6%). However, medical undergraduates do not retrieve information from the medical library through the use of OPAC (143, 60.9%) and Internet (142, 60.4%).

Research Question Four: What are the human factors affecting the use of medical library by the undergraduates?

The data presented in Table 4.9 was used to provide answers to research question four.

Table 4.9: Human Factors Affecting the Usage of Medical Library by Undergraduates

Human factors affecting usage of medical library	Agreed		Disagreed		Total	
	No.	%	No.	%	No.	%
lack of attendance at library user education	112	47.7	110	46.8	222	94.5
Improper organization of library materials	110	46.8	112	47.7	222	94.5
Improper shelf guidance and arrangement	142	60.4	80	34.0	222	94.4
High cost of internet access	116	49.4	100	45.1	216	94.5
Insufficient staff	96	40.9	126	53.6	222	94.5
Crowded students' timetable	146	62.1	76	32.2	222	94.3
Inaccessibility of some websites	130	55.3	92	39.1	222	94.4
Insecurity of library users' properties	128	54.5	94	40.0	222	94.5
Unfavorable rules and regulations for library users	128	54.5	94	40.0	222	94.5
Inadequate encouragement from lecturers	137	58.3	85	36.2	222	94.5

Table 4.9 showed the different human factors affecting the usage of medical libraries by undergraduates. It shows that lack of attendance at library user education (112, 47.7%), improper shelf guidance and arrangement (142, 60.4%), high cost of internet

access (116, 49.4%), crowded students' timetable (146, 62.1%), inaccessibility of some websites (130, 55.3%), insecurity of library users' properties (128, 54.5%), unfavorable rules and regulations for library users (128, 54.5%) and inadequate encouragement from lecturers (137, 58.3%) are some of the human factors affecting the use of medical libraries by undergraduates. However, the undergraduates disagreed that insufficient library staff (126, 53.6%) do not affect their use of the medical library.

Research Question Five: What are the environmental factors affecting the use of medical library by the undergraduates?

The data presented in Table 4.10 was used to provide answers to research question five.

Table 4.10: Environmental factors affecting the usage of medical library by undergraduates

Environmental factors	Agreed		Disagreed		Total	
	No.	%	No.	%	No.	%
Inadequate books loaned out to students	122	51.9	100	42.6	222	94.5
Inadequate facilities and equipments	133	56.6	89	37.9	222	94.5
Inadequate computers	106	45.1	116	49.4	222	94.5
Lack of library software	142	60.4	79	33.6	221	94
Unsuitable library hours	93	39.6	129	54.9	222	94.5
Lack of quiet and well-furnished study area	114	46.5	108	46.0	222	92.5
Lack of comfortable study atmosphere	93	39.6	129	54.9	222	94.5
Uncomfortable seating arrangement	92	39.1	130	55.3	222	94.4
Preference of hostel use to library	85	36.2	137	58.3	222	94.5
Poor maintenance of facilities and untidy environment	83	35.3	139	59.1	222	94.4
Incessant power outage	67	28.5	155	66.0	222	94.5

The analyzed data in Table 4.10 revealed that inadequate books loaned out to students (122, 51.9%), inadequate facilities and equipments (133, 56.6%), lack of library software (142, 60.4%) and lack of quiet and well furnished study area (144, 46.5%) are the environmental factors affecting the usage of medical libraries by undergraduates. However, they disagreed that the following environmental factors do not affect their usage of the medical libraries, these include: inadequate

computers (116, 49.4%), unsuitable library hours (129, 54.9%), lack of comfortable study atmosphere (129, 54.9%), uncomfortable seating arrangement (130, 55.3%), preference of hostel use to library (137, 58.3%), poor maintenance of facilities and untidy environment (139, 59.1%) and incessant power outage (155, 66.0%).

4.4: Testing of the Research Hypotheses

This section is devoted to the testing of the research hypotheses earlier formulated in chapter one of the study. It also presents the discussion of the research findings. The results are presented in Tables 4.11 to 4.13.

Hypothesis One: There is no significant relationship between human factors and usage of medical libraries by undergraduates.

Data pertaining to hypothesis one is presented in Table 4.11.

Table 4.11: Relationship between Human Factors and Usage of Medical Libraries by Undergraduates

		Human Factor	Usage
Human Factor	Pearson Correlation	1	.595**
	Sig. (2-tailed)		.000
	N	222	222
Usage	Pearson Correlation	.595**	1
	Sig. (2-tailed)	.000	
	N	222	251

Table 4.11 shows that the Pearson correlation value of .595 is equivalent to 59.9% which is approximately 60%. This means that the relationship between human factors and usage of medical library is 60%. The null hypotheses is therefore rejected. This implies that an increase in one of the values lead to an increase in the other value. Also, the Sig. value is .000 which is lesser than 0.05 and this implies that an increase or decrease in one of the values lead to equal a corresponding increase or decrease in the other value.

In conclusion, the hypothesis stating there is no significant relationship between human factors and usage of medical libraries by undergraduates is rejected. This implies that human factors influence the usage of medical libraries by undergraduates.

Hypothesis Two: There is no significant relationship between environmental factors and use of medical library by undergraduates.

Data presented in Table 4.12 was used to test hypothesis two.

Table 4.12: Relationship between Environmental Factors and Usage of Medical Libraries by Undergraduates

		Environmental Factor	Usage
Environmental Factor	Pearson Correlation	1	.581**
	Sig. (2-tailed)		.000
	N	222	222
Usage	Pearson Correlation	.581**	1
	Sig. (2-tailed)	.000	
	N	222	222

Table 4.12 showed that the Pearson product correlation coefficient r is $(.581 \times 100) 58.1$ and beyond average. The hypothesis is rejected. This means that there is a significant relationship between environmental factors and use of medical library by undergraduates. Also, as shown in Table 4.12, the significant value is .000 which is lesser than 0.05 and this implies that an increase or decrease in one of the values (environmental factors) lead to an equal corresponding increase or decrease in the other value (use of medical library).

Hypothesis Three: There is no composite significant relationship between human, environmental factors and the usage of medical library by undergraduates.

Data presented in Table 4.13 was used to test hypothesis three.

Table 4.13: Composite Relationship between Human, Environmental Factors and Usage of Medical Libraries by Undergraduates

Model	R	R ²	Sums of Squares	df	Mean Square	Sig.
Regression			4306.506	2	2153.253	.000 ^b
Residual	.634 ^a	.402	6401.440	219	29.230	
Total			10707.946	221		

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	53.124	3.515		15.115	.000
	humanfactor	-.066	.075	-.068	-.881	.380
	environmentalfactors	.161	.054	.231	2.995	.003

Table 4.13, showed that a multiple regression was run to predict the use of libraries from human factors and environmental factors. These variables statistically and significantly predicted the use of libraries $+ (2,219) = .634$, $p < 0.05 (0.00)$, $R^2 = .402$. All two variables added significantly to the prediction, at 0.00. the null hypothesis is therefore rejected, implying that an increase in both human and environmental factors will lead to a corresponding increase in the use of libraries by medical undergraduates and vice-versa.

Discussion of Findings

The findings of the study are discussed in line with the formulated research questions and research hypotheses.

Frequency Usage of Information Resources in the Medical Library by Undergraduates

The findings indicate that the frequency of usage of information resources in the medical library by undergraduates is low. The undergraduate medical students do not frequently use medical journals, encyclopedias of medicine, medical dictionaries, health related articles on newspapers, health magazines, medical bulletines, thesis/projects, health related e-journals, maps, health related audio tapes and videos and internet services that are available in the medical libraries under this study. This implies that the medical undergraduates majorly use textbooks than other information resources.

This findings is in agreement with that of Okiy (2000), Dee and Stanley (2005), Ajiboye and Tella (2007), Ugah (2007) and Popoola (2008). Of a particular interest is Popoola (2008) who identified books and textbooks as commonly used by medical undergraduate for their study. The findings from the study also reaffirmed the view of Ugah (2007) who asserted that textbooks account for undergraduate library visits.

However, the findings is at variance with that of Eskola (2005) which revealed that medical undergraduate frequently use printed sources such as books and journals, electronic sources such as databases and the Internet, media sources such as TV and radio, and people.

Reasons Undergraduate Use Medical Library

The findings revealed that the undergraduate medical students agreed that they use the medical library in order to: read medical textbooks, consult medical materials for the purpose of carrying out research, study, read newspapers for current information on health issues, prepare for examination, write assignment, prepare for seminar presentations, borrow and return health related information materials, consult reference materials and to use abstract.

The findings from this study is in line with that of Aderibigbe and Emmanuel (2012) on the use of library information technology resources by undergraduate students in Nigeria. The respondents were asked to state their reasons for visiting the library; the result revealed that majority of the respondents (15, 20%) visit the library mainly to consult materials for research, 12(16%) of the respondents used the library to prepare their seminar presentation, and only 7 (9%) respondents visit the library to read newspapers. The finding from this study also conforms with that of Mausumi and Palash (2012) which found that undergraduate medical students of West Bengal tertiary institution, visit the library to study and to read text-books.

How Information is Retrieved from Medical Library

The findings revealed that the undergraduate medical students agreed that they retrieve information from the medical library through the use of manual card catalogue, shelve browsing and through direction given by library staff and friends.

The findings from this study reaffirmed the assertion made by Akande (2003) that greater numbers of medical undergraduate are aware of the existence of library catalogues as the first point of call in searching and retrieving library materials. The effectiveness of the library catalogue in locating and retrieving library materials is affirmed as 83% of respondent successfully use catalogues.

Nevertheless, the finding from this study do not corroborate that of Oyesuki and Oduwole (2004) who argued that majority of students are not well skilled in locating information resources using the catalogues and searching for information through manual library catalogue consumes time.

Human Factors Affecting the Usage of Medical Library by Undergraduate

The findings from the study revealed that different human factors such as lack of attendance at library user education, improper shelf guidance and arrangement, high cost of internet access, crowded students' timetable, inaccessibility of some websites, insecurity of library users' properties, unfavorable rules and regulations for library users and inadequate encouragement from lecturers are some of the human factors affecting the use of medical libraries by undergraduates.

The findings from this study is in line with that of Gojeh, Dutse and Daudu (2013) who carried out a survey on the factors affecting the usage of medical libraries by undergraduates. It was revealed that the human factors affecting students' utilization of library resources include, lack of students' attendance of library use education, improper organization of library materials, shelf guidance and arrangement, users' attitudes, crowded students timetable, unfriendly attitude of staff, insecurity of library users' properties, unfavorable rules and regulations for library users and lack of students' encouragement by lecturers, etc.

Environmental Factors Affecting the Usage of Medical Library by Undergraduates

The findings of this study revealed that inadequate books loaned out to students, inadequate facilities and equipments, lack of library software and lack of quiet and well furnished study area are the environmental factors affecting the usage of medical libraries by undergraduates.

The findings from this study are at variance with that of Amusa and Iyoro (2013) on the influence of library environments, instructional programmes and user-librarian collaborations on library use by undergraduates in Nigeria. It was revealed that majority (1,926; 72%) of the undergraduates strongly agree with the statements that library environments such as conducive reading atmosphere, location of the library, seating arrangement, shelve guidance and arrangement, etc. affects the use of the library.

The findings from this study do not corroborate that of Ansari and Jilani (2008) which investigated the general environment in the library and asserted that inconveniences of the working hours, distance from the place of residence, etc. influence the use of the library by medical undergraduates.

Relationship between Human Factors and Usage of Medical Libraries by Undergraduates

The findings of this study revealed that the Pearson correlation value of .595 is equivalent to 59.9% which is approximately 60%. This means that the relationship between human factors and usage of medical library is 60%. The null hypotheses is therefore rejected. This implies that an increase in one of the values lead to an increase in the other value. Also, the Sig. value is .000 which is lesser than 0.05 and this implies that an increase or decrease in one of the values lead to equal a corresponding increase or decrease in the other value.

The findings from this study corroborates that of Kamba (2011) which acknowledged the existence of crunch trained and inexperienced technical personnel who manage, control and maintain available ICT resources in academic libraries as another

human factors affecting the use of medical library by undergraduates. The finding from this study is also in conformity with that of Gojeh, Dutse and Daudu (2013) which stated that users' attitude, crowded students' timetable, students' preference of hostel use to library and lack of students' encouragement by lecturers to use the library, constitutes some of the human factors affecting the usage of the medical library by undergraduates.

Relationship between Environmental Factors and Usage of Medical Libraries by Undergraduates

The findings of this study revealed that the Pearson product correlation coefficient r is $(.581 \times 100)$ 58.1 and beyond average. The hypothesis is rejected. This means that there is a significant relationship between environmental factors and use of medical library by undergraduates. Also, the significant value is .000 which is lesser than 0.05 and this implies that an increase or decrease in one of the values (environmental factors) lead to an equal corresponding increase or decrease in the other value (use of medical library).

The findings from this study corroborates that of Gojeh, Dutse and Daudu (2013) which identified physical environmental factors that are capable of affecting the usage of medical libraries as tangible elements of service quality like availability of computers, OPAC terminals, cleanliness, adequate lightings, proper ventilation, functional furniture, suitable library hours, library software and place for reading. The finding from this study is also in line with that of Ansari and Jilani (2008) which investigated the general environment in the library and asserted that inconveniences of the working hours, distance from the place of residence, etc. influence the use of the library by medical undergraduates.

Composite Relationship between Human, Environmental Factors and Usage Medical Libraries by Undergraduates

The findings of this study revealed that a multiple regression was run to predict the use of libraries from human factors and environmental factors. These variables statistically and significantly predicted the use of libraries $+ (2,219) = .634$, $p < 0.05 (0.00)$, $R^2 = .402$. All two variables added significantly to the prediction, at 0.00. the null hypothesis is therefore rejected, implying that an increase in both human and environmental factors will lead to a corresponding increase in the use of libraries by medical undergraduates and vice-versa.

The finding from this study corroborates that of Amusa and Iyoro (2013) which asserted that for a meaningful and effective utilization of library and information services by medical students, the environment which could be human or physical should be favourable or conducive to the users. The academic library environment encompasses all the circumstances, people, things and events around the library and can have potential effects (positive or negative) on the library usage. The design of a library can influence users' behaviour and satisfaction in the same way that the physical environment and organization of a library can.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary and conclusion, based on the findings of the study as well as recommendations, contribution to knowledge and suggestions for further research. The chapter is organized on the following headings:

- a. Summary of the study
- b. Conclusions
- c. Recommendation
- d. Contribution to knowledge
- e. Suggestion for further research

5.1 Summary of the Study

The study investigated the human, environmental factors affecting the usage of medical libraries by undergraduates in Niger-Delta Region of Nigeria. It covered three university medical schools in the Niger-Delta Region. The descriptive survey research design was employed to carry out the study, with a population of 618 respondents from which 40% (248) was used as the sample size using the systematic random sampling technique. 248 copies of the questionnaire were administered to the undergraduates at their respective medical schools, while 222 copies of the questionnaire were retrieved. Four research questions and three hypotheses were drawn to guide this study and the data generated were analyzed using descriptive and inferential statistics. The statistical analysis was carried out using the Statistical Package for Social Sciences (SPSS version 22). The findings from this study are presented as follows:

- i. Undergraduates medical student do not frequently consult medical journals, encyclopedia of medicine, medical dictionaries, health related articles on newspapers, health related magazines, medical bulletins, projects, health related journals, e-encyclopedia and e-magazine under this study.
- ii. Undergraduates medical students read medical text books, consult medical materials for the purpose of carrying out research, for studying, read newspapers for current information on health issues , prepare for examination, write assignment, prepare for seminar presentation, borrow and return health related information materials, to consult reference materials and to use abstract.
- iii. Undergraduate medical students agreed that they retrieve information resources from the medical library through the use of manual card catalogue, shelve browsing, and through direction given by medical library staff and friends.
- iv. The study also revealed the difference human factors affecting the usage of medical library by undergraduate. It shows that lack of attendance at library user education, improper shelf guidance and arrangement, unfriendly attitude of library staff, crowded students' timetable, insufficient staff, insecurity of library users' properties, unfavorable rules and regulations for library users, and inadequate encouragement from lecturers, are the human factors affecting the usage of medical libraries by undergraduates.
- v. As revealed in the study, undergraduates medical students agreed to the statement that environmental factor such as: inadequate books loaned out to

students, inadequate facilities and equipment lack of library software and lack of quiet and well furnished study area are the environmental factors affecting the usage of medical libraries by undergraduates. However, they disagreed that the following environmental factors do not affect the usage of the medical libraries, these include inadequate computer, unsuitable library hours, lack of comfortable study atmosphere, uncomfortable seating arrangement, preference of hostel use to library, poor maintenance of facilities and untidy environment and incessant power outage.

- vi. It was also revealed from the study that human factors affect the usage of medical libraries by undergraduates, environmental factors affect the usage of medical libraries by undergraduates and also, both human and environmental factors jointly affect the usage of medical libraries by undergraduates.

5.2 Conclusion

It can be concluded from the findings that the need for medical undergraduates to frequently use the library is of paramount to the very existence of the library as well as the bedrock for self-learning as obtainable in the 21st Century. The study revealed that undergraduate use the medical libraries for various reasons which are in line with their academic pursuit. Some of these reasons include the use of the medical libraries for study purposes, preparation for examinations, writing of assignments, preparation for seminars, etc. undergraduates retrieve information materials from the medical libraries through manual card catalogue, shelve browsing and direction given by medical library staff and friends, various human

factors stand as barrier to the effective utilization of the medical library by undergraduates and some of these human factors include: lack of attendance at library user education by undergraduates, improper organization of library material, improper shelf guidance and arrangement, high cost of internet access, crowded students' timetable, unfriendly attitude of library staff, insecurity of library users' properties, unfavorable rules, regulations for library users and inadequate encouragement.

5.3 Recommendations

Based on the findings of the study, the following recommendations are made:

- i. Librarians and library management should put in place plans, programmes and strategies that will encourage undergraduate medical students to always consult the different health related information resources that are available in the library.
- ii. In order to sustain the use of the medical libraries by undergraduate medical students, they should be made to feel comfortable whenever they come to the library.
- iii. Librarians and the management of medical libraries should make it an imperative to sensitize students on the use of modern information retrieval channel, such as the use of OPAC, internet and social network sites, etc.
- iv. The various human factors acting as a barrier to the effective usage of the medical libraries should be addressed by library management by organizing staff orientation programmes and also create a medium of getting feedback from the undergraduates on the overall performance of the library.

- v. Awareness campaign should be organized by librarians on sensitizing medical undergraduates on the need to be present always at library user education programmes so as to inculcate in them the various reasons why it is important for medical students to use health related information resources in the medical library.

5.4 Contributions to Knowledge

This study has contributed to the body of existing knowledge in the following ways:

- i. The findings from this study have established that medical undergraduates do not frequently consult medical journals, encyclopedia of medicine, medical dictionaries, health related articles on newspapers, health related magazines, medical bulletins, projects, health related journals, maps and audio materials in the medical libraries under this study.
- ii. It has equally shown that various human factors affect the usage of medical libraries by undergraduates. Human factors such as lack of attendance of library user education by undergraduates, improper organization of library materials, improper shelf guidance and arrangement, high cost of internet access, crowded students' timetable, unfriendly attitude of library staff, insecurity of library users' properties, unfavorable rules and regulations for library users and inadequate encouragement from lecturers.
- iii. The findings from this study has equally shown that various environmental factors affect the usage of medical libraries by undergraduate.

Environmental factors such as inadequate books loaned out to students, inadequate facilities and equipments, lack of library software, unsuitable library hours, poor maintenance of facilities and incessant power outage etc.

REFERENCES

- Aderibigbe, N.A., & Emmanuel, S.O. (2012). Information seeking behaviour of undergraduate in the University of Agriculture, Abeokuta, Ogun State, Nigeria. *Journal of Library and Information Science*.
- Adikata, A.A., & Anwar, M.A. (2006). Student's library use: A study of faculty Perceptions in a Malaysian University. *Library Review*, 55(2), 106-119.
- Aina, L.O. (2004). Library and information science text for Africa. Ibadan: *Third world information Services*.
- Ajiboye, J.O., & Tella, A. (2007). University undergraduate students' information seeking behaviour: Implications for quality in higher education in Africa. *Turkish online Journal of Educational Technology*, 6(1), 40-52.
- Akande, S.O. (2003). Patterns of first year students' use of a university library: A survey at University of Ibadan. *Lagos Journal of Library and Information Science*, 1(3), 22-26.
- Akinade, J.O. (2000). Nigerian medical libraries: challenges for the 21st century: Nigerians libraries, 34(1), 44 –54.
- Akin-Ojo, J. (1994). Conscience of exhibition, library orientation and effective use of the library: A case study of the University of Lagos. *Lagos Librarian*, 5(15), 11-17.
- Alison, K.N, George W., Kiyingi, G.W., & Baziraake, B.B. (2012). Factors affecting utilisation of electronic health information resources in universities in Uganda. *Annals of Library and Information Studies*, 59 (23), 90-96.
- Amkpa, S. A. (2000). Students' use of University of Maiduguri Library: An evaluative study. *Gateway Library Journal*, 2(3), 70-80.
- Amusa, O., & Iyoro, A.O. (2013). Influence of library environments, instructional programs, and user-librarian collaborations on library use by undergraduate students in Nigeria. *Chinese Librarianship: An International Electronic Journal*, Retrieved from <http://www.iclc.us/cliej/cl35AI.pdf>
- Andaleeb, S.S. (2001). Usage of academic library: The role of service quality, resources and users characteristic. Retrieve from <http://www.allbusiness.com/technologt>.
- Andaleeb, S., & Simmonds, P. (1998). Explaining user satisfaction with academic libraries: Strategic implications. *Research Libraries*, 59(2), 156-167.
- Ansari, M. & Jilani, G. (2008). Internet use by student of the Dethi University. *Journals of information studies*, 14(3), 163-172.

- Anyaoku, E.N. (2015).Evaluating Undergraduate Students Awareness and Use of Medical Library Resources: A study of Nnamdi Azikiwe University, Nigeria, *International Journal of Library Science*, 4(3): 53-58. DOI: 10.5923/j.library.
- Ashcroft, L., & Watts, C., (2005).ICT skills for information professional in developing countries: Perspectives from a study of the electronic environment in Nigeria. *IFLA Journal*31(1), 6-12.
- Basu, M., & Das, P. (2012). Library use by undergraduate medical students of a tertiary care institution of west bengal. *Indian, J. Prev. Soc. Med.* 43 (3), 315-320.
- Braimoh, D.J.O., & Chadzinwa, M.M. (1997).Library utilization and Academic growth: An assessment of the National University of Lesotho. *African Journal of Library, Archival and information science*, 7 (1), 63-69.
- Braude, R. M. (1989). Role of Libraries in Medical Education. *Bulletin of New York Academy of Medicine*, 65(6), 704–738.
- Chatterjee C, Joardar G, Bhattacharya K, Nandy S, & Misra, R (2006).Use of Medical Library by Medical Students and Teachers in Medical Colleges of Kolkata. *Ind J Comm. Med*, 31(3), 204-206.
- Collins, E., & Stone, G. (2014).Understanding Patterns of Library Use among Undergraduate Students from Different Disciplines. *Evidence Based Library and Information Practice*, 9 (3), 51- 67. Available at <http://ejournals.library.ualberta.ca/index.php/EBLIP/article/view/21326>.
- Dee, C & Stanley E. (2005). Information-seeking behaviour of nursing students and clinical nurses: Implications for health sciences librarians. *Journal of the Medical Library Association*, 98 (2), 213-222.
- Don, D. (2006). How students and faculty use academic libraries differently. *Journal of library and information science* Retrieved from http://www.Irs.org/documents/fastfacts/242_ALIS_2_KL.pdf
- Dunn, K. (2000). “Assessing Student information literacy skills in the California State University: A progress report.”*Journal of Academic Librarianship*28(1/2), 26-35.
- Emmanuel, G. & Sife, A. (2008). Challenge of managing information and communication technologies for education: Experiences from sokoine national agricultural library and development using information and communication technology. *International journal of Education*.4(3), 137-142.
- Epstein R.J. (2004) Learning from the Problem of problem-based learning. *B.M.C. Med. Edu*, 4 (1), 34-46.

- Estin, J.E & Edem, E. (2005).Towards improving user education programme in Nigeria university library. *Africa Journal of Archives and Information science*, 6(1), 31-36.
- Eskola (2005).Active use of information resources by undergraduates.*BMC Medical Education*.7(1), 30-35.
- Etukah, D. (2004). Research methods in tertiary institutions. *Africa Research Review*, 2(2), 119-129.
- Ezomo, E.O. (1998). Catalogue use: A Nigeria case study. *Nigeria Library and Information Science Review*, 6(1), 17-25.
- Fasae,J.K (2011). Use of library resources and services of Federal University of Technology, Akure by postgraduate students. *Gateway Library Journal*, 14(3), 66-75.
- Fayose, P. O. (2000). Library resources and their roles in education: The Centre for external Studies. University of Ibadan, Ibadan.
- Fidzani, B.T. (1998). Information needs and information seeking behaviour of Undergraduate students at the University of Botswana. *Library Review*,47(7), 329-340.
- Fister, B. (1992).The research process of undergraduate students. *Journal of Academic Librarianship* 18(3), 163-169.
- Fowowe, S.O. (1999). Students' use of an academic library: A survey. *Library and Information Science Review*,7(1), 47-57.
- Franklin, B., & Plum, T. (2004). Library usage patterns in the electronic information environment. *Information Research*, 9 (4), 187. Retrieved from <http://InformationR.net/ir/9-4/paper187.html>
- Frascott, J., Levenseler, J., Weingarten, C., &Wiegand, K. (2007). Improving library use and information literacy at Caritas Charles Vath College. An interdisciplinary qualifying project report submitted to the faculty of Worcester Polytechnic Institute. Retrieved from<http://www.edu/Pubs/E-project/Available?E-project-030107-103835>
- Gojeh, L.A. (1995). The library: An indispensable aid to successful research in education. A Research framework for teacher education in Africa. 15(6) 45-50.
- Gojeh, D. & Daudu (2013). Library science of higher education human and physical Environmental factors affecting student's utilization of library and information services. *Colleges of education libraries*. 45-78.

- Guskin, A. E. (1996). Facing the future. *Change*, 28(4), 26-38.
- Hiller, S. (2002). How different are they? A comparison by academic area of library use, priorities and information needs at the University of Washington, *Issues in Science and Technology Librarianship* 33. Available: <http://www.ist.org/02-winter/article.html>.
- Hiller, S. (2001). Assessing user needs satisfaction and library performance at the University of Washington Libraries. *Library Trends*. Available: <http://www.lib.washington.edu/survey>.
- Igun, S.E., & Adogbeji, O.B (2007). "Study habits of postgraduate students in selected Nigerian Universities, *Library Philosophy and Practice*. Retrieved from <http://digitalcommons.uni.edu/libphi/prac/153>.
- Jubb, M., & Green, R. (2007). Researchers' use of academic libraries and their services. Retrieved from <http://www.rin.ac.uk/system/files/.../Researchers-libraries-services-report.pdf> 448-455.
- Julien, H. (2000). Information literacy instruction in Canadian academic libraries: Longitudinal trends and international comparison. *College and Research Libraries*, 61(6), 510-523.
- Kakai, M. (2004). A study of the information seeking behaviour of undergraduate students of Makerere University, Uganda. *World Libraries*, 14(1), 544-564.
- Kamba, M.A. (2011). "Implication of ICT's in libraries of higher education institutes panacea catapulting library Development in Africa" DESIDOC. *Journal of library and information technology* 31(1), 65-71.
- Kelley, K., & Orr, G. (2003). Trends in distant student use of electronic resources. *College and Research Libraries*, 64, 176-191. Retrieved from <http://www.ala.org/ala/mgrps/divs/acrl/publications/crljournal/collegeresearch.com>
- Kudkarni, M., & Deshapande, N. J. (2013). Empowering library users, establishing channel of communication for service quality expectations of trainers from government administrative training Institute (ATI) libraries in India. Retrieved from <http://conference.ifla.org/ifla78>
- Komolafe-Opadeji, H. (2011). Use of Internet and electronic resources among postgraduate students of a Nigerian private university, *International Journal of Information and Communication Technology*. 8, 29-34.
- Lancaster, F.W. (1998). If you want to evaluate your library, Champaign: Graduate school of library information science. University of Illinois.

- Lee, Y. (2012). The Technology Acceptance Model: Past, Present, and Future. *Communications of the Association for Information Systems*, 12, 752-780.
- Lombardo, S. V., & Condic, K. S. (2001). Convenience or content: A study of undergraduate periodical use. *Reference Services Review*, 29(4), 332-338.
- Lubans, J. (1998). How first year university students use and regard internet resources: A draft commentary. Available : <http://www.lubans.org/docs/firstyear/html>
- Lushington, N. (2002). *Libraries designed for users: A 21st century guide*. New York: Neal-Schuman Publishers.
- Majid, S. & Ai, T.T. (2002), Usage of information resources by computer engineering students: A case study of Nanyang Technological University, Singapore: *Online Information Review*, 26 (5), 318-325.
- Martins, L.A. (2003). User studies and library planning' *Library Trend*. 24(3), 483-496.
- Martin, S. (2003). Impact of a Graduate Entry Programme on a Medical School Library service. *Health Information and Libraries Journal*, 20, 42-49.
- Mason, M. K. (2010). Myths Associated With Undergraduate Use of Academic Libraries. Retrieved from <http://www.moyak.com/papers/academic-library-anxiety.html>.
- Mathacidesona, M. (1997). Users and information service. *Knizuice: Infomaucie*, 29(11), 437- 442.
- Mutsiak, K. K. (2012). Perceptions of usability and usefulness of digital libraries. *International Journal of humanities and Arts Computing*. 6(7), 133-147.
- Mausumi.B.&Palash (2012). Library use by undergraduate medical student's, in Indian. *J. prev. Soc. Med.* 43 (3).
- McCarthy, C.A. (1995). Students perceived effectiveness using the university Library. *College and Research Libraries*, 56(3), 221-234.
- Nicholson, N.N., & Barlett, E. (1962). Who uses university libraries: Ibadan: *College and Research Libraries*, 23(3), 217-222.
- Nock, G.I (1998). Assessment of Physical facilities and readers satisfaction on Kashim Ibrahim Library, Zaria: *Ahmadu Bello Focus* 15(1), 1-11.
- Nworgu, B.G. (2006). *Educational research: basic issues and methodology*. 2nd and enlarged ed. Nsukka: University Trust Publishers.
- Obuh, O.A. (2009). Use of electronic resources by postgraduate students of the department of Library and Information Science of Delta state university,

- Abraka, Nigeria, Retrieved from <http://www.wepages.uidaho.edu/~mbolin/obuh-alex.htm>
- Ogunsheye, F.A. (2011). Effective use of books and Libraries for tertiary Institution. Ibadan: Abadaian Media Resource Centre.
- Okiki, O. C., & Asiru, S. M. (2011). Use of electronic information sources by postgraduate students in Nigeria: Influencing factors. *Library Philosophy and Practice*, 4-6.
- Okiy, R. B. (2000). Assessing students and faculty use of academic libraries in Nigeria: The study of Delta State University, Abraka. *Frontiers of Information and Information Science*, 1(1), 65-75.
- Olatokun, W.M. (2009). Analysing socio-demographic differences in access and use of ICTs in Nigeria using the capability approach. *Issues in informing science and information technology*. 6 (2), 479-496.
- Okorodudu, R.I (2013). Research methods and statistics: A practical approach for under graduates and post graduates studies in education, social science, psychology and other disciplines concerned with empirical research. Abraka: university printing press.
- Olofinsawe A.A., Oyeniyi, D.A. (2010). Student's use of the school libraries: A case study of Federal University of Technology Akure, Ondo State, Nigeria. *Owena Journal of Library and Information Science*. 3, 65-72.
- Ondari-Okemwa, E. (2002). Impediments to promoting access to global knowledge in sub-Saharan Africa. *Library management*, 25 (8/9), 361-375.
- Onifade, F.N, Ogbuiyi, S.U & Obuh, O. (2013). Use of Library resources and service utilization by post graduate students in babock university library. Illishon-Remo, Nigeria. *International Journal of Library and information science* <http://www.academicjournals.org/lis>.
- Osagie, J.N (2003) user education in tertiary institution in Nigeria, Lagos. *Journal of library and information science*, 1, 32-36.
- Oseghale, O. (2008). Faculty opinion as collection evaluation method: A case study of Redeemer's University Library. *Library Philosophy and Practice*. Retrieved from <http://unlib.unl.edu/Lpp/oseghale.htm>.
- Osinulu, L.F. (1998). Library use in Ogun State University, Abiokunta: *Gateway Library Journal*. 1(20), 81-87.
- Ossai , N.B.(2009). Library use pattern of law students at the University of Benin, Benin City, Nigeria. *Simbiosi*. (6), 2.

- Oyedum, G.U (2006). Assessment of readers Satisfaction; a case study of Federal University of Technology Minna library. *Bornolibrary. Archival and information science journal*, 5(1), 67-75.
- Oyedum, G.U. (2011).Physical facilities as determinants of undergraduate students' use of federal university libraries in Nigeria. *Library Philosophy and Practice*,5(2),1-12.
- Onyekweodiri, N.E & Agbo, A.D (2015).Utilization of Library Resources by Veterinary Medicine Students in Two Federal Universities in South-East Zone of Nigeria. *Global Journal of Human-Social Science*, 15 (2), 45-55.
- Oyesiku, F.A., & Oduwole, A. A. (2004). Use of an academic library: A survey on the Olabisi Onabanjo University Libraries. Lagos: *Journal of Library and Information Science*, 2(2), 96-101.
- Palssan, J. in Etim, F.E. (2002). Integrating information handling skills into the Curriculum: a Panacea of education reforms in secondary schools in Nigeria. *Nigeria libraries*, 36(1), 23-29.
- Pearson, P.C., & Tiefel, V. (1996).Evaluating undergraduate library instruction at Ohio State University. *Journal of Academic librarianship*, 7(6), 351-357.
- Pelzer, L. & Leysen, J.M. (1998).Library use and information-seeking behaviour of veterinary medical students. *Bulletin of the medical association* 76(4), 328-333
- Perera, P. A. (2005). A study on the pattern of usage of library facilities at the Medical Library, University of Peradeniya. *Journal of the University Librarians Association of Sri Lanka*, 9, 41-61. Retrieved from <http://www.sljol.info/index.php/JULA/article/viewFile/312/355>.
- Popoola, S. O. (2001). Faculty awareness about library information products and services in Nigerian universities. *Gateway Library Journal*, 4(1 & 2), 1-10.
- Popoola, S. O. (2008). The use of information sources and services and its effect on the research output of social scientists in Nigeria Universities. *Library Philosophy and Practice*. Retrieved from <http://unlib.unl.edu/LPP/popoola.htm>
- Redman,S. (1997) obvious need for clear accurate information about health issues to be disseminated to Australia women, National issues on health.
- Renwick, S. (2004). Knowledge and use of electronic information resources by medical sciences faculty at the University of the West Indies. *Journal of the Medical Library Association*, 93(1), 21-31.
- Romanov K. & Aarnios M. (2006).A survey of the use of electronic scientific information resources among medical and dental students. *BMC Medical Education*, 6 (1), 28-35.

- Sahak, M.D.&Saad, M.S.M (2010).A Survey on the Use of Library Resources, Services and Facilities: A Case Study at the Faculty of Medicine and Health Sciences, University, Putra Malaysia.
- Samuel, N.M. & Amallraj, R.M. (1996).Evaluation of the regional Medical library of the TAMILNADU, Dr M G R medical University in Chennai, *Indian Journal of Medical Education*, 35, 18-24.
- Seaman, N.H. (2001). Information Literacy: A study of freshman students perceptions with recommendations. PhD thesis, Virginia Polytechnic Institute and State University. Available: <http://www.scholar.lib.vt.edu/theses/available/etd-05142001-104550/unrestricted/seamans.pdf>
- Sinha,M.K (2010). Internet awareness and internet usage pattern amongst university and college teachers of North Eastern Region of India: A survey. *Library Progress (International)*30(1), 61-82.
- Shah, C. (2012).Library usage at the Indian Medical College. *Health information and Library Journal*.28, 77-81.
- Shiny, M., Mohd, S., Mohan, S., Paul, S., & Ramesh, K. A. (2006). A cross-sectional study on library use by medical students and faculties in government medical college, Thiruvananthapuram. Under graduate research paper.
- Stamatoplos, A. & Mackoy, R. (1998). Effect of library instruction on student's satisfaction with the library: A Longitudinal study, *College and Research Libraries*. 54, 323-334.
- Smith H. C. (2002) Course Directors' perspectives on problem-based learning curricula. In *Biochemistry*. Acad. Med. 77: 1189-1198.
- Suleman, M. (2009). Control measures of academic libraries in Nasarawa state. *Research library*. 26(8), 416-422.
- Tanner. (2002). "Skills for a millennium Library" *.Library Journal* 124-139.
- Tear, L.C. (1999). A library services study of Orange county(NC) citizens. A master's paper submitted to the faculty of school of Information and Library Science, University of North Carolin, Chapel Hell. Retrieved from <http://www.rexonavn.com/orange-government-nc-manual.html>
- Tenopir, C. (2003). *Use and users of electronic library resources: An overview and analysis of recent research studies*. Washington, DC: Council on Library and Information Resources. Retrieved from <http://www.clir.org/pubs/reports/pub120/pub120.pdf.html>.

- Tommy, L. (2009). Nigerian University Libraries and the challenges of Globalization. *The Electronic Library*28(2), 45-52.
- Troll, D. (2002). How and why libraries are changing: what we need to know. *University library Research*. Retrieved from <http://repository.cmu.edu/lib.science/64>.
- Tsafe,A.G (2004). Students' utilization of Usaman Danfodio university medical library, Sokoto. *Gateway Library Journal* 2&3, 70-80.
- Ugah, D. (2007). Evaluating the use of university Libraries in Nigeria: A case study of Michael Okpara University of Agriculture, Umudike. Available: <http://unllib.unl.edu/LPP/ugah2.htm>
- Unomah, J.I. (1988). Students utilization of Academic libraries in Nigeria: The example of two universities. *Nigerian Library and Information Science Review* 6(2), 51-57.
- Urquhart, C., & Rowley, J. (2007). Understanding students' information behaviour in relation to electronic information services: Lessons from longitudinal monitoring and evaluation, part 2. *Journal of the American Society for Information and Technology*,58 (8), 1188-1197.
- Wei, W. (1995), Rethinking science library services: A user study at the University of California, New York: Santa Cruz. *Science and Technology Libraries*,15(3), 17-33.
- William, H.S. (2013) The school environment in fundamental, innovations & issues in Education. *Institutes of Ecumenical Education* 3(4), 84-90.
- Wilson, T.D. (1996). Models in information behaviour research. Ibadan: *Journal of Documentation* 55(3), 249-270.
- Whitmore, E. (2001). A longitudinal study of undergraduate academic library experiences. New York: *The Journal of Academic Librarianship*27(5), 279-385.
- Whitmire, E. (2002). Disciplinary differences and undergraduates' information seeking behaviour. *Journal of the American Society for Information Science and Technology* 53(8), 631-638.
- Yusuf, F., & Iwu, J. (2010). Use of academic library: A case study of Covenant University, Ogun: Nigeria. Retrieved from <http://www.white-clouds.com>
- Zwezing, D.L. (1977). Measuring library use. *Drexel Library Quarterly*13(7), 13-15.

APPENDIX I
QUESTIONNAIRE

Department of Library and Information,
Science, Faculty of Education,
Delta State University, Abraka. 10th October,
2015.

Dear Respondents,

HUMAN AND ENVIRONMENTAL FACTORS AFFECTING THE USE OF MEDICAL
LIBRARY BY UNDERGRADUATES QUESTIONNAIRE (HEFATUMLBU)

I am a master student of the Department of Library and Information Science, Delta State University, Abraka, carrying out a study on human and environmental factors affecting the use of medical library by undergraduates. I hereby solicit for your support in completing this questionnaire objectively. All responses will be treated confidentially and used for research purpose.

Thank you,

OYIBOOGHENEKARO
(Researcher)

SECTION A: DEMOGRAPHIC INFORMATION OF THE RESPONDENTS

INSTRUCTION: Please answer the questions by ticking or filling the gaps

1. Name of the Medical Library _____
2. Level of Study: 400L () 500L () 600L ()
3. Marital Status: Single () Married ()
4. Sex: Male () Female ()
5. Age: 18-22 () 23-27 () 28-32 () 32 and above ()

SECTION B: FREQUENCY USAGE OF INFORMATION RESOURCES IN THE MEDICAL LIBRARY

6. How often do you use each of the following resources in the medical library?

Please tick (√) the appropriate option. The letters in the column stand for Always (A) Occasionally (O) Rarely(R) Never (N)

Medical materials used in the library	A	O	R	N
Medical textbooks				
Medical journals				
Encyclopaedias of medicine				
Medical dictionaries				
Health related articles on newspapers				
Health related magazines				
Medical bulletins				
Thesis/ projects				
Health related e-journals				
Maps				
Health related audio tapes				
Health related Video Tapes				

Section C: For what reasons do undergraduates use the medical library.

7. Why do undergraduates use the medical library?

Please tick (√) in the appropriate option. The letters in the column stands for Agree (A) and Disagree (D).

I used the medical library to	A	D
read medical textbooks		
consult research on medical materials		
Study		
read newspapers for current information on health issues		
prepare for examination		
write assignment		
prepared seminar presentations		
borrow and return health related information materials		
consult monographs		
consult reference materials		
use abstract		

Section D: Means by which undergraduates retrieve information from the medical library.

8. How do undergraduates retrieve information from the medical library?

I retrieve information from the medical library through	A	D
manual card catalogue		
OPAC		
Shelve browsing		
direction given by medical library staff and friends		
Internet		

Section E: Human factors affecting use of medical library by undergraduates

9. What are the human factors affecting the use of medical library by undergraduates?

The following human factors affect my usage of medical library	A	D
lack of attendance of library user education		
improper organization of library materials		
Improper shelf guidance and arrangement		
Users' attitude towards the use of the library		
insufficient staff		
crowded students timetable		
unfriendly attitude of library staff		
insecurity of library users' properties		
unfavorable rules and regulations for library users		
Inadequate encouragement from lecturers		

Section F: Environmental factors affecting use of medical library by undergraduate

10. What are the environmental factors affecting the use of medical library by undergraduate?

The following environmental factors affect my usage of the medical library	A	D
inadequate books loaned out to students		
inadequate facilities and equipment		
inadequate computers		
lack of library software		
unsuitable library hours		
lack of quiet and well-furnished study area		
lack of studious atmosphere		
uncomfortable seating arrangement		
students' preference of hostel use than library		
poor maintenance of facilities and untidy environment		
Incessant power outage		

APPENDIX III

Detailed SPSS Output

[DataSet1] C:\Users\dlaw4usall\Documents\OYOIBO DATA ENTRY.sav

Descriptive Statistics

	N	Mean	Std. Deviation
medical textbooks	222	2.57	1.223
medical journal	222	1.93	1.078
encyclopedia of medicine	222	2.09	1.108
medical dictionaries	222	2.34	1.184
health related articles on newspapers	222	1.94	1.036
health related magazines	222	1.98	1.080
medical bulletins	222	1.85	1.065
Projects	222	1.59	.941
health related e-journals	222	1.61	.920
Maps	222	1.60	.992
health related audio tapes and videos	222	1.75	1.054
Valid N (listwise)	222		

Frequencies

Frequency Table

read medical textbooks

		Frequency	Percent	Valid Percent	Cumulative Percent
	3	1	.4	.5	.5
Valid	Disagreed	34	14.5	15.3	15.8
	Agreed	187	79.6	84.2	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

consult research on medical materials

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	42	17.9	18.9	18.9
	Agreed	180	76.6	81.1	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

Study

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	21	8.9	9.5	9.5
	Agreed	201	85.5	90.5	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

read newspapers for current information on health issues

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	1	.4	.5	.5
	Disagreed	107	45.5	48.2	48.6
	Agreed	114	48.5	51.4	100.0
Total		222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

prepare for examinations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	31	13.2	14.0	14.0
	Agreed	191	81.3	86.0	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

write assignments

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	39	16.6	17.6	17.6
	Agreed	183	77.9	82.4	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

prepare for seminar presentations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	72	30.6	32.4	32.4
	Agreed	150	63.8	67.6	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

borrow and return health related information materials

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	84	35.7	37.8	37.8
	Agreed	138	58.7	62.2	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

consult monographs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	131	55.7	59.0	59.0
	Agreed	91	38.7	41.0	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

use reference materials

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	81	34.5	36.5	36.5
	Agreed	141	60.0	63.5	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

use abstracts

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	109	46.4	49.1	49.1
	Agreed	113	48.1	50.9	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

FREQUENCIES VARIABLES=retrieval1 retrieval2 retrieval3 retrieval4
retrieval5
/ORDER=ANALYSIS.

**Frequencies
Frequency Table**

manual card catalogue

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	88	37.4	39.6	39.6
	Agreed	134	57.0	60.4	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

opac

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	143	60.9	64.4	64.4
	Agreed	79	33.6	35.6	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

shelve browsing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	73	31.1	32.9	32.9
	Agreed	149	63.4	67.1	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

direction by library staff and friends

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	82	34.9	36.9	36.9
	Agreed	140	59.6	63.1	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

e-journals

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	142	60.4	64.0	64.0
	Agreed	80	34.0	36.0	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

Frequencies

Frequency Table

lack of attendance of library user education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	110	46.8	49.5	49.5
	Agreed	112	47.7	50.5	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

improper organization of library materials

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	112	47.7	50.5	50.5
	Agreed	110	46.8	49.5	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

improper shelf guidance and arrangement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	80	34.0	36.0	36.0
	Agreed	142	60.4	64.0	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

insufficient staff

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	126	53.6	56.8	56.8
	Agreed	96	40.9	43.2	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

crowded students' time table

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	76	32.3	34.2	34.2
	Agreed	146	62.1	65.8	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

insecurity of library users' properties

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	94	40.0	42.3	42.3
	Agreed	128	54.5	57.7	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

unfavourable library rules and regulations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	94	40.0	42.3	42.3
	Agreed	128	54.5	57.7	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

inaccessibility of some websites

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	92	39.1	41.4	41.4
	Agreed	130	55.3	58.6	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

lack of encouragement from lecturers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	85	36.2	38.3	38.3
	Agreed	137	58.3	61.7	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

high cost of internet access

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	106	45.1	47.7	47.7
	Agreed	116	49.4	52.3	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

Frequencies

Frequency Table

inadequate books loaned out to medical undergraduates

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	100	42.6	45.0	45.0
	Agreed	122	51.9	55.0	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

inadequate facilities and equipments

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	89	37.9	40.1	40.1
	Agreed	133	56.6	59.9	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

inadequate computers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	116	49.4	52.3	52.3
	Agreed	106	45.1	47.7	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

lack of medical library softwares

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	1	.4	.5	.5
	Disagreed	79	33.6	35.6	36.0
	Agreed	142	60.4	64.0	100.0
Total		222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

unsuitable medical library hours

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	129	54.9	58.1	58.1
	Agreed	93	39.6	41.9	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

lack of quiet and well furnished study for medical undergraduates

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	108	46.0	48.6	48.6
	Agreed	114	48.5	51.4	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

lack of studious atmosphere

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	129	54.9	58.1	58.1
	Agreed	93	39.6	41.9	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

uncomfortable seating arrangement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	130	55.3	58.6	58.6
	Agreed	92	39.1	41.4	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

undergraduate preference of hostel use than the medical library

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	137	58.3	61.7	61.7
	Agreed	85	36.2	38.3	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

poor maintenance of facilities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	139	59.1	62.6	62.6
	Agreed	83	35.3	37.4	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

untidy environment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	151	64.3	68.0	68.0
	Agreed	71	30.2	32.0	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

incessant power outage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagreed	155	66.0	69.8	69.8
	Agreed	67	28.5	30.2	100.0
	Total	222	94.5	100.0	
Missing	System	13	5.5		
Total		235	100.0		

Correlations

Correlations

		Human factor	usage
Human factor	Pearson Correlation	1	.595**
	Sig. (2-tailed)		.000
	N	222	222
Usage	Pearson Correlation	.595**	1
	Sig. (2-tailed)	.000	
	N	222	251

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

CORRELATIONS

/VARIABLES=environmental factors usage
 /PRINT=TWOTAIL NOSIG
 /MISSING=PAIRWISE.

Correlations

Correlations

		Environmental factors	usage
Environmental factors	Pearson Correlation	1	.581**
	Sig. (2-tailed)		.000
	N	222	222
Usage	Pearson Correlation	.581**	1
	Sig. (2-tailed)	.000	
	N	222	222

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

Regression

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Environmental factors, human factor ^b		Enter

a. Dependent Variable: usage

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.634 ^a	.402	.033	5.74461

a. Predictors: (Constant), environmental factors, human factor

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4306.506	2	2153.253	4.778	.000 ^b
	Residual	6401.440	219	29.230		
	Total	10707.946	221			

a. Dependent Variable: usage

b. Predictors: (Constant), environmental factors, human factor

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	53.124	3.515		15.115	.000
	Humanfactor	-.066	.075	-.068	-.881	.380
	environmentalfactors	.161	.054	.231	2.995	.003

a. Dependent Variable: usage