

**INFORMATION NEEDS AND INFORMATION USE PATTERNS OF NURSES FOR
HEALTHCARE DELIVERY IN GENERAL HOSPITALS OF JIGAWA STATE,
NIGERIA**

BY

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DECLARATION

I hereby declare that this work titled “Information Needs and Information Use Patterns of Nurses for Healthcare Delivery in General Hospitals of Jigawa State, Nigeria.” is the product of my research effort undertaken under the supervision of Professor Ghaji Abubakar Badawi, and has not been presented anywhere for the award of degree or certificate. All sources consulted have been duly acknowledged.

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CERTIFICATION

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ABSTRACT

The study investigates the information needs and information use patterns of nurses for healthcare delivery in general hospitals of Jigawa State, Nigeria. The objectives of the study are to determine the information needs of the nurses; to determine information seeking strategies of nurses; to identify the information resources used by the nurses; to determine the information use patterns of the nurses and to identify challenges in meeting the information needs of the nurses for healthcare delivery. The study adopted survey research design using cross-sectional method. The population of the study comprises of three hundred and eighty four (384) nurses drawn from the nine (9) general hospitals in the state. There was no sample size used because the entire population was used using census technique. Questionnaire was the only instrument used to collect data from the respondents (nurses). Therefore, a total of three hundred and eighty four (384) copies were administered, and three hundred and fifty two (352) (92%) copies were returned and found useful for the analysis. The data collected were analyzed using descriptive and inferential statistics. The findings of the study revealed that about 139 (39%) of the nurses need information on palliative care, 83 (24%) need information on patients' referral and 76 (22%) need information on clinical decision making. The findings of the study also revealed that most of the nurses seek information through their medical colleagues and Internet and used google and yahoo for searching for online information resources. The findings also revealed that the main information resources used by nurses for healthcare delivery are medical textbooks, internet resources and medical reference materials. The study also revealed that majority 287 (82%) of the nurses encountered various challenges in meeting their information needs for healthcare delivery, they are: lack of information search skills, lack of time, lack of awareness, high cost of information resources, unstable power supply, lack of medical libraries, lack of medical databases etc. the study concluded that there are more male nurses than female nurses in the general hospitals of Jigawa State, Nigeria, it was also concluded that the nurses need information on palliative care, patient's referral and clinical decision making. The study further concluded that the nurses encounter challenges in meeting their information needs. The study recommended that the state health ministry of health should identify the basic information needs of the nurses, medical libraries should be available in all the general hospitals, Hospital Information System should be functional, there should be current and relevant information resources, Internet connectivity should be available and accessible to the nurses and the nurses should be trained on how to improve their search skills for healthcare delivery.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Healthcare delivery is the basic responsibility of every health professional, therefore health professionals need to have access to current and relevant information resources in order to provide effective healthcare services to their patients. Healthcare delivery is the provision of healthcare services to individual or community by health workers to improve their healthcare status. According to World Health Organization WHO (2004), healthcare is a service provided to individuals or communities by health service providers such as nurses, dentists, medical doctors etc for the purpose of promoting, maintaining, monitoring or restoring health. The healthcare services are categorized into the following: Intermediate healthcare, Primary healthcare, Secondary healthcare and Tertiary healthcare.

Economically, a healthy society is expected to be more productive than unhealthy one. Therefore, the role of health personnel also contributes to the economic devolvement of a particular country. For this reason, every nation needs sound healthcare delivery system. Therefore, healthcare services should be easily accessible by every citizen. Medical personnel need various information sources in order to obtain relevant information resources to satisfy their information needs and discharge their clinical duties; this is because information is a tool for both clinical and professional development in nursing profession. As such, information is indeed for answering clinical questions and solving medical issues.

Effective healthcare delivery is a global challenge which is common all over the world, particularly African countries. Information plays a vital role in providing effective healthcare

delivery to their patients, this is because availability of information resources will help health professional to make informed clinical decision. Thus, when health professional have access to information they need, it will reduce the dependency on their professional colleagues in meeting their information needs for healthcare delivery. Therefore, there is the need to have a medical library in each and every hospital for the health personnel to obtain the information they need.

Investigating the information needs and information use patterns of nurses will help the stakeholders in the health industries to indentify the information needs of the nurses under study. The concept information needs has attracted attentions from various scholars to conduct researches on information needs of different user groups such as nurses, teachers, students, lawyers, engineers, farmers etc. However, this study is also an attempt to study the information needs and information use patterns of nurses in general hospitals of Jigawa State-Nigeria.

Information need is seen as the desire of an individual or group of individuals to locate and obtain information in order to satisfy their information needs. Wilson (1999), described information need as not a primary need, but, first, a secondary need that arises out of needs of a more basic kind; and second, that in an effort to discover information to satisfy a need, the enquirer is likely to meet barriers of different kinds. Today, information need has become an important variable in the literature of library and information science, and attracts attention of many scholars from various fields to conduct researches on different user groups. In this study, nurses are chosen to be the user group.

On the other hand, information use pattern is how people utilize information in order to satisfy their information needs. Information use pattern is seen as the process which leads an individual to use information in a particular way or manner to satisfy his/her desired needs. However,

information use patterns can be defined as a method adopted by a user in utilizing information resources for a particular purpose. Thus, an information use pattern is beyond using the information resources, but it involves the process, method and purpose in utilizing information.

The study is conceptualized on two models: Leckie, Pettigrew & Sylvain (1996), model of Information-Seeking of Professionals, and Wilson (1981), model of information seeking behavior. Leckie, et al (1996), model of information-seeking of professionals explains that the information seeking habits of nurses indicates that for routine questions, nurses rely on single source of information be it a colleague or in printed information resources. The model assumed that the roles and related tasks undertaken by professionals in the course of daily practice prompt particular information needs, which in turn give rise to the information-seeking process. The model comprises six (6) constructs: Works roles, associated tasks, characteristics of information needs, factors affecting information seeking, awareness of information and outcomes While, Wilson (1981), model of information-seeking behavior. The model has its origins in 1981 by T.D. Wilson in a presentation at the University of Maryland in 1971 then later first published in 1981. The model has twelve (12) constructs which are involve in information seeking process, they include: information user, information use, information needs, information seeking behaviour, satisfaction or non-satisfaction, information transfer, information exchange, demands on information system, demands on other information sources, other people, success and failure.

In order to carry out this study, quantitative research method is adopted based on cross- sectional survey design whereby specific and narrowed questions were asked in order to answer the specific research questions raised by the researcher. According to Creswell (2009) quantitative research emphasizes on quantification in the collection and analysis of data and expresses a view of social and unbiased reality. However, quantitative study usually allows researchers to

originate a problem from a significant body of literature that is available in terms of variables and existing theories that may need to be tested. The study used descriptive and inferential statistics to analyse the data collected.

1.1.1 Healthcare Status in Nigeria

Nigeria's Healthcare System is the product of colonial administration which was introduced and developed by the British government. The system was initially meant to serve the military forces used in the conquest of the area. Gradually, the system was extended to the local populations. However, missionaries and private agencies also contributed to the development of the Nigerian Healthcare System by establishing hospitals, dispensaries, maternity centres and clinics in various parts of the country. Thus, the establishment of hospitals was the main effort made to improve the healthcare delivery in Nigeria. For many decades, colonial administration provided healthcare services through ad-hoc fashion, with inadequate commitment to rapidly extend it to the majority of the populace, this was not realized until 1946 when effort was made by the colonial government to coordinate and plan for the development of the health care system which served as the foundation of health planning in Nigeria.

In 1960, new Nigerian leaders were confronted with enormous challenges in the healthcare delivery, the need to restructure the system and embark on the massive manpower training and provision of equipments and drugs to make it effective and efficient. Unfortunately, not much was achieved. National Health Policy and Strategy was introduced in 1988, this was a milestone in the development of healthcare sector in Nigeria in order to take care of all activities related to healthcare provision such as: medical care, prevention, promotion etc. The main focus of the Policy was on the national health system and its management, national health care resources,

national health interventions and services delivery, national health information systems, partnership for health development and health research and health care law.

In this regard, Waziri (2015), states that, the poor state of the healthcare delivery system in Nigeria affects all other sectors of the country, because a healthy nation is likely to be more productive than unhealthy ones. It was also estimated that private health system provided over 60% of healthcare of the population in Nigeria. From the above discussion, it can be concluded that efforts made to improve the healthcare delivery in Nigeria was not only from government participation, but private health system also did a lot by establishing privately owned hospitals in order to decongest the number of patients depending on government hospitals for healthcare services. It can be observed that, private hospitals outnumbered the government hospitals in Nigeria, especially in urban areas.

In another effort, Abacha regime established Petroleum Trust Fund (PTF) which did a lot in alleviating problems of lack of drugs and equipments which became embarrassingly endemic in Nigerian hospitals. But the problems were so much that (PTF) could not make drastic change in the system. Though, the products of (PTF) are still seen in many hospitals in almost all parts of the country. Recently, after the 2003 election, another effort was made under National Economic Empowerment and Development Strategy (NEEDS), to improve the health status of Nigerians.

From the above discussion, it can be concluded that Nigerian healthcare system is in poor condition because many Nigerians do not have access to healthcare services. Therefore, government and other stockholders need to do more in order to provide effective healthcare services to the people. In view of this, Ife (2013) stated that the healthcare status of Nigeria is in a deplorable state and Nigeria's overall health system performance was ranked 187th position

among the 191 Member States of the World Health Organization in 2000. From this statement, it can be summarized that Nigerian health system is just better than four countries of the World Health Organization report.

With reference to Jigawa State, the situation is still the same whereby majority of the people in the state do not have access to healthcare services. According to Jigawa State Strategic Health Development Plan (2015), the healthcare delivery system in the state is characterized by a weak infrastructure, inadequate distribution of available resources and poorly regulated service providers. This situation is caused by poor healthcare delivery, lack of reliable information for planning and critical management decision and weak data management system system. Similarly, Abdulkadir (2017) reports that Jigawa State is one of the States with poor health indices in Nigeria. The benchmarking exercise carried out in 2000 placed Jigawa State among those having lowest health indicators. It is against this background that this study aims to investigate the information needs and information use patterns of nurses in general hospitals in Jigawa State, Nigeria.

1.2 Statement of the Problem

Attainment of effective healthcare delivery through the use of information resources available has always been the priority of every health sector. Every health professional tries to use relevant information resources to satisfy his/her information needs. The role of information sources such medical libraries, internet, social media etc cannot be overemphasized. Nurses play vital role in the healthcare delivery, they usually constitute the highest number of health personnel in every hospital. Thus, nurses are actively involved in promoting healthcare services to the community

they serve. But, many nurses find it difficult to identify which information sources to obtain information for healthcare delivery.

In Nigeria, most of the general hospitals have no medical libraries, no internet connectivity and so on. As a result of this, they end up using information sources which are not current. In view of this, Ibegwan (2013), reveals that nurses in low-income countries such as Nigeria, currently lack access to health information they needed and this problem may lead directly or indirectly to wrong diagnoses, error in treatment and cause unnecessary suffering, disability or even death. There is also problem relating to the difficulty experienced by nurses in Nigerian hospitals to find information that could enhance their work and provide effective healthcare delivery.

It is therefore common in Nigeria hospitals to see nurses waiting for a doctor or a senior nurse on what to do to a patients even at the emergency cases, such delay could make their patients medical condition worse especially when the situation is already critical or even cause death. In view of this, Adamu & Olaide (2013), cited Dee and Stanley (2005), who asserts that most nurses rely only on their colleagues and books for medical information.

It seems therefore, that most medical centres have no libraries or any other information centres, which its responsibility is primarily to identify the information needs of their clients and on the basis of such knowledge make available relevant and functional information resources and services that will assist the medical personnel to discharge their duties effectively. A study such as this therefore is needed or imperative to give the medical personnel a desirable information structure that is crucial to discharge their medical responsibilities.

1.3 Research Questions

The study is designed to find answers to the following questions:

1. What is the information needs of nurses in general hospitals of Jigawa State?
2. What are the information seeking strategies of the nurses in general hospitals under study?
3. What are the information resources used by nurses in general hospitals under study?
4. What is the information use patterns of nurses in general hospitals under study?
5. What are the challenges encountered by nurses in meeting their information needs in general hospitals under study?

1.4 Research Objectives

The objective of the study is to investigate the information needs and information use patterns of nurses for healthcare delivery in general hospitals of Jigawa State-Nigeria, the specific objectives of the study are:

1. To determine the information needs of nurses in general hospitals of Jigawa State;
2. To determine the information seeking strategies of nurses in general hospitals under study;
3. To identify the information resources used by nurses for healthcare delivery in general hospitals under study;
4. To determine the information use patterns of nurses in the general hospital under study;

5. To identify challenges encountered by nurses in meeting the information needs in general hospitals under study.

1.5 Research Hypothesis

Hypotheses are formulated in order to establish the existence of relationship between the major variables in a particular. Hypothesis can be either Null Hypothesis (H₀) or Alternative Hypothesis (H_i). For the purpose of this study, null hypothesis was used at 0.05 level of significance:

H₀¹ - There is no significant relationship between information needs and information seeking strategies of nurses in general hospitals of Jigawa State, Nigeria.

H₀² - There is no significant relationship between information needs and information resources used by the nurses in general hospitals of Jigawa State, Nigeria.

H₀³ - There is no significant relationship between the information needs and information use patterns of nurses in general hospitals of Jigawa State, Nigeria.

H₀⁴ - There is no significant relationship between the information needs and working experience of nurses in general hospitals of Jigawa State, Nigeria.

1.6 Significance of the Study

The study highlighted key points on the information needs and information use patterns of nurses for healthcare delivery. Therefore, the finding of the study is expected to contribute to the existing literature on information needs and information use patterns of health professionals. The findings of the study are also expected to assist health professionals to know the information

resources available in the general hospitals of Jigawa State. However, the findings of the study would be significant to Jigawa State Ministry of Health (SMoH) in knowing the information needs of the nurses in the hospitals for effective healthcare delivery. Furthermore, the study is expected to be a reference material to State Ministry of Health, researchers and students conducting other studies on this area.

1.7 Scope and Limitation of the Study

The study was conducted in Jigawa State, Nigeria and the focus was on the general hospitals in the state. The nine general hospitals were covered for the data collection. Due to the scope of the study, other types of hospitals such as psychiatric hospitals, specialist hospitals, federal medical centre, primary health care centers and private hospitals were not included in the study. The study also covered the clinical nurses working in the general hospitals, other medical personnel such as medical doctors, pharmacists, dentists; midwives, laboratory scientists, physiotherapists etc were not included in the study.

The study has some limitations in data collection procedure, this is because the nine general hospitals are located at different Local Government Areas (LGAs) in the state and some of them are not close to the state capital, as such access to those hospitals will be difficult, these general hospitals are: Birniwa General Hospital, Kazaure General Hospital, Gumel General Hospital and Kafin Hausa General Hospital. With the help of research assistants this difficulty is minimized. Another limitation was in reaching the respondents, due to the nature of the respondents and tight schedule in their respective wards. Most of them were not be able to fill the questionnaires on duty. To overcome this limitation, the researcher used two research assistants one for morning

duty and the other one for evening duty in distributing and collecting the copies of the questionnaire from the respondents for the period of one week.

1.8 Definitions of Key Terms

The following terms and concepts were defined operationally in relation to the study:

Clinical Nurse: is a professional member of healthcare team who assumes advocacy and accountability for a group of patients for a designated time.

General Hospital: non-specialized hospital, treating patients suffering from all kinds of medical condition, is a hospital in which patients with many different types of ailments are given care.

Healthcare Delivery: Is a service provided to patients by health professionals for the purpose of promoting, maintaining or restoring their health conditions.

Information Needs: Individual's desire to locate, obtain and use information for day-to-day activities.

Information Seeking Strategy: is the process or activity of attempting to obtain information in both human and technological contexts.

Information Use pattern: is the way how nurses use information for healthcare delivery.

Information Sources: Are various channels where nurses obtain information in any format such as human sources, printed, and e-sources.

Information Resources: Are various materials used by nurses such as printed resources (medical textbooks, journals, magazines etc) or e-resources (e-books, e-journals, internet social media etc)

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

This chapter deals with the review of related literature on information needs and information use patterns of nurses for healthcare delivery. The chapter however reviewed related literature from various sources such as scholarly journals, e-journals, textbooks, e-books, theses, dissertations, conference proceedings, reports, reference resources, internet, etc under the following sub-headings:

2.1 Information to Nursing Profession

2.2 Information Needs of Nurses for Healthcare Delivery

2.3 Information Seeking Strategies of Nurses

2.4 Information Resources used by Nurses Healthcare Delivery

2.5 Information Use Patterns of Nurses for Healthcare Delivery

2.6 Challenges encountered by Nurses in meeting their Information Needs

2.7 Theoretical and Conceptual Framework

2.8 Summary of the Review and Uniqueness of the Study

2.1 Information to Nursing Profession

Information means different thing to different people depending on the context within which it is used. Many scholars define information differently to suit their specialization. Information can be defined as idea or knowledge communicated or received concerning a particular fact or situation. According to Oxford Dictionary (2011) defines information as knowledge or facts

learned especially about a certain subject or event. The above definition can be seen as the literal meaning of information which can be applied to any specialization.

In the context of information science, Otoide (2015) cited Aina (2004), also defines information as data associated with text, modified by purpose, intent, knowledge of recipients, state of mind and conceptive structure which underlines the surface structure of a text. However, Kumar (2015) is of the opinion that information means communication of knowledge about an event or given condition or the spread of knowledge derived from observation, study or instruction. In addition, information is knowledge, facts, data, news, messages etc. used as synonyms or near synonyms to information. In view of the above, Abdullahi et al (2015), define information as data value in planning, decision making and evaluation of any programme. Therefore, information can be seen as data that have been subjected to some processing functions capable of answering user's query be it recorded, summarized, or simply collected that can help in decision making.

Based on the above discussion, information can be seen as knowledge, fact and data that can help someone in decision making. Thus, information is an important resource for making decision. In view of this, Ngozi & Ezeugwu (2014) cited Edoke (2000), define information as relevant data, idea or fact that can be useful in decision making. Since information can help in decision making, therefore information can be useful to every individuals, because everybody makes decision in order to do things right. Likewise, nurses make decision to provide healthcare services to their patients. Aliyu (2013), cited Aina (2004) opines that information increases the knowledge of the recipient, resolving uncertainty, value in decision making. Therefore, information changes the way people think and make informed decision by increasing the

knowledge of people and help them solve their problems. Information is the accumulation of knowledge in the life of the people in their areas of specialization.

According to American Nursing Association (2010), nursing is the protection, promotion, and optimization of health, prevention of illness and injury, alleviation of suffering through diagnosis and treatment of human response, and advocacy in the care of individuals, families, communities and populations. According to Basavanthappa (2014), “nursing encompasses autonomous and collaborative care of individuals of all ages, families and communities. Nursing includes the promotion of health, prevention of illness and care of disabled and dying people”. Nursing profession therefore, focuses on providing healthcare services that enable individuals to maintain and sustain good health and well-being.

In this regard, nurses play important role in the healthcare services delivery. As such, nurses need adequate and current information in discharging their duties. Similarly, Rutledge (2015) opined that nurses can be categorized into all levels of the nursing profession, such as registered nurses, advanced practice nurses, nurse practitioners, clinical nurses, specialist nurses, clinical nurse educators, pediatric nurses, family nurse practitioners, chief nursing officers, and associate Chief nursing officers. But this study is dealing with clinical nurses, because they are the one that provide direct care to people and usually work in hospitals.

Information is important to nursing profession because it helps nurses to make informed clinical decision for healthcare delivery. In view of this, Egbunu & Bamigbade (2012), states that medical profession is dynamic, and to sustain the interest of the practitioners in this profession, current and relevant information is needed, that is why various information sources should be provided. Ibegwan (2012), states that access to health information should be considered as

equally important as access to drugs and medical equipments. Therefore, health professionals need information to be able to diagnose correctly. Thus, access to information is vital for professional development and keeping up to date. Without access to health information, nurses are likely to make mistakes which could cause serious damage or even death.

Moreover, information has become very crucial for sustainable development of individuals and communities. In contrast, lack of information would make individuals to make wrong decisions in their day-to-day activities. Information can help people to be aware of new epidemic around their society. With regard to the nursing profession, information can help nurses to give the best healthcare service to their patients. Therefore, nurses that lack access to current and relevant information are in danger of providing wrong healthcare services which may cause great damage or even death. In another view, Mansoor & Kamba (2010), affirms that “information is vital for community development; information can eradicate ignorance and help achieve economic, social, political, and cultural objectives towards the development of the entire community”. In view of the above, Kamba (2013), also explains that the use of information is inevitable to almost aspects of human development. The need to become informed and knowledgeable individuals leads to the process of identifying information needs. However, this process alone cannot work without knowing the ways individuals articulate, seek, evaluate, select and finally use the required information, which is commonly known as information-seeking behaviour.

Basically, information brings about knowledge and no community can develop without knowledge, and community can only become knowledgeable when information is easily accessed and fully utilized. So for nurses to develop their professional carrier and provide quality healthcare to their patients; current and relevant information should be easily accessible for them to make informed decision in their daily routines. Thus, information is a vital resource in nursing

profession. In view of this, Adamu & Iyaro (2013), opines that “information is regarded as resource for use and therefore its generation and use for efficiency and effectiveness is a very demanding”. Thus, as society progresses and becomes more complex, information need and use of information becomes diverse, complex and sophisticated where people seek information from different sources and use it various purposes. However, Devi & Dlamini (2014), is in the opinion that, information ranks next to the basic human needs such as air, water, food and shelter.

Today, societal development is determined by how people of that society have access to information they need and use the information for their daily routine. In support of the above statement, Egbunu & Jeminiwa (2012), state that information is an indispensable factor for promoting societal development and also essential part of nation’s resources. Accessibility to current and relevant information is very essential. Information that is timely and accurately available enhances quick decision making by eliminating uncertainties. In another perspective, Baby & Kumaravel (2011), report that information is always used in connecting individuals to others who share an interest, over the past decade. In view of this, information can equally be used in connecting nurses to their patients because nurses and patients share the same interest, whereas nurses provide healthcare services to patients while patient depend on their nurses for their healthcare services.

Based on the above discussion, information can therefore be useful to nursing profession in connecting nurses with the patients in understanding their health problems because nurses communicate and interact with their patients directly for healthcare service delivery. In this study, information can be conceptualized as anything that assists the nurses to develop themselves in understanding their patients, or a knowledge that nurses get about diseases, diagnosis, treatment and interaction with their patients. Similarly, information to nursing

profession is any sources that nurses can find information that will assist them to reduce uncertainty and make right decisions in their daily routines.

In nursing profession, Just (2008), defines information is data, text, documents, objects, knowledge, and conversations derived informally and formally from human information sources such as patients/families or discussions with colleagues and professionals, conferences as well as printed or electronic information resources such as patient records, research databases, journals, books, standards, guidelines, and manuals. Thus, health information resources are obtained from various channels which include printed and electronic resources; nurses also consult their nursing colleagues when they need information for a particular case.

However, Vati (2013), enumerates how important information is to nursing profession in the following ways:

- Information helps nurses to make right clinical decision-making.
- Information helps nurses in retrieving evidence-based standards, legislative acts, and statistical analysis within the profession at any given time at the micro level.
- Information helps nurses to improve the health of populations, communities, and families in direct provision of health care services.
- Information enables nurses to devote more time for clinical activities or patients' care.
- Information is useful to nurses in decision-making at the operational and strategic planning levels of health care.

Generally, information helps health professionals in healthcare delivery, academic work and Health professionals also use information to generate different types of information that help them to discharge their duties. In line with this, Lansley (2013), observes that information can

fundamentally help the health professionals improve the health conditions, wellbeing, care services and the outcomes of peoples. Thus, if nurses have access to the information they require they can certainly provide effective healthcare delivery to their patients.

In conclusion, information as a term has no specific definition, but it can be defined based on the context it is used. For this purpose of this study, information is defined as data valued in making decision and solving medical issues. Therefore, current and relevant information is required in nursing profession in order to improve healthcare delivery to the society they serve. These healthcare services include treatment, diagnosis, drug therapy etc.

2.2 Information Needs of Nurses for Healthcare Delivery

Nurses are engaged in various nursing activities related to the healthcare delivery, but every activity needs specific information or approach. The information needs of nurses are many based on their duties and practices. Generally, information needs is the desire of an individual or group of individuals to obtain information to satisfy their needs, but the needs depend highly on the activities of such individual or group of individuals. For instance, information needs of lawyers differ from the information needs of nurses. Information needs of lawyers will be on legal issues while information needs of nurses will be on healthcare delivery. As such, each individual has his own information base on his/her demand. People need information for day-to-day activities and making informed decision.

In view of this, Arvind & Maheswarappa (2014), notes that information is needed in every field of human thought and action. People need information to make best decision possible in their day-to-day life, decisions are made daily and information is needed to take the right decisions. Information need is a construct that exists only in the mind of the person. For example, someone

may say he needs a house while another may say he needs a car. Thus, information needs vary from one person to another based on their desire and purpose of using the information. At the same time, the nature of someone's job determines the information needs of that person.

In order to understand the concept *information needs*, there is the need to define the term *Need*. Need comes about when there is a gap, and need can be seen as what an individual ought to have or a circumstance under which something is lacking. Therefore, need can be seen as what someone cannot do without, it can also be seen as psychological condition associated with uncertainty as well as desire to fill a gap. According Egbunu & Jeminiwa (2012), cited Haruna (2001), information need is when the state of processed information is less than what is needed to deal with some issues. Having understanding what the term 'need' is all about, it will be easier now to understand the concept information need.

The concept information need consists of two words, '*Information*' and '*Need*', the concept was first coined by Robert S. Taylor in 1968 and later became a popular concept in Library and Information Sciences. Information need remains a difficult concept to define or measure, because it involves cognitive process which may operates on different levels of consciousness. But these difficulties did not stop researchers to make attempt in defining it. In view of this, Egbunu & Jeminiwa (2012), cited Aikin (2003), who defines information needs in term of cognitive state arising between the state of uncertainty and the information seeker's knowledge state of desire. Bitso & Fourie (2012), state that information needs may be understood in the context of Belkin's *anomalous state of knowledge*, as that knowledge gap or uncertainty existing within the individual that triggers information-seeking, either immediately or at a later stage in an attempt to address the uncertainty.

To them, information need is the recognition of the existence of uncertainty in the personal or work-related life of the individual. Similarly, Ricks & Ten (2015), opines that information needs arise when persons recognize a gap in their state of knowledge and wish to resolve that anomaly. They further defined information needs as deficiency in a person's knowledge or a gap in life's experience and a state of uncertainty which is recognized by individual that motivate them to seek answers and form questions to find solution for a particular problem.

However, Otoide (2015), claims that, the concept of information needs according to Robert S. Taylor has four (4) major levels:

- a) The conscious and unconscious need for information.
- a) The conscious mental description of defined area of decision.
- b) The inquirer forms a rational statement of his question.
- c) The question been presented to the information system.

According, Khan & Shafique (2010), the objectives of studying information needs include:

- a) The examination of wants.
- b) Explanation of observed phenomena of information use or expressed needs.
- c) Prediction of instance of information use.
- d) Control and improvement of the utilization of information for solving problems and making decisions.

Based on the review, information needs can be seen as individual desire to obtain information for a particular purpose whether conscious or unconscious in order to satisfy his/her knowledge gap. Information needs is also the desire of individuals to utilize information solving their daily problems and making decision. It involves all sorts of information seeking both purposive

information behavior and non-purposive information behavior. Many researchers find it difficult to have a widely accepted definition of information needs. Information need is considered as an individual or group's desire to locate and obtain information to satisfy a conscious or unconscious need, for solving problems, decision making, and deficiency in person's knowledge or state of uncertainty.

According to Ngozi, Uche & Ejiro (2015), information need is a gap in a person's knowledge. When a person identifies such a gap, it may be expressed as a question or a search query. Thus, information needs lead to search and demand for information to meet the information gap. It is obvious that information needs is a quite complicated concept to define because it is in the mind people and it is naturally difficult to read people's mind, therefore information needs is difficult to identify until it is expressed. It has ambiguous meanings, defining a real meaning is controversial. Some have different ideas and a variety of perspective.

The above assertion is corroborated with Farzana & Khalid (2013), observing that information need is not constant and can be influenced by number of variables such as age, experience, education and geographic location, etc. The context within which the information need arises, the frequency, importance and the complexity of the tasks are also other factors. All of these factors can influence the information needs of a particular group of people. Thus, information needs of a person can be influenced by his demographic background, the information needs of elderly people are different from that of young people, so also their information needs may be varied based on their educational qualifications or their environments such as working places.

The concept of information need has been defined differently by different scholars. According to Emmanuel & Jegede (2011), information need could be referred to as the extent to which

information is required to solve problems, as well as the degree of expressed satisfaction or dissatisfaction with the information. They also observed that information need is influenced by variety of factors such as the range of information sources available, information use, background, motivation, professional orientation and individual characteristics.

In the context of this study, information needs could be depicted from the nursing point of view, as such various factors are likely to shape the information seeking behaviour of an individual or a group of individuals, nurses inclusive. It is therefore, desirable to understand the purpose for which information is required, the environment in which the user operates, skills required for identifying the needed information, and types of information resources and to be used. Since nurses work within the healthcare sector and their main role is to provide healthcare service to the people and improve their health conditions. Therefore, information need of nurses can reflect on the information about drug therapy, drug prescription, diseases control etc.

According Milton (2016), information need of health professionals is the requirement that may drive them into an information seeking process to meet their information gaps. Knowledge about the information need, information behaviour and information seeking patterns of health professionals is crucial to effectively satisfy the felt information needs and improve the delivery of health care services in a country. Information needs in high income countries revealed that doctors mainly need information in the following areas: clinical care. Information on diagnosis and treatment were also major information needs for primary care health professionals in Spain.

In view of the above, Momoh, Oni & Oshionebo (2015) in their study conducted on the information seeking behaviour of nurses in central hospitals in Delta State, Nigeria, reported that the areas nurses need information, about 68% of the nurses need information for diagnosis, 66%

need information in the area of drug therapy and 62% need information in the area of health development and current medical treatment techniques. Similarly, Prakasan (2013), also reports that nurses most frequent information need is related to drug therapy, diagnosis, and other therapy. They usually consult journal articles as their main information resources in order to meet their information needs. It can be said that, the information needs of nurses is for diagnosis, drug therapy and health development and current medical treatment.

According to Anyanwu et al (2016), information need of nurses and other health workers are the needs that enable them to perform their job effectively. Health information need is the desire of health professionals especially nurses to locate and get information to satisfy their needs. Nurses need information to help them take adequate care of patients. However, their study indicate that about 42% of nurses require information on care and management of patients, 43% need information to improve knowledge in clinical areas, 37% need information to support lifelong learning, 16.4% need information on occupational hazard 38.6% need information on new drugs, 21.4% require information on nursing process and procedures, 20.7% need information on Anatomy and Physiology, while only 0.7% need information on Palliative Care.

The above study also reveals that majority 95.2% of nurses need information to keep up to date followed by 90.5% who needed information for managing patients, also 75.4% of the nurses needed information for supporting diagnosis medical doctors, 78.6% needed information for solving clinical problems and 85.7% needed information for managing patients, supporting diagnosis, acquiring new drugs, and undertaking research respectively. The study also found that about 31.6% of medical doctors from both government establishments and private hospitals needed specific medical information, 24% needed general medical information, 20% needed reference information, and 13% needed information for research and preparing publications. In

another view, Egbunu & Jeminiwa (2012) cited in Vickery (1970), opines that the information needs of nurses reflect on the need for awareness about the ongoing in the field of medicine, and the need to keep abreast with the current progress in the nursing profession. Therefore, information need of nurses is generally on information about their patients, diagnosis and treatment.

In context of this study, information needs of nurses can mean any information resources, sources which nurses can use to acquire information to satisfy their information needs. Similarly, Just (2008), reports that about 59% of nurses need information on nursing care and information in providing basic nursing care for daily body function such as bathing, general hygiene care, about 83% indicated that they need information in providing basic nursing care for psychosocial or spiritual care. However, Ricks & Ten (2015), cited in Breimaier et al (2011), report that nurses need information to demonstrate evidence to underpin practice and show that their practice is effective, efficient and worthwhile.

However, Ibegwan (2013), cited in Thomas et al (2004), that information need of health professionals has three (3) components:

1. Information that is needed for decision making and that is already known by the nurses. This refers to the currently satisfied needs.
2. Information that is not known by the nurses but they recognize as being applicable to the decision-making process. This refers to consciously recognized needs.
3. Information that is important to the circumstance at hand but that the nurses do not realize is applicable, this refers to unrecognized needs.

Thus, nurses also need information for decision making; therefore they need current and relevant information to make informed decision because any mistake in nursing profession may lead to serious damage or even death. As such, nurses need current and relevant information resources to be up informed and satisfy their information needs as well. Furthermore, Ibegwam (2013) cited in William et al (1992), categorized information needs of nurses by the reason that they began their search for information to, they are as follow:

- Assist in solving a new or unfamiliar health care problem.
- Update basic knowledge on topic through review.
- Obtain information from another specialty when dealing with patients with multiple problems.
- Highlight particular patient care concerns to other members of the health care team.
- Find out about a rare or unusual patient care problem.

In another study conducted by Clarke et al (2013) cited Nwagwu (2009), found that most frequent information needs among doctors and nurses in Nigeria were associated with diagnoses, drugs and treatment/therapy. Most of the Nurses often sought for information on policies and procedures while doctors often sought information for diagnostic reasons. However, Milton (2016), summarizes the results on types of information sought by health professionals and the responses indicated that the main types of health information sought by health professionals were updates on new health issues, disease prevention and control and routine patient care.

Similarly, Andualem et al (2013), found that about 97% of health professionals need information to update knowledge in order to support their daily activities, 98.8% of the health professionals preferred formal health information resources than informal health information resources while

56% of the health professionals need self-initiated information and question from patients, only 42% of the health professionals had access to internet/searching on Google engine at different places. Their study further concluded that almost all the health professionals have information needs.

In this regard, Just (2008), defines information need in context of nursing as any desire to have data, information, and knowledge to answer questions, solve problems, make sense of nursing care and practice situations, or make decisions about their nursing care and practice. Therefore, information need(s) of nurses denotes a state of requiring information or knowledge as a result of having information or knowledge gap for patient care/practice and professional development. In view of this, Thomas (2012), found that nurses sought information for decision making about individual patients' care, while 49% sought for medications and conditions of patients, 21% of the nurses frequently required information related to drug therapy and diagnosis and the sources they use most frequently are their professional colleagues, drug reference manuals and protocol manuals.

In the context of nursing profession, Just (2008), defines information as data, text, documents, objects, knowledge, and conversations derived informally and formally from human information sources such as patients/families, discussions with colleagues, and professional conferences as well as from printed/electronic information sources such as patient charts/records, research databases, journals, books, standards, guidelines, and manuals. For the purposes of fulfilling information needs of individual nurses in their nursing care and practice or for their personal purposes. In summary, the needs for information by nurses are related to nursing care activities and nurses' role-related functions, times related to patient care, the settings under which patient care is taking place and complexity of patient problems or patient care, patient expectation, a

magnitude of information need, and purposes of information needs and uses. In general, nurses reported the need for information for professional development more than for patient care. In the real time practice, nurses need information for patient care more than for professional development. However, no study has been conducted to assess what information nurses need and use for their specific nursing care activities.

In conclusion, information need is generally seen as the desire of an individual to obtain information to satisfy an uncertainty or information gap. It can also be concluded that the main types of information needed by nurses are information on diagnosis, treatment, patient care/practice, drug therapy, professional development and for decision making. There are other aspects of nursing profession which nurses may require information. Therefore, this study aims to identify those areas. It is against this background that this study aims to identify the information needs of nurses in general hospitals of Jigawa State-Nigeria.

2.2.1 Factors Influencing the Information Needs of Nurses

Different user groups have different information needs. For instance, information needs of legal practitioners differ from that of health professionals. Nurses need variety of information to provide healthcare services to their patients. As such, different information resources are to be consulted to satisfy their information needs. The type of information which nurses require is determined by several factors such as topic or issue in the clinical problems, area of specialization, experience/knowledge of the nurses, their awareness of information resources available etc.

In view of the above, Ngozi & Ezeugwu (2014), speaking on the factors influencing meeting information needs stated that information materials are not always available to rural communities

because of the cost of access to it. They further point out that where some information materials that are available may be unaffordable because of high cost of purchasing them. These include newspaper, magazines, and even some books. Most of medical personnel use library materials or services only when they are available. But most library materials and services are close to their wards/units. Thus, availability information resources is among the factor influencing the information needs of nurses for healthcare delivery.

There are many factors influencing the information needs of nurses for healthcare delivery. According to Ngozi & Ezeugwu (2014), the factors influencing the information needs include incapacitated users in utilizing information, availability and timeliness of information, relevance and repackaging, inadequate training to recognize information as a vital component, lack of awareness, poor funding of information materials and services. Based on the above discussion, funding can be seeing as one of the factors that influence the information needs of nurses because most of the medical libraries in Nigeria cannot afford to buy current health information resources and provide relevant information services to the nurses.

Similarly, Ibegwan (2013), states that information needs of health professionals are determined by several factors including: the topic or issue in question, his/her awareness of information sources, the area of specialization of the nurses, the associated costs of acquiring information, the purpose for which the information will be used, time available to conduct search, access to databases and the knowledge required to conduct the search. Thus, access to databases is one of the factors influencing the information needs of nurses. Ruan (2011) is more specific on these factors which she enumerates them as: technical quality, degree of experience, the cost associated with using the resource, accessibility and use of the information resources. But

accessibility to information resources remains one the most common factors that influence the information needs of nurses for healthcare delivery.

In a broader term, Just (2008), maintains that the information needs of nurses is influenced by nursing care activities, nurses-related tasks, times related to patient care, the settings under which patient care is taking place, patient expectation, a magnitude of information need, and purposes of information needs. These factors influenced the information needs of nurses for healthcare delivery, which in turn affect their information use. These factors are discussed below:

I. Time spent for Patients' care by Nurses

Nurses require enough time with their patients in order to understand their patients. Therefore, nurses need more time to be with patients. Nurses spend considerable time in providing healthcare and medical treatment to their patients, due to this they need more time to support their healthcare practice as well as provide accurate diagnosis and treatment. In view of this, Just (2008), states that, time related to patient care specifies the information needs and use of nurses, problem in patient care requires specific information to deal with. It may arise either during nursing care delivery (patient encounter) or after giving patient care. In this regard, nurses need more information to solve the specific problems of their patients during the nursing care delivery as they interact with the patient face-to-face. The more time nurses spend with their patients the more they understand their problems and the more they need information to solve the problem. According to Wright & McSherry (2013), observes that the time nurses spent on patients care determine how much they seek and use information, they added that around 70% of nurses spent their time with patients in order to improve patient outcomes, reduce errors in prescription and treatment, and increase patients satisfaction. The amounts of time nurse spend with their patients

determine how often they seek for information. For instance, the more they stay with their patients the more they understand their medical condition, and the more they understand their medical condition the more healthcare service they provide to them. This will ultimately make them to require for information in order to provide effective healthcare delivery to their patients.

II. Work/Place Settings

The working environment under which nursing practice is taking place influence the information needs of nurses. Nurses work in health industries such as hospitals, outpatient units, clinics, nursing homes, schools, community health centers, patients' homes, etc. Patients require different nursing care based on their medical conditions which will result to different treatment, this affect the information needs and use of nurses. The information needs of nurses depend on the complexity of the patient health conditions and the nature of the environment they work. It is based on this premise that Ibegwam (2013), states that work environment or practical setting affects the information seeking of health professionals. Health professionals working in smaller work environment such as clinics and private practice tend to rely more heavily on informal sources, such as colleagues, and limited to formal sources, including textbooks and handbooks, while nurses working in academic settings or in large clinics and hospitals prefer to use textbooks and colleagues more frequently. The type of work setting under which a hospital is located determines how the nurses seek for information. Hospitals that are located in urban areas have more patients and nurses than those in rural setting. In large hospitals nurses usually work in team under a supervision of a senior nurse, that interaction with colleagues push them to seek for information especially from senior colleagues.

III. Patients' Expectation from Nurses

Patients' expectation from their nurses is too high; most of the patients feel more comfortable explaining their problems to nurses than medical doctors. Nurses stay with patients all time in a particular ward. Thus, patients interact with nurses more than with doctors, as such the patients expect more from their nurses. This expectation always pushes the nurses to seek and use information, and nurses usually seek for information when they feel their patient expect more from them. In view of this, Just (2008), found that during the week after clinical patient care, nurse seek for information because they perceived that their patients expect them to provide solutions to their health problems. Some patients have emergency cases that need urgent attention by nurses, as such the patients' expectation is much, so nurses who are in emergency ward need more information than those in another wards. Patients' expectation is determined by their satisfaction from the healthcare services they received from the nurses, the more the patients are satisfied with the services received from the nurses the less they expect from them and vice versa. Some patients are curious, and curiosity pushes the nurses to seek for more information.

IV. Magnitude of the Information Needs

Basically, nursing profession is dynamic as such nurses need information to solve different medical issues. The extent to which nurses require information stimulates their information needs and use. Therefore, as their information needs increases their demand for information also increased. In view of the above, Just (2008) cited Cogdill (2003), believes that the more nurses need information the more they seek for information and the more they use information for healthcare delivery. Nurses need information based on their nature and schedule of their work. In

another study conducted by Nwagwu & Oshiname (2009), shows that about (94%) of nurses use information in order to improve their knowledge. Thus, nurses use information when they perceive there is a gap in their information needs. Nurses with more patients may tend to need more information. And the nature of wards where nurses work also determine how they seek for information. For instance, nurses working in an emergency ward are busier than other nurses; therefore, their magnitude of information need is higher.

V. Purposes of Information Needs

Nurses need information for many reasons such as patient care/practice, professional development, decision making in clinical aspect and solving problems. For instance, in the patients' care, nurses need several kinds of information either direct from the patients and patients' files or from colleagues. While, for professional development, nurses need information in order to develop themselves professionally by consulting information resources such as textbooks, medical journals or attending seminars, workshops conferences etc. According to Just (2008), nurses need information for clinical decision making. For this reason, relevant and current information resources should be provided to nurses to satisfy their information needs. Another purpose why nurses seek for information is for solving problems. Nursing profession is highly complex. Therefore, information is therefore needed to solve the expected clinical questions raised by patients at a given time because nurses have known that their decisions have important implications for patient outcomes.

VI. Lack of Information/Knowledge

Access to health information is another factor that influences the information needs of nurses for healthcare delivery. Nurses should have access to the information they need in order to discharge their duties effectively. According to Prakasan (2013) cited in Fakhoury & Wright (2000), who reveals that community psychiatric nurses, who did not have training skills on successful management of severe mental illness, perceive there is lack information/knowledge in that aspect. While some nurses do not use information because they have lack of knowledge on how to use or evaluate the information resources available to them. Generally, information is sought when there is a gap identified by the users. Nurses that feel that they are lacking information with regard to their profession seek information more than those that feel they have adequate information.

VII. Lack of Computer Skills

Information and Communication Technology (ICT) and computer skill is another factor that affects the information needs of nurses. Nurses with high level of ICT skill tend to seek for information more than those that do not have. Computer skills help in searching for online information, because there millions of information on the internet can only be accessed with the help of computer skills. Nurses who are computer literate search for information more. In addition, Just (2008) cited in Pravikoff (2005), says that most American nurses did not use electronic database information because they lack information search skills, which is the ability to search, locate and retrieve the needed information on the internet. Compared to physicians, nurses do not use electronic information frequently. However, Onyla & Oni (2015), cited in Eda (2015) opine that computer and information training programme would enable nurses develop

internet search skills which will help them access information. According to Adams (2015), about (45%) of nurses do not have adequate training in computer skills, which may hinder the adoption of health-related IT in their workplaces. Therefore, lack of training and computer skills may lead to cognitive barriers on how they seek for information”. Health information technology has the capability to decrease errors, waste time in providing healthcare services to patients. But many nurses are not digitally oriented and did not grow up using internet.

VIII. Years of Experience of Nurses

In the information need and use studies among nurses, researchers found out that, the years of experience nurses have in their profession determines how they seek for information. Just (2008) cited in Benner (1984), who says that advanced beginners and expert nurses use information and knowledge differently. Advanced beginner nurses use theoretical information/knowledge, which comes from theories, rules, guidelines, and principles found in textbooks, while expert nurses who have been in clinical practice for at least five to six years, use practical information/knowledge which comes from their experiences. According to Jones & Bartlett (2015), clinical experiences or practicum is part of every nursing programme. This experience occurs when nurses provide healthcare to patients. This care may be provided to individual patients or to their families by providing care to a patient after surgery and teaching the family how to provide care after discharge. Quality healthcare depends on the level of experience and competency of the nurses. Experienced nurses are likely to provide more quality healthcare than the newly recruited nurses because they use more information.

IV. Accessibility to Information Resources

Access to health information helps health professionals to use various information resources for healthcare delivery. Similarly, access to information sources determines the usage of the information sources. In view of this, Ibegwan (2013), observes that the use of textbooks and journals is easy and convenient for most nurses in Nigeria. According to Thompson (2011), nurses prefer to use information that is accessible, convenient, and easy to use. Thus, convenience in terms of access to use information resources has a significant influence on how nurses seek for information. Professional colleagues, superiors and other health care providers, especially physicians, are favourite resources for health information sources because they are easily accessible. Lack of access to health information discourages how nurses seek and use information, while availability and accessibility of information resources encourage nurses to seek and use information more frequently.

X. Cost of Information Resources

The cost information resources determines the usage of those resources, information resources that are less expensive attract more users. Moreover, Ibegwan (2013), states that cost is another factor that affects information needs of nurses, the financial cost of online searching may be a factor in determining what sources of information are to be consulted. Since online charges generally are determined both by the information retrieved online (the per-minute connect time) and by the amount of information retrieved online. Nurses prefer to use CD-ROM resources, which allow for unlimited searching for fixed costs. Literature shows that, nurses consult their colleagues and other printed materials more than any other information sources because they are more accessible to them.

In conclusion, there are many factors influencing the information need of nurses for healthcare delivery. Those factors can be positive or negative. The positive factors are those that motivate the users to need the information while the negative factors are those that discourage the users from feeling the desire for information. Based on the discussion, the following are some of the factors influencing the information needs of nurses for healthcare delivery: cost of information resources, search skills, information overloads, availability of medical libraries, availability of internet connectivity in the hospitals, expectations from the patients, the types of ward the nurses work etc. Therefore, this study aims to find out factors influencing the information needs of nurses for healthcare delivery in general hospitals of Jigawa State-Nigeria.

2.3 Information Seeking Strategies of Nurses Healthcare Delivery

With respect to the information seeking strategies, some studies have been conducted to investigate the information seeking strategies of different user groups such students, academics, engineers, health professionals etc. This section review literature on information seeking strategies of nurses for healthcare delivery. Just (2008), opines that in electronic search strategies, the information seeker may apply terms and keywords such as medical subject headings, combine searches by Boolean operators (AND, NOT, and OR), and refine a search by broadening, limiting, and truncating.

There is the need to understand the word strategy for easy understanding the concept ‘‘information seeking strategies’’. According to Oxford Advanced Learner’s Dictionary (2002), strategy as a plan that is intended to achieve a particular purpose or as a high level plan to achieve one or more goals under conditions of uncertainty. While information seeking strategy

can be seen as an approach in using the information sources to obtain the needed information for a particular purpose.

However, Omekwu, & Agbo (2014), define seeking strategy as plan or situational interactions between users and information resource. Seeking strategy is the ‘action plan’ for retrieving information. It consists of series of sequential tactics that take into account both planned and situational elements. Information seeking strategy can be defined as the organization of search keywords and symbols in order to conduct effective search for information. Basically, information seeking strategy is an interactive process that gets easier the more familiar you are with information seeking and your topic of interest.

There are many factors which decide the information seeking strategies of individuals, these factors include time spent in search of information, knowledge about information sources, the way of expressing his/her information needs etc. Nobert & Iwoga (2013), explore the information seeking behavior of physicians at Muhimbili National Hospital (MNH) in Tanzania. Their study found that physicians preferred to seek information from formal sources such as printed sources (textbooks/journals) and electronic resources (e-books/e-journals, electronic databases etc.) in order to satisfy their information needs.

In context of this study, Milton (2016), expresses that the information seeking strategies of health professionals are variety of methods used by health professionals in using information resources to satisfy their information need. Different health professionals may use different information resources to access different health information in order to meet their different information needs. The study also revealed that about 33% of health professionals sought health information to upgrade skills and knowledge questions from clients, 19% of them sought information for

emergence of new methods and technologies, while 14% of the health professionals sought health information on daily basis. Information seeking strategies of nurses can be conceptualized in this study as the methods or techniques adopted by nurses as well as the types of information resources used while seeking for health Information in order to satisfy their information need for providing healthcare delivery.

Seeking strategies yield sensitivity of the needed information. In a study conducted in 181 Registered Nurses (RNs) and 80 Advanced Nurse Practitioners (APRNs), with more than (30 %) of response rate. The study found that more than 80% of RNs and more than 50% of APRNs consulted a librarian less than four times. More than 60% and 50% of RNs did not use CINAHL and MEDLINE, respectively. Approximately, 46% and 24% of APRNs did not use CINAHL and MEDLINE, respectively. Just about 11% of RNs and 31% of APRNs indicated their MEDLINE search as “successful”.

Milton (2016) cited Spink & Cole (2005), who defines information seeking as, “a sub-set of information behaviour that includes the purposive seeking of information in relation to a goal”. Information is not sought in a vacuum. This is why Wilson (1999), notes that purposive seeking for information is a consequence of a need to satisfy some goal. There is always a motivating factor behind all information seeking. The seeker exists in an environment that partially determines, constrains, and supports the types of needs and inquiries that arise. The seeker also has his/her own memories, pre-dispositions and motivations. Information seeking is process necessitated by a problem and a need to solve it. Sometimes individual seek information out of desire to have more information.

Information seeking strategy makes users to plan on how to seek for information satisfy their information needs. The plan begins when users perceive there is information/knowledge gap. This plan involves identifying the sources where to obtain information. This plan can be referred to as information seeking strategies.

Information seeking strategy is similar to information seeking behaviour in some aspects. Information Seeking Strategy is the plan adopted by individuals when seeking for information while information seeking behaviour is the manner of individuals exhibited when using information. Information Seeking Strategy encompasses information-seeking as well as the totality of other unintentional or passive behaviour as well as purposive behaviours that involves seeking, information seeking involves two processes: firstly, information seeking occurs when a person has knowledge stored in long term memory that precipitates an interest in related information as well as the motivation to acquire it. Secondly, it can take place when a person recognizes a gap in their knowledge that may motivate that person to acquire new information. While, Information seeking behaviour is the way and manner in which individual search for information to satisfy their information needs. For the purpose of searching information various techniques are applied to search for information. Therefore, information seeking has to do with information sources and resources used by individuals. It is against this background that the study aims to investigate the information seeking strategies of nurses for healthcare delivery.

2.3.1 Information Seeking Behavior

According to Aforo & Lamptey (2012), information seeking behaviour deals with behaviour and action exhibited by human beings in their search for information to satisfy their information need. Abubakar & Harande (2010), define information seeking behaviour as the purposive seeking for information by individuals as a consequence of a need to satisfy goals or purposive acquisition of information from selected channels for communicating information. It is the human behaviour with the respect to searching various sources, and use. Kumar (2013), expresses that Information seeking behaviour involves personal reasons for seeking information, the kind of information which are being sought, and the ways and sources which needed information is being sought. However, Kamba (2013), states that Information seeking behaviour is a broader term encompassing ways which individuals articulate their information needs, seek, evaluate, select, and use information, in other word, Information seeking behaviour is purposive in nature and is a consequence of a need to satisfy some goal. In the course of seeking, individual may interact with people, annual information system, or with computer-oriented information system.

The concept information-seeking behaviour has been used many scholars to investigate how different user groups search for information. Some scholars differentiate information behaviour from information-seeking behaviour. But, Al-Dousari (2009) defines the concept of information-seeking behaviour as a term by which individuals pursue to resolve an information need. In this regard, Wilson (2000), makes a distinction between the terms information behaviour and information-seeking behaviour. He defines information behaviour as "the totality of human behaviour in relation to sources and channels of information, including both active and passive information seeking, and information use while information behaviour includes face-to-face

interactions, as well as the passive receiving of information from, for example, watching television advertising, without having any intention of acting on the information provided".

Information seeking behaviour as "purposive seeking for information as a consequence of a need to satisfy some goals. Individuals interact with two paths when seeking for information: manual information systems e.g. newspaper or a library and computer-based systems such as www. For the purpose of this study, information seeking behaviour can be defined as the seeking strategies of nurses in response to reducing uncertainty in clinical decision-making'.

Igwe (2012), describes information seeking behaviour as an individual way and manner of gathering and sourcing for information for personal use, knowledge updating and development. In other words, information seeking begins when someone perceives that the current state of possessed knowledge is less than what is needed to deal with some issues or problems. Information seeking behaviour relates with determining information needs, information searching behavior and use of information. In the context this study, the term information seeking behaviour can be seen as the behavior of nurses during the processes of seeking health information to improve their knowledge and skills for healthcare delivery.

Razak et al (2010), opines that information seeking behaviour is a complex activity requiring access to diverse information resources to deal with work related, personal and social information problems. Information seeking behaviour refers to plan use in locating information. Information seeking behaviour deals with the psychological state of users which may lead to the understanding of their information need. According to Kolawole & Igwe (2010), information seeking behaviour is the way information users conduct themselves or act when looking for, receiving or acquiring information. The utterance, gesture, anger, anxiety, eagerness, reluctance,

zeal or any other attribute displayed by information user in his efforts to purchase, acquire or receive information, data, stories or anything that may inform or misinform his knowledge or understanding of something constitute seeking behavior. Users have many plans for seeking their desired information; these plans are referred to as information seeking strategies.

In view of this, Arvind & Maheswarappa (2014), explains that health information seeking behaviour (HISB) is broadly viewed as the way by which information sources such as TV/Radio, newspaper, magazines, internet, family/friends and colleagues are sought and used by health professionals. Health information seeking behaviour (HISB) is broadly viewed as the ways and manners displayed by health workers to obtain information about health, illness, health promotion, risks to health etc.

Health professionals are expected to use all kind of information resources to provide effective healthcare delivery. Information seeking strategies of nurses can be seen as the plans by which nurses obtain from various information sources. It can therefore be defined as plans, process and activity through which health workers such as nurses think of where to obtain information by thinking of the best resources to be used.

Generally, information seeking strategy and information seeking behaviour are two concepts used to explain how individuals think of what to do, where to go to obtain information in order to discharge their duties effectively. Several strategies are used by different individuals to seek for different information for different purposes. How nurses seek information means their information seeking strategies.

In a study conducted by Milton (2016), reveals that in primary care of Kenya medical practitioners seek information from colleagues, print resources and online resources to care for

their patients. The study also reveals that more than half 58% seek information several times per week, 22% rarely 18% daily and 2% never. This result shows that the information seeking behaviour of physicians is very specific but varies from physician to another.

In view of this, Zarea et al (2013), shows that majority 71% use often and sometimes while another 64% of them search health information using search engines and directories such as google and yahoo while 16.5% use health specific and authorized websites and databases. The social networks, blogs, and discussion groups, as applications of web2.0, were used by the lowest number. However, Olajide & Otunla (2015), cited Pravikoff, Tanner & Pierce (2005), report that, nurses often ask their colleagues or search Internet because they do not have confidence and skills to search some databases such as PubMed or CINAHL and do not know how to access full-text sources. According to Majid et al (2012), boolean operators such as ‘AND’ is used frequently and ‘NOT’ is used least frequently by the nurses under the study. This means that nurses do not frequently use ‘NOT’ operators in their search strategies.

Therefore, it can be concluded that health professionals use different approach to seek for information for different reasons, but with regard to the nurses in Nigerian hospitals, google and yahoo use most for searching online information resources for clinical purposes. It is against this background that this study aims to explore the information seeking strategies of nurses in general hospital of Jigawa state, Nigeria.

2.4 Information Resources use by Nurses for Healthcare Delivery

To obtain timely, relevant and current information, various sources need to be consulted. Information source is where information in any format can be obtained, which include human sources, printed or non-printed sources. Information sources are the various means or channels

by which information is recorded, obtain and use by an individual or an organization, these sources can be observations, people, speeches, documents, pictures, organizations, electronic etc. Nurses as professionals need a wide variety information sources in order to acquire relevant and current information clinical or professional needs. Unfortunately, time constraints, cost of information resources, accessibility etc are among the factors that determine the information resources used by nurses for healthcare delivery.

In view of this, Ajuwan (2016), defines information sources as various means by which information is recorded for use by an individual or organization. Thus, means by which a person is informed about something or knowledge is provided or share with someone, a group of people or an organization, it could be in print or non-print formats. Information sources can be classified into:

1. Primary Sources: Are usually evidence or accounts of the events, practices, or conditions being researched they present information in its original form, not interpreted or condensed or evaluated by other writers. They are created by a person (s) who directly experienced that event. Examples include among others diaries, interviews, minutes of meetings, photographs, videos, artworks, artifacts. However, what constitute a primary source of information depends on the discipline or context (Ajuwan, 2016).

2. Secondary Sources: Secondary sources of information are created by someone who did not have a first-hand experience or participate in the events being researched. Are generally accounts written after the fact with the benefit of secondary sources describe, analyze, interpret, evaluate, comment on and discuss the evidence provided by primary sources. They are not evidence, but rather commentary on and discussion of evidence. A secondary data is one that has been

collected by individuals or agencies for purposes other than those of a particular research study. Examples are: textbooks, bibliographies, biographical works, commentaries, criticisms, dictionaries, encyclopedias. What constitutes secondary source of information depends on discipline or how the information is used (Ajuwan, 2016).

3. Tertiary Sources: These are works which list primary and secondary sources in a specific subject area. Materials that index, organize and compile citations to, and show how secondary (and sometimes primary) sources could be used. These are materials in which information from secondary sources has been digested, reformatted and condensed, and put into a convenient and easy to read. Examples include: almanacs, directories, population registers/ statistics, fact books, abstracts, indexes, bibliographies, chronologies, classifications, handbooks, guide books and manuals (Ajuwan, 2016).

Nurses need wide variety of information sources to meet their clinical and professional needs.

In this regard, Maji et al (2012), is of the opinion that nurses basically use three types of information sources: Printed Sources, Electronic Sources and Human Sources. For printed information sources used by nurses, their study found that medical reference sources were used most frequently, closely followed by healthcare pamphlets and information made available by healthcare companies and hospitals. It was noted that the use of articles from professional journals was quite low. It was however, not surprising that newspapers were not frequently used by nurses for getting healthcare-related information. The review reveals that majority of the nurses used different human information sources for getting healthcare information. The most frequently used human sources were nursing supervisors, ward or department colleagues and nursing management staff. Based on this discussion, it can be concluded that most of health

professionals use human sources as their main sources of information then followed by printed sources such as textbooks and medicinal journals.

According to Ricks and Ten (2015), information sources are the various means by which a person is informed about something or knowledge which is provided or shared with someone, group of people or an organization. In this study, information sources can be referred to as any channels where nurses can obtain information for both clinical and professional development. In this regard, Bitso & Fourie (2012), state that information source is a medium in which knowledge or information is stored; information source contains relevant information that will help users to obtain information they needed.

In this study, the users refer to the nurses currently working in the general hospitals of Jigawa State and the information sources are the channels they consult to obtain health information for healthcare delivery. Information sources can come virtually from anywhere: personal experiences, books, articles, expert opinions, encyclopaedias, web etc. Majid at el (2011), observe that nurses use information sources such as medical reference books, nursing supervisors and internet, but they use human sources more than any other source. However, Momoh, et al (2015) cited Dee & Stanley (2005), that professional colleagues and other health care providers, especially physicians, books and journals are the favourite information sources used by nurses in Nigeria.

Similarly, Milton (2016), found that health professionals use variety of information sources to fulfil their information needs, but they first rely on their colleagues and medical textbooks or journals. For instance, studies from countries such as China, Egypt, Kenya, India, Thailand, etc indicated that health professionals often seek information to answer number of clinical questions,

but they first consult their senior colleagues and printed materials such as textbooks remain the most commonly used information sources. In another study conducted in Uganda, the result reveals that medical colleagues remain the main information sources used by health professionals. In contrast, Arvind & Maheswarappa (2014), reveals that about (95%) of nurses use Community health centers as their main information sources followed by (81%) who use libraries and neighbours, only (40%) use magazines and newspapers for healthcare delivery.

With the increase in the number of publications in the nursing profession and the introduction of the internet, many new electronic information sources are now available to nurses. The availability of the internet provides an opportunity to the most current and reliable information sources. In view of this, Anyanwu & Oparaku (2016), reveal that 58% of nurses use the internet as their information sources followed by 42.1% who use journals while 21% use textbooks and 32.1% use health professionals such as doctors, nursing colleagues and medical libraries. Only 11.4% use electronic databases.

Although, professional colleagues are the most common information source used by nurses, but there are various information sources which nurses can obtain health information for healthcare delivery. In view of this, Egbunu & Jeminiwa (2012) cited Ademorah (2003), opines that the most common information sources used by nurses include journals, e-media, newspaper, factual information sources and personal correspondences via telephones, fax, emails or face to face conversations. Similarly, Basavanthappa (2014), states that the common sources used by nurses are journals, abstracts/excerpts, bibliographies, dictionaries, encyclopedias, and nursing journals.

In this regard, Ibegwan (2013), notes that there are several sources of health information which include: full text journals, textbooks, evidence-based medical resources, healthcare officials such as doctors, nurses, and dentists. Government health resources such as the centres for disease

control and prevention, National Institutes of Health (NIH), World Health Organization (WHO), American Red Cross, American Cancer Society, American Heart Organisation, Federal Ministry of Health, National Agency for Food and Drug Administration Control (NAFDAC) and other educational organizations such as colleges and universities, library resources, medical journals etc. There are also free access to databases on internet such as medline, health star, aisline, histline, sdline, toxline and cancerlit.

Today, there are many sources where nurses can obtain health information for effective healthcare delivery which includes printed, electronic and human sources, but from the discussion above, most nurses in developing countries like Nigeria prefer human sources such as nursing colleagues, team leaders, physicians, senior colleagues, supervisors etc to obtain health information for healthcare delivery. Other types of information sources such as textbooks, medical libraries, internet hospital information system etc are less used by nurses in obtaining health information for healthcare delivery. It is against this background that this study aims to investigate the information sources used by nurse to obtain health information for healthcare delivery in general hospitals of Jigawa State, Nigeria.

Information resources are sometimes used to replace information sources, because some examples of information sources can be used as information resources. Literally, information sources are the channels where information resources can be obtained. Information resources are various materials or resources by which information is recorded, obtained and used by an individual or an organization. Information resources can be textbooks, journals, periodicals, reference materials, organizations e-recourses etc. Therefore, information resources come in printed or electronic resources such as e-books, e-journals, databases, etc

According to Egbunu & Usman (2013), information resource is a source of knowledge communicated concerning some particular facts, subjects, events and that which one is appraised to. Thus, information resources can be obtained from libraries or individuals since they are sources of knowledge. Since information resources can be obtained from libraries therefore hospitals should have medical libraries where nurses and other health professionals can access the information resources. The medical libraries should also have internet connectivity for access to e-resources by the health professionals. Similarly, Bitso & Fourie (2012), define information resource as a medium in which knowledge or information is stored. Nursing profession is highly information intensive as such nurses require variety of information resources both in printed and non-printed forms in order to satisfy their information needs at a given time, as well as providing effective healthcare delivery to their patients.

However, Ricks & Ten (2015), expresses that information resource is where a person is informed about something or knowledge which is provided or shared with someone or group of people or an organization. In the context of this study, information resource can be defined as a channel by which nurses are informed about medical issues to enable to provide effective healthcare services to their patients. In view of this, Ibegwan (2013), enumerates the following as common information resources use by nurses:

A) *Printed Materials:* These include all printed monographs available in the medical libraries, faculty libraries, and even medical records departments. Example of these types of resources include: WHO, Blue Trunk Library, book donations, book aid international, free or low-cost newsletters and periodicals.

B) Internet-based Computing: this is another category of information resources which nurses use to satisfy their information needs, they are stored on the web and the internet, internet gateway. Example of these are essential health links, educational and reference materials, WHO website, electronic journals, open access journals such as Biomed central, telemedicine.

C) Stand-alone Computing: This group of information resources are contained in digital storage devices like MEDLINE, CD-ROM, reference update, provision of computers, DVDs, diagnostic and management software such as map of medicine.

D) Mass Media: Televisions, radio, newspapers, are mainly used for health education and information for general public, relatively little used for health workers. It is vital not only to ensure that health workers have access to health information resources, but that they are given appropriate support and training in knowing how to search for and use the information resources in practices, yet many nurses do not have access to the information resources they need.

Similarly, Just (2008), conducted a study on information needs of nurses in Thai and reveals that about 44% of the nurses use printed sources for examining patient health and monitoring patient's vital signs, while (51%) use printed sources for admitting and discharging patients and terminating care, 67% use printed sources for planning patient care and rehabilitation. It can be generalized that the most common information resources use by nurses is printed textbook.

In view of this, Majid, et al (2011), reveal that nurses used various information resources such as medical reference books, nursing supervisors and internet, but they used human sources more than any other source. Similarly, Andualem et al (2013), found that 39% of health professionals use textbooks and protocol manuals, follow by 31% who use internet at internet cafe while (38%) use internet at home and the most common reasons for using internet among health

professionals are for checking e-mails, drug and patient care information and browsing new findings.

According to Adamu & Olaide (2013), cited Dee & Stanley (2005) asserts that most nurses in Nigeria rely on their colleagues and books for medical information. To substantiate this statement, Olajide & Otunla (2015), cited Pravikoff et al (2005), also report that, most nurses often ask their colleagues when they need information. The above affirmation is related to Nigerian experience because most of the review revealed that most nurses in Nigeria use their medical colleagues as their information sources for healthcare services delivery.

In view of the above, Milton (2016), reveals that about 51% nurses use professional colleagues such as senior staff and supervisors to obtain health information while 45% indicate that they use standard guides to obtain health information, e-books, audio-visual materials and e-journals.

Similarly, Just (2008), indicates that about 43% of nurses use information from their nursing colleagues for providing basic nursing care and about 42% use both printed and e-resources for basic psychological or spiritual care. This situation is the same in Nigeria, Momoh et al (2015), cited in Dee and Stanley (2005), reveal that professional colleagues and other healthcare providers, especially physicians are the favorite information resources use by nurses. The study also reveals that nurses use printed resources such as books and journals for healthcare delivery. At this juncture, it can be generalized that most nurses in Nigerian hospitals used their professional colleagues for healthcare delivery.

In contrast, Anyanwu et al (2016), reveal that about 57% of nurses use internet as information sources, follow by 42% who use journals while about 41% use books, only 32% use health professionals and nursing colleagues, while 28% use medical libraries and 11% use e-resources

such as databases. This shows that there are few nurses who prefer to use e-resources other than professional colleagues for healthcare delivery. In view of this, Egbunu & Jeminiwa (2012), reveal that about 30% of health professional use internet follows by 19% who use radio and television for health information.

With the increase number of publications in the medical profession and the availability of internet, many new electronic information resources are now available. The availability of internet has provided great opportunity to the most current, recent and reliable information in the nursing profession. It can be concluded that most nurses prefer their professional colleagues for health information. Today, there are various information resources which nurses can use to obtain information for healthcare delivery. The more information resources nurses use the more informed they will become, and the more they are informed in their profession, the more they provide effective healthcare services.

At this point, a knowledge gap is identified that majority of nurses rely heavily on their professional colleagues for health information. Thus, other types of information sources such as medical libraries, TV/Radio, internet, social media, medical databases, etc are not commonly use by the nurses. It is against this background that this study aims to identify the information resources used by nurses for healthcare delivery in general hospitals of Jigawa State, Nigeria.

2.5 Information Use Patterns of Nurses Healthcare Delivery

Medical personnel are expected to utilize different information resources in order to provide effective healthcare services to their clients. In trying to do so, some ways or techniques are adopted on how to use the available information resources to satisfy their information needs. The concept information use pattern is a marriage between information and use patterns. Therefore,

there is the need to understand the concept ‘‘information use’’ for easy understanding of the concept ‘‘information use patterns’’.

Information use can be seen as individual interaction with information resources in a given time and situation in order to acquire information for a particular purpose. Information use is synonymous to information utilization, knowledge use, and knowledge utilization. Information use is the end activity in information seeking which involves a pattern or process in which an individual makes use of the available information resources in order to satisfy his/her information needs. Information use is also defined as the frequency and duration in using the information resources by individuals. Information use is therefore referred to as the utilization of information sources, resources and services by individuals in order to accomplish a given task. Based on the above definitions, information use can be seen the way and manner in which individuals utilize information sources, resources and services in order to accomplish a given task.

In the context of this study, information use is the utilization of information resources by nurses in order to provide healthcare services to their patients. Use of information resource by professionals is crucial because it helps them to be up to date and be clinically and professionally developed. In view of this, Kamba (2013), observes that information use is inevitable to almost all aspects of human development. The need to become informed and knowledgeable individuals leads to the process of identifying information needs. However, this process alone cannot work without knowing the ways individuals articulate, seek, evaluate, select and finally use the required information, which is commonly known as information-seeking behaviour.

According to Kari (2010), information use is a ‘phenomenon which appears everywhere in the context of everyday life. It covers the user’s behaviour, connecting to the information sources, searching for information, information skills and utilizing the information’. In view of this, Kumar (2013), opines that the primary use of information by nurses is to support high quality health care records. Thus, nurses usually use information to provide high quality of healthcare. In general, information use can be characterized as an intellectual activity which is manifested through various thoughts and deeds. In another view by Kari (2010), cited Svolainen (2009), who explains that information use is how people approach information sources by reading and thinking about how to acquire information. It is also the reception, interpretation and the functional utilization of the information. In view of the above, it can be deduced that information use of nurses is the utilization of information for a particular purpose.

On the other hand, information use patterns can be referred to as the method adopted in seeking and using information by an individual. Thus, information use pattern is beyond using the information resources but adaptation of a method or way in obtaining information before using it. Therefore, information use patterns can be seen as regular or irregular use of information resources by individual or groups. The patterns which a user adopts in using information resources depend on the information needs of that user. Understanding the information use patterns of a particular user groups will assist libraries and other information to provide effective service delivery to them.

Every user is expected to think of how to get information sources then select the best source to use after evaluating the sources. Generally, the term information use pattern is a method or process in which an individual adopt to use the available information resources to satisfy their information needs. Baby and Kumaravel (2011), define information use patterns as motives of

users which give rise to information needs in order to quench the thirst for information. Users adopt numerous ways and means to access and utilize information. Similarly, Nurses adopt various methods to use both printed resources and e-resources for healthcare delivery.

With regard to information use patterns of nurses, Andualem et al (2013), reveals that most of health professionals spent extra time simply by side talking in groups and moving around or using books in library. Two-third of them used internet for e-mail and chatting purpose, while most of them have mobile phones with internet connectivity. However, library staff determined the average stay time for one person at one computer for only 30 minutes per session in order to save time for others.

However, Adamu & Olaide (2013) cited in Dee & Stanley (2005), found that only 8% of the nursing students used online databases more than six (6) times a week, 84% of them used them from one to five times a week, and 8% indicated usage of less frequently than once a week. On the other hand, only 4% of clinical nurses used databases more than six times a week, 32% used them one to five times a week, and 64% did not perform searches even on a weekly basis. The usage figures clearly reflected the different access to databases and the previous training for each group. Additional comparisons of factors that influenced database searching by nursing students and clinical nurses found that insufficient time for electronic database searching was a deterrent indicated by 28% of the nursing students, compared to 76% of clinical nurses. The study further reveals that both nursing students and clinical nurses use information resources through human sources and books on a daily basis, about 25% of nursing students use Personal Digital Assistants (PDAs) daily while about 33% of clinical nurses use internet through search engines daily. Only 4% of the nursing students make minimal use of the medical libraries.

Just (2008), notes that nurses used information weekly but some use it biweekly. They use information for patient care, practice and professional development. Nurses use both printed resources more and e-resources least when they are looking for information to answer clinical questions. In view of this, Egbunu & Jeminiwa (2012), cited Williamson (2000), report that all group of nurses are likely to spend five hours per week reading and the main types of information they use is on medical/surgical, clinical care and drug therapy. Thus, it can be concluded that that all group of nurses sought for information from different sources for many reasons, they used information regular period such as daily, weekly, twice in a week for healthcare delivery.

Conclusively, most of the nurses in Nigeria obtain health information through their professional colleagues while few of them use medical textbooks and internet. Medical libraries are not use commonly by nurses for healthcare delivery. Indeed, this is a knowledge gap identified in this study. As such, the study aims to investigate the information use pattern of nurses for healthcare delivery in general hospitals of Jigawa State, Nigeria.

2.6 Challenges in meeting the Information Needs by Nurses for Healthcare Delivery

In the process of meeting the information needs, various challenges may be encountered. These challenges could be personal, economic, environmental, professionals, social etc. In view of this, Thomas (2012), enumerates the following challenges in meeting the information needs: environmental barriers, personal and demographic barriers, role related and interpersonal barriers and information Sources.

Similarly, Andualem et al (2013), opine that majority of health workers encounter challenges in meeting information needs such as geographical, organizational, economic related, educational,

social/cultural barriers, poor personal initiation, time shortage, low prevalence of new cases. Their study further found that in developing countries where (ICT) infrastructure is available access and use of health information technology (HIT) is another challenge. It was also found that more than half 54% of health professionals encountered challenges in meeting information needs during their daily activities due to information limitation.

According to Ngozi & Ezeugwu (2014), states that lack of access road network is a great hindrance to meeting the information needs. They also pointed out that even when the available information has been repackaged, delivery to the required places including rural areas is always a problem since most communities are inaccessible. To worsen the situation, information seekers in the rural setting in Nigeria is pitiful due to the fact that the mobile library services of the state library boards meant to serve these rural areas are now dead because there are no functional delivery vans to convey both the staff and their materials to the rural areas. They also stated that there are two major challenges in seeking and using information by nurses in Primary HealthCare (PHC) for healthcare delivery:

- Access to health information and services is highly limited, especially to some nurses who are in rural areas. Again, access to health information is difficult especially online sources such as e-journals, e-books, internet etc.
- Low level of availability and utilization of relevant primary healthcare services is another barrier. Provision and utilization of modern primary healthcare services between urban and rural areas is difficult.

Moreover, Egbunu & Jeminiwa (2012), conducted study on information needs and seeking behavior of medical doctors in University of Abuja Teaching Hospital, Nigeria reveals that

health professionals face some challenges while using information resources among which are: lack of time, lack of appropriate selection tools, lack of finding what they are looking for, lack of search skills and cost of information resources. Thus, health professionals including nurses encounter many challenges in seeking and using information for healthcare delivery.

Anyanwu et al (2016), shows that about 38% of nurses emphasize the need for training on how to search and use information resources, while 26% indicates that there is lack of access to internet, 20% lack access to current information materials, document delivery services and selective dissemination of information. only 16% lack access to information in general.

According to Ibegwan (2013), nurses encounter several challenges in accessing information for healthcare delivery these include: inadequate resources, untrained human resources, infrastructural problems including power outage, lack of awareness of information resources, unaware of the health trends, lack of time and training, lack of effective search skills.

Accessibility of internet resources is one of the problems most nurses in Nigeria encountered because in most of the hospitals in Nigeria especially in rural areas they do not have internet connectivity. In view of this, Momoh et al (2015), conducted a study on information seeking behaviour of nurses in central hospitals in Delta State, Nigeria and reveals that access to internet resources is another problem which nurses in Nigeria encounter in meeting their information need. Users of cyber cafes have several constraints, including high cost of accessibility, lack of privacy, and the fact that these cafes are typically rowdy. The study further found that 78% shows that nurses strongly agree that power outages is one of the major problems in using internet, about 77% strongly agree that there is lack of search skills while 71% have problem with high cost of the internet.

Anyanwu et al (2016), conducted a study on meeting the information needs of nurses for effective healthcare delivery in Nigeria and reveals that 26% of nurses do not have access to internet, 24% agree they have problem is lack of user survey or community analysis to ascertain their real information need, 20% shows that lack of current materials is another problem. The study also reveals that poor internet connectivity, low computer literacy, poor personal initiation and high cost of internet connection in hospitals are major barriers in meeting information needs. With regard to foreign experience, a study is conducted in United Kingdom by Callinan et al (2010), found that about 67% of nurses lack time to use medical libraries, 0% have poor access to library resources, while 84% shows that lack of computer skills was the bigger deterrent for clinical nurses, only 8% of nursing students consider there is lack of database training.

Finally, it can be concluded that nurses all over the world encounter many challenges in meeting their information needs healthcare delivery. The most common challenges are lack of current information, lack of time, lack of medical libraries, high cost of information resources, poor internet connectivity, lack of search skills, lack of computer skills, etc. It is against this background that this study aims to identify challenges nurses encounter in meeting the information needs for healthcare delivery in general hospitals of Jigawa State, Nigeria.

2.7 Theoretical and Conceptual Framework

In any research, data are analyzed within a given theoretical or conceptual framework, which serves as the theoretical or conceptual guide for a particular study. Theories and models are used by researchers in order to have a guide for their studies. Basavanthappa (2014), asserts that conceptual framework provides the perspective from which researchers view a problem, and is not merely restatement of previous research, but an investigation of the existing theoretical

traditions and knowledge about the topic. Conceptual framework consists of concepts and the propositions about how concepts and theories are related to a particular study.

2.7.1 Theoretical Framework

A theory is a statement that purports to account for or characterize some phenomenon or set of concepts inter-related to form propositions that are useful for prediction and control'. Therefore, a theory consists of words or other symbols that are intended to represent something in the real world. The symbol is not the thing itself, only a label for the object, property or event. On the other hand, theoretical framework is the structure that can hold or support a theory of a research study; it introduces and describes theory that explains why the research problems under study exist. Theoretical framework is therefore a group of related ideas or collection of related concepts that provides guidance to a research project.

There are many theories/models that are used by many scholars to study different user groups, some of these theories listed below:

- Leckie, Pettigrew & Sylvain (1996), model of information-seeking of professionals
- Wilson (1981), model of information-seeking behaviour
- Wilson (1996), model of information-seeking behaviour
- Ellis' (1994), model of information-seeking behaviour
- Kuhlthau's (1993), information search process model

These different approaches generate various models of information seeking behaviours. Therefore, most models in information and library science explains the information seeking behaviours of an individual and the factors affecting his/her information seeking behaviours in

relation to how he/she needs, seeks and uses information. This study applied a cognitive approach and holistic view of Leckie et al (1996), model of information-seeking of professionals and Wilson (1981), model of information behaviour to explain the information needs and information use patterns nurses for healthcare delivery in general hospitals of Jigawa State, Nigeria. Therefore, the two models are adopted to form the conceptual framework of the study. The models are discussed below:

1. Leckie, Pettigrew & Sylvain (1996) Model of Information-Seeking of Professionals

This model is called general model of information-seeking of professionals proposed by Leckie et al (1996), they used the model professionals such as engineers, healthcare professionals, and lawyers. There are many models developed by scholars that can be used to study information needs and seeking behaviors of different user group. Leckie et al (1996) model is very relevant to this study because nurses by their nature of work fall under professional class. Therefore, the model is used to serve as the conceptual guide for the study.

According to Leckie et al (1996), model of information-seeking of professionals, information needs of nurses are basically divided into two types:

1. Information to help them make decision about the care of individual patients
2. Information about broader topics within nursing.

The model therefore explains that, information seeking habits of nurses indicates that for routine questions, nurses rely on single source of information be it a colleague or in printed information resources. For other information about broader topics within nursing, nurses will seek multiple sources of information. Though, the model focus on a specific group, but the authors suggested

that the model can be used for any group of professionals apart from engineers, healthcare professionals and lawyers.

The model assumes that the roles and related tasks undertaken by professionals in the course of daily practice prompt particular information needs, which in turn give rise to the information-seeking process. Information seeking is greatly influenced by a number of interacting variables, which can affect the outcome of information use. The model comprises six (6) components: Works roles, associated tasks, characteristics of information needs, factors affecting information seeking, awareness of information and outcomes. Leckie et al (1996) model shows that each group of professionals has specific information needs and searches for information in specific ways. The information-seeking habits of professionals are directly related to their work and the outcomes of that work.

The model is adopted by many researchers to study the information needs and information-seeking behavior of different user groups. Recently, the model was used to study the information seeking behavior of various professionals such as doctors, lawyers, teachers, clergies, librarians, accountants, etc. For instance, Gambo & Abu Bakar (2013), used the model to study the information seeking behaviour of Ulama in their preaching in Nigeria, Ruan (2011), used the model to examine the information-seeking and sharing behaviour among fire service field staff instructors in USA, Bitso & Fourie (2012), used the model in studying the information seeking behaviour of in-service Secondary Level Geography Teachers in Lesotho, Preez (2008), used the model to investigate the information seeking behaviour of consultant Engineers in South Africa, etc. The model is presented in the diagram below:

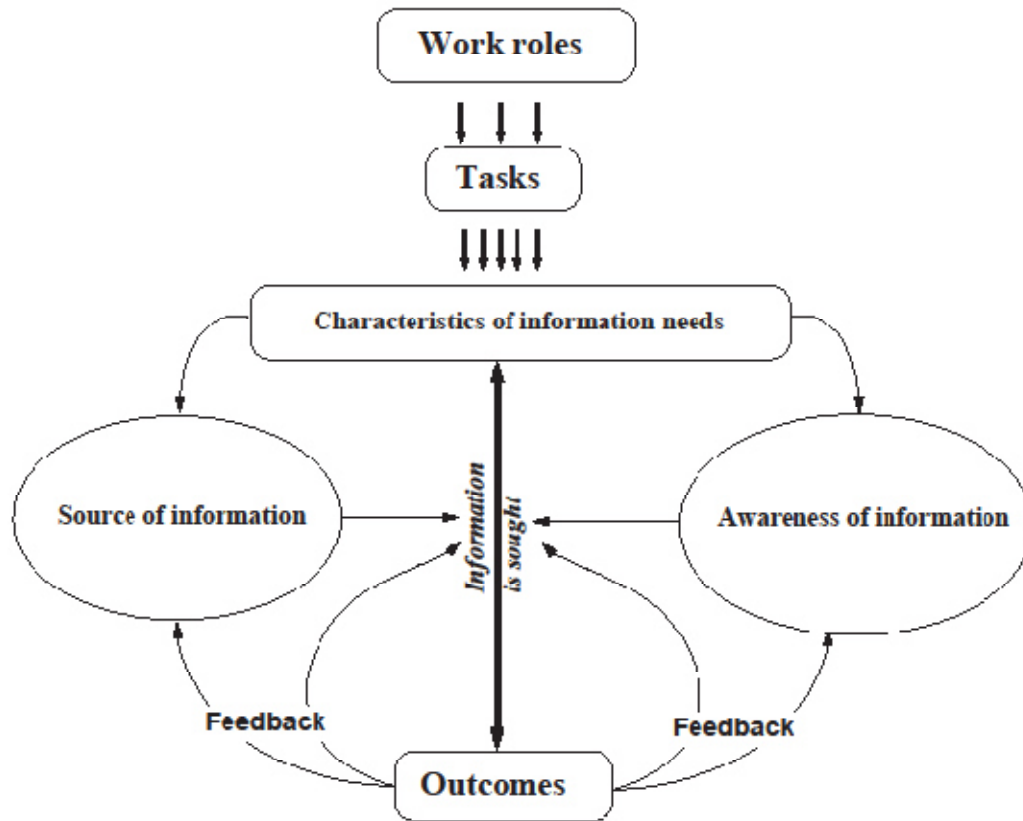


Figure 1: Leckie et al (1996), model of information-seeking of professionals.

Strength and Weaknesses of the Model

Leckie et al (1996), model of information-seeking of professionals can be used in this study to study the information needs of professionals such as nurses, engineers, health professionals, physicians, dentists, lawyers, etc. The model is relevant to this study because nurses are professionals by their work. However, the model was chosen it captured the main variables of this study in its constructs: information needs, information seeking behaviour, information use.

However, one of the weaknesses of the model is that the constructs of the model do not capture all the variables of the study such as information use patterns, Another weakness of this model is that the model was first developed in 1996, which seems to be too old to use in the contemporary research. Due to these weaknesses, the researcher decides to use another model like Wilson (1981), model of information-seeking behaviour.

2. *Wilson (1981), Model of Information-Seeking Behaviour*

The Wilson (1981), model of information-seeking behaviour has its origin in 1981 by T.D. Wilson in a presentation at the University of Maryland. This model identified twelve (12) constructs, they include: information user, information use, information needs, information Seeking behaviour, satisfaction/non-satisfaction, information transfer, information exchange, demands on Information System, demands on other information sources, other people, success and failure.

According to Garg (2016) cited in Aina (2004), Wilson determines that the satisfaction of an information need is proposed to be the driving force behind the action taken by a user. In order to satisfy a perceived information need, demands are made upon either formal or informal sources/services resulting in failure or success. Success leads to the utilization of the information, which results in fully or partially fulfilling the perceived need. It states that information-seeking was promoted by an individual's physiological, cognitive, or affective needs, which have their roots in personal factors, role demands or environmental context. The model was based on an understanding of human information seeking behaviours that are best understood as three interwoven frameworks: the users, the information system, and the

information resources. The model also illustrated the utility of “information use” which had received little attention until then.

In relation to this study, the users can be referred to the nurses while the information resources could be the resources used by the nurses to obtain health information for satisfying their information needs. The model therefore, suggests that information-seeking behaviour arises as a consequence of a need perceived by an information user, in order to satisfy that need, if successful, the individual then makes use of the information found and may either fully or partially satisfy the perceived need or indeed, fail to satisfy the need and have to reiterate the search process.

The model suggests that information-seeking behaviour results from the recognition of some need, perceived by the user. That behavior may take several forms, for example, the user may make demands upon formal systems that on user studies are customarily defined as information systems such as libraries, on-line services, or information centres. Alternatively, the user may seek information from other people, rather than from systems, and this is expressed in the diagram as information exchange.

In terms of information seeking behaviour, the idea of reciprocity may be fairly weak in some cases as when a junior scientist seeks information from a senior but hierarchically equal colleague but in other cases may be so strong that the process is inhibited, as when a subordinate person in a hierarchy fears to reveal his ignorance to a superior. In any of the above cases of information-seeking behaviour, “failure” may be experienced: this is indicated in the diagram for the use of systems but, of course, it may also be experienced when seeking information from other people.

Curiously, information use which ought to point most directly to the needs experienced by people is one of the most neglected areas; and “information exchange” as defined here has tended to fall within the sphere of interest of sociologists and organizational theorists rather than within that of information scientists. Again, a user may be interested in specific resources as a physical entity, as in the expression of a need to view various sources of information. In information transfer it may be a fact, an opinion or a piece of advice that is transferred orally, or opinion/advice that can be given to another person. The diagram of the model is presented below:

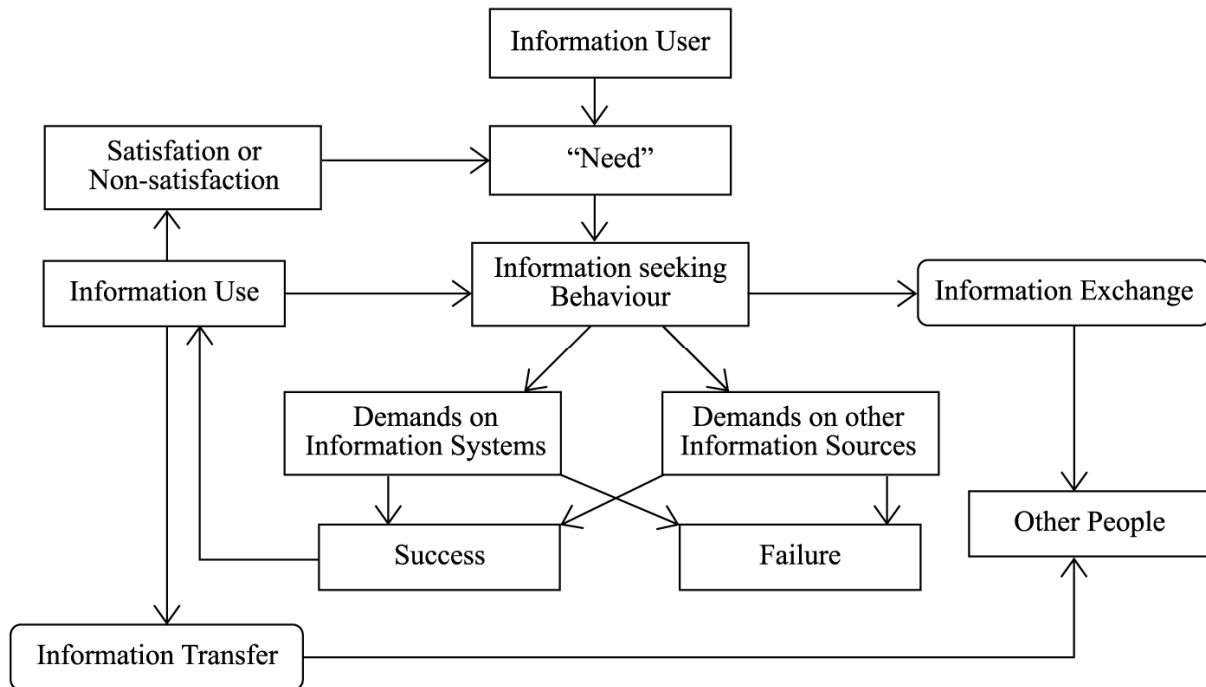


Figure 2: Wilson (1981), model of information seeking behaviour

Strength and Weaknesses of the Model

One of the contributions of this model toward studying the information needs and information seeking behaviour of nurses. The model illustrates the utility of information which captured the

attention of many researchers to conceptualize their work on it. The model also gives way in studying various user groups and their information needs as well as studying their information seeking behaviour. The review reveals that majority of the nurses used their professional colleagues as their main sources of information, and this is illustrated in the model using information exchange. However, one of the weaknesses of the model is that it does not directly suggest testing of hypothesis which most of the quantitative studies believe. The model was developed in 1981 but it still consider relevant by many scholars because it has may many constructs such as information needs, information seeking behavior and information use, though the model did not capture ‘‘information use pattern’’.

Table 2.1: Mapping Leckie, Pettigrew, and Sylvain (1996) Model and Wilson (1981) Model

S/N	Research Objectives	Leckie et al (1996)	Wilson (1981)
1	Information Needs	Information Needs	Information Needs
2	Information Seeking Strategies	Information Seeking	
3	Information Resources	Information Sources	
4	Information Use Patterns		Information Use
5	Challenges		Failure

Source: Developed by the researcher (2017)

2.7.2 Conceptual Framework

Conceptual framework consists of concepts and propositions about how concepts and theories are related to a particular study. However, Bitso & Fourie (2012), notes that there are various models of information behaviour which help scholars to have conceptual guide for their studies. A model may be described as a framework for thinking about a problem and may evolve into a statement of the relationships among theoretical propositions. A model can be defined as some

symbolic representation of phenomena which can be expressed in mathematical terms. Most models in general field of information behavior are in form of statements and diagrams that attempt to describe an information-seeking activity, the causes and consequences of that activity, or the relationships among stages in information-seeking behavior.

Therefore, this study is conceptualized on Leckie et al (1996), model of information seeking of professional and Wilson (1981), model of information seeking behaviour. The two models are found relevant to this study; because Leckie is the general model in studying the information needs of professionals and nurses by their nature of work and specialization fall under this category. While Wilson (1981), model of information seeking behaviour is generally used as a guide to study any user group and in the context of this study the user group is referred to as ‘nurses’.

The conceptual model of this study displays the relationships amongst the six of the study. Nurses are expected to identify their information needs first, then they think of the information resources and service to be used to satisfy their identified need, in satisfying those needs some factors may come that will make them to use the information resources available. However, the factors may determine the frequency of using the information resources which will serve as the information use pattern. In the process of utilizing the information resources by the nurses, barriers may interfere which will eventually affect the outcome of the whole process. Thus, the level of satisfaction derived from using the information resources will determine how effective they will provide healthcare delivery services to their patients. For instance, when they are satisfactory from the information resources they used, it may lead effective healthcare delivery while unsatisfactory may lead to the ineffective healthcare delivery. The diagram below presented the conceptual diagram of the study.

Conceptual Diagram of the Study

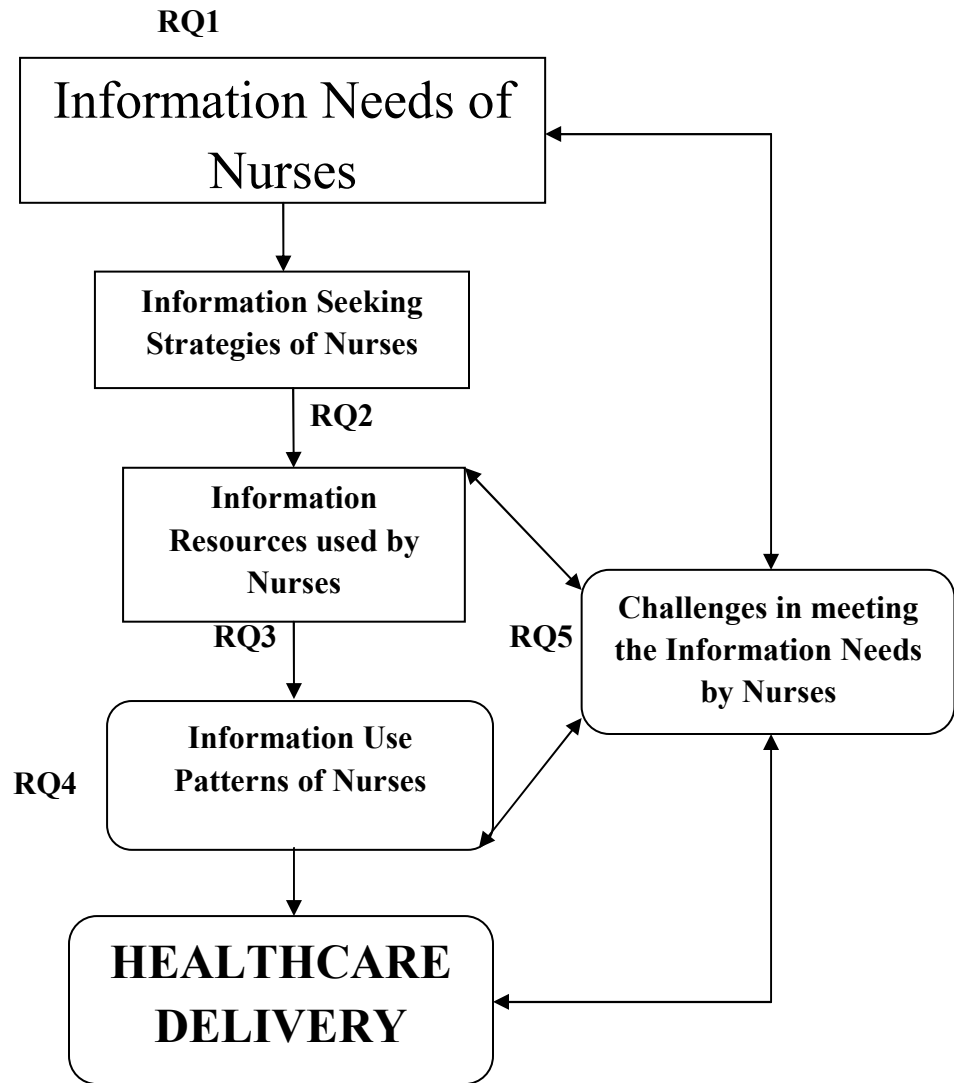


Figure 3: Conceptual diagram of Information Needs and Information Use Patterns of Nurses.

The conceptual model of information needs and information use patterns of nurses for healthcare delivery consists of five (5) constructs which are formed from the research questions, they are: information needs, information seeking strategies, information resources, information use patterns and challenges in meeting the information needs and they are discussed below:

1. Information Needs of Nurses: Information needs of nurses is the first construct in the above model, it is assumed that the nurses under study require information on treatment, diagnosis, drug therapy, palliative care, prevention on diseases, management of patients' health status etc. and the nurses need information for various reasons but basically nurses need information for healthcare delivery. In this regards, whenever nurses feel there is the need to acquire information for healthcare delivery then their information needs increased. According to Ricks & Ten (2015), cited Breimaier et al (2011), "nurses need information to demonstrate evidence to underpin practice and show that their practice is effective, efficient and worthwhile". Nurses usually use information that is accessible, current, relevant and manageable, as well as information sources that assist them in satisfying their information need.

Therefore, nurses need to consult various information sources in order to meet their clinical and educational needs. Since information need is a construct that exists only in the mind of the person, then information needs of nurses means the desire to access and use information resources for their daily routine whether for clinical or educational development. When the nurses realize their need for information, then the next thing is to plan strategies for seeking the information to satisfy their information needs.

2. Information Seeking Strategies of Nurses: Information seeking strategies is the plans organise by individuals on how to seek for information in order to satisfy their information needs. For the purpose of seeking information various plans are organise in order to find relevant information. Therefore, information seeking strategy has to do with locations the sources where information can be obtained. However, Kumar (2013), expresses that Information seeking involves personal reasons for seeking information, the kind of information which are being sought, and the ways and sources which the needed information is being sought. In the course of seeking, individuals may interact with people, manual information system, or with computer-oriented information system. Therefore, some strategies are usually adopted in order to seek for the information needed by individuals. Therefore, the nurses under study are expected to seek for different sources where information can be obtained. This construct is depicted in the conceptual diagram of the study in order show the relationship between the information needs and information seeking strategies of nurses for healthcare delivery. Since information-seeking behaviour is a purposive seeking for information as a consequence of a need to satisfy some goals. Therefore, the study investigated the information seeking strategies of nurses for healthcare delivery in General Hospitals of Jigawa State, Nigeria.

3. Information Resources used by nurses: To obtain timely, relevant and current information, various information resources need to be consulted and used. Information source is where information in any format can be obtained, which include human sources, printed or non-printed sources while information resources are the various means or channels by which information is recorded, obtained and used by an individual or an organization. In view of this, Ajuwan (2016) defines information sources as various means by which information is recorded for use by an

individual or organization. These are means by which a person is informed about something or knowledge is provided or share with someone, a group of people or an organization.

Information sources are basically classified into primary, secondary tertiary sources. In the conceptual diagram, an information source means the various means which nurses use to obtain health information for healthcare delivery. Information sources can come virtually from anywhere: personal experiences, books, articles, expert opinions, encyclopaedias, Web etc. Nurses by their nature of work are expected to search for various information sources in order to satisfy their information needs. The main sources of information most nurses prefer are textbooks in their schools and colleagues in their working places. Additionally, personal knowledge and experiences are used as another source of information. This is supported by Olajide & Otunla (2015), who states that some nurses prefer printed information resources whereby over 70% of them used print journals at least once a week. When the information sources are obtained then the nurses under study are expected to think of how to use the information resources for healthcare delivery.

4. *Information Use Patterns of Nurses:* is the way individuals use information for a particular which may lead to consultation of different information sources. This construct explains how regular nurses use information for healthcare delivery. It determines the level of utilization of the information resources. Nurses as Professionals, as such they used information for various reasons especially for healthcare delivery. Due to time constraints and many other factors, many nurses prefer to obtain information from sources that are convenient, easy to use, and reliable. Information is used based on the needs by the users, some use information daily, weekly, and monthly or occasionally. When using information, various challenges are encountered. Challenges in meeting the information needs is the last construct in the diagram.

5. Challenges in meeting the Information Needs of Nurses: In the process of identifying, obtaining and using information, various challenges may interfere in the process and create barriers to meeting the information needs by the nurses under study. These challenges could be personal, organizational environmental or situational. Egbunu & Jeminiwa (2012), reports that health professionals face challenges in meeting their information needs for healthcare delivery, the challenges are: Lack of time, lack of appropriate selection tools, lack of finding what they are looking for, lack of search skills, cost of information resources. Ibegwan (2013), states that there are several challenges that nurses face in meeting their information needs, these include: inadequate resources, untrained human resources, infrastructural problems including power outage, lack of awareness of the information resources, unaware of the health trends, lack of time, lack of access, lack of training, lack of effective search skills. The most common problem in manual systems is illegible handwriting, but electronic records systems eliminated the difficulties of handwriting interpretation. Nurses often need to look back over a patient's record for a period of time so that they could be aware of previous prescriptions.

2.8 Summary of the Review and Uniqueness of the Study

This chapter has presented and discussed various related literature on the information needs and information use patterns of nurses where the review indicated that the types of information needs of nurses are information on palliative care, information on clinical decision making and information on patients' referral. Studies of Egbunu & Jeminiwal (2012), Bitso & Fourie (2012), Momoh et al. (2015), Ibegwan (2013), Otoide (2015), Anyanwu et al. (2016), Anduaem et al. (2013), are found relevant to this study. Studies on the factors influencing the information needs of nurses were also reviewed. The contributions of Ngozi & Ezeugwu (2014), Ruan (2011), Just (2008), Nwagwu & Oshiname (2009) and Ibegwan (2013) are considered relevant in this study.

The result of the empirical studies shows that the factors that influence the information needs of are generally categorized as personal, economic, social and environmental, but the specific factors influencing the information needs of nurses are working experience of the nurses, awareness of the information resources, cost of the information resources, accessibility of the information resources, time spend with nurses, curiosity in the practice, availability of internet connectivity, patient' expectation, availability of medical libraries in the hospitals.

Furthermore, review was done on the information seeking strategies of the nurses for healthcare delivery in general hospitals of Jigawa State, Nigeria. Studies of Aforo & Lamptey (2012), Igwe (2012), Nobert & Iwoga (2013), Just (2008) and Milton (2016) are found relevant. The review shows that majority of nurses seeks information related to their work such as upgrading their skills and knowledge, for emergence of new methods and technologies. However, the review also indicated that majority of nurses seek information from their colleagues and printed resources.

Review was also done on the information sources used by the nurses for healthcare delivery in general hospitals of Jigawa State, Nigeria. Studies of Ajuwan (2016), Majid et al (2012), Arvind & Maheswarappa (2014) and Anie (2011) are found relevant. It was discovered that most of the nurses use their professional colleagues and printed resources as their main of information sources. Review was also done on the information resources use by nurses for healthcare delivery in general hospitals of Jigawa State, Nigeria. Studies of Adamu & Oloide (2013), Olajide & Otunla (2015), Anyanwu et al (2016), Egbunu & Jeminiwa (2012) and Momoh et al. (2015) are found relevant and reveal that most nurses in Nigeria use medical textbooks and internet as their main information resources to obtained health information.

Consequently, review was done on the information use patterns of nurses and studies of Kari (2010) Prakasan (2013) Kumaravel (2011) Kamba (2013), Kumar (2013) were found relevant to this research work. Studies of Egbunu & Jeminiwa (2012), Dee & Stanley (2005) revealed that most nurses use information daily for healthcare delivery and used their professional colleagues and internet to obtain health information

Review was also done on the challenges in meeting the information needs of nurses. Studies of Egbunu & Jeminiwa (2012), Thomas (2012), Andualem et al (2013), Ngozi & Ezeugwa (2014), Anyanwa et al (2016) and Momoh et al (2015) are found relevant. The review also reveals that most of the nurses encounter challenges in meeting their information needs for healthcare delivery. The common challenges are lack of time, lack of motivation, high cost of information resources, lack of search skills, lack of awareness, unstable power supply, poor internet connectivity, lack of access to information resources. The study used two models to propose the conceptual model of information needs and information use patterns of nurses, to enable a better understanding and answering the research questions.

The study adopted two models/theories to serve as the conceptual guide for the study. The models used are Leckie et al (1996), model of information-seeking behaviour of professionals and Wilson (1981), model of information seeking behavior. The Leckie et al (1996), model is suitable in studying the information seeking of every professionals and nurses by the nature of their work and role fall under this category. While the Wilson (1981), model of information seeking behavior is used to study the information needs and sources. Thus, the two models captured the major variable of the study. The research setting is one of the uniqueness of the study, in the sense that Jigawa State is among the states is one the last states in Nigeria. There are nine (9) general hospitals and three hundred and eighty four (384) nurses. The study is also

unique in the sense that, most previous studies conducted in Nigeria were in the southern part of the country. This study is also unique in the sense that its sample is unique where all the population of the study is used as the sample size of the study, therefore the sample size also made the study distinct. This indeed can serve as a gap which is needed to be bridged. However, Most of the studies modified only one theory or model in their studies, but this study modified a model and a theory in order to fit in the major variables of the study. Finally, this study is also unique in the sense that its sample is unique where all the population of the study is used as the sample size of the study, therefore the sample size also made the study distinct.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter describes the methodology adopted in conducting this research. This includes research setting, research design, population and sampling technique, instrumentation, validity and reliability and method of data analysis. It is therefore necessary to choose a methodology that will fit the nature of the study to be undertaken, so that the outcome of the study will be valid and acceptable. The study is based on quantitative method, methodology is chosen for this study because it enables the researcher (s) to solicit for huge information by means of allowing the target population to provide needed information freely through the use questionnaire. According to Basavanthappa (2014), quantitative methodology allows researcher to plan all aspects of a study in carefully designed manner before data collection. This methodology is chosen it allows researchers to collect numerical data from respondents and generalize findings which can be applied to other population and studies.

3.1 Research Design

Research design is a specific procedure involves in the conduct of any research, it usually deals with data collection, analysis and report writing. It is a way in which a researcher follows to collect, analyze and interpret data using a specific research methodology. Research Design is a plan, structure, and strategy of investigating answers to the research questions. For the purpose of this study, survey design was used in conducting the study based on cross-sectional research design in order to collect data at a given point in time.

Survey research design, using cross-sectional design, was employed for this study. It is a study conducted at a point in time to provide direct evidence about the effects of time in order to draw conclusion. Cross-Sectional Survey deals with collecting information from the respondents at a single period in time. It usually use questionnaire to ask about a particular topic at one point in time. Sometimes, cross-sectional surveys are used to identify the relationship between two variables, as in a comparative study.

This design is concerns with describing, recording, analyzing and interpreting conditions that either exist or existed, it is essential for cross-sectional. Surveys are usually appropriate for social and behavioral sciences which can be either census or sample surveys. Muhammad (2012) cited Bichi (2004), views survey research as that which concerns itself with the determination of the current status of the phenomena under investigation.

3.2 Research Setting

The research location is Jigawa State the focus is on general hospitals in the state. Jigawa State is one of thirty-six (36) States in the Federal Republic of Nigeria. The motto of the state is “*A New World*” which suggests a virgin land of full opportunities. It was created based on legal backing through the State Creation and Transitional Provisions Decree Number 37 of 1991. Jigawa State is situated in North-Western geo-political zone of Nigeria. The state lays between Latitudes 11.00° N to 13.00° N and longitudes 8.00° E to 10.15° E. Kano and Katsina State border Jigawa to the west, Bauchi State to the east, Yobe State to the northeast and to the north, Jigawa State shares an international border with the Republic of Niger. The maximum temperature is about 42° C usually between the months of March to September. Lower temperatures are recorded

especially at nighttimes during the harmatan season, which is as low as 10⁰C during the period between October and February.

The state has twenty-seven (27) Local Government Areas (LGAs), and Dutse is the capital of the state. There are five emirate councils each is administered by a traditional ruler called Emir. The emirates councils are: Dutse, Gumel, Hadejia Kazaure and Ringim. Jigawa State ranked 8th among the most populous states in Nigeria. According to National population Census (2006), the state population is 4,348,649 people of which 51% 2,215,897 are males while the remaining 49% 2,132,752 are females. The population of the state is predominantly rural estimated at over 85%. Based on the National estimates, the life expectancy at birth in Jigawa State is 47.8 years for males and 48.5 years for females. About 68.7% of household heads are self-employed while 70% of them relying on subsistence agriculture as their main occupation. About 81.3% of the household heads have never had any formal educations; only 4.4% acquire a post-secondary education. The socio-cultural situation in Jigawa State could be described as homogeneous with Hausa/Fulani found in all parts of the State. Kanuri are largely found in Hadejia Emirate.

According to Abdurrahman (2014), Jigawa State has high mortality rates and for every thousand children born 98 will die by age 5 years, and the leading causes of ill health and death in the children are communicable diseases and malnutrition. Malaria, diarrhea diseases, respiratory tract infections and malnutrition. Mothers die frequently from complications of pregnancy and childbirth. Abdulkadir (2017), states that malaria is associated with (70%) of illnesses in pregnancy. The doctor - nurse population ratio in Jigawa State is reported to be only about 1:90,000 and 1:10,800 respectively all of which are pathetically below the national average of 1:333 and 1:1000 respectively.

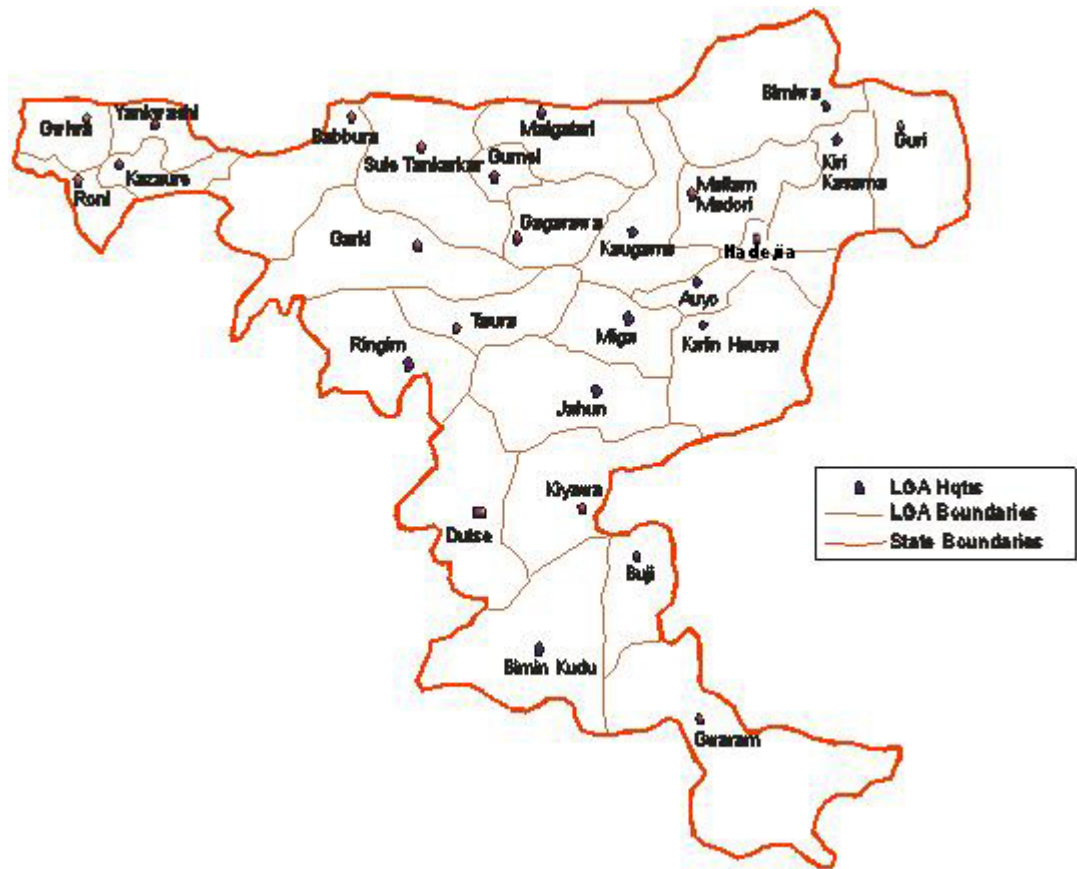
According to Jigawa State Strategic Plan (2015), only half 53% of the population in the state have access to medical services; the rate is higher in urban areas with 55%. There is a general shortage of resources for health service delivery except for drug supplies that is reported to have improved due to the introduction of sustainable drug supply scheme. Health facilities and major equipment are in general state of disrepair and require major rehabilitation or replacement. The State Ministry of Health (SMH) has responsibility for formulating state policies or translating national health policies for local implementation and regulating the services. Until recently this dual role of regulator and provider has compromised its role as oversight agency for all health services.

Jigawa State Strategic Plan (2015), states that there is Gunduma Health System (GHS) which is responsible of providing healthcare services to the people in the state. System is headed by a Director General who reports to the Commissioner of Health and who is supported by a team of directors; the team provides the secretariat for the Gunduma Board. The aim of the system is to coordinate and promote collaboration among all healthcare providers in the state and supervise and monitor health teams at other levels. There are nine (9) Gundumas each headed by a council to oversee service delivery at that level. Within each Gunduma is a hierarchy of health facilities ranging from General Hospital to Basic Health Clinic.

According to Jigawa State Strategic Health Plan (2015), there are about twenty (20) hospitals in the state among which nine (9) are general hospitals, they are as follows: Birniwa General Hospital, Birnin-Kudu General Hospital, Dutse General Hospital, Gumel General Hospital, Hadeja General Hospital, Jahun General, Hospital, Kazaure General Hospital, Kafin Hausa General Hospital and Ringim General Hospital.

The map below shows the 27 local government areas of the state.

Figure 2: Map of Jigawa State



Source: www.Googlemap.com 2016

3.3 Preliminary Study

Preliminary study is the activities, discussions or surveys that take place at the beginning of a study for the preparation of that study. The researcher conducted a preliminary study at the Jigawa State Ministry of Health (SMoH) in order to get some background information about this study. The preliminary survey was conducted because of the following objectives:

- i) To determine the number of general hospitals in Jigawa state;
- ii) To determine the number of clinical nurses currently working in general hospitals in Jigawa State;

The researcher visited the office of the Commissioner of Health in the Ministry of Health Jigawa State, at New Secretariat, Blocks B in Dutse and submitted an introductory letter collected from Department of Library and Information Sciences, Bayero University Kano for ethical clearance. Consequently, the researcher was introduced to the Director Human Resources under the Gunduma Health System in order to collect relevant data for the study. The researcher raised the following questions:

- i) How many general hospitals are there in Jigawa State?
- ii) How many clinical nurses are currently working in general hospitals of Jigawa State?

The result of the preliminary survey revealed that there are nine (9) general hospitals in the Jigawa state, which are:

1. Birnin – Kudu General Hospital
2. Birniwa General hospital
3. Dutse general Hospital
4. Gumel General Hospital
5. Hadeja General Hospital
6. Jahun General Hospital
7. Kafin Hausa General Hospital
8. Kazaure General Hospital
9. Ringim General Hospital

These hospitals are controlled by Gunduma Health System Board (GHSB). However, the preliminary survey also revealed there are three hundred and eighty four (384) nurses working in all the general hospitals in the state.

Health Management Information System (HMIS) is responsible for providing information to those hospitals but the system is described as weak facing challenges such as lacking in basic tools for data collection, collation and analysis. In addition, there were infrastructural decay, poor access to health services, poor managerial capacity and limited capacity for policy plan formulation, implementation and monitoring and evaluation at both State and Local government levels. The reform process culminated into the introduction of several interventions that led to drastic improvements in the quality of health services delivery and structural change which integrated both primary and secondary health care services under a single line of authority. The powers and authority of the Ministry of health were decentralized into 9 Gunduma Governing councils with a Governing Board to oversee their activities.

The Gunduma Health System is headed by a Director General who reports to the Commissioner of Health and who is supported by a team of directors; the team provides the secretariat for the Gunduma Board which among other functions provides strategic planning and development for health and local government sectors, recommends policy changes to Ministries of Health and Local Government and Community Development, sets fees and charges, coordinates and promotes collaboration among all health care providers in the state and supervise and monitor health teams at other levels of care.

With regard to information sources used by the nurses in the General Hospitals in the State, Health Information System is observed to be another source in which the nurses obtain information for healthcare delivery. Health Information System is established to provide an effective Health Management Information System (HMIS) for informed decision-making at all levels and improved health care it is also to improve data collection and transmission all LGAs making routines. HMIS returns to State level by end 2011 to ensure that HMIS forms are available at all health service delivery points at all levels. It is also establish and strengthen Knowledge Management at all levels by providing Active Knowledge Management unit in State Ministry of Health (SMoH) and Gunduma Health System Board (GHSB) by fourth quarter 2010. However, NHMIS is formed to develop and adopt State Knowledge Management strategy, to coordinate data collection from vertical programmes, to build capacity of health workers for data management and to ensure supportive supervision of data collection at all levels Supportive supervision of data collection institutionalized.

In terms of provision of electronic information resources, Health Information System is established to provide infrastructural support and ICT of health databases and staff training. It is also use to strengthen the use of information technology in Health Information System, State

Ministry of Health and Gunduma Health System Board with ICT by fourth quarter 2013 computerizing data collection, utilization and analysis processes in the 9 General Hospitals in the state by Providing computers and generators to all the 27 LGAs and nine (9) general hospitals.

3.4 Population of the Study

Population is the total number of people who live in a place, or a group of individuals, persons, objects, or items living in a particular geographical area. Population refers to a total category of person or object that meets the criteria for study established by a researcher, any set of person, objects or measurements having an observable characteristics in common. The target population of this study comprises all the clinical nurses currently working in the nine (9) general hospitals in Jigawa state which is three hundred and four (384) nurses. The table below shows the total population of the study.

Table 3.1: Population of the Study

S/N	General Hospitals	Nurses (male)	Nurses (female)	Total
1	Birnewa General Hospital	17	2	19
2	Birnin Kudu General Hospital	42	12	54
3	Dutse General Hospital	28	19	47
4	Gumel General Hospital	47	11	58
5	Hadeja General Hospital	33	16	49
6	Jahun General Hospital	30	1	31
7	Kazaure General Hospital	32	13	45
8	Kafin Hausa General Hospital	23	0	23
9	Ringim General Hospital	38	20	58
	Total	290	94	384

Source: Jigawa State Ministry of Health (2015)

3.5 Sampling Technique and Sample Size

Sample is a group of subjects or cases selected from a large group with the aim of studying this smaller group in order to reveal information and make generalization about the larger group. While Sampling is the process of selecting representative units of a population for study in a research, it is the process of selecting a subset of a population, in order to obtain information regarding a phenomenon in order to represent the entire population. For the purpose of this study, census is used as the sampling technique since the population is not large and can be managed by the researcher. Census is an enumeration or complete population count at a point in time within a specified geographical location. Census is the process of distributing a questionnaire to every member in a particular geographical area. Abdulkadir (2016), opines that census is used in calculating health indicators, it also provides more realistic and useful statistic and there is less chance of omission of persons from the count. This technique is chosen because it provides more reliable and accurate data if properly enumerated. To substantiate this reason Momoh, et al (2015) cited Iwuama et al (1992), states that it is possible to study the entire population, especially when the population is not large, no enough fund and adequate time.

3.6 Instrument for Data Collection

The instrument that was used in collecting data from the respondents (nurses) was only questionnaire. Questionnaire is often considered as the heart of a survey research and this study is survey in nature. According to Allamki (2013), opines that questionnaires are data-gathering instrument used to collect data beyond the physical vision of the researcher in order to explore deep data within minds, attitudes, feelings, experiences, knowledge, and opinions of participants.

Questionnaire is a collection of questions based on the subject of interest of the researcher and completed by the respondents. Questionnaire is chosen as the instrument for data collection because it is the simplest and least expensive method of obtaining information from the respondents and questionnaire allows respondents to express their opinions freely. Questionnaire is also chosen because the respondents in the study are literate, they can read and write. Thus, they are capable of filling the questionnaire without any assistance but they disperse over the geographical locations in the state. Thus, the general hospitals are located in different places in the state. According to Ibrahim (2013), questionnaire is also considered advantageous for data collection in a relatively short period of time and it is also less expensive and less time consuming. The questionnaire is written in English language, as the medium of instruction in among all health workers in Nigeria. In order to obtain accurate data from the respondents, their names were not used in the questionnaire to ensure that any information given will be treated in confidentially.

Consequently, several studies on related topics were consulted and their instruments were examined. This study used questionnaire as the main instrument for data collection, like many similar studies. The questionnaire was chosen as it is more appropriate for this study because it covered a wider range of respondents. Thus, the questionnaire was self developed using researches conducted by Thomas (2012), just (2008) and Thuburn (1997), as a guide for this study. The questionnaire consists of total of one hundred and forty eight items (148). Some of the questions were obtained from other questionnaire used in similar studies and in some cases adapted to answer some of the research questions. The respondents were requested to indicate their options by ticking in the case of the closed-ended questions while comments were on the open-ended questions.

The questionnaire is divided into six (6) sections:

SECTION A: was designed to obtain demographic information on the respondents which consists of ten (10) items.

SECTION B: was designed to ask questions on information needs of nurses as well as the factors influencing the information needs, this section consist of thirty three (33) items.

SECTION C: was also to obtain data on information seeking strategies of nurses, this section contains twenty three (23) items.

SECTION D: was designed to obtain information resources by nurses which consist of twenty six (46) items.

SECTION E: was determined the information use patterns of nurses and this section consist of seventeen (17) items.

SECTION F: was formed to generate data on challenges in meeting the information needs by nurses, this section contains nineteen (19) items using Likert Scale.

3.7.1 Validity of the Research Instrument

According Ibrahim (2013), validity refers to accuracy or truthfulness of a measurement. Validity is the quality, accuracy, measurement, agreement or approval to the research instrument in a particular study. The aim of validity is to check and effect the corrections and irregularities in the questionnaire before the final distribution to the respondents. The questionnaire used in this study was validated by experts in the Department of Library and Information Sciences Bayero University Kano. Umaru Musa Yar Adua University, Katsina State and Abubakar Tafawa

Balewa University (ATBU) Bauchi State. They checked the contents of the instrument and made necessary corrections and finally returned it to the researcher to effect the corrections.

3.7.2 Reliability of the Research Instrument

For reliability of the instrument, a pre-test was conducted prior to the actual data collection to make sure that the questions in the questionnaire are easy to answer by the respondents. The reliability test was done to identify the difficulties that may confront the researcher in conducting the study. The Reliability test indicated that all seven (7) variables were reliable indicating that the questionnaire can be used for wider distribution to investigate the information needs and information use pattern of nurses for healthcare delivery in general hospitals of Jigawa State. The result of the validity test is presented in the table below:

Table 3.2: Reliability Test

S/N	Variables of the Study	Items	Cronbach Alpha(α)
1	Information Needs	33	.823
2	Information Seeking Strategies	23	.769
3	Information Resources	46	.734
4	Information Use Patterns	17	.821
5	Challenges in meeting the Information needs	19	.766

According to Abdullahi (2016) cited in Malhotra (2004), states that alpha coefficient below 0.6 is weak in reliability, 0.6- 0.8 are strong while 0.8 and above are very strong reliability". Thus, the instrument used for the study showed that two (2) were tested very and three (3) were tested strong in reliability test.

3. 7.3 Administration of the Research Instrument

According to the preliminary results, majority of the nurses working in the general hospitals operate on rotational bases which is morning and evening duty. Therefore, the researcher administered the questionnaire personally to the respondents in both morning and evening duties in their respective wards in the hospitals with the help of two research assistants in each of the hospitals. However, the researcher and the two research assistants went round to retrieve the questionnaire back on that same day. Due to the tight duty schedule of the respondents, some of the respondents were left with the questionnaire to fill at their convenient time for at least one week and the researcher followed up such cases through phone calls.

3.8 Method of Data Analysis

Data analysis gives meaning to data collected during administration of instruments in a particular study. The data for this study was analyzed using both descriptive and inferential statistics. Descriptive statistics was used in this study to summarize the data collected and presented it using simple percentage. While inferential statistics (Cronbach alpha (α)) was used to test the hypothesis in order to determine the existence of relationship between variables and the responses which was extracted, collated, coded and presented using SPSS (Version 16.0).

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.0 Introduction

This chapter presents results of the data collected and analyse for the study. The presentation was done based on the research questions and hypotheses that guided the study. The data collected are presented, analysed and interpreted in tabular presentation under the following sub-headings:

4.1 Response Rate

4.2 Demographic Data

4.3 Information Needs of Nurses

4.4 Information Seeking Strategies of Nurses

4.5 Information Resources used by Nurses

4.6 Information Use Patterns of Nurses

4.7 Challenges in meeting the Information Needs of Nurses

4.8 Inferential Statistics

4.9 Discussion of Findings

4.1 Response Rate

This section is designed to analyze the response rate in the study; this will help in evaluating the copies the questionnaire returned for analysis. The response rate from the nine (9) general hospitals of Jigawa State is shown in table 4.1

Table 4.1 Response Rate

Questionnaire	Frequency	Percentage (%)
Administered	384	100(%)
Returned	352	92(%)
Not Returned	32	8(%)

Table 4.1 shows that 384 copies of questionnaire were administered to the respondents, out of which 352 (92%) are filled, returned and found useful for analysis, while 32 (8%) are not returned. The result also shows that there was high rate of returned the questionnaires administered to the respondents, which means that most of the respondents were within the reach of the researcher. Therefore, the percentage realized was strong enough for analysis in the study.

4.2 Demographic Information

The sought to find out the demographic information of the respondents such as their age, years of working experience and highest qualifications. Detail of the findings is shown in table 4.2.

Table 4.2 Demographic Information

Gender of the Respondents		
Options	Frequency	Percentage (%)
Male	275	78%
Female	77	22%
Total	352	100%
Years of working experience		
Options	Frequency	Percentage (%)
0-5years	64	17.2%
6-10 years	201	53.4%
11-15years	46	12.2%
16-20years	37	9.8%
21years and above	28	7.4%
Total	352	100(%)
Highest Qualifications of the respondents		
Options	Frequency	Percentage (%)
Nursing/Midwifery certificate	216	61%
BSc	80	23%
MSc	30	9%
Others	26	7%
Total	352	100(%)

Table 4.2 indicates that majority 275 (78%) of the respondents are male while 77(22%) of the respondents were females. This shows that male nurses are more dominant than female counterparts in the general hospitals of Jigawa State. The table 4.2 also shows that half 201 (53.4%) of the respondents had 6- 10 years working experience in the hospitals under study, followed by 64 (17.4%) who indicated that they had only 0-5 years working experience, while 46 (12.2%) had 11-15 years working experience, 37 (9.8%) had 16-20 years working experiences,

only 28 (7.4%) had 20 years and above working experience. This shows that majority of the respondents had 6-10 years working experience as nurses in the hospitals under study.

Table 4.2 further reveals that half 216 (57%) of the respondents had Nursing Certificates, followed by 84 (22%) who had BSc Certificates while 36 (10%) had Masters Degree, only 40 (11%) had other health-related certificates. It can be seen that majority of the nurses in the general hospitals were male nurses, this may be due to the fact that female are not given same opportunity to go to schools. It can be inferred that the nurses in the general hospitals of Jigawa State do not have enough working experience in the profession because majority of them have only 5-10 years working experience, and those with adequate working experience are at the edge of their retirement age.

4.3 Information Needs of Nurses

Furthermore, the researcher sought to find out types of information needs of nurses for healthcare delivery. The table below shows the information needs of nurses.

Table 4.3 Information Needs of Nurses

Information Needs	Frequency	Percentage (%)
Information on management of patients' health conditions	20	6%
Information on disease control & treatment	16	5%
Information on clinical decision making	70	20%
Information on drug therapy & prescription	16	5%
Information on patients' referral	80	22%
Information to educational development	20	6%
Information on Palliative care	130	36%
Total	352	100%

Table 4.3 shows that 130 (36%) of the respondents require information on palliative care, follows by 80 (22%) who require information on patients' referral, 70 (20%) require information on clinical decision making, 20 (6%) reveals that they require information on management of patients' conditions and Information to improve knowledge on clinical issues. While 6 (5%) require information on diseases control & treatment. It can be deduced that the types of information needed by nurses of general hospitals are for healthcare delivery are information on palliative care, information on patients' referral and information on clinical decision making. This is in line with the study conducted by Anyanwu, et al (2016), who also reveals that the information needs of nurses are information on Palliative Care.

Table 4.4 Reasons why Nurses need Information

Options	Frequency	Percentage (%)
For providing basic nursing care	10	3%
Providing health education, promotion and prevention	12	3.3%
Examining patients' health conditions	74	21%
For admitting/discharging patients	66	18.7%
For measuring and monitoring patients' vital signs	10	10%
Promoting health status of patients	180	3%
Total	352	100%

Table 4.4 indicates that half 180 (51%) of the respondents need information for promoting health status of their patients, followed by 74 (14%) who indicated that they need information for examining patients' health conditions, 66 (18.7%) needed information for admitting/discharging patients. Only 12 (3.3%) shows that the need information for providing health education, promotion and prevention while 10 (3%) need information for providing basic nursing care. This result shows that the nurses under study need information for promoting health status of their patients. The result also shows that the nurses under study don not need information for

providing basic nursing care, providing health education, promotion and prevention and for measuring and monitoring patients' vital signs.

Table 4.5 Personal Factors influencing the Information Needs of the Nurses

STATEMENT	SA/A		UN		SD/D	
	F	%	F	%	F	%
Time spent per day with patients	243	69%	16	5%	93	26%
Experience in the nursing profession	82	24%	5	1%	265	75%
Lack of motivation	77	22%	15	4%	260	74%
Curiosity to acquire knowledge in the profession	272	77%	0	0%	80	23%

KEY

- Very high —————> 70 – 100%
- High —————> 60 – 69%
- Low —————> 50 – 59%
- Very low —————> 00 – 49%

Table 4.5 shows that more than half 243 (69%) of the respondents reveals that time spent with their patients influence their information needs, follow by 265 (75%) who indicates that their experience in the profession influence the information they need, majority 272 (77%) of the respondents shows that curiosity to acquire knowledge influence their information needs. This result shows that the personal factors that influence the information needs of the nurses are: time spend with their patients, their experience in the profession and curiosity to acquire knowledge.

Table 4.6 Infrastructural Factors influencing the Information Needs of Nurses

STATEMENT	SA/A		UN		SD/D	
	F	%	F	%	F	%
Availability of Information Resources	244	69%	13	4%	95	27%
Cost of acquiring Information Resources	274	77%	10	2%	68	19%
Possession of personal computers	282	80%	14	4%	58	16%
Availability of Internet Connectivity	227	64%	23	7%	102	29%

Table 4.6 shows that majority 284 (80%) of the respondents indicates that that current information resources influence their information needs, follow by 274 (77%) who shows that cost of acquiring information resources influence their information needs. While more than half 244 (69%) of the respondents shows that availability of internet connectivity influence their information needs, 227 (64%), followed by 244 (69%) who indicates that availability of information resources influence their information needs. This result shows that the infrastructural factors influencing the information needs of nurses for healthcare delivery were: availability of information resources cost of acquiring information resources, current information resources and availability of internet connectivity.

Table 4.7 Professional Factors influencing the Information Needs of Nurses

STATEMENT	SA/A		UN		SD/D	
	F	%	F	%	F	%
Nature of routine duty in a ward/unit	117	33%	22	6%	213	61%
Patients' expectation to the nurses	283	80%	14	4%	55	16%
Number of patients treated in a ward/unit	296	84%	10	3%	46	13%
Patients' health conditions	302	86%	12	3%	38	11%

Table 4.7 shows that majority and 302 (86%) of the respondents agree that Patients' health conditions, 296 (84%) number of patients treat in a ward/unit, 283 (80%) patients' expectation are the professional factors that influence the information needs of nurses for healthcare delivery.

Table 4.8 Social Factors that influencing the Information Needs

STATEMENT	SA/A		UN		SD/D	
	F	%	F	%	F	%
When there is seminar presentations	123	35%	34	10%	195	55%
When there is clinical or promotional examinations	311	88%	23	7%	18	5%
When there is new disease epidemic	332	94%	0	0%	20	6%
When there is an emergence of cases	341	97%	0	0%	11	3%

Table 4.8 shows that majority 322 (91%) of the respondents agreed that emergence of cases, followed by 333 (94%) new disease epidemic and 311 (88%) clinical or promotional examinations are the social factors that influence the information needs of nurses for healthcare delivery in general hospitals of Jigawa State.

KEY

- Very high → 70 – 100%
- High → 60 – 69%
- Low → 50 – 59%
- Very low → 00 – 49%

4.4 Information Seeking Strategies of Nurses

The study sought to find out the information seeking strategies of nurses for healthcare delivery.

The tables below show the information seeking strategies of nurses.

Table 4.9 Search Strategies employed by Nurses

Options	Frequency	Percentage (%)
Ask colleagues	190	54%
Subscribing Medical Journals	44	13%
Index browsing	10	3%
Medical subject headings	13	4%
Internet Search	88	24%
Accessing Medical Databases	7	2%
Total	352	100%

Table 4.9 reveals that half 190 (54%) of the respondents use their colleagues when seeking information, follow by 88 (24%) who use internet search as another search strategy for searching for online information for healthcare delivery. This result contradicts the study of Nobert & Iwoga (2013), who reveals that health professionals seek for information from printed sources and e-resources. The nurses under study used their senior colleagues because they are more experienced in the profession.

Table 4.10 Frequency of Seeking Information

Options	N	Mean
Daily	194	2.18
Once a week	94	0.80
Once a month	35	0.39

Rarely	31	0.08
Total	352	3.45

Table 4.10 indicates that the overall mean mark for frequency of seeking information by nurses for healthcare delivery is 3.45 which is significant and greater than the bench mark of 2.50 mean therefore the result shows that the nurses under study seek for information daily for healthcare delivery.

Table 4.11 Search Engines used by nurses

Search Engines	Frequency	Percentage (%)
Google	122	35%
Yahoo	100	28.8%
Ask.com	97	27%
AOL	7	2%
Bing	8	2.4%
Baidu	8	2.4%
Excite	5	1.2%
Wolframalpha	5	1.2%
Total		

Table 4.11 indicates that 122 (35%) of the respondents use Google for searching online information, followed by 100 (28.8%) who use Yahoo and 97 (27%) of the respondents use Ask.com, while 8 (2.4%) of the respondents use Bing and Baidu respectively, followed by 7 (2%) who use AOL, 5 (1.2%) of the respondents used Excite and 5 (1.2%) use Wolframalpha. This result showed that Google and Yahoo were the most common search engines used by nurses for searching online information for healthcare delivery in General Hospitals in Jigawa State. This result showed that the nurses under study used only Google and Yahoo more for searching online information.

Table 4.12 Reasons for Seeking Information

Statement	Frequency	Percentage (%)
For solving clinical questions	80	23%
For clinical management of patients' healthcare	170	47%
For knowing about new medical trends	9	3%
For Emergency of new methods/technologies	80	23%
For updating skills & practices	13	4%
Total	352	100%

Table 4.12 indicates that 176 (47%) of the respondents seek information for clinical management of patients' healthcare, follow 80 (23%) who seek information for information for solving clinical questions and 80 (23%) of the respondents seek information for emergency of new medical trends only 13 (4%) of the respondents seek information to update their skills & knowledge and 9 (3%) of the respondents seek information to know about new medical trends. This result shows that the nurses in general hospitals of Jigawa State, Nigeria seek information various reasons to provide healthcare services to their patients.

4.5 Information Resources use by Nurses for Healthcare Delivery

The Respondents were asked to indicate the information resources they used while obtaining information for healthcare delivery in the general hospitals and their responses were shown in the Tables below. All percentages calculated in the tables are calculated using n=352

Table 4.13 Information Sources used by Nurses

Information Resources	Frequency	Percentage (%)
Medical Libraries	13	4%
Academic Libraries	10	3%
Public Libraries	5	1%
Radio/Television	30	9%
Medical databases	10	3%
Professional colleagues	100	29%
Family & friends	10	3%
Social Media	71	20%
Internet	98	27%
Hospital Information System	5	1%
Total	352	100%

Table 4.13 reveals that 102 (29%) of the respondents use their professional colleague as their information sources, follow by 98 (27%) who use internet, 71 (20%) use social media, 30 (9%) of the respondents use Radio/Television, only 13 (4%) of the respondents use medical libraries while 10 (3%) of the respondents use academic libraries, medical databases and family/friends. This result shows that the information sources use by nurses are professional colleagues, Internet and Social Media for healthcare delivery in general hospitals of Jigawa State Nigeria.

Table 4.14 Information Sources prefer by Nurses

Information Sources	Frequency	Percentage (%)
Printed Sources	61	17%
Electronic Sources	85	24%
Human Sources	206	59%
Total	352	100%

Table 4.14 reveals that half 206 (59%) of the respondents prefer human information sources, follow by 85 (24%) who prefer electronic information sources, while 61 (17%) of the respondents prefer using printed information sources. This result shows that the nurses prefer human information sources such as their senior colleagues for healthcare delivery. This is in line with the study of Majid et al (2015) who also found that nurses used human sources for getting information by first approaching their supervisors or peers for the needed information.

Table 4.15 Reasons why nurses preferred the information sources they use

STATEMENT	SA/A		UN		SD/D	
	F	%	F	%	F	%
They are available	346	98%	0	0%	6	2%
They are accessible	287	82%	16	4%	49	14%
They are less cost	334	95%	0	0%	18	5%
They are reliable	344	98%	0	0%	8	2%

Table 4.15 indicates that majority 346 (98%) of the respondents prefer human sources because they are available and reliable, follow by 344 (95%) who shows that because they are less cost, 87 (82%) of the respondents shows that they prefer human sources because they are accessible. This result also shows that the nurses prefer use human sources of because it is available to them, accessible to them, less expensive to acquire cot and reliable for them to use at all time.

Table 4.16 Satisfaction with the Information Sources used by Nurses

Options	N	Mean
Very Satisfied	81	0.92
Satisfied	203	1.73
Partially Satisfied	13	0.15
Unsatisfied	55	0.15

Total	352	2.87
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Tables 4.16 reveals the overall mean mark for satisfactory with information sources used by nurses is mean = 2.87 which is significant and greater than the bench mark of 2.50 and therefore accepted that the nurses under study are satisfied with the information sources use for healthcare delivery.

Table 4.17 Information Resources Available to Nurses

Information Resources	Frequency	Percentage (%)
Medical textbooks	151	43%
Medical journals	12	3%
Newspapers/Magazines	14	4%
Conferences/Seminar papers	14	4%
Internet Resources	85	24%
Medical Reference Materials	70	20%
Audio Tapes	6	2%
Total	352	100%

Table 4.17 indicates that 151 (43%) of the respondents shows that medical textbooks are available to them, follow 85 (24%) who indicate that internet resources were available to them, while 70 (20%) of the respondents shows that the nurses use medical reference materials are available for them, 14 (4%) indicates that newspapers/magazines and conference/seminar papers were available to the respondents, only 12 (3%) of the respondents shows that medical journals were available to them and 6 (2%) shows that audio tapes were available. This result shows that the information resources available to the nurses are medical textbooks, internet resources and medical reference materials.

Table 4.18 **Relevance of the Information Resources**

Options	N	Mean
Very Relevant	42	0.68
Relevant	77	1.65
Partially Relevant	13	0.07
Not Relevant	220	2.2
Total	352	2.87

Table 4.18 shows that the overall mean mark for the relevance of the information resources use by the nurses is 1.66 which is significant and less than the bench mark of 2.50 and therefore accepted that the information resources use by the nurses for healthcare delivery is not relevant.

Table 4.19 **Adequacy of the Information Resources**

Options	N	Mean
Very Adequate	50	0.56
Adequate	80	0.69
Partially adequate	5	0.02
Not adequate	215	0.61
Total	352	1.37

Table 4.19 shows that the overall mean mark for the adequacy of the information resources used by the nurses is 1.37 which is significant and less than the bench mark of 2.50 and therefore accepted that the information resources used by the nurses for healthcare delivery is not adequate.

Table 4.20 Information Resources use by Nurses

Information Resources	Frequency	Percentage (%)
Medical textbooks	20	6%
Medical journals	170	48%
Newspapers/Magazines	3	1%
Conferences/Seminar papers	32	9%
Internet Resources	100	28%
Medical Reference Materials	20	6%
Audio Tapes	7	2%
Total	352	100%

Table 4.20 reveals that less than half 170 (48%) of the respondents use medical journals, follow by 100 (28%) who use Internet Resources, while 32 (9%) used conferences/seminar papers only 20 (6%) use medical textbooks and medical reference materials respectively. Only 3 (1%) use newspapers/magazines, followed by 7 (2%) who use audio tapes. This result shows that the nurses under study use only medical journals and internet resources for healthcare delivery. Medical journals and medical reference materials are expected to be used more by the nurses because they contain current and relevant information.

Table 4.21 Satisfaction with the Information Resources use

Options	N	Mean
Very Satisfied	30	0.34
Satisfied	100	0.85
Partially Satisfied	5	0.02
Unsatisfied	217	0.61
Total	352	1.82

Table 4.21 shows that the overall mean mark for satisfaction with the information resources used by the nurses is 1.82 which is less than the bench mark of 2.50 therefore accepted that the nurses under study are not satisfied with the information resources for healthcare delivery in the hospitals.

4.6 Information Use Patterns of Nurses

The study sought to find out the information use patterns of nurses for healthcare delivery in the general hospitals, questions were raised and the breakdown of their responses is shown in the Tables below. All percentages calculated in the tables are calculated using n=352

Table 4.22 Frequency of utilizing Information by Nurses

Options	N	Mean
Daily	242	2.75
Once a week	23	0.19
Once a month	81	0.46
Rarely	6	0.01
Total	352	3.45

Table 4.22 shows that the overall mean mark for using information by the nurses under study is 3.41 which are significant and greater than the bench mark of 2.50 and accepted that the nurses used information daily for healthcare delivery in the hospitals.

Table 4.23 Patterns of Information Utilization

Options	Frequency	Percentage (%)
Through Medical Libraries	10	3%
Through Public Libraries	6	2%
Through Academic Libraries	10	3%
Through Hospital Information System	59	16%
Through Medical Colleagues	155	44%
Through Internet Sources	106	30%
Through Trial and Error	6	2%
Total	350	100%

Table 4.23 Shows that less than 155 (44%) of the respondents use their through professional colleagues, follow by 106 (30%) who indicates that they use Internet, 59 (16) of the respondents use information through hospital information system, while 10 (3%) of the respondents use information through medical libraries and academic libraries respectively only 6 (2%) of the respondents used information public libraries and trial and error respectively. This shows that the nurses under study used information through medical colleagues, Internet and hospital information system for healthcare delivery.

Table 4.24 Reasons for utilizing Information by Nurses

Statement	Frequency	Percentage (%)
Solving new healthcare challenges	111	33%
Acquiring more knowledge on another specialty	13	3%
Updating knowledge/skills in nursing profession	15	4%
Learning how to interact with patients	54	15%
Clinical decision making	144	41%
Clinical & promotional examination	15	4%
Total	352	100%

Table 4.24 indicates 114 (41%) of the respondents shows that they use information for clinical decision making, follow by 111 (33%) who use information for solving new healthcare challenges, while 15 (4%) use information for updating knowledge/skills in nursing profession and clinical & promotional examination respectively, only 13 (3%) use information for acquiring more knowledge on another specialty. This result shows that the nurses used information for clinical decision making, solving new healthcare challenges and Learning how to interact with their patients.

4.7 Challenges in meeting the Information Needs of Nurses

Questions on the challenges in meeting information by nurses were raised and the breakdown of their responses was shown in the table below. All percentages calculated in the tables are calculated using n=352

Table 4.25 Challenges encounter in meeting the Information needs by Nurses

STATEMENT	SA/A		UN		SD/D	
	F	%	F	%	F	%
Lack of search skills	235	83%	25	7%	27	10%
Lack of time	222	77%	30	10%	35	13%
Lack of awareness about the information sources	222	77%	25	7%	40	16%
Lack of motivation to use the information resources	216	75%	40	16%	31	9%
Lack of training	230	80%	20	6%	37	14%
High cost of information resources	210	73%	25	7%	52	18%
Unstable power supply	230	80%	31	11%	26	9%
Poor internet connectivity in the hospitals	238	83%	22	8%	27	9%
Lack of Medical Library	250	87%	30	11%	7	2%
Lack of Medical databases	260	90%	0	0%	27	10%
Lack of personal computers	180	63%	17	7%	90	30%
Lack of adequate information resources	223	78%	12	4%	52	18%
Lack of relevant information resources	200	70%	12	3%	75	27%
Lack of accessibility to information resources	208	72%	18	5%	61	10%

Table 4.25 indicates that majority 260 (90%) of the respondents reveals that there is lack of medical databases, followed by 238 (83%) who confirms that there is poor internet connectivity to search for online information, 235 (83%) also reveals that they do not have search skills to search for information. With regard to print-information resources 250 (87%) of the respondents shows that there is no medical libraries in their hospitals, follow by 230 (80%) who reveals that they do not have training on how to search for information, another 230 (80%) of the respondents shows that there is unstable power supply in the hospitals, 223 (78%) of the respondents reveals that there is inadequate information resources, 222 (77%) of the respondents indicated that there is enough time to seek and used information, another 222 (77%) of the respondents indicated that they are not aware of the information resources to use.

Table 4.25 also indicates that majority 216 (75%) of the respondents shows that they are not motivated to use the available information resources for healthcare delivery, followed by 210 (73%) who confirmed that there is high cost of information resources, 208 (72%) of the respondents reveals that the information resources are not accessible to them, while 200 (70%) of the respondents indicates that the information resources are not relevant and 180 (63%) of the respondents revealed that they lack personal computers to connect to the internet when searching for online information for healthcare delivery.

Implications of the Study

The nurses under study do not need information on various aspects in nursing profession, and they only google and yahoo while searching for online information because they rely heavily on their medical colleagues. The nurses also encountered various challenges in meeting their information needs. This implies that the nurses' knowledge on other aspects in nursing profession when their professional colleagues are not present they may find it difficult to discharge their duties effectively and their patients may suffer as a result of this, and they are likely not provide effective healthcare services.

4.8 Inferential Statistics

The discussion below explains the findings of the inferential analysis using Chi-square (α) test to test the null hypothesis employed in the study. Chi-square (α) was used in testing the hypothesis using SPSS version 16.0. In the conduct of the test, 0.05 was used as the level of significance. All the assumptions of the Chi-square were met before the analysis was done.

4.8.1 Relationship between Information Needs and Information Seeking Strategies.

H0¹ – There is no significant relationship between information needs and information seeking strategies of nurses for healthcare delivery in general hospitals of Jigawa State.

Table 4.26 Relationship between information needs and information seeking strategies.

	Value	Df	Asymp. Sig. (2sided)
Pearson Chi-Square	5.735E1a	786	.000
Likelihood Ratio	404.363	786	1.000
Linear-by-Linear Association	5.725	1	.009
N of Valid Cases	177		

Table 4.26 shows that the result of chi-square test indicates that there is a significant relationship between the information needs and information seeking strategies of nurses for healthcare delivery in the general hospitals of Jigawa State. This is expressed as: $X^2= 5.725$, $Df=786$, $N=177$, $P=.000$. This shows that the null hypothesis is rejected and alternate hypothesis is accepted. Therefore, there is a significant relationship existing between the information needs and information seeking strategies of nurses for healthcare delivery in the general hospitals of Jigawa State. Hence, the null hypothesis is rejected. This result further reveals that the information seeking strategies of nurses under study is influenced by their information needs.

4.8.2 Relationship between Information Needs and Information Resources used.

H0² - There is no significant relationship between information needs and information resources used by nurses in general hospitals of Jigawa State

Table 4.27 There is no significant relationship between information needs and information resources used.

	Value	Df	Asymp. Sig. (2sided)
Pearson Chi-Square	7.62E1a	645	.000
Likelihood Ration	470.533	645	1.000
Linear-by-Linear Association	8.865	1	.009
N of Valid Cases	177		

Table 4.27 shows that the result of chi-square test on the relationship between information needs and information resources use by the nurses under study showed that there is a significant relationship between the information needs and information sources use by the nurses for healthcare delivery. It is expressed as: $X^2= 7.627$, $DF=645$, $N=177$, $P=.000$. This showed that the null hypothesis is rejected and alternate hypothesis is accepted. Therefore, there is significant relationship existing between the information needs and information resources used by nurses in the general hospitals of Jigawa State. Hence, the null hypothesis is rejected. This result showed the information resource used by the nurses under study is determined by their information needs for healthcare delivery.

4.8.3 Relationship between Information Needs and Information Use Patterns of Nurses.

H_0^3 - There is no significant relationship between the Information Needs and Information Use Patterns of Nurses for healthcare delivery.

Table 4.28 There is no significant relationship between the Information Needs and Information Use Patterns of Nurses.

	Value	Df	Asymp. Sig. (2sided)
Pearson Chi-Square	7.82E1a	636	.000
Likelihood Ration	407.533	636	1.000
Linear-by-Linear Association	8.865	1	.009
N of Valid Cases	177		

Table 4.28 shows the result of chi-square test indicating that there is a significant relationship between the information needs and information use patterns of nurses for healthcare delivery. It is expressed as: $X^2= 7.824$, $Df = 636$, $N=177$, $P=.000$. This showed that the null hypothesis is rejected and alternate hypothesis is accepted. Therefore, there is significant relationship existing between the information needs and information use pattern of nurses for healthcare delivery in the general hospitals of Jigawa State. Hence, the null hypothesis is rejected. The result also revealed that the information needs of the nurses under study indicated how they used information for healthcare delivery.

4.8.4 Relationship between Information Needs and working experience of Nurses.

H_0^4 - There is no significant relationship between Information Needs and working experience of Nurses in General Hospitals of Jigawa State

Table 4.29 There is no significant relationship between Information Needs and working experience of Nurses in General Hospitals of Jigawa State.

	Value	Df	Asymp. Sig. (2sided)
Pearson Chi-Square	7.632E1a	654	.000
Likelihood Ration	470.533	654	1.000
Linear-by-Linear Association	8.865	1	.009
N of Valid Cases	177		

Table 4.29 shows that the result of chi-square test on the relationship between information needs and working experience of the nurses showed that there is a significant relationship between the information needs and working experience of the nurses for healthcare delivery. It is expressed as: $X^2= 7.632$, $DF=654$, $N=177$, $P=.000$. This showed that the null hypothesis is rejected and alternate hypothesis is accepted. Therefore, there is significant relationship existing between the information needs and working experience of nurses in the general hospitals of Jigawa State. Hence, the null hypothesis is rejected. The result further showed that the information need of the nurses under study is determined by their experience in the nursing profession.

4.9 Discussion of the Findings

The study investigates the Information needs and information use patterns of nurses for healthcare delivery in general hospitals of Jigawa State, Nigeria. The discussions were based on the five (5) research objectives raised by the researcher. A total of three hundred and seventy six (384) copies of the questionnaire were administered out of which three hundred and fifty two (352) were returned and found useful for the analysis. This is obvious that the response rate was appreciable and would give affirmation to the findings of the study. This corroborates the recommendations of Osuala (2015), cited Hamza, (2013), that the higher the number of response

rate, the more credible will be the study. The results of the study showed that, majority of the respondents were male, and most of them have Diploma Certificates as their highest educational qualification, and they have 6-11 years of working experience the general hospitals.

The study found that the types of information needs of the nurses on information palliative care, information on patients' referral and information on clinical decision making. The study also found that nurses needed information very often for healthcare delivery. The study therefore found that the nurses need information for promoting health status of their patients, for examining patients' health conditions and need information for admitting/discharging patients.

In investigating the information seeking strategies of the nurses, the study found that most of the nurses used their colleagues and Internet Search when seeking for information for healthcare delivery. The study also found that the nurses sought for information very often. The found study that the nurses used Google and Yahoo searching online information. However, the study also found that the nurses sought for information for clinical management of patients' healthcare, for information for solving clinical questions and emergency of new medical trends. This is substantiated the study of Egbunu & Jeminiwa 2012), who also found that medical doctors used Google for online search and the reasons why they seek information was for clinical management of patients.

The study found that that the information sources use by nurses to obtain health information are medical colleague, Internet Sources and social media. The study also found that the information sources prefer by nurses are Human Sources and the nurses preferred using this source because it is available, accessible, less cost and reliable to them. They are satisfied with this information sources. To support these findings, Majid et al (2015), also found that these information sources

are presented under three categories: print, electronic and human information sources. Among the printed information sources, most of the nurses used medical reference sources closely followed by healthcare pamphlets and information made available by healthcare companies and hospitals. It was noted that the use of articles from professional journals was quite low. It was however surprising that newspaper was not frequently used by nurses for getting healthcare-related information.

The study found that the types of information resources available to nurses are medical textbooks, internet resources and medical reference materials. The study also found the information resources they used are not relevant and adequate. The further found that the used medical textbooks and Internet resources as their main information resources and they are not satisfied with those information resources they used. This is supported by the study of Anyanwu, et al (2016) who also found that majority of nurses used internet, books, nursing colleagues their information resources.

In investigating the information use patterns of nurses, the study found the nurses used information daily for healthcare delivery. The study further found that the nurses sought for information through their professional colleagues, internet source and Hospital Information System. The study also found that the nurses sought for information for clinical decision making, solving new healthcare challenges, updating knowledge/skills in nursing profession and clinical & promotional examination. This is in line with the study of Just (2008), who found nurses use information on daily basis for patient care, practice & professional development.

The study found that the factors influencing the information needs of the nurses for healthcare delivery are: time spend per day with patients, experience in the nursing profession, curiosity to

acquire knowledge in the profession, availability of information resources, cost of acquiring information resources, lack of current information resources and availability of internet connectivity, location of the hospital work with, hours of full-time work per week, type of ward/unit work with, type of ward/unit work with and type of ward/unit work with, This support the findings of Ngozi & Ezeugwu (2014), who also found that factors that influence the information needs of nurses are availability and timeliness of information, relevance and repackaging, inadequate and unavailable training to recognize information, lack of awareness, poor funding. Similarly the study is in line with the findings of Just (2008), who found that the information needs of nurses is influenced by times related to patient care, the settings under which patient care is taking place, patients; expectation, cost of information resources and computer literacy.

In investigating challenges in meeting the information needs by nurses for healthcare delivery, the study found that majority of the nurses encountered various. The identified challenges encountered are lack of search skills, lack of time, lack of awareness, lack of motivation, lack of training, high cost of information resources, unstable power supply, lack of medical libraries, lack of medical databases, The study also revealed that, This proved the findings of Egbunu & Jeminiwa 2012), who found that medical doctors are faced with the following problems lack of time, lack of selection tools and lack of search skills.

Similarly, in another findings by Ibegwan (2013), found that high cost of information resources, lack of enough time, lack of easy access to information resources are challenges faced health professional in using information.

Hypotheses were formulated to serve as a guide and provide answer to the research questions. The results of the inferential analysis to test the first hypothesis rejected the prediction that there is no significant relationship between the information needs and information seeking strategies of nurses.

In the second hypothesis formulated, the study predicts that there is no significant relationship between the information needs and information resources used by nurses. The result showed that there is significant relationship existing between the information needs and information resources used by nurses.

In the third hypothesis, the study predicts there is a significant relationship between information needs and information use patterns of nurses. The result shows there is positive relationship between the information needs and information use patterns of nurses of general hospitals of Jigawa State, Nigeria.

In the last hypothesis, the study predicted that there is a significant relationship between information needs and working experience of nurses. The result showed there is positive relationship between the information needs and factors influencing the information need of nurses in General Hospitals of Jigawa State.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presents summary of the findings, conclusion, recommendations and suggestions for further research. The findings are sequentially discussed and interpreted in line with the five (5) objectives of the study.

5.1 Summary of the Study

The study investigated the information needs and information use patterns of nurses for healthcare delivery in general hospitals of Jigawa State, Nigeria. The study consists of five (5) chapters. The summary of each chapter is discussed below:

Chapter one covers the general background and overview of status healthcare delivery in Nigeria and Jigawa State. The concept information needs and information use patterns were introduced in this chapter. The chapter also discussed the statement of the problems, research questions, research objectives, research hypothesis, Significance of the study, scope and limitation and operational definition of terms used in the study.

Chapter two presents review of related literature and empirical findings on information needs and information use patterns of nurses for healthcare delivery. The review was done in line with the following sub-headings: concept and significance of information to nursing profession, information needs of Nurses, factors influencing the information needs of nurses, information seeking strategies of nurses, information sources used by nurses, information resources used by nurses, information use patterns of nurses, challenges faced in meeting the information needs and

theoretical and conceptual Framework was discussed in this chapter. Uniqueness of the study was also highlighted in the chapter.

Chapter three discusses the research methodology adopted in the study. The research methodology was presented under the following sub-headings: research setting, research design, population of the study, sampling technique and sample size, research instrument, reliability and validity of the study, administration of the instrument and methods of data analysis.

Chapter four discusses data presentation and analysis using descriptive and inferential statistics. Three hundred and eighty four (384) copies of questionnaires are distributed, three hundred and fifty two (352) copies were filled and returned and thirty eight (32) copies were not returned. This represented response rate of (92%). Simple percentage was used to present the data in tabular forms.

Chapter five discusses summary of the study, summary of the findings, conclusion of the study, recommendations made by the study and areas for further researches were discussed in this chapter. The chapter further discussed areas for further research.

5.2 Summary of the Major Findings

Based on the review, presentation, analysis and discussion of the results generated from the sampled population of the study, summary of the major findings were discussed in line with the research objectives. The study found the following:

1. Information Needs of Nurses

The study found that the information needs of the nurses in general hospitals of Jigawa State-Nigeria are information on palliative care, information on patients' referral and information on clinical decision making.

2. Information Seeking Strategies of Nurses

The study found that the nurses prefer asking their medical colleagues in seeking for information and they used Google and Yahoo for searching online information resources.

3. Information Resources used by Nurses

The study found that the main information resources use by nurses for healthcare delivery are: medical textbooks, internet resources and medical reference materials.

4. Information Use patterns of Nurses

The study found that the nurses use information on daily basis for clinical decision making and solving new healthcare challenges.

5. Challenges faced by Nurses in meeting the Information Needs

The study found that the nurses encounter various challenges in meeting their information needs for healthcare delivery, among which are: lack of search skills, lack of time, lack of awareness, lack of motivation, lack of training, high cost of information resources, unstable power supply, lack of medical libraries and lack of medical databases.

5.3 Conclusion

1. The study concluded that there are more male nurses than the female counterparts in the general hospitals of Jigawa State, Nigeria. It was also concluded that most of the nurses spent five years practicing nursing profession and their highest qualification is nursing/midwifery certificates.
2. The study concluded that the nurses under study require information on few aspects of nursing profession such as palliative care, patients' referral and clinical decision making. It was also concluded that there are various factors that influenced information needs of the nurses.
3. The study concluded that the nurses do not adopt specific strategies while seeking information instead they obtained information through their medical colleagues and used google and yahoo for searching for inline information.
4. The study further concluded that the nurses' main information resources use by nurses for healthcare delivery are: medical textbooks, internet resources and medical reference materials.
5. The study concluded that the nurses used information on daily basis for healthcare delivery through their professional colleagues and internet.
6. The study concluded that the nurses encountered various challenges in meeting their information and that will bring negative impact on the healthcare delivery.

5.4 Recommendations made by the Study

Based on the findings of the study and conclusions drawn, the following recommendations were made:

1. The State Ministry of Health and hospital management should identify the basic information needs of the nurses in order to satisfy the information needs of those nurses working in the general hospitals.
2. Medical library should be available in each and every general hospitals with at least one professional librarian to organize and disseminate information to the nurses in the general hospitals the in the state.
3. The Hospital Information System should be functional in order to provide current and relevant health information to the nurses.
4. Current and relevant information sources/resources should be provided to the nurses in all the general hospitals in Jigawa State, Nigeria.
5. Internet connectivity should be available and accessible to the nurses in order to enhance the use of electronic resources by the nurses in the general hospitals in the state.
6. More nurses should be recruited in order to reduce the workload of the nurse in order to have enough time to use the information resources available in the hospitals.
7. The nurses should be trained on how to search and use information in order to improve their information literacy skills search.

5.5 Areas for Further Research

Based on the scope and limitations of the study, there are many opportunities for further researches under this area. The wider scope for further research may include another study on the information needs and information use patterns of other health professionals such as dentists, pharmacists, gynaecologists, paediatricians, laboratory technicians etc. The scope of the study could be expanded to other states covering North Western States on information needs and information use pattern of nurses in general hospitals. Another area for further research is information needs and use of electronic resources by medical personnel for healthcare delivery.

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APPENDIX I: Questionnaire for Nurses

Introductory Letter to the respondents

Faculty of Education,
Department of Library and Information Sciences,
Bayero University Kano,
P.M.B 3011.

Dear Respondent,

I am a postgraduate student in the above department currently conducting a study titled **“Information Needs and Information Use Patterns of Nurses for Healthcare Delivery in General Hospitals in General hospitals in Jigawa state-Nigeria”**. To enable me conduct this study, a questionnaire is designed to elicit relevant information from you. I assure you that all information provided will be treated only for the purpose of this study.

Thank you.

Yours Faithfully,

ADAMU ABDULLAHI MUHAMMED

SPS/14/MLS/00034

08061619625

SECTION A: DEMOGRAPHIC INFORMATION

Please kindly fill the space provided below:

1. Gender of the respondents. Kindly indicate your gender by ticking only one option.

- A. Male { }
B. Female { }

2. Years of Working Experience of the respondents in the hospital?

S/N	YEARS OF EXPERIENCE	TICK
A.	0-5 years	
B.	6-10 years	
C.	11-15years	
D.	16-20 years	
E.	21 and Above	

3. Highest Educational Qualification. (Tick only one option)

- A. Nursing/Midwifery Certificates { }
B. BSc { }
C. MSc { }
D. Others { }

SECTION B: INFORMATION NEEDS OF NURSES

4. What are the type(s) of information you need?

S/N	Information Needs	Tick
A	Information on care & Management of Patients	
B	Information about Diseases Prevention, Control and Treatment	
C	Information on Clinical Decision Making	
D	Information on Drug Therapy & Prescription	
E	Information on Patients' Referral	
I	Information to improve knowledge on clinical areas	
J	Information on Palliative Care	

5. How often do you need information?

- A. Very often { }
- B. Often { }
- C. Seldom { }
- D. Never { }

6. For what purpose(s) do you need information?

S/N	Purposes	Tick
A	Providing basic nursing care e.g bathing, general hygiene care	
B	Providing health education, promotion and prevention	
C	Examining patients' health conditions	
D	For admitting/discharging patients	
E	For measuring and monitoring patients' vital signs	
F	Promoting the health status of patients	

Please use the following statement and rate your agreement on the factors influencing your information needs using 5 point Likert scale.

KEY: Strongly Agree (AS) = 5, Agree (A) = 4, Undecided (UN) =3, Disagree D = (2), Strongly Disagree (SD) = 1

7. What are the Personal Factors influencing your information needs?

S/N	STATEMENT	SA	A	UN	SD	D
A	Time spend per day with patients					
B	Experience in the nursing profession					
C	Motivation to use information					
E	Curiosity to acquire more knowledge in the profession					

8. What are the Infrastructural Factors influencing your information needs?

S/N	STATEMENT	SA	A	U	SD	D
A	Availability of Information Resources					
B	Cost of acquiring Information Resources					
C	Possession of personal computer					
D	Availability of Internet Connectivity					

9. What are the Professional Factors influencing your information needs?

S/N	STATEMENT	SA	A	U	SD	D
A	Nature of a routine duty in a ward/unit					
B	Patients' expectation ward/unit					
C	Number of patients treated in a ward/unit					
D	Patients' health conditions					

10. What are the Social Factors that influence your information needs?

S/N	STATEMENT	SA	A	U	D	SD
A	Seminar/workshop presentation					
B	Clinical/promotional examinations					
C	New disease epidemic					
D	When there is an emergence cases					

SECTION C: INFORMATION SEEKING STRATEGIES OF NURSES

20. What type(s) of search strategies do you employ when seeking for information?

- A. Ask colleagues { }
- B. Subscribing Medical Journals { }
- C. Index browsing { }
- D. Medical subject headings { }
- E. Internet Search { }
- D. Accessing Medical Databases { }

21. How often do you seek for information?

- A. Daily { }
- B. Once a week { }
- C. Once a month { }
- D. Rarely { }

22. Which search engines do you use when seeking for online information?

- A. Google { }
- B. Yahoo { }
- C. Ask.com { }
- D. AOL { }
- E. Bing { }
- F. Baidu { }
- G. Excite { }
- H. Walframaphal { }

23. What are the key reasons that make you seek information for healthcare delivery?

- A. Solving clinical questions { }
- B. Clinical management of patients' healthcare { }
- C. Acquiring knowledge on new medical trends { }
- D. Emergency of new methods/technologies { }
- E. Updating skills & knowledge on the Profession { }

SECTION D: INFORMATION RESOURCES USED BY THE NURSES

11. What types of Information Sources do you use to obtain Information?

S/N	Information Sources	Tick
A	Medical Libraries	
B	Academic Libraries	
C	Public Libraries	
D	Radio/Television	
E	Medical databases	
F	Medical colleagues	
G	Family & friends	
H	Social Media	
I	Internet Sources	
J	Hospital Information System	

12. What types of Information Sources do you prefer?

- A. Printed Sources (textbooks, journals, manuals etc) { }
- B. Electronic Sources (internet, websites, CDs, e-journals, e-books etc) { }
- C. Human Sources (colleagues, supervisors and senior staff etc) { }

13. Why do you prefer the Information Sources used?

S/N	STATEMENT	SA	A	UN	SD	D
A	They are available					
B	They are accessible					
C	They are less costly					
D	They are reliable					

14. What is your level of satisfaction derived from the Information Sources used?

- A. Highly Satisfied { }
- B. Satisfied { }
- C. Not Sure { }
- D. Dissatisfied { }

15. What type(s) of Information Resources available to you?

S/N	Information Resources	Tick
A	Medical books	
B	Medical journals	
C	Newspapers/Magazines	
E	Conferences/Seminars papers	
G	Internet Resources (e-books/e-journals)	
H	Medical Reference Materials	
I	Audio Tapes	

16. How relevant are the Information Resources?

- A. Very relevant { }
- B. Relevant { }
- C. Partially Relevant { }
- D. Not Relevant { }

17. How adequate are the Information Resources?

- A. Very Adequate { }
- B. Adequate { }
- C. Partially Adequate { }
- D. Not Adequate { }

18. What type(s) of Information Resources do you used?

S/N	Information Resources	Tick
A	Medical books	
B	Medical journals	
C	Newspapers/Magazines	
E	Conferences/Seminars papers	
G	Internet Resources (e-books/e-journals)	
H	Medical Reference Materials	
I	Audio Tapes	

18. How satisfied are you with the information resources used?

- A. Very satisfied { }
- B. Satisfied { }
- C. Dissatisfied { }
- C. Very Dissatisfied { }

SECTION E: INFORMATION USE PATTERNS OF NURSES

24. How often do you use information for healthcare delivery?

- A. Daily { }
- B. Once a week { }
- C. Once a month { }
- D. Rarely { }

25. What pattern(s) do you adopt in utilizing information?

S/N	OPTIONS	TICK
A	Through Medical Libraries	
B	Through Public Libraries	
C	Through Academic Libraries	
D	Through Hospital Information System	
E	Through Professional Colleagues	
F	Through Internet Sources	
G	Through Trial and Error	

26. For what purpose(s) do you use Information?

S/N	STATEMENT	TICK
A	Solving new healthcare challenges	
B	Updating knowledge/skills in profession	
C	Acquiring more knowledge on another specialty	
D	Learning how to interact with patients	
E	Clinical decision making	
F	Clinical/promotional examination	

SECTION F: CHALLENGES IN MEETING INFORMATION NEEDS OF NURSES

27. What types of challenges do you encounter?

S/N	STATEMENT	SA	A	UN	SD	D
A	Lack of search skills					
B	Lack of time					
C	Lack of awareness about the information sources					
D	Lack of motivation to use the information resources					
E	Lack of training					
F	Lack of search skills					
G	Lack of time					
H	Lack of awareness about the information sources					
I	Lack of motivation to use the information resources					
J	Lack of training					
K	High cost of information resources					
L	Unstable power supply					
M	Poor internet connectivity in the hospitals					
N	Lack of Medical Library					
O	Lack of Medical databases					
P	Lack of personal computers					
Q	Lack of adequate information resources					
R	Lack of relevant information resources					
S	Lack of accessibility to information resources					

Thank You.

Adamu Abdullahi Muhammed
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muhdaa2510@gmail.com

APPENDIX II: Reliability Statistics

Reliability Statistics of Information Needs

Cronbach's Alpha	Number of Items
.823	33

Reliability Statistics of information Seeking Strategies

Cronbach's Alpha	Number of Items
.769	23

Reliability Statistics of Information Resources used

Cronbach's Alpha	Number of Items
.734	46

Reliability Statistics of information use patterns of Nurses

Cronbach's Alpha	Number of Items
.766	17

Reliability Statistics of challenges in meeting the Information needs

Cronbach's Alpha	Number of Items
.750	19

APPENDIX IV: List of Abbreviations

WHO: World Health Organization

PTF: Petroleum Trust Fund

NEEDS: National Economic Empowerment and Development Strategy

LGAs: Local Government Areas

ICT: Information and Communication Technology

EBP: Evidenced-Based Practice

RCN: Royal College of Nurses

PBRN: Practice-Based Research Network

EMR: Electronic Medical Record

PDAs: Personal Digital Assistants

PHC: Primary Health Care

RQ: Research Question

SMoH: State Ministry of Health

GHS: Gunduma Health System

SPSS: Statistical Package for the Social Sciences