

JIMMA UNIVERSITY

COLLEGE OF NATURAL SCIENCES

DEPARTMENT OF INFORMATION SCIENCE

INFORMATION SEEKING BEHAVIOR OF NURSES: THE CASE OF JIMMA

UNIVERSITY SPECIALIZED HOSPITAL, ETHIOPIA

BY:

TSEHAY DEMILIE

JIMMA-ETHIOPIA

JUNE, 2017

JIMMA UNIVERSITY

COLLEGE OF NATURAL SCIENCES

DEPARTMENT OF INFORMATION SCIENCE

**INFORMATION SEEKING BEHAVIOR OF NURSES: THE CASE OF JIMMA
UNIVERSITY SPECIALIZED HOSPITAL, ETHIOPIA**

BY

TSEHAY DEMILIE

PRINCIPAL ADVISOR: TIBEBE BESHAN (PhD)

CO-ADVISOR: REGASA ALEMU (MSc)

SAMUEL ASSEFA (PhD)

A RESEARCH SUBMITTED TO THE DEPARTMENT OF INFORMATION SCIENCE,
COLLEGE OF NATURAL SCIENCES OF JIMMA UNIVERSITY IN MEETING THE
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF
SCIENCE IN INFORMATION AND KNOWLEDGE MANAGEMENT.


**JIMMA, ETHIOPIA
JUNE, 2017**

JIMMA UNIVERSITY
COLLEGE OF NATURAL SCIENCES
DEPARTMENT OF INFORMATION SCIENCE
INFORMATION SEEKING BEHAVIOR OF NURSES: THE CASE OF JIMMA
UNIVERSITY SPECIALIZED HOSPITAL, ETHIOPIA

BY
TSEHAY DEMILIE

As member of the board of examiners of Msc. Research open defense examination of the above title, we read and evaluated the research and examined the candidate.

Name and Signature of Members of the Examining Board

Name	Title	Signature	Date
Samuel Sisay (MSc)	Chair person	_____	_____
Tibebe Beshah (PhD)	Principal Advisor		_____
Regasa Alemu (MSc)	Co-advisor	_____	_____
M. Natarajan (PhD)	Internal examiner	_____	_____
Million Meshesha (PhD)	External examiner	_____	_____

JIMMA, ETHIOPIA
JUNE, 2017

GRADUATE THESIS OWNERSHIP AGREEMENT

This thesis is a property of Jimma University, an institution that awarded MSc/PhD Degree to the graduate student and funded its research cost fully or partly. The research work was accomplished under the close support and supervision of the assigned University’s academic staff. It is therefore strictly forbidden to publish, modify, or communicate to or put at the Disposal of third party the entire document or any part thereof without the common consent of the research supervisor(s) and the graduate student. Disregarding this agreement would lead to Accountability according to the Jimma University’s Research and Publication Misconduct Policy **Article 1.7** of the University’s Document for “Guidelines and Procedures for Research, March 2012”

Name of the Graduate Student Signature Date

Name (s) of the Research Supervisor (s) Signature Date

Title of the Thesis:

Degree Awarded: MSc/PhD (Encircle one)

DEDICATION

I dedicate this work to my family especially for my mother weyzero Yalganesh Melkamu, she was encouraged me to complete this research.

ACKNOWLEDGEMENTS

First of all, I would like to thank Bulehora University for allowing me to take this post graduate program. Secondly I greatly thank for my advisors Dr. Tibebe Beshah for his guiding and giving constructive ideas and supportive advice for the development of this research starting from title constructing up to ending.

I would also like to thank for my co-advisors Mr. Regasa Alemu and Mr. Samuel Assefa from the EDMA program, for their reliable suggestion and comment until the thesis is finished.

I would thank for Jimma University Specialized hospital staffs for their positive cooperation at the time of data collecting when developing this thesis research. Finally I would like to thank my classmates for all their encouragement and help along the way and for my family for their supporting advice. Above all, I would like to thank the Almighty God for helping me in my endeavour.

TABLE OF CONTENTS

Contents	Page No
DEDICATION	iv
ACKNOWLEDGEMENTS	v
LIST OF TABLES	ix
LIST OF FIGURES	x
ABSTRACT	xi
LIST OF ACRONYMS	xii
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background of the study	1
1.2. Statement of the problem	4
1.3 Research questions	7
1.4. Objectives of the study.....	7
1.5 The scope and limitation of the study	7
1.6 Significance of the study.....	8
1.7 Operational Definitions.....	8
CHAPTER TWO	10
LITERATURE REVIEW	10
2.1. The Concept of Information.....	10
2.2. Information needs	10
2.3. Information seeking behavior	11
2.4. Information Sources for health professionals	13
2.5. Factors that affect information seeking behavior of health professionals	14

2.6. Models of information Seeking behavior	16
2.7. Related works.....	22
2.8. Summary of related works	24
CHAPTER THREE	26
METHODOLOGY OF THE STUDY	26
3.1 Description of the study area	26
3.2. Research Design.....	26
3.3. Sample size and sampling technique	26
3.4. Data Sources	28
3.5. Data collection techniques	28
3.6. Data collection procedure	28
3.7. Study variables.....	29
3.8. Checking the validity and reliability of the instruments.....	29
3.9. Data quality control.....	30
3.10. Methods of Data Analysis.....	30
3.11 Ethical consideration.....	30
CHAPTER FOUR.....	31
RESULTS AND DISCUSSION	31
4.1 Response rate	31
4.2 Socio demographic data.....	32
4.3 Information Seeking Patterns of Nurses	33
4.3.1 Computer access and use	33
4.3.2 Preference of information sources.....	34
4.3.3 Methods of internet access.....	35
4.3.4 Satisfaction level of respondents.....	38

4.3.5 Respondent’s library usage behavior.....	39
4.4 Purpose of seeking information	41
4.5 Communication channels that nurse’s use.....	41
4.6 Sources used by nurses	43
4.7 Factors that affect ISB of nurses	45
4.8 Correlation and Regression results of the key variable	48
4.9 Correlation and regression result of key factors	51
4.2. Discussion.....	55
4.2.1. Information seeking pattern	55
4.2.1.1. Computer use and access	55
4.2.1.2. Sources of information for nurses	56
4.2.1.3. Respondent’s library usage behaviour	57
4.2.2. Reasons why nurses seek information	57
4.2.3. Factors that affect information seeking behavior	58
4.2.4. Regression Results of the Key Variable	59
4.3 Conceptual Framework.....	59
CHAPTER FIVE	61
CONCLUSION AND RECOMMENDATION	61
5.1. Conclusion	61
5.2. Recommendation	63
5.2.1. Recommendation for practice	63
5.2.2. Recommendation for future work	63
References.....	64
Appendix.....	i

LIST OF TABLES

Table 4.1 Response rate of the study	31
Table 4.2 Demographic characters of respondents	32
Table 4.3 Computer access and use	34
Table 4.4 Preferred information format	35
Table 4.5 Method of internet access	36
Table 4.7 Satisfaction with information provided inside and outside work area.....	38
Table 4.8 Problems encountered when searching information on internet.....	38
Table 4.9 Library usage behavior of respondents	39
Table 4.10 Information sources subscribed by institution	40
Table 4.11 Purpose of information seeking among nurses	41
Table 4.12 Main communication channels used by nurse professionals	42
Table 4.13 Sources of information.....	44
Table 4.14 Factors that affect ISB of nurses.....	46
Table 4.15 Correlation results of the key variables	48
Table 4.16 Regression result of key variables.....	50
Table 4.17 Correlation result of information seeking factors.....	52
Table 4.18 Regression result of information seeking factors	52

LIST OF FIGURES

Figure 2.1 Wilson's information behaviour model (Case, 2002).....	17
Figure 2.2 Wilson's second (1996) model of information behavior (Wilson, 1999).....	19
Figure 2.3 Ellis's model of information seeking behaviour (Wilson, 1999).....	20
Figure 2.4 Leckie, Pettigrew, and Sylvain (1996) information seeking model (Case, 2002).....	22
Figure 4.1 Conceptual framework of the study	60

ABSTRACT

Information seeking behavior is the application of attitudes through a set of actions in order to achieve the desired information need. Studying the information-seeking behavior of users is very important for librarians and information services providers while planning and designing information services for their clientele. The objective of this study was to identify the information seeking behavior of nurses in Jimma University Specialized hospital. The methodology employed to conduct this study was quantitative survey research and the respondents were nurses of Jimma University Specialized hospital, Ethiopia. The total population of the study was 500 nurses. Simple random sampling was used for selecting questionnaire respondents from the total populations. Questionnaire was used as data collecting method to gather data. The questionnaire was distributed to 152 nurses, from which 126 (82.9%) were returned and used for data analysis.

The result of the analysis indicates that the main reasons that motivated nurses to search for information were updating their knowledge, for their development and for better patient care. The main types of information sources accessed by nurses were internet resources, books, ask (Drs, pharmacists), personal collection and their colleagues. The most preferred information formats for nurses were both electronic and printed information format. Education level, year of experience, poor computer and search skill and lack of adequate time were the identified factors that affect/facilitate information seeking behavior of nurses, those listed factors had significant relationship with information seeking behavior. This study recommended that library and information center should conduct continues need assessment and provide information literacy training and develop better information system to convey the relevant information needed of nurse staffs.

LIST OF ACRONYMS

DB:	Databases
IB:	Information Behavior
ICT:	Information Communication Technology
ISB:	Information Seeking Behavior
JUSH:	Jimma University Specialized Hospital
PDAS:	Personal Digital Assistants
SPSS:	Statistical Package for Social Science

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Information can be seen as a resource for every person. Every human being needs some information for his/her day-to-day activities and well-being. It is a fact that information plays a significant role in every aspect of people's life, without differentiating between rural or urban dwellers, old or young, literate or illiterate (Helen, 2012). Information is considered as an important matter that contributes towards the maturity of a nation. It provides the core for the development of knowledge, the basis for innovations, the resources for informed citizenry and as a result, becomes a key commodity for the progress of a society (Shaheen et al., 2000). Information is valued as much as human resources, financial resources and material resources, becoming the fourth factor of production (Popoola, 2002).

Societies that do not have access to the information they need will be left behind in terms of cultural and technological improvement. Information is an essential device used in the realization of any objective or goal set by individuals; thus it remains the means of support for any individual or organization (Helen, 2012).

Information is the basic necessary resource to almost all jobs and professions. The need to become informed and educated individuals initiate to the process of "investigate information needs" (Davis, 2007). However, this process alone cannot work without knowing the ways individuals articulate, seek, evaluate, select and finally use the required information, which is normally known as "information-seeking behavior".

Information seeking behavior and information needs concept is originated from information behavior ideas (Case, 2002). Information behavior implies "information seeking with the totality of other unintentional or passive behaviors as well as purposive behaviors that do not involve seeking, such as actively avoiding information" (Case, 2002). Information behavior refers to what extent an individual does to fulfill an information need.

Information need is described as an individual's or group's desire to locate and obtain information to satisfy a conscious or unconscious need (Case, 2006). Kuhlthau (1993) also justified that information needs is often understood as a vague awareness of something missing and usually culminating in locating information that will contribute to understanding and

meaning. The identification of information needs of a person will lead to the means of seeking for that information.

Information seeking behavior is the process in which one goes to search information that will meet his or her need. Information seeking behavior vary considerably from one individual to another with their age, gender, level of education, occupation, location, culture, etc. It is very difficult, if not impossible to identify common information seeking behavior for every one of people mainly in the developing regions of the world (Ekoja, 2010). The author additionally stated that information seeking behavior are the tendencies and approaches exhibited by people while seeking out information, which also is a task of the recognition of one's information needs as perceived by him and that which propels him to make use of information services and resources to satisfy such perceived needs.

Information users need to seek relevant information for problem solving, current awareness, for entertainment purposes and up-dating of their knowledge. Without seeking valid and update information, it is impossible to do progress in any field of life (Genene, 2014). Identifying the information needs and information-seeking behavior of various professional groups is essential as it helps in the planning, implementation and operation of information system and services in the given work settings.

The constant stream of developments in the current information age means that patterns of searching, locating and identifying information sources will continue to change. Therefore, information need and seeking behavior (ISB) will always needs further research (Sandra, Lyn & David, 2015). The investigation of information needs and information seeking behavior is a well-known and major research area in library and information science and other correlated disciplines. Users study go on to be an important area of library research, as identifying the information seeking behavior of specific user group has contributed to the development a variety of library services (Barret, 2005).

Health workers are professionals who play the vital role in maintaining a healthy population. They are trained medical professionals who are responsible for taking care of patient and play a major role in the prevention of diseases. They are people who protect and improve the health of their communities. They engage in actions whose primary aim is to enhance health. The health workers include medical doctors, nurses, pharmacists, laboratory scientists and community health officers. They perform the vital function of ensuring that people are well both mentally

and physically. The health workers need health information in performing their official duties. They need continuous information so as to keep abreast with recent development in the field of medicine (Emmanuel et al., 2016).

The society is dynamic, so there are rapid changes in theory and practice of health care delivery. Health professionals are a group of users that have a great role for the health of each individual by giving a good treatment. Health care delivery has become a crucial factor in national development. In health organization there are different health professionals that need current information to give better service for patients and to update their knowledge (Mulusew, 2012).

Nurses characterized by a focus on health promotion and disease prevention, on empowerment of the person, including the provision of information, education, and advocacy, and on working in partnership with patients, careers, and other professionals (Ebenezer, 2015).

Nurses are one group from health professionals that play a pivotal role in any health care institution and encompass the largest workforce in any health care institution; they act as direct caregivers who serve a hospital twenty-four hours a day, seven days a week. This gives nurses a unique perspective on both patient care and hospital operations. So they need current information for updating their clinical knowledge to improve patient care and mainly they need information related to drug (Tadesse, 2016).

The importance of nurses cannot be overemphasized because they play a crucial role in health care delivery. They help the doctors, pharmacists and laboratory scientists to provide effective health care to patient. In fact, nurses coordinate all health care activities of patient in their care.

The role of nurses in health care delivery, information is a very crucial tool and how they acquire and use the information are key determinants of their performance (Paraskevi, Petros & Marianna, 2014).

The investigation of information seeking behavior plays a great role for health professionals to perform all kinds of jobs, whether it is treatment of a patient or overall management of the hospital. Different researchers investigate information needs and seeking behavior of different user groups, but there is limited research on the area of health professionals. So, the aim of this study is identifying the information seeking behavior of health professionals by taking a distinct group that are nurses as a target population. The researcher tries to give relevant recommendations for the responsible person for improving the information availability, so the study improves the awareness of nurses on information seeking behaviors to fulfill their needs.

1.2. Statement of the problem

In the modern age information is taking as one of the key factors of production, this indicates deficient in information, no activities can be undertaken. In each field of study, one cannot think work without information. Health professionals in health environment need too recent information to perform various activities and to reduce medical errors (Oyemo, 2006).

The investigation of information need and seeking behavior of health professionals is very essential to find out their information needs and where do they look for information. This knowledge helps the health library to acquire and disseminate the right information to meet the needs of professionals and for system designers and database developers for improving facilities and services to meet the information needs of users efficiently and effectively (Mathew, 2015).

The developing world currently faces a series of health crises that threaten the lives of millions of people due to lack of resources and full-bodied healthcare infrastructures (Oyemo, 2006). In developing countries including Ethiopia, particularly in rural primary health care lack of access to information remains a major barrier to knowledge-based health care services (Lemma, 2009).

Since the library collection and different information systems do not fulfill the information needs of users, health professionals get a high risk that leads for medical errors which are common in today's health care organizations and have the potential to cause miss-diagnosis, incorrect treatment, increase multi drug resistance, severe injury or unpredicted patient death (Davies, 2007).

Continuously assessing the information needs and seeking behavior of health professionals become more vital and mandatory due to the emergence of new infectious diseases such as Asian bird flu, HIV/AIDS epidemic, malaria, tuberculosis and other communicable diseases and to become knowledgeable for other future suddenly emerging diseases (LaPelle *et al.*, 2006). Tremendous developments in the medical field such as new emerging diseases, treatment, management and advances in the information technology sector have created knowledge gaps resulting to continuous changes in information needs of medical professionals (Anne, 2014).

As many health related studies in developing countries indicated that, accessing relevant health information for all is mandatory due to the presence of life threatening infectious diseases and poor trend / access of recent health information resources among health professionals (Lemma, 2009).

The exponential growth of information and its users influenced the information management system. Thus, it is essential to evaluate the user's behavior, information seeking pattern and their awareness of the latest information technology (Grace & Jeyshankar, 2014). Understanding the information needs and information-seeking behavior of various professional groups is essential as it helps in the planning, implementation and operation of information system and services in work settings (Devadason & Langanm, 2000). With the development of different technologies, information need and seeking behaviors of different public and private health professionals should be continuously identified to create effective and efficient provision of timely and relevant information and to design appropriate information systems (Mulusew, 2012).

In other countries some surveys such as (Sarah, 2012, Ebenezer, 2015, Anne, 2014 and Petros, Vasiliki and Dimitris, 2011) were conducted in hospital professionals to identify their information seeking behavior and information needs in order to reach a wider and generalizable result. However, study related to information seeking behavior of health professionals in Ethiopia is very limited (Mulusew, 2012) and there is no more studies conducted by taking specific user group of health professionals. Information needs and seeking behavior of individuals in an organization differ depending upon their respective functions and tasks, the level of their knowledge and experience (in the specific field of specialization and in the use of information systems and services), their particular interest and need to satisfy which they seek information, on the breadth and depth of their interest profiles, and on the nature of the subject (Kuruppu, 1999). Without the identification of each health professional information needs and seeking behaviors, health organization libraries and system developers cannot fulfill their individual needs. Users study continue to be an important area of library research, as studying the information seeking behavior of specific user group has contributed to the development of a variety of library services, because the information seeking behavior of different user groups are not similar (Barret, 2005).

So the investigation of different user groups is relevant to identify each user information needs and seeking behavior and it becomes an input for library and system developers consider each user groups and make the system gives equal benefit.

In health professional there are different health professional groups like doctors, nurses, pharmacist, physicians and other groups. These individual groups have their own information behavior, so examining each group of information seeking behavior is appropriate.

Most nurses work in hospitals, and the majority of hospital employees are nurses (WHO, 2001). They are responsible not only for following physicians' orders and performing routine duties, but also for maintaining a constant surveillance of their patients, especially in a critical care unit (McKnight 2006). Nurses are usually more in number than other clinical employees and they are easily available to take care of patients quite unlike doctors who are seen more in their consultation rooms. Nurses form the majority of clinical employees of hospitals and they are consulted more than other health workers. Nurses need current, accurate and timely health information to perform their duties effectively (Emmanuel, Oyemike & Desmond, 2016). According to Wessel, Epstein & Gadd (2013) most previous studies on health care provider's ISB focused on pharmacists & physicians, studies on ISB of nurses is limited it needs due attention and investigation. Esmeralda & Wilma (2015) also recommend that research studies should be more conducted in the field of health professionals specifically on nurse's information seeking behavior. Different groups in health organization have different information seeking behavior. The researcher initiates to identify the selected hospital nurses professionals information seeking behavior, because in the current information age there is information overload and it makes difficult for library services and information source developers to fulfil the different user information needs. Investigation of different user group's information seeking behavior is very relevant to satisfy users and to improve and give quality service for patients in health organizations.

From the literature understanding nurses are one health professional groups and they represent the largest professional group of the local public health workforce and they pass most times on the work area (Health Resources and Services Administration, 2000). Based on the author's idea and as nurses represent most numbers from than other professionals the study was limited to employees with a nursing duties. Because of this reason the researcher become interested to identify the information seeking behavior of nurses to fulfill their information needs and figure out a conceptual framework based on the result of the survey about the current information seeking behavior of health professionals (nurses), sources used, factors affect their seeking activity and suggestions to overcome basic ISB hinder factors. The conceptual framework will serve as a guideline for information professional and information providers in designing and providing appropriate information delivery mechanism for nurses.

1.3 Research questions

Based on the above objectives the following research questions were proposed.

1. How do nurses seek information in Jimma University Specialized hospital?
2. What are the factors that affect the information seeking behavior of nurses?
3. What are the purposes of seeking information by nurse professionals?
4. How best the theories for nurses information seeking conceptual framework to be figured?

1.4. Objectives of the study

1.4.1. General objective

The main objective was to study the information seeking behavior of nurses and figure out a conceptual framework for effective representation of the same.

1.4.2. Specific objectives

The specific objectives of the study were:

1. To identify the information seeking patterns of nurse professionals
2. To identify factors that affect/facilitate the information seeking behavior of nurses
3. To determine the purpose of seeking information for nurse professionals
4. To figure out a conceptual framework that is relevant to create understanding on information seeking behavior of nurses

1.5 The scope and limitation of the study

The scope of this study limited to Jimma University Specialized hospital. The main aim was to study the information seeking behavior of nurse professionals working at JUSH. The researcher first select Jimma zone to select research area hospitals, in Jimma zone totally there are four public hospitals, the researcher select JUSH conveniently. The researcher analyzes and discusses the results based on what the participants reported through the survey. There was limited number of current literature related to this study in Ethiopia, so it makes difficult to more analyze and discuss.

1.6 Significance of the study

Understanding the information seeking behavior of nurses is vital for provision of timely and relevant information to aid them in their duties, research and skill development. According to Nkomo (2009) understanding user's information seeking behavior has always interested information science research area. It is hoped that the recommendations made from this study will benefit for policy makers, information system developers and the nurses themselves. It will create awareness among policy makers, about the information requirements and problems that nurses face during seeking. This may help them to come up with policies which will develop and promote nurses in the health organization. Information system developers will be able to understand the information seeking behavior and capabilities of nurse professionals. It is hoped that with the research findings available and the recommendations made, the designers will be able to design systems that will be appropriate and user friendly to nurses information need. Consequently resulting from good policies and information systems, nurses will be able to benefit from them. Moreover, the study may help as a stepping-stone for the concerned authorities of the health organization to take timely measures, to minimize the problem and make conducive working environment. The findings and recommendations of the study will contribute towards the ongoing efforts of developing information seeking behavior culture of nurses in health organization. Furthermore, the study may also add knowledge on the area and open ways for further research.

1.7 Operational Definitions

Health professionals: All health personnel from different categories working at the selected health institutes. They are people whose job is to protect and improve the health of their communities (The World Health Report, 2006).

Nurses: Nurses are one group of health professionals that responsible for the protection, promotion, and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human response, and advocacy in the care of individuals, families, communities, and populations.

Hospital: An institution that provide medical and surgical treatment and nursing care for sick or injured people (Simpson et al., 2009).

Information behavior: Is the totality of human behavior in relation to sources and channels of information, including both active and passive information seeking, and information use

(Wilson, 2000). In other, Information behavior refers to what extent an individual does to fulfill information need (Case, 2002).

Information need: The information in which information seekers require for conducting their businesses and for their daily lives (Ekoja, 2002).

Information Seeking: The notion of information seeking is basically, is the consequence of a felt information need by a user who may then fulfill demands upon formal and informal information sources or services in order to satisfy the needs (Ramnah & Laili, 2001).

Information seeking behavior: Information seeking behavior refers to those activities a person engages while in identifying his or her own need for information searching and using or transferring of information (Juran & Milan, 2014).

Information sources: The sources used to acquire relevant information to achieve their information needs.

CHAPTER TWO

LITERATURE REVIEW

In this chapter literatures that become important to the study were reviewed. This chapter contains some concepts of information, information seeking behaviors; information sources in health environment; factors that affect information seeking behaviors of health professionals (nurses) and lastly discuss models of information seeking behavior.

2.1. The Concept of Information

In the discipline of information science, information is defined in numerous different ways by different scientists and there is no single commonly accepted definition for it. Oxford English Dictionary defined information as (1) the action of informing, the action of telling or fact of being told something (2) that one is apprised or told; intelligence, news. This nominal definition reveals at least one key distinction: the term may be used to indicate either a process (informing) or a kind of message (news) (Case, 2012).

Wilson (2006), explained that the word “information” is used, in the context of user studies research to denote a physical entity or phenomenon (as in the case of questions relating to the number of books read in a period of time, the number of journals subscribed to), the channel of communication through which messages are transferred (as when we speak the incidence of oral versus written information), or the accurate data, empirically determined and presented in a document or transmitted orally.

According to Manoj et al. (2015), Information is very crucial resource for building a community or a society. Relevant information is the cornerstone for building the awareness, expertise and practical strategies that necessary to get better world we live in, in terms of health, physical, technical, mental, social and scientific development of humanity.

2.2. Information needs

Information is required because of it is one from the basic resources that are relevant for every individual life. People need information to gain answers for the purpose of to achieve their goal by solving specific problems. So, information need begin whenever individuals find themselves in a situation as they find the success (Ayalu & Moly, 2015). According to Kennedy (1997), the reflection of information needs is similar to the need for love and the physiological need for food

and water. Ricks & Ten (2015), defined information needs as ‘a state or process started at the time one perceives a gap between the information and knowledge available to solve a problem and the actual solution of the problem.’

Information need is the amount of positive information that an individual necessitate having for their work, entertainment and many other like satisfaction. However this shows that lack of gaining the needed information is difficult to accomplish tasks. The concept of information need also means the need for information whenever individuals are faced with situation that requires knowledge. Thus indicates, information need is a gap in person’s knowledge (Davies, 2007).

Health professionals need information about disease, diagnosis procedures, and treatment side effects and for improving their daily life activities. Nursing professionals need a wide variety of health information to achieve their clinical and educational needs (Grace1 &Jeyshankar, 2014). According to Sarah (2012) information concerning with drug therapy and about policies and procedures were identified as the most popular reasons for seeking information in the clinical environment.

Blythe &Royle (2000) stated that nurses required information for decision making about individual patients’ care and for wider topics within nursing. Nurse professionals have a need for information that become accessible, good quality, up-to-date, manageable and relevant, as well as information services that assist nurses in finding that information (Esmeralda &Wilma, 2015).

2.3. Information seeking behavior

Wilson (2008) said that, “Information seeking behavior is the purposive seeking for information as a consequence of a need to satisfy some goal. In the course of seeking the individual may interact with manual and computer based information system.” It is important to study the information-seeking behavior of particular groups of people, in order to serve them better. Information-seeking behavior is the way in which people express the need for search and use information (Ellis, 1993).

According to Wilson (2015), Individuals are motivated to seek information to satisfy their needs. Information seekers should initiate with finding out what is stopping progress to create relevant information that able to fill gap. ISB started from the recognition of some needs perceived by the user, who as a consequence makes demand upon on formal system such as libraries and information centers, or some other person in order to satisfy the perceived information need. The information seeking behavior basically refers to position discrete knowledge elements. It is

concerned with the interactive utilization of the three basic resources that is people, information and system.

From the understanding of Case (2007), Information-seeking behaviors consist of a variety of behaviors motivated by the recognition of missing information, or information needs. An information need requires the individual to seek out resources that become relevant for problem solving to accomplish the task. An individual can seek information independently (i.e. searches sources like published journals) or through a collaborative means (that is seeks channels like colleagues) by assisting each other to find information resources. From the understanding of Emmanuel (2013) 'the information seeking behavior is focused on who needs what kind of information and for what purpose; how to get those information, tested and used, and how there need can be identified and satisfied. According to his idea in information seeking behavior, there are processes involved, such as: identifying objective, defining needs, accessing information system, establishing sources of information, use of information; and satisfaction/dissatisfaction. Information-seeking behavior involves personal reasons for seeking information, the kinds of information which is being sought, and the ways and sources from which the needed information is being sought. In a specific word, information seeking behavior is purposive in nature and is a consequence of the need to satisfy some goal (Pettigrew, 1996).

Information seeking behaviors are strategies employed by individuals to acquire information with a selection of sources and channels to meet their need and preference for messages on particular subjects (Case, 2002; Wilson, 1992). Information seeking behavior shows "those activities a person may engage in when identifying their own needs for information, searching for such information in any way and using or transferring that information (Wilson, 1999, 2000). Identifying information needs and information-seeking behavior of users is intended to gain understanding on aspects such as who needs information, what information is needed, why is the information needed, how the information is sought, when the information is required and where it is required. It is an expression of a want, demand, need or requirement that entail looking for information (Anne, 2014). In the current study, information seeking behavior refers an action in which nurses professionals are involved to seek relevant information.

Information-seeking behavior differs from group to group significantly according to their background, culture, conditions, needs and requirements. It is difficult to predict the actual behavior that a person might exhibit in a quest for information. In order to understand the

behavior of human beings better, there is a need for multidisciplinary research using multidimensional approaches. Health science is a vast discipline that uses information extensively (Yahya & Ahmed, 2010).

2.4. Information Sources for health professionals

Ayalu & Moly (2015) stated that information sources are the materials or assets through which information can be found. Information sources simply indicate materials, means, avenues or packs through which information can be received or sourced. Information sources can be formal or informal. Formal sources refer to textbooks, encyclopedias, or daily newspapers, e-resources while informal sources tend to be friends, colleagues, and family (Case, 2006).

Updating knowledge with relevant information is very important for health care professionals to deliver quality and sustainable health care services to their consumers. This is possible only when there is a sustainable access to health information resources for health facilities. Access to health information facilitates to use new medical technologies, handle properly the necessary medical procedures and treatment of patients. Grace & Jeyshankar, (2014) stated that, many health care professionals prefer to obtain information from resources that are convenient, easy to use, and reliable because of the time constraints.

Access to relevant information and knowledge is critical to the delivery of effective healthcare services. There are wide ranges of resources available to physicians to meet their ever-growing information needs. Consultation with respected senior colleagues, medical textbooks, printed journals, Internet medical resources and conferences are among the preferred sources among the physicians over the years (Davies, 2007).

There are only a few studies that have studied, in general, public health professionals' information-seeking behaviors (Kristine, Donna & Maureen, n.d; Mulusew, 2002; Simpson, Hatheway, Luckmann & Martin; 2004, Esmeralda & Wilma; 2015, Petros, 2011; Emmanuel, 2013). The literature indicates that colleagues are frequently the first information resource that public health professionals seek, when they need information. Sarah (2012) stated that "the main information source nurses used was human sources, followed by the internet and intranet." Additionally for continuing professional development, nurses used popular sources like: databases, the library, journals and books.

From the health professionals, nurses preferred using books, journals, supervising physicians and sales representatives as a source for seeking new information for their day to day activities (Asha, 2011). Grace & Jeyshankar (2014), investigation also indicates that Professional superiors, colleagues, and other health care providers, especially physicians, are favorite resources for nursing professionals. Print materials are other next preferred resources of information, including nursing textbooks and journals. On the investigation of Cogdill (2003), the sources that most frequently used by nurses were colleagues, drug reference manuals and protocol manuals.

2.5. Factors that affect information seeking behavior of health professionals

According to most research results, the ease of information retrieval, time and cost, quality of contents and availability of information were some factors that affect information seeking behavior of most health professionals (Mulusew, 2012, Esmeralda & Wilma, 2015).

Information needs of professionals are affected by range and knowledge of information sources available, the background, motivation, professional orientation, discipline, type and area of work, and other individual characteristics of the users as well as the consequences of use. The seeking behavior differs due to many factors like knowledge of literature, availability, accessibility and information need (Grace1 & Jeyshankar, 2014).

According to Debra (2006), in health professionals there are different barriers (factors) that hinder or positively impact to achieve their information needs. These barriers are environmental barrier, psychological barrier, Source characteristics and unique barriers.

- Environmental barriers: are external characteristics, like time, setting (urban, rural), staffing and size of a public health department's service area can facilitate or hinder the public health practitioner's ability to meet information needs. Decentralization, unavailability of internet services in a rural environment, inadequate equipment and lack of organized library services are environmental barriers to meet information needs.
- Psychological barriers: The information seeker's preferences, prejudices, self- evaluation of knowledge and skills, interests, and knowledge of the subject are all potential psychological barriers to meet information needs.
- Source characteristics: An information source's accessibility, relevance, trust-worthiness, currency, quality, and reliability can determine whether an information need is met or is not fulfilled. Limited access with the information need is a major obstacle for public health

practitioners, including access to research-based information sources, medical literature, electronic full-text journal articles and conference websites.

- Unique barriers: The need for timely, reliable, and accurate information early in an outbreak is critical for preventing harsh international reaction against countries that report disease outbreaks, especially poorer countries that are more economically vulnerable in the event of an outbreak. Data set “overload” the consequence of increasingly large data sets generated by surveys and other data collection tools has forced many epidemiologists to become data managers, making it more difficult to analyze data from a variety of sources in order to detect disease out- breaks at an early stage (Devies, 2007).

According to Mulusew (2012) report, barriers that hinder accessing of health information resources to rural and urban health professionals were lack of library in the work area, lack of training on the use of information, lack of inter-library loan services, lack of uniform data standards, lack of up-to-date medical books and lack of access to medical databases.

Wilson’s second “Model of Information Behaviour” (Wilson, 1999) also identified those various barriers to seek information. These are: environmental barriers, role related and interpersonal barriers, demographic barriers, and information source characteristics.

Environmental barriers include lack of time, lack of access to computers and the internet. Lack of time is the most frequently reported barrier to information seeking.

Role related and interpersonal characteristics in this context could be said to relate to nursing culture. In many clinical practice settings, information-seeking behaviors and use of current evidence is neither valued nor supported. This includes lack of support from other health professionals. Mostly nurses seek information only for their specific tasks or particular problems, and within strict time constraints (Sarah, 2012).

Personal and demographic barriers include physiological, cognitive and emotional characteristics and perceptions of the person in question. They also incorporate factors such as educational level, knowledge base, age and time since qualifying. A major personal barrier is the confidence and skill level of nurses for meeting their information needs. In order to fully participate in evidence based practice it is necessary for nurses to have an awareness of the need to search for information (Sarah, 2012).

- Information source characteristics: accessibility, credibility and channel of information are information source characteristics that influence information needs and uses of individuals.

- Accessibility: accessibility of information sources affects information uses. Lack of accessibility of some information sources may impose information seekers to seek other information sources.
- Credibility: credibility is reliability and accuracy of information. If information seekers realize that an information source is less reliable and accurate than the other sources, they may seek the more reliable and accurate ones.
- Channel of communication: channel of communication is presentation types of information such as a TV advertisement, publications or types of information sources such as human-sources, printed source, including electronic sources such as computer and internet. People may prefer to use information from one type to another.

Anne, (2014) notes that, factors of information seeking behavior of medical staffs with two parts Such as environmental (economic, social, cultural, technological) and personal characteristics (psychological, cognitive, connective and affective factors) influence information-seeking behaviour. Environmental factors are external elements that are outside the control of the individual group and influence the ways in which one behaves. In the case of information-seeking behavior, it can be assumed that people's responses in identifying needs, accessing and using information in medical teaching will vary because of the influence of economic, social, cultural, political, technological developments and other external elements upon them (Khayesi, 2011).

2.6. Models of information Seeking behavior

In order to provide a theoretical background for the current study, this section of the review presents a number of selected information seeking models. Information seeking behavior models explain how information needs arise and how people seek and search for information. A model according to Wilson (1999) is a framework for thinking about a problem and may evolve into a statement of the relationships among theoretical propositions. Rarely do such models advance to the stage of specifying relationships among theoretical propositions: rather, they are at a pre-theoretical stage, but may suggest relationships that might be fruitful to explore or test.

Information seeking is a purposive acquisition of information as a consequence of an information need from selected information carriers. Information carriers may include a variety of channels, a variety of sources within channels, and a variety of messages contained within these sources

(Johnson *et al*, 2006). In order to acquire information the user has to select information from a particular source, system, channel or service.

2.6.1 Wilson's model of information seeking

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. Most models in the general field of information behavior are of the former variety: they are statements, often in the form of diagrams, which attempt to describe an information-seeking activity, the causes and consequences of that activity, or the relationships among stages in information-seeking behavior.

The first model is Wilson's (1981) model of information seeking. The main target of this model was to outline the various areas covered by what the writer proposed as information-seeking behavior, as an alternative to the common information needs, but it is clear that the scope of the diagram is much greater and that it attempts to cover most of what is included here as information behavior.

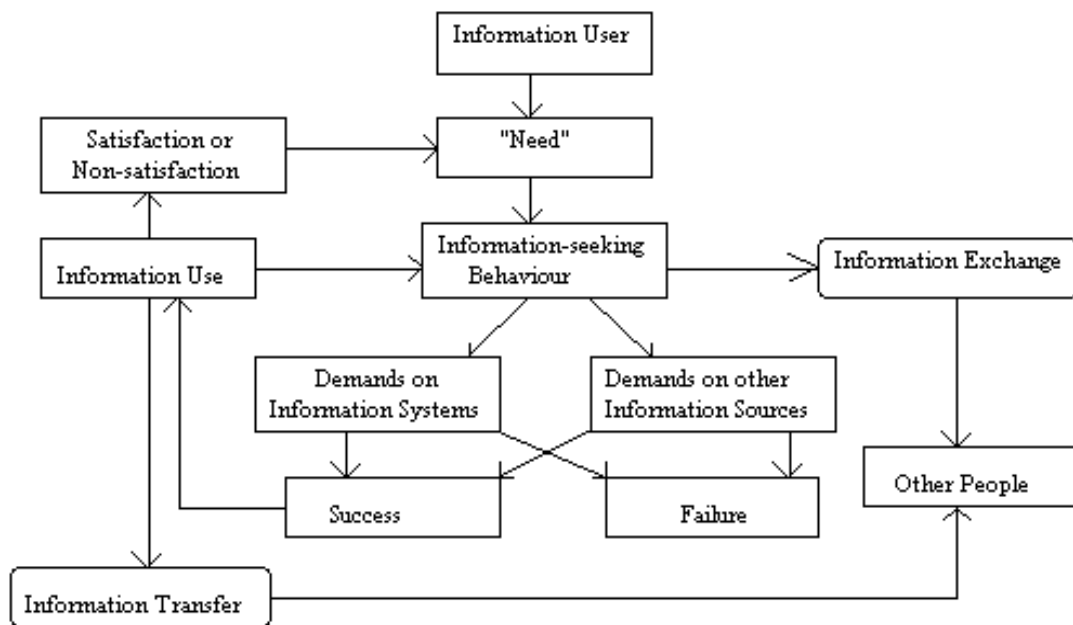


Fig 2.1 Wilson's information behaviour model (Case, 2002).

The model suggests that information-seeking behavior arises as a consequence of a need perceived by an information user, who, in order to satisfy that need, makes demands upon formal

or informal information sources, which result in success or failure to acquire relevant information. If the result 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 also indicates that part of the information-seeking behavior may involve other people through information exchange and that information perceived as useful may be passed to other people, as well as being used by the person himself or herself.

2.6.2 Wilson's second model

Wilson's 1996 model is a major revision of that of 1981, drawing upon research from a variety of fields other than information science, including decision-making, psychology, innovation, health communication and consumer research (Wilson, 1999).

The basic framework of the 1981 model persists, in that the person in context remains the focus of information needs, the barriers are represented by intervening variables and information-seeking behavior is identified. However, there are also changes: the use of the term intervening variables serves to suggest that their impact may be supportive of information use as well as preventive; information-seeking behavior is shown to consist of more types than previously, where the active search was the focus of attention; information processing and use is shown to be a necessary part of the feedback loop, if information needs are to be satisfied; and three relevant theoretical ideas are presented: stress/coping theory which offers possibilities for explaining why some needs do not invoke information-seeking behavior; risk/reward theory which may help to explain which sources of information may be used more than others by a given individual and social learning theory, which embodies the concept of self-efficacy, the idea of 'the conviction that one can successfully execute the behavior required to produce the outcomes' Thus, the model remains one of macro-behaviour, but its expansion and the inclusion of other theoretical models of behaviour makes it a richer source of hypotheses and further research than Wilson's earlier model. This model is a complex one. It invokes explicit theories at points to explain the following three aspects of information seeking:

- Why some needs prompt information seeking more than others (stress/coping theory, from psychology)?
- Why some sources of information are used more than others (risk/reward theory, from consumer research)?

- Why people may, or may not, pursue a goal successfully, based on their perceptions of their own efficacy (social learning theory, from psychology)?

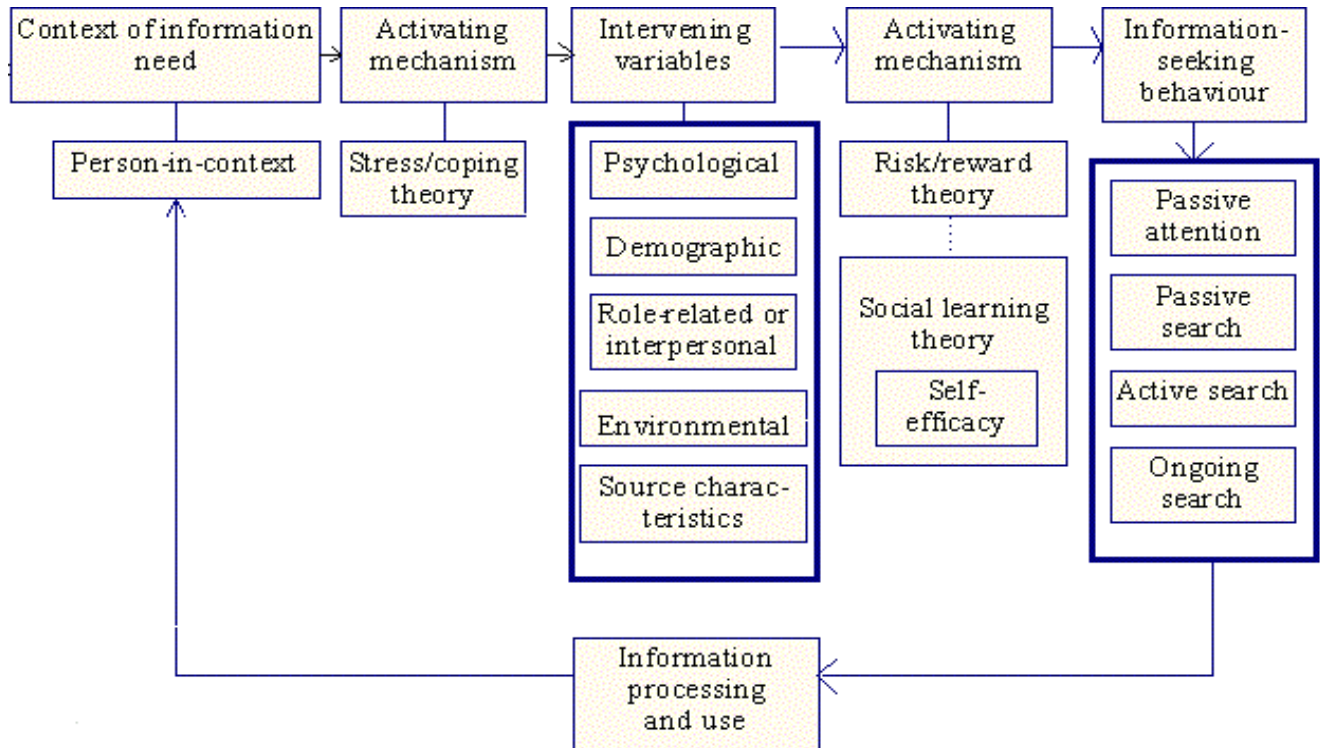


Fig 2.2 Wilson's second (1996) model of information behavior (Wilson, 1999)

A major contribution of Wilson's model is his re-specification of the information needs and discussion of barriers to information seeking. In his model, an individual develops an information need based on the combination of personal, organizational, and social roles.

2.6.3. Ellis's model

According to Ellis, information seeking involves different behaviors (see figure 2.3). Wilson (1999) recognizes that Ellis does not claim that these different behaviors make up a single set of stages. Ellis' use of the term "features" and not "stages" affirms this fact. The strength of Ellis' model is that it is based on empirical research and has stood the test of time. Below is a list of Ellis' features as cited in Wilson (1999).

Starting: the means employed by the user to begin seeking information, for example, asking some knowledgeable colleague;

Chaining: following footnotes and citations in known material or forward chaining from known items through citation indexes;

Browsing: semi-directed or semi-structured searching of primary and secondary information;

Differentiating: using known differences in information sources as a way of filtering the amount of information obtained;

Monitoring: keeping up-to-date or current awareness searching;

Extracting: identifying and taking out the relevant material in an information source;

Verifying: checking the accuracy of information;

Ending: concluding the search process with satisfied or dissatisfied results.

Wilson sees a logical pattern from the first feature (Starting) to the last one (Ending). He however notes that while Browsing, Chaining and Monitoring are search procedures, Extracting is an action performed on the information sources and Differentiating is a filtering process. As a result, Wilson classifies Ellis' features into micro-analysis of search behaviour (starting, chaining, extracting, verifying, ending) and macro-analysis of information behaviour (browsing, monitoring, differentiating) (Wilson, 1999).

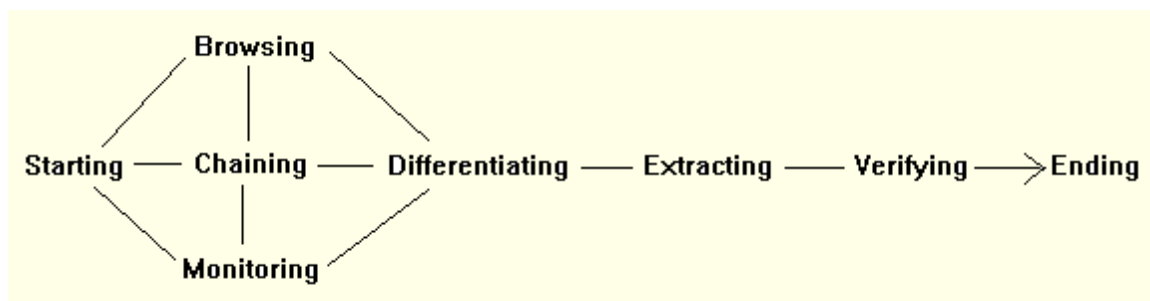


Fig 2.3 Ellis's model of information seeking behaviour (Wilson, 1999)

The strength of Ellis's model as with Kuhlthau's, is that it is based on empirical research and has been tested in subsequent studies, most recently in the context of an engineering company of the features, Ellis notes that, '...the detailed interrelation or interaction of the features in any individual information seeking pattern will depend on the unique circumstances of the information seeking activities of the person concerned at that particular point in time' However, it is clear that Starting must initiate a process and that Ending must end it. It also seems reasonable to suggest that Verifying is a penultimate stage in a process and that Extracting must follow on from specific search behaviour such as Browsing.

Indeed, drawing attention to this fact, leads to the conclusion that Extracting is not information behaviour of the same kind as Browsing, or Chaining or Monitoring. It further suggests that Differentiating is also a different kind of behaviour: browsing, chaining and monitoring are

search procedures, whereas differentiating is a filtering process and extracting may be seen as an action performed on the information sources.

The remaining behaviors do not necessarily take place in a specific sequence and may be initiated in different sequences at different times in the overall search process. Ellis's account, therefore, in terms of the different kinds of features it embodies, appears to sit between the micro-analysis of search behaviour (starting, chaining, extracting, verifying, ending) and a more macro-analysis of information behaviour generally (browsing, monitoring, differentiating).

2.6.4. Luckier Model of information seeking of Professionals

Lecky, et al. (1996), model on the assumption that information seeking is related to the performance of a particular role and its associated tasks. As part of the communication and information seeking process, professional groups adopt, enact, and expect various roles. It features six factors connected by arrows, all but one of them unidirectional (i.e., “outcomes” and “characteristics of information needs” influence each other in mutual fashion). The luckier model is depicted as flowing from top to bottom. The causal process begins on the top with “work roles,” which in turn influence “tasks” (Case, 2002).

Given that the Lecky model is restricted to “professionals” (such as health care professionals, lawyers, and engineers), it is not surprising that “work roles and “tasks” are thought to be the prime motivators for seeking. Although individual demographics (age, profession, specialization, career stage, and geographic location) are not depicted in the model itself, they are said to be “variables that influence or shape the information needs,” along with certain aspects of the need itself. In the luckier model, needs create an awareness of information sources and/or content and thus motivate a person to examine those. Here, the most important variables are thought to be the familiarity and prior success with the source (or the search strategy employed), along with the trustworthiness, packaging, timeliness, cost, quality and accessibility of the sources. The Lecky model depicts information seeking behaviour itself as a two way arrow labeled “information is sought.” The end results of information seeking, labeled “outcomes,” affect most other aspects of the model through feedback loops to “sources,” “awareness” and “information is sought” (Case, 2002).

The model by Leckie, Pettigrew and Sylvian is perhaps the most relevant model as it is focused on “professionals” including healthcare professionals (Case 2002). The basic supposition of the model is that the roles and tasks undertaken in the course of daily practice lead to specific

information needs, which then lead on to an information seeking process. Nurses lead complicated working lives, taking on a number of roles in the course of their daily work. Particular tasks are embedded within these roles, constituting the second layer of the role/ task part of the model.

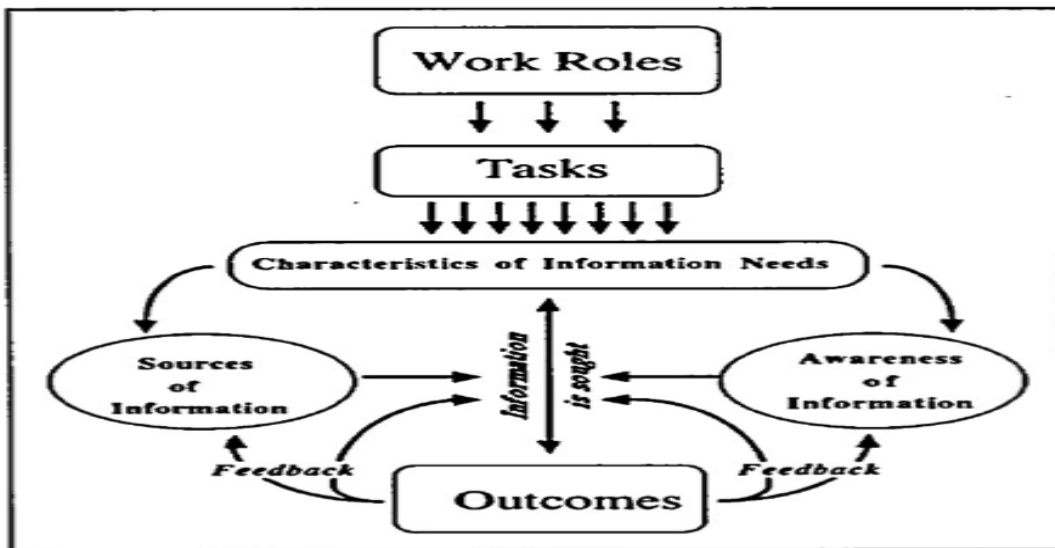


Fig.2.4 Leckie, Pettigrew, and Sylvain (1996) information seeking model (Case, 2002).

2.7. Related works

Some related studies are conducted by researchers in different parts of the world. However, there are limited numbers of studies conducted in Ethiopia on the information needs and seeking behavior of health organization professionals.

Pilips et al. (2009), in their study on the title “The information-seeking behavior of clinical staff in a large health care organization”, by taking a sample of randomly chosen 850 hospital clinical staff from the population, understood that health professionals mainly get information from colleagues and they take Google to seek electronic information.

Mulusew (2002), information needs and seeking behavior among health professionals working at governmental hospital and health centers in Bahirdar town, identifies the information sources mainly used by study users (library and internet), barriers for seeking information (geographical, organizational, personal, economic related, educational status and time), and the reason for health professionals mainly seek information that are for update themselves and support daily activities. The author concluded that almost all respondents need to access health information

and more than 80% of study areas have no library, internet and computer services. Therefore, great attentions should be given to help those health professionals working at those areas.

Grace & Dip (1996) Information seeking behavior of health professionals in Hong Kong: a survey of thirty seven hospitals. The author concluded that the information needs and seeking behavior of different user groups are not similar. So, the investigation of each user group is relevant to identify each user information needs and seeking behavior and it becomes an input for library and system developers consider each user groups and make the system give equal benefit.

Petros, Vasiliki & Dimitris (2001), the information seeking behaviors of hospital pharmacists. The author concluded on his study that pharmacist mostly seek scientific information for the reason, drug management and scientific participation in the hospital's drug policy, in order to further expand their professional role and more specifically for information regarding drug indications, storage, dosage and prices. The author also understands the lack of time, knowledge and skills for information access has created problems for the information behaviour of pharmacists.

Grace & Jeyshankar (2014), studied "information seeking behaviour of the nursing professionals of Apollo College of nursing, Chennai" The study concluded that the print media and the informal resources were utilized more than the online resources to meet their information needs. The curriculum requirements, awareness of resources and the availability of resources influence the information seeking behaviour. Many of them were not aware of the online databases available in their subject field. Hence the facilities provided are utilized at the maximum level and had moderate level of satisfaction about the service and sources provided. User level, educational qualification, experience, nature of work and individual's capability also influence seeking to some extent and attaining satisfaction from dissemination of information by various organizations and documentation centers.

Gorman (2001) surveyed the information needs of physicians in primary health care centers. The results reveal that, physicians in USA used Physicians' Desk Reference is the most commonly used resources for immediate references.

Shaheen et al. (2011), explored information use and literature searching skills of nurses, the study indicated that nurses preferred consulting their supervisors and colleagues for obtaining the needed information rather than using electronic resources.

Antonio (2013), conducted a Survey of the Information-Seeking Behaviour of Hospital Professionals at a Public Cancer Hospital in Greece, he concluded that the main obstacle respondents noted experiencing when seeking information was the lack of time (3.7 score on Likert scale). A lack of information services was second to the time issue with a Likert scale score of 3.6. Most respondents using the internet for seeking scientific information (83.0%) and e-mail communication (65.3%) and internet users use internet at home and at work place.

A study conducted by Romanov & Aarino (2006), on the use of electronic scientific information resources among medical and dental students, revealed that information searching skills are correlated with the use of electronic resources. Use of electronic resources differs among students. 40% were non users of text article. The author suggests that adequate training in information searching skills will increase the use of electronic information resources.

Emmanuel, Desmond & Oyemike (2016), meeting the information needs of nurses for effective healthcare delivery in Nigeria, the study concluded that the major information sources used by nurses are internet 81(57.9%), the second information sources utilized is journal 59(42.1%), the third major information source utilized by nurses is books 58(41.4%). It should also be noted 45(32.1%) used other health professionals like doctors, 41(29.3%) used nursing colleagues, 40(28.6%) used health/medical libraries. And also the author identified the nurses information needs, 60(42.%) of the respondent require information on care and management of patients; 61(43%) need information to improve knowledge in clinical areas; 43(30.7%) need information to support lifelong learning; 23(16.4%) need information on occupational hazard; 54(38.6%) need information on new drugs, 30(21.4%) require information on nursing process and procedures, 29(20.7%) need information on Anatomy and Physiology, while 1(0.7%) need information on Palliative Care.

2.8. Summary of related works

From the above review of related works on information seeking behavior of health professionals specifically on nurses, the purpose and factors that affect information seeking habit of health professionals was revealed that different authors have tried in different ways to identify nurse's information seeking behavior and factors that affect users easily finding of their relevant information needs. The overview of the study on information seeking behavior of health professionals by taking specific user group (nurses) in Ethiopia hospitals, there is limited studies on information seeking behavior of health professionals, but, to the researchers knowledge still

there is not yet conducting research on information seeking behavior of specific health professional user group in Ethiopia. So this research is attempting to identify the information seeking behavior of nurses and factors that affect their information seeking behavior in Ethiopia context, because the study of seeking behavior of nurses will not identical from place to place.

CHAPTER THREE

METHODOLOGY OF THE STUDY

3.1 Description of the study area

Jimma is the town of Jimma zone, which is one of 18 zones of the Oromia Regional State that found/located at 352 kms from Addis Ababa, in the South western part of the country. Based on the 2007 E.c Census conducted by the Central Statistics Agency, this Zone has a total population of 2,486,155 of these 1,250,527 are men and 1,235,628 women, with an area of 15,568.58 km².

Jimma University teaching Hospital (JUTH) is one of the oldest public hospitals in the country. It was established in 1930 E.C by Italian invaders for the service of their soldiers. JUSH has bed capacity of 450 and a total of more than 1300 staffs of both supportive and professional. It provides services for approximately 9000 inpatient and 80,000 outpatient attendances a year, coming from the catchment population of about 15 million people. JUSH is one from other four jimma zone hospitals (Shenen Gibe, Agaro and Limu hospitals).

The study populations were nurse professionals who work at JUSH. The total populations of the study were 500 nurses (based on website and asking the hospital human resource office).

3.2. Research Design

The research design (method) that used for this study was quantitative research approach. Quantitative research approach uses survey and questionnaire, information dealing with numbers and anything that is measurable and organized tables were used to present the results of the study (Marshall & Gretchen, 2006).

The researcher used quantitative approach to identify the information seeking behavior of nurses based on closed ended data.

3.3. Sample size and sampling technique

3.3.1 Sampling techniques

The sampling technique used for this study was purposive and simple random sampling for qualitative and quantitative data collection from the hospital nurses. Purposive sampling technique was used for nurse supervisors for interview on detailed information about the hospital nurse information seeking behavior and source facility. Purposive sampling is appropriate as it

allows us to identify respondents who are typical and appropriate to explain the case at hand. Two nurse supervisors were taken purposively and a simple random sampling technique was used to select nurse employees. Simple random sampling method is appropriate to reach respondents with homogenous nature, because even if there are different nurse types in nurse professionals, there is not a big difference on their information needs.

3.3.2. Sample size

A research conducted by taking the entire population able to get perfect result, however, due to time and efforts required to conduct a research on every person, an optimal sample size must take to do on time and effort. According to Asika (2006), it is practically impossible to take a complete and comprehensive study of the entire population, because of the nature and pattern of distribution of the elements of the population.

Based on the total population, sample size was taken. So the sample size was determined using the sample size determination formula and proportional allocation of subjects also done by (Kothari, 2004) formula. The sample size is determined by using the statistical formula given below with the appropriate sample size confidence level = 95% and margin of Error = 5%.

$$n = \frac{X^2 * N * P * (1-P)}{(ME^2 * (N-1)) + (X^2 * P * (1-P))} \quad n = \frac{(1.96)^2 * 500 * 0.5 (1-0.5)}{((0.05)^2 * (500-1)) + ((1.96)^2 * 0.5 (1-0.5))}$$

n = sample size

x= chi-square for the specific confidence level at one degree of freedom

N = population size

p= population of proportion

ME= desired Margin of Error

The sample size should be:

Where: x=1.96 N= 500 P= 0.5 ME= 0.05

Based on the formula $n_o = 218$

$$n = \frac{n_o}{1 + \frac{n_o}{N}} = 152 \text{ (sample size).}$$

So, the sample size for this research was 152 nurses were representatives of the target population. By taking name list of the whole nurses from human resource, sample respondents was selected randomly based on their list and then tick from the list to make easy for data collection.

3.4. Data Sources

There are two sources of data which includes primary and secondary data sources. This study works on both primary and secondary source of data.

Primary data sources are first-hand information collected by the researcher from their original sources through various methods such as observation, interviewing, mailing, questionnaires, focus group etc. (Alemayehu, 2009). Therefore, the primary data for this study was collected from selected professionals through questionnaire and some interviews.

Secondary data is information which already exists in some form, but which was not primarily collected. The technique of acquiring secondary data sources is not unique to the statistics field; it evidently has multidisciplinary appeal (Daas & Beukenhorst, 2008). The researcher will use different documents, articles, journals, internet sources and useful research reports as a secondary data.

3.5. Data collection techniques

The instrument that is used to collect data for this study was questionnaire. The questionnaire was one of the instruments used for collecting data from respondents about their information seeking behavior, factors affecting their seeking behavior, suggestion to overcome or reduced affecting factors.

3.6. Data collection procedure

The data for this research was collected by using a structured questionnaire. The questionnaires were created by using suitable questions modified from related research and individual questions formulated by the researcher and approved by advisors. To collect data from the respondents the researcher got official letter from the department of information science, Jimma University and the researcher submitted the letter to top manager of the study site to get permission for conduct the survey. Top manager forwarded the letter to the concerned bodies by approving the study can be done. After that the researcher went to the human resource department of the study

organization to find out list of office employees. The questionnaire was distributed to the employees selected by using simple random sampling technique.

3.7. Study variables

The following independent and dependent variables are identified for data analysis.

Dependent variable is a variable that is affected or explained by another variable. An independent variable is a variable that causes change in another.

i. Independent variables

- Socio-demographic variables: (Age, Sex, Years of experience, education level, computer skill),
- Health information resources performance,
- Culture (information use habit of customers, reading habit, attitude towards ICTs)
- Time availability

ii. Dependent variables

- Information seeking behavior of nurses (Mulusew, 2012, Sathivel & Allysonam, 2011).

3.8. Checking the validity and reliability of the instruments

The questioners adopted from different literatures. The current study collects data by using questionnaire and semi- structured interview. The current study checks the validity and reliability after conducting the pilot study. After checking the pilot study all the necessary modifications were done like grammatical, spelling error and reputation of question that identify the same problem but write by different way in the interview and the questionnaire, the pilot testing also helped to rechecking the language and contents of the question and the interviews. The chosen place for the pretest study was shenen gibe hospital. According to Edwin et.al (2011) the pre-test was done in a neutral location that was not used in the actual field work. Simple random sampling technique was used to identify pre-test subjects. It was done by distributing the questionnaire randomly for 10 employees and interviewing for head of nurses, and also as internal validity and external validity that is the translation of words and weather question achieve the goal is check by advisor. The pretest result shows most of the problem was found

with similarity of some questions that means different questions, but had the same idea. Lastly modifications were made on the basis of the suggestions offered.

3.9. Data quality control

The researcher gave an orientation to the data collectors on the purpose, objectives and data collection process of the study. And also the data was collected under the supervision of the researcher. The completeness and consistency was also checked at the site by the researcher. This quality checking was done before, after and during data collection. The missed data, completeness and consistency were checked before data analysis; this increases the validity of the data used in the research.

3.10. Methods of Data Analysis

Data was analyzed using both descriptive statistics and inferential statistics. Quantitative data was analyzed by using descriptive statistics such as (frequency, mean and percentage) based on Statistical Package for the Social Sciences (SPSS) version 20.

Then, inferential statistics (binary logistic regression) was used to analyze the effects of demographic variables and independent variables on information seeking behavior, because, binary logistic regression analysis predicts the values on one dependent variable from one or more independent variables.

3.11 Ethical consideration

An ethical issue is an important consideration in the design and conduct of research (Wilkinson, 2000). Ethical issue was considered in all steps of the research and the issue was a crucial issue for both researcher and respondents. This research would not enforce and deceives the participants. The researcher collected information only for the purpose of conducting this research. During the study, the respondents felt free and expressed their ideas freely without any internal and external pressures and any personal information was to be kept confidential, generally all activities in this study were conducted in a legal way.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Response rate

Summary of the response rate is presented in the table 4.1 below:

No	Questionnaires	Number of questionnaires	Percent
1	Question returned	126	82.9%
2	Question not returned	26	17.1%
3	Total	152	100%

Table 4.1: Response rate of the study

Out of one hundred fifty two questionnaires distributed, 82.9% were returned and were used for analysis of this study. The rest 17.1% were non responses for the mentioned reasons of lack of time on the respondents' side, unavailability after receiving the questionnaire for long time and lack of interest after taking the questionnaire.

4.2 Socio demographic data

Respondent's all demographic characters were listed in the table 4.2 below.

Variables	Characteristics	Frequency	Percent
Gender	Female	55	43.7
	Male	71	56.3
	Total	126	100.0
Age	21-25	71	56.3
	26-30	30	23.8
	31-35	19	15.1
	41-45	3	2.4
	>46	3	2.4
Level of education	Diploma	81	64.3
	Bachelor degree	38	30.3
	master's degree	7	5.6
Experience of nurse professionals	<2 years	35	27.8
	2-4 years	58	46.0
	5-7 years	24	19.0
	8-10 years	6	4.8
	>10 years	3	2.4
	Total	126	100.0

Table-4.2 Demographic characters of respondents

From the table 4.2 above, it can be seen that 56.3% male and 43.7% female respondents. It indicates male respondents were more than female once. The distribution of respondents according to their age group as indicated in table 4.2, that 56.3% of nurses were found in the years ranging from 21-25, next 23.8% were the year ranging 26-30, 15.1% ranging from 31-35, while the smallest number, 2.4% of nurses were found in the years 41-45 and the same as 2.4% of nurses found in the year >45. This shows that higher numbers of nurses were categorized in the range from 21-25. It indicates most respondents were young workers.

The respondent's level of study as shown in table 4.2, the largest groups of respondents were those at the Diploma's level, that were 64.3% of the respondents, while 30.3% were at the bachelor level and only 5.6% respondents were at the Master's level. More respondents, 46.0%, had a working experience between two to four years, whereas 27.8% had less than two years work experience, 19.0% had between five to seven years of work experience, 4.8% had between eight to ten years of work experience and the rest 2.4% greater than ten year of work experience. From the respondents response the researcher understand most nurses in the study have diploma education level, this indicates most nurses need upgrade their knowledge by getting the chance based on the hospital to learn their bachelor and master degree on time.

4.3 Information Seeking Patterns of Nurses

Information seeking patterns of nurses can be seen in the following categories of discussions which are related to the ways of searching information to meet their needs. Computer application and access, preference of information sources, methods of internet access and library usage, purpose of seeking information and communication channel of respondents are presented in the following sections.

4.3.1 Computer access and use

In hospital, most nurses had not their own computer, but from the respondents idea they access internet sources using their own smart phone.

Table 4.3 Computer access and use

Statements	Responses	Frequency	Percent
Do you have personal laptop computer?	Yes	46	36.5
	No	80	63.5
	Total	126	100.0
Where your computer placed?	At home	7	15.2
	At work	13	28.3
	At home and at work place	26	56.5
	Total	46	100.0
purpose of using a computer	Report writing	4	8.7
	Reading	13	28.3
	Listening music	1	2.2
	Keeping files	15	32.6
	Using internet	11	23.9
	for all the listed purpose	2	4.3
	Total	46	100.0

From the above table 4.3 only 36.5% participants had their own computer, but 63.5% nurses had not their own computer that used for different purposes. Respondents that had their own computer used computer for different purpose, most nurses 32.6% used their computer for keeping files, 28.3% for reading, 23.9% for using internet, 8.7% for report writing, 2.2% for Listening music and lastly 4.2% use their computer for all the above listed activities. The result shows that most nurses used their computer for keeping files, reading softcopy materials and for accessing internet sources. From the data 56.5% respondents response home and work area were areas preferred for using their computer for performing their activities, 28.3% respondents prefer at work area and 15.2% respondents were used their computer at home. The result indicates most nurses used their own computer at home and at work area.

4.3.2 Preference of information sources

Types of information sources	Frequency	Percentage
Printed information	32	25.4
Electronic information	23	18.3
Both printed and electronic sources	71	56.3
Total	126	100.0

Table.4.4. Preferred information sources

Format of information sources had a huge impact on the information users. Users today have to integrate new, changing formats with the traditional formats they have grown habituated to. The above table 4.4 clearly shows that out of the three formats of information (printed, electronic; and both printed and electronic sources), the most preferred sources of information 56.3% as indicated in the table were both electronic and printed sources, followed by printed sources 25.4% and 18.3% respondents prefer electronic format of sources.

The result shows that most nurses preferred information sources to search their information need was hybrid type (uses of printed and electronic sources), followed by printed sources and nurses that prefer electronic sources were less than from other format. The reason why nurses mostly prefer printed sources were, most nurses not familiar on how to access and search relevant materials on the internet; most nurse professionals not have enough time to access internet sources goon fast internet connection area and there not enough desktop computer on their work area. Internet user nurses mostly used their smart phone with mobile data, so using always internet with mobile data was cost. Even if most nurses access internet sources, not always.

4.3.3 Methods of internet access

All ideas about internet access were summarized on the table 4.5 below:

Method of internet access	Responses	Frequency	Percent	
Do you have access to an internet	Yes	109	86.5	
	No	17	13.5	
	Total	126	100.0	
Where you using internet	At home	4	3.7	
	At work area	38	34.9	
	Internet cafe	27	24.8	
	Public library	1	0.9	
	At home and at work area	19	17.4	
	At home, at work area and internet cafe	20	18.3	
	Total	109	100.0	
Time duration to access internet sources	Daily	15	13.8	
	Two times a week	43	39.4	
	Three times a week	30	27.5	
	Once a month	8	7.3	
	Prefer not to mention	13	11.9	
	Total	109	100.0	
Purpose of using internet	E-mail	Yes	44	40.4
		No	65	59.6
	Drug information	Yes	75	68.8
		No	34	31.2
	Research purpose	Yes	34	31.2
		No	75	68.8
	Patient care information	Yes	88.8	80.7
		No	21	19.3
	Entertainment	Yes	29	26.6
		No	80	73.4
	Downloading files	Yes	71	65.1
No		38	34.9	
Total		109	100.0	

Table-4.5 Method of internet access

Most nurse professionals had physical access to the internet. In response regarding the uses of the internet, 86.5% nurses' access internet sources and only 13.5% stated that they have not access internet sources. Respondents that access internet sources for used different purposes.

Nearly 80.7% respondents retrieve internet sources for patient care, 68.8% for drug information, 65.1% for downloading files, 40.4% for E-mail checking, 31.2% for research purpose and lastly 26.6% respondent's access internet for entertainment. The result point out most nurses need to access internet to get relevant information for patient care and to become knowledgeable on drugs.

Paraskevi, Petros and Marianna, (2014) revealed that the purpose of seeking information. The information most frequently utilized by the nurses are relating to patient care, i.e. "patient care skills" (mean=4.9), "hospital infection control" (mean=4.07), "patient evaluation" (mean=4.02) and "emergency patient care" (mean=3.91). On the other hand, information about drugs and treatments are utilized less frequently.

Among the total respondents, 34.9% respondents used internet at internet cafe, 24.8% at work area, 18.3%, at home, at work area and at internet café, 17.4%, at home and at work area, 3.7% had computer access at home and only 0.9% access internet sources at public library. The result shows that most nurses' access internet sources at internet cafe, next they choice at work area and then at home, at work area and internet cafe. The time length when respondents' access to internet sources shows 39.4% respondents access two times a week, 27.5% three times a week, 13.8% access daily, 7.3% once a month and lastly 11.9% respondents prefer not mentioned their duration of time to search internet sources. The respondents' response told that most nurses not access internet sources every day because of different reasons.

In order to fulfill the respondents satisfaction with information provided inside and outside, respondents were asked to indicate their overall satisfaction on the sources.

4.3.4 Satisfaction of respondents on the provided sources

Statements	Responses	Frequency	Percent
Satisfaction with information provided inside and outside work area	Yes	45	35.7
	No	81	64.3
	Total	126	100.0
Do you need training on how to access E-resources	Yes	98	77.8
	No	28	22.2
	Total	126	100.0

Table- 4.7 Satisfaction with information provided inside and outside work area

The finding in table- 4.7 indicates that the majority 64.3% respondents not satisfied with the sources provided inside and outside their working area and 35.7% respondents were satisfied on the provided sources. From the respondents, 77.8% need training on how to access E- resources and only 22.2% not need training on how to access internet resources using different browsers and sites.

Statements	Responses	Frequency	Percent
Is there any problem while searching information in the internet	Yes	93	85.3
	No	16	14.7
	Total	109	100.0
Problem encountered when searching information in the internet	Poor internet connection	29	26.6
	High internet cost	14	12.8
	No enough computer	15	13.8
	Limited access terminals	4	3.7
	Retrieval problems	5	4.6
	Lack of relevant information sources	8	7.3
	Lack of time for searching	11	11.8
	Lack of training in using IT resources	7	6.4

Table- 4.8 problems encountered when searching information on internet

At the time of searching internet sources, nurses those who had access to internet encountered problems. Of those problems, 26.6% poor internet connection, 13.8% lack of computer 12.8% high cost of internet, 11.8% lack of time for searching, 6.4% lack of training on IT resources, 7.3% lack of relevant information sources and lastly 4.6% retrieval problems. The result in the table 4.8 above indicates that poor internet connection, lack of computer, lack of time and lack of training were problems mainly encountered on most nurses to search internet sources.

4.3.5 Respondent's library usage behavior

Most nurse professionals were used the library to seek library sources for their information needs.

Statements	Responses	Frequency	Percent
Do you use public or health library to meet your information needs?	Yes	75	59.5
	No	51	40.5
	Total	126	100.0
Why do not use library?	There is not latest printed resources	19	37.3
	Have their own resources	16	31.4
	Not interesting	9	17.6
	Less internet connection	7	13.7
Time duration to use library	Once a week	32	42.6
	Twice a week	13	17.3
	Once a month	26	34.7
	Undecided	4	5.3
	Total	75	100.0
Satisfaction on library sources	Satisfied	26	34.7
	Not satisfied	49	65.3
	Total	75	100.0

Table 4.9.library usage behavior of respondents

From the 126 respondents, majority 59.5% of them indicated that they use the library for getting the needed information. However, 40.5% of the respondents never used the library. The main cause for respondents not going to library to access information was the library not provide latest printed resources 37.3%, have their own resources 31.4%, 17.6% respondents said that

there is not have any interesting to access library sources and lastly lack of time for going to the library was also another reason mentioned by the respondents.

The respondents were also asked to identify time duration when they visit their library to meet their information needs. The frequency of library usage ranged from daily to when need rises. The finding in the above table 4.9 indicates that the majority 42.6% of respondents use library once a week, 17.3% twice a week, 34.7% once a month and 5.3% undecided to visit library to get their information need. The result shows that nurses not always refer library sources. The different result of this finding might have been due to lack of time for going to the library and dissatisfaction with library sources. From the library users most respondents 65.3% not satisfied and 34.7% respondents were satisfied with the library resources. The above table 4.9 data result indicates, nurse professionals encountered different problems to use library resources. Because of encountered problems nurses not satisfied on library resources and they didn't access library resources timely.

Statements	Responses	Frequency	Percent
Is your organization subscribed journals, books, research papers and other information resources?	Yes	40	31.7
	No	86	68.3
	Total	126	100.0
Are those information sources up-to-date	Fully updated	4	10
	Partially updated	20	50
	Least updated	13	32.5
	Not updated	3	7.5
	Total	40	100.0

Table 4.10 Information sources subscribed by institution

In the above table 4.10 from the total participants, only 31.7% reported that their organization subscribed information sources such as books, journals, research paper and other sources. Concerning being up to datedness and usefulness of those available sources, 50% participants said that their sources are partially updated, 32.5% as least updated, 10% fully updated and 7.5% participants reported as not updated, but most respondents 66.7% said that their organization not subscribe books and journals for each wards. From the respondents response the investigator understand that hospitals not give consideration on the necessity of information for their professionals to provide quality and full service.

4.4 Purpose of seeking information

Purpose of seeking information	Responses	Frequency	Percent	Rank
Research works	Yes	67	53.2	7
	No	59	46.8	
Updating knowledge	Yes	118	93.7	1
	No	8	6.3	
Carry out their responsibility in hospital	Yes	112	88.9	3
	No	8	6.3	
Personal development	Yes	117	92.9	2
	No	9	7.1	
Improving their personal competencies	Yes	105	83.3	5
	No	21	16.7	
For entertainment	Yes	77	61.1	6
	No	49	38.9	
To solve immediate practical problem	Yes	110	87.3	4
	No	16	12.7	

Table 4.11 Purpose of information seeking among nurses

Mainly, nurses appeared to search for information to updating their knowledge, for personal development, carry out their responsibility in hospital, to solve immediate practical problems, improving their personal competences, for entertainment and research works.. In the above table 4.11 shows that 93.7% of nurses indicated that the primary purpose of seeking information was for updating knowledge, 92.9% nurses for personal development, 88.9% respondents seek information for carry out their responsibility in hospital, 87.3% to solve immediate practical problems, 83.3% for improving their personal competencies, 61.1% for entertainment and lastly 53.2% to carry out research works. Generally the result indicates that nurses mainly need to seek information for the purpose of updating their knowledge, personal development and for carry out their responsibility in hospital.

4.5 Communication channels that nurse's use

Communication channel	Frequency	1	2	3	4	5
Health library	N	35	37	27	11	16
	%	27.8	29.4	21.4	8.7	12.7
Internet	N	74	26	14	5	7
	%	58.7	20.6	11.1	4.0	5.6
Personal collection	N	34	35	30	17	10
	%	27.0	27.8	23.8	13.5	7.9
Meeting/ colleagues	N	31	36	16	30	13
	%	24.6	28.6	12.7	23.8	10.3
Media(TV/Radio)	N	23	38	30	28	7
	%	18.3	30.2	23.8	22.2	5.6
Telephone	N	43	33	23	19	8
	%	34.1	26.2	18.3	15.1	6.3

(1) = First, (2) = Second, (3) = Third, (4) = Fourth, (5) = Fifth

Table4.12. Main communication channels used by nurse professionals

Respondents were requested to indicate five main communication channels in order of priority and then number 1, 2, 3, 4, and 5 respectively as the findings summarized in the above table 4.12. The results show that respondents use various information channels when seeking for their information needs. Based on their first choice, it can be seen that 58.7%, 34.1%, 27.8%, 27.0%, 24.6% and 18.3% of respondents used the internet, telephone, health library, personal collection, meeting/colleagues and media for achieving their information needs respectively. In a second level 30.6%, 29.9%, 27.8%, 27.1%, 25.0% and 20.1% of respondents used media, colleagues, health library, personal collection, telephone and internet, while the other 23.6%, 22.9%, 19.4%, 18.8%, 14.5% and 11.8% choose the media, personal collection, health library, telephone, meeting/ colleagues and internet as the third information seeking channel for getting information. The other information channels, representing 22.9%, 19.4%, 13.2%, 13.2%, 9.7% and 4.2% of the respondents choose colleagues, media, telephone, personal collection, library and internet fourthly and 16.7%, 9.0%, 8.3%, 7.6%, 6.9% and 5.6% of the respondents choose health library, meeting/colleagues, internet, personal collection, telephone and media for the last fifth level.

The finding by Emmanuel, Desmond and Oyemike (2016) confirmed that the majority of nurses use the internet as the first communication channel to get their information needs. Seek information from their personal collection was the second communication channel, next discuss with their relatives to enhance their knowledge on the needed subjects.

Paraskevi, Petros & Marianna (2014) study showed that nurses mainly seek information relating to patient care and they highly utilize using internet channel. This study result shows that respondents used the internet as the first communication channel when seeking for their information needs, followed by telephone and personal collection. The result of this study indicates that internet is the first choice for nurses and followed by media and colleagues.

4.6 Sources used by nurses

Sources of information	Responses	Frequency	Percent	Mean	Standard deviation
Journals	Yes	29	23.0	1.77	0.423
	No	97	77.0		
Personal collection	Yes	114	90.5	1.10	0.295
	No	12	9.5		
Discussion with colleagues	Yes	105	83.3	1.26	0.441
	No	21	16.7		
Online database	Yes	81	64.3	1.38	0.488
	No	45	35.7		
Social media	Yes	70	55.6	1.52	0.502
	No	56	44.4		
Internet	Yes	115	91.3	1.06	0.230
	No	11	8.7		
Periodicals	Yes	36	28.6	1.71	0.454
	No	90	71.4		
Attending seminars	Yes	52	41.3	1.60	0.493
	No	74	58.7		
Ask (Drs/pharmacists/ other members)	Yes	100	79.4	1.17	0.381
	No	26	20.6		
Dissertation	Yes	50	39.7	1.61	0.489
	No	76	60.3		
Patient notes	Yes	100	79.4	1.30	0.461
	No	26	20.6		

Books (online and print)	Yes	102	80.9	1.25	0.437
	No	24	19.1		

Table4.13. Sources of information

Selection of information sources depends on users' interest and demand to satisfy their information needs. Nurses are seeking information from different sources to meet their needs. From the above table 4.13, it can be pointed out that majority of the respondents used information sources were internet 91.3%, personal collection 90.5%, discussion with colleagues 83.3%, books 80.9%, ask (Drs/ pharmacists 79.4%, patient notes 79.4%, online database, 64.3%, social media, 55.6%, attending seminars, 41.3%, dissertation, 39.7%, periodicals, 28.6% and journals, 21.4%. The findings in the above table 4.13 shows that, the most preferred information source was internet compared to the other information sources, next personal collection, discussion with colleagues, online and printed books and followed by ask (Drs/pharmacists), and patient notes.

The finding of Emmanuel (2013) revealed that the most preferred information source of nurse professionals was colleagues and the second most preferred information source was nursing journals, followed by access internet sources to enhance their knowledge.

Emmanuel, Desmond and Oyemike (2016) in his study indicate that internet and journals are most important sources, followed by books to achieve their information needs. They were also using electronic database and asking doctors and nurse colleagues to get their required information.

Denise & Siobhan (2011) most respondents 90% (339) agreed nursing guidelines were the most sources to get their required knowledge.

4.7 Factors that affect ISB of nurses

Factors that affect ISB of nurses	Frequency with %	1	2	3	4	Mean	Rank
Lack of adequate time	N %	56/44.4%	37/29.4% 4%	26/20.6% 6%	7/5.6%	2.90	1
Distance from the source	N%	25/19.8%	56/44.4% 4%	34/27.0%	11/8.7%	2.25	13
Less quality of the sources	N%	25/19.8%	46/36.5%	42/33.3%	13/10.3%	2.34	11
Accessibility of the sources	N%	40/31.7%	47/37.3%	32/25.4%	7/5.6%	2.05	16
Latest information sources not available	N%	32/25.4%	50/39.7%	32/25.4%	12/9.5%	2.19	15
Format of the sources	N%	31/24.6%	41/32.5%	41/32.5%	13/10.3%	2.29	12
Poor internet facility	N %	37/29.4%	41/32.5%	34/27.0%	14/11.1%	2.20	14
Poor searching skill	N%	15/11.9%	36/28.6%	45/35.7%	30/23.8%	2.71	3
Lack of training	N%	26/20.6%	40/31.7%	38/30.2%	22/17.5%	2.44	6
Poor computer skill	N%	49/38.9%	55/43.7%	18/14.3%	4/3.2%	2.45	5
Education level	N%	17/11.8%	37/29.7%	43/29.9%	47/32.6%	2.85	2
Language barriers	N%	26/20.6%	28/22.2%	35/27.8%	37/29.4%	2.66	4
Information using habits	N%	23/18.3%	44/34.9%	46/36.5%	13/10.3%	2.39	9
Your attitude towards ICT &	N%	56/44.4%	43/34.0%	25/19.8%	2/1.6%	2.42	7

reading habit			1%	8%			
Health information performance	N%	31/24.6%	35/27. 8%	38/30. 2%	22/17.5 %	2.40	8
High cost of information sources	N%	30/23.8%	36/28. 6%	45/35. 7%	15/11.9 %	2.38	10

(1) Most serious, (2) = Serious (3) = Slightly serious, (4)= Not serious

Table 4.14 .factors that affect ISB of nurses

In the above 4.15 table 1, 2, 3 and 4 represents most serious, serious, slightly serious and not serious respectively. Many factors affect the process of information seeking. Based on the collected responses depicted in table 4.14, out of one hundred twenty six nurses mean value (2.90) of them complained that lack of adequate time was the factor that affect their information seeking behavior, secondly mean value of (2.85) participants expressed education level is affects seeking behavior of respondents. And the other, (2.71) respondents expressed that difficulty in accessing online materials (searching skill) was other factor, (2.66) others expressed language barrier was the factor that affected their information seeking process.

For mean (2.45) respondents, poor computer skill was the factor that affected their information seeking process, and other mean value (2.42) respondents, attitude towards ICT and reading habit was the other factor affect their seeking habit. Table 4.14 has more information, as it is clearly seen in table 4.14, the major factor that affected respondents' information seeking process was shortage of time.

In the Emmanuel (2013) study revealed that time constraint was one of the problems that hindered the information seeking process. Nurses indicated that they experienced difficulty in accessing foreign nursing journals and lack of awareness of medical databases. This could be due to weak user education, lack of funds to subscribe to local and foreign journals, and lack of training on skills to use medical databases for the nurses.

Emmanuel, Desmond and Oyemike (2016) study indicated that lack of training in how to access internet resources for nurses is the first factor that affects their seeking process, followed by lack of access to internet and lack of current relevant materials.

Grace1 and Jeysankar (2014) concluded that lack of awareness on resources and the availability of resources influence the information seeking behaviour. Many of them were not aware of the online databases available in their subject field.

Petros, Paraskevi, Marianna (2014) identified that lack of time (mean=3.53), unfamiliarity with computers, lack of skills for searching information were the main factor for nurses to seek relevant information using the interested website. Generally from the responses the researcher understands the serious level of factors become different on the different working area. For this study time constraint was the first factor to hinder the information seeking habit of nurse professionals.

4.8 Correlation and Regression results of the key variable

Variables		Information seeking behavior			Spearman correlation	Pearson chi-square value (x ²)
		High	Medium	Low		
Gender of respondents	Female	16/29.2%	26/41.5%	16/29.23%	-0.33	0.225
	Male	22/32.9%	28/39.2%	18/27.8%		
Level of education	Diploma	27/31.9%	33/40.4%	23/27.6%	0.83	4.611
	Bachelor degree	10/25.6%	15/39.5%	12/34.8%		
	Master degree	3/57%	3/42.8%	0		
Age of respondents	21-25	24/31.7%	27/37.8%	21/30.3%	-0.47	10.742
	26-30	8/24.3%	12/43.2%	11/32.4%		
	31-35	8/47.4%	8/47.4%	2.7%		
	41-45	0	2/66.7%	1/333%		
	>45	1/33.3%	0	2/66.7%		
Work experience	<2 years	9/25.6%	16/46%	10/28%	-1.65	10.975
	2-4 years	22/37.7%	23/39%	13/23%		
	5-7 years	8/34.6%	10/42.3%	5/23.1%		
	8-10 years	5/83%	0	1/16.7%		
	>10 years	3/75%	1/25%	0		
Training on internet access	Yes	35/35.3%	37/37%	29/27.6%	0.137	5.291
	No	11/42.8%	12/50	2/7%		
Computer skill of nurses	Excellent	2/66.7%	0	1/33.3%	0.235	25.949
	Very good	12/54%	8/37.5%	2/8.3%		
	Good	15/30.9%	22/45.4%	10/23.6%		
	Fair	13/43.6%	13/43.6%	5/12.8%		
	Poor	2/11%	6/33%	10/55.6%		
	Haven't computer skill	2/40%	0	3/60%		

Table.4.15. Correlation results of the key variable

Equation

$$y = \alpha + \beta_1(x_1) + \beta_2(x_2) + \beta_3(x_3) + \beta_4(x_4) + \beta_5(x_5) + \beta_6(x_6) + \epsilon$$

$$ISB = \alpha + \beta_1 (G) + \beta_2 (LE) + \beta_3 (A) + \beta_4 (WE) + \beta_5 (TIA) + \beta_6 (CS) + \epsilon$$

Whereas:

e = is common error

α = is constant

Y = is dependent variable

X_1, x_2, x_6 = independent variables

While

$X_1 = G$ = Gender

$X_2 = LE$ = Level of Education

$X_3 = A$ = Age

$X_4 = WE$ = Work Experience

$X_5 = TIA$ = Training on Internet Access

$X_6 = CS$ = computer skill

$Y = ISB$ = Information Seeking Behavior

Age: Young nurses are keen to seek information in their day to day activities and they are also eager to taste and apply the technologies they see. On the other hand, older nurses may also be tradition bound and unwilling to use new technologies, but on this study the model result shows that age had a negative relationship with information seeking behavior ($\chi^2 = 10.742$, spearman correlation = -0.47).

Gender: Sex of respondents has positive effect on adoption of technologies in favor of males. Due to the culture and growing setting, traditionally women are concerned with in house activities like food preparation, house cleaning; children care (Ataklti, 2008). In this study gender had negative relationship with information seeking behavior ($\chi^2 = 0.225$, spearman correlation = -0.33) (Table 4.15).

Level of education: Education level increases respondents ability to get process and use information and increase their willingness to adopt a new technology (Ataklti, 2008). Respondents who have better knowledge are assumed to adopt and use technologies better. The result of the analysis showed that education qualification was found to be positively relation with information seeking behavior of respondents ($\chi^2 = 4.611$, spearman correlation = 0.83) (Table 4.15).

Work experience: Experience of individuals to the working environment helps them to search information for their need related to their field. The model result indicated that work experience was negatively related with ISB. ($x^2=10.975$, spearman correlation = -1.65) (table 4.15).

Computer skill: The skill to access a computer can help an individual to perform different computer applications from different place. This usage will increase the information need and ways of getting it. The model indicated that the skill to computer access was a positive relationship with information seeking behavior ($x^2=25.949$, spearman correlation =0.235) (Table 15).

Training on internet access: Nurses come from different backgrounds and for some members of nurse professionals; certain factors would have denied them the opportunity to obtain web information seeking skills. They could either have obtained their information seeking skills prior to the popularity of the web based information services, or attain new skills through self-teaching with sporadic instances of formal training. The result in the model indicated that training on internet access had positive relationship with information seeking ($x^2 = 5.291$, spearman correlation = 0.137) (Table 4.15).

Model	Unstandardized Coefficients		St. Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.642	.453		1.417	.159
Age of respondents	.070	.092	-.085	.762	.120
Experience of nurse professionals	-.194	.093	-.235	-2.098	.038
Computer skill of nurse professionals	.080	.058	.112	1.374	.041
Level of education	.005	.107	.004	.050	.023
Gender of respondents	.118	.123	-.076	.957	.340
Training on internet access	-.90	.155	.046	-.580	.041

Table 4.16 Regression result of key variables

From the above table 4.16 the model indicates that level of education ($p = 0.023$), work experience ($p = 0.038$), computer skill ($p = 0.04$) and training on internet access ($p = 0.04$) and but gender ($p = 0.340$) and age ($p = 0.120$) in this study hadn't a significant relationship with

information seeking behavior. In the other study like Genene (2014) on undergraduate student's information need and seeking behavior age and gender become significant demographic factor on information seeking habit of undergraduate students, but in this study age and gender had negative relationship and not significant factor for information seeking behavior of nurse professionals.

4.9 Correlation and regression result of key factors

Based on regression model the relations of key factors with information seeking behavior were identified.

Factors		Information seeking behavior
Information seeking behavior	Pearson Correlation Sig. (2-tailed)	1
Attitude towards ICT and reading habit	Pearson Correlation Sig. (2-tailed)	-.574*
lack of adequate time	Pearson Correlation Sig. (2-tailed)	.037
distance from the source	Pearson Correlation Sig. (2-tailed)	.661
less quality of the sources	Pearson Correlation Sig. (2-tailed)	.044
accessibility of the source	Pearson Correlation Sig. (2-tailed)	.050
latest information sources is not available	Pearson Correlation Sig. (2-tailed)	.553
format of the source	Pearson Correlation Sig. (2-tailed)	.039
poor internet facility	Pearson Correlation Sig. (2-tailed)	.138
poor search skill	Pearson Correlation Sig. (2-tailed)	-.229
lack of training	Pearson Correlation Sig. (2-tailed)	.006
poor computer skill	Pearson Correlation Sig. (2-tailed)	.028
education level	Pearson Correlation Sig. (2-tailed)	.740
language barrier	Pearson Correlation Sig. (2-tailed)	-.023
information use habit	Pearson Correlation Sig. (2-tailed)	.782
health information performance	Pearson Correlation Sig. (2-tailed)	-.598
high cost of information sources	Pearson Correlation Sig. (2-tailed)	.020
		-.675
		.030
		.729
		.027
		-.682
		.031
		.832
		.042
		.009
		.916
		.026
		.340
		.540
		.036
		-.024
		.047

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

Table 4.17 Regression result of information seeking factors

From the above table, lack of adequate time, less quality of the sources and health information performance, distance from the source, latest information source not available, language barrier, education level, lack of training and information using habit had positive relationship with information seeking behavior but, poor computer skill, lack of attitude towards ICT and reading habit, poor search skill, poor internet facility and accessibility of the sources, high cost of information access and format of the source had a negative relationship with information seeking behavior.

Coefficients^a

Factors	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Your attitude towards ICT and reading habit	-.175	.083	-.182	-2.119	.036
Lack of adequate time	.067	.069	.083	.964	.045
Distance from the source	-.031	.078	-.036	-.405	.686
Less quality of the sources	.099	.072	.114	1.376	.061
Accessibility of the source	-.220	.078	-.256	-2.809	.006
Latest information sources is not available	.160	.081	.197	1.966	.551
Format of the source	-.001	.073	-.001	-.016	.987
Poor internet facility	.013	.071	.017	.187	.021
Poor search skill	.012	.082	.015	.144	.032
Lack of training	.006	.076	.008	-.078	.026
Poor computer skill	-.020	.088	-.020	-.227	.032
High cost of information sources	-.033	.074	-.043	-.450	.654
Education level	.015	.073	.020	-.210	.034
Language barrier	-.020	.069	-.028	-.283	.778
Information use habit	.016	.086	.019	.189	.850
Health information performance	.088	.070	.115	1.262	.033

Dependent Variable: Information seeking behavior

Table 4.18. Regression result of ISB factors

From the above table, lack of adequate time, less quality of the sources, health information performance, education level, poor computer skill, attitude towards ICT and reading habit, poor search skill, lack of training, poor internet facility, accessibility of the sources and high cost of information access were a significant factor for information seeking behavior and the other factors like distance from the source, less quality of the source, latest information source not available, language barrier and information using habit insignificant variable for information seeking behavior.

4.2. Discussion

To examine the information seeking behaviour of nurses, the study was conducted in Jimma University Specialized hospital. Three specific objectives were put: to examine information seeking patterns of nurses, to identify information sources used by nurses to acquire required information and to identify factors influence ISB of academic staffs and lastly figure out a conceptual framework based on the respondents result and with understanding information seeking models. Data were collected from 126 nurses.

Both descriptive and inferential statistics were used to analyze the collected data. Descriptive statistics was employed to describe the characteristics of respondents and inferential statistics was used to identify factors affecting information seeking behavior of nurses and to analyze the correlation and significant level between dependent and independent variables. Education level, computer skill, year of experience and training on internet access were found to be significant determinants of information seeking behaviors.

4.2.1. Information seeking pattern

4.2.1.1. Computer use and access

Findings of this study showed that only 46 (36.5%) participants had their own computer, but 80 (63.5%) nurses had not their own computer that used for different purposes. Respondents that had their own computer that benefit for different purpose, most nurses 15 (32.6%) used their computer for keeping files, 13 (28.3%) for reading and 11 (23.9%) for using internet. From the data 26 (56.5%) respondents response home and work area were areas preferred for using their

computer for performing their activities, 13 (28.3%) respondents prefer at work area and 7 (15.2%) respondents were used their computer at home. Most nurses on this study seem to be familiar with computers and they have accessing internet sources, but still greater number of nurses' 98 (77.8%) needs training on how to search required documents using relevant sites. Findings of this study showed that almost all study participants (93.7%) reported as they seek information relating to updating knowledge and patient care and most nurses highly utilize internet sources mainly using their own smart phone. Among the total respondents, 38 (34.9%) respondents used internet at work area and followed by 27 (24.8%) at work area. Nurses who had access to internet encountered problems. Of those problems, 29 (26.6%) poor internet connection, 15(13.8%) lack of computer, 14 (12.8%) high internet costs, 11 (11.8%) lack of time for searching, 8 (7.3%) lack of relevant information sources and 7 (6.4%) lack of training on IT resources were major problems. In this study 83 (57.6%) nurses mainly prefer both electronic and print format of information.

The time length when respondents' access to internet sources shows 43 (39.4%) respondents access two times a week, 30(27.5%) Three times a week and 15 (13.8%) access daily. Majority 81 (64.3%) respondents not satisfy on the sources provided inside and outside their working area and 45 (35.7%) respondents were satisfied on the provided sources.

4.2.1.2. Sources of information for nurses

Emmanuel (2013) identified the sources the nurses used to obtain information. Colleagues was the source most often indicated with 169 responses, this was followed by nursing journals with 145 responses and the internet was the third source of information indicated with 123 responses rate.

Paraskevi, Petros & Marianna (2014) the information resources which are most frequently utilized by the nurses include internet search engines (mean=3.84), other nurses (mean=3.79), scholar web pages (mean=3.77) and hospital seminars (mean=3.73) are considered to be the most popular information resources.

In the (Sarah, 2012) study the interview result shows the most popular sources used were human sources, followed by the internet and intranet.

In most cases nurses use their colleagues (doctors, nurses and other health professionals) as information resources. It seems that the increased workload and often the emergency of patient

care, makes nurses to be attentive and therefore it is often rather difficult to use internet for seeking information at work.

In this study, majority of the respondents used information sources were internet 115 (91.3%) followed with personal collection 110 (87.3%), discussion with colleagues 105 (83.3%), books 102 (80.9%) and ask (Drs/ pharmacists 100 (79.4%). In Mulusew (2012) study also internet was the first choice of source from others.

4.2.1.3. Respondent's library usage behaviour

In this study most nurse professionals were used the library to seek library sources for their information needs. From the 126 respondents, majority 75(59.5%) of them indicated that they use the library for getting the needed information. However, 53 (40.5%) of the respondents never used the library. The reason why not used the library includes: - 19 (37.3%) respondents said that the library not provide latest printed resources, 16 (31.4%) have their own resources 9(17.6%) respondents said that there is not have any interesting to access library sources, 7 (13.7%) less internet connection and lastly lack of time for going to the library was also another reason mentioned by the respondents. The study indicates that the majority 26 (34.7%) of respondents use library once a month for getting their information needs, 32 (42.6%) once a week, 13(17.3%) twice a week, 4 (5.3%) undecided to visit library. From the library users most respondents 49(65.3%) not satisfied and 34 (34.7%) satisfied with the library resources. Of the total participants, only 40 (31.7%) reported that their organization subscribed information sources such as books, journals, research paper and other sources. Concerning being up to datedness and usefulness of those available sources, 20 (50%) participants said that their sources are partially up to date.

4.2.2. Reasons why nurses seek information

In this study updating knowledge, Personal development and carry out their responsibility on hospital were the main purposes for which nurses at the hospital sought information from printed and electronic sources. Nearly 88 (80.7%) respondents retrieve internet sources mainly for patient care, 75 (68.8%) for drug information, 71 (65.1%) for downloading files, 44 (40.4%) for E-mail checking and 34 (31.2%) for research purpose.

Paraskevi, Petros & Marianna (2014) who found that most frequently nurses utilized information relating to patient care, i.e. "patient care skills" (mean=4.9), "hospital infection control"

(mean=4.07), “patient evaluation” (mean=4.02) and “emergency patient care” (mean=3.91). On the other hand, information about drugs and treatments are utilized less frequently. In the Sarah (2012) four of the interviewees’ response nurses seeking information mainly about drugs, policies and procedures in the duty and for medical condition.

Emmanuel (2013) were studied better patient care was the purpose most indicated with 176 responses, and this is followed by medication administration with 152 responses, this was closely followed by better job performance with 149 responses. The results show that respondents used the internet as the first communication channel when seeking for their information needs, followed by personal collection.

In the (Sarah, 2012) study the reason nurses seek information was administration of drugs, applying dressings, and carrying out procedures in accordance with policy all constitute roles and tasks carried out by nurses.

4.2.3. Factors that affect information seeking behavior

(Mulusew, 2012) identified top major identified hindering factors 103 (30.3%), 95% CI [25.6%-35.6%] were: Geographical, organizational, economic related, educational status, poor personal initiation, time shortage, low prevalence of diseases and new cases.

Emmanuel (2013) responses from the nurses revealed that time constraint was one of the most factor that hindered the information seeking process, followed by poor search skill on foreign nursing journals and lack of awareness of medical databases. This could be due to weak user education, lack of funds to subscribe to local and foreign journals, and lack of training on skills to use medical databases for the nurses.

Sarah (2012) the study result indicates that lack of time was identified as the biggest factor to information seeking and other significant factors included: lack of access to computers, levels of information literacy and issues around nursing culture.

On this study out of one hundred twenty six nurses, mean value (2.90) of them complained that lack of adequate time, (2.85) education level, (2.71) poor searching skill, (2.66) language barrier were main factors identified from the respondents.

4.2.4 Correlation and Regression results of the key variable

From the correlation result logistic regression result age, work experience, training on internet access and computer skill were the significant demographic variables and factors for nurses information seeking behavior.

4.3 Conceptual Framework

A conceptual framework is described as a set of broad ideas taken from relevant fields of enquiry and used to structure a subsequent presentation. When clearly articulated a conceptual framework has potential usefulness as a tool to scaffold research and to assist a researcher to make meaning of subsequent findings (Smyth, 2004).

Studies in information-seeking behavior stem from concerns surrounding how people use information in their work environments. Information seeking behavior arises as a consequence of a need perceived by the information user, who in order to satisfy it, makes demands upon formal or informal information sources or services, resulting in either success or failure (Wilson, 1999: 251). During searching information, there may be several factors that will delay their searching processes (Davies, 2007). Due to the presence of such delaying factors, they may not be satisfied with their searching processes and may remain under information needs. The process becomes cyclic to use the sources again. Relevant and valid information will be used by users for their information needs and may also be exchange to others. This process may have a great role on achieving their goals, updating themselves and becoming good competent in the given environment. The conceptual framework was figure out based on the analysis result and the researcher also tries to modified (Demelash, 2016) works.

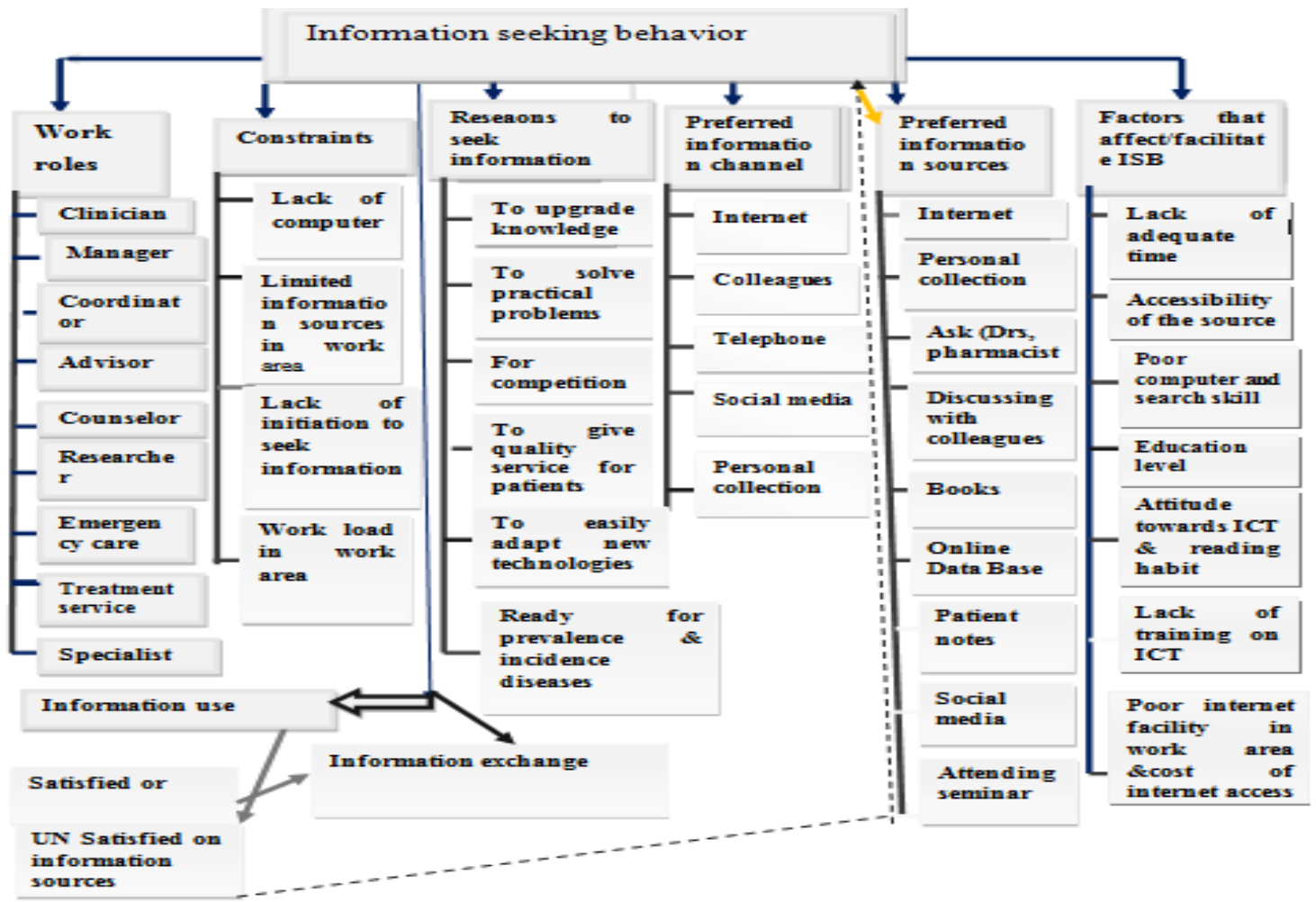


Fig 4.1 Conceptual framework of the study

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1. Conclusion

Information needs and seeking behavior is influenced by a number of factors so the first step is to understanding the actual seeking behavior of information users. The study has set to determine the information seeking behavior of nurse professionals of Jimma University Specialized hospital.

From this study result, most nurse professionals focus on both printed and electronic sources for searching their relevant information. The result shows that most of the nurses come to the library to seek library printed resources with electronic one, but they hardly use the internet-resources.

From the study result most nurses lack basic skills on how to access e-resources using different browser. The information sources like internet, books, asking (Drs, pharmacists) and their colleagues were the major once that nurse professionals used to meet their information requirements. The findings of the study revealed that the majority of the respondents not satisfied the information provided either library or on the work area, from the respondent's idea the library did not provide enough information sources with updating. And also in work area there were not enough reference materials and desktop computers to access e-resources.

From the data result the researcher clearly observed that, the major factors that affect/facilitate ISB were lack of adequate time, less quality of the sources, health information performance, education level, poor computer skill, attitude towards ICT and reading habit, poor search skill, lack of training, poor internet facility, accessibility of the sources and high cost of information access were a significant factor for information seeking behavior. From the demographic variables work experience, computer skill and work area were a significant variable for nurses information seeking behavior, but gender ($p = 0.062$) and age ($p = 0.120$) in this study hadn't a significant relationship with information seeking behavior.

Information seeking behavior studies help the libraries and system designers for collection development and also to provide better services to its users. Nurses need to continually improve their skills and knowledge through a dynamic interaction with healthcare information space. Nurses can able to use advanced information sources and the internet efficiently and effectively they become satisfy on their needs and becomes knowledgeable on different issues. Their

adaptation to change and their ability to utilize specific information services are important skills that nurses need to develop so as to advance their professional role and deliver high-quality care to patients. As such, this study necessary to understand their information behaviors in order to develop specialized information services as well as information literacy programs specially designed for nurses. The descriptive survey was difficult to analysis. There was limited number of current literature related to this study in Ethiopia.

5.2. Recommendation

5.2.1. Recommendation for practice

Based on the findings, the following recommendations were therefore forwarded.

- ✚ The hospital should subscribe enough updated and relevant e-journals and other open access journal articles by considering all nurse wards to meet their need.
- ✚ The library management should collect information sources and design information services on predicated information needs of nurse staffs to satisfactorily respond to their information needs. Majority of nurse professionals reported that the existing information systems did not fully respond their information needs.
- ✚ The library & information science professionals those work in health libraries should consider the research result to provide each nurse type's information need.
- ✚ The hospital try to provide desktop computer with internet connection for each ward members to create suitable accessibility of internet sources with a time at work place. And also build a library only for nurse professionals by fulfilling the required materials will increase the motivation to seek on the needed time.
- ✚ Information professionals can analyze the findings of the study and design, develop and introduce new library and information services for nurses.
- ✚ Formal training should be provided to the nurse staffs on how to access online resources using different search engine on various sites.
- ✚ Since it is clear that nurses required information for different purposes, so, adequate time should be created to search for the required information to fill their information gaps.

5.2.2. Recommendation for future works

The following are suggestions made for other researchers to carry out further research work:

1. A study on the design a framework connecting with information retrieval that facilitate the information seeking behavior of nurses.
2. A comparative study of the information seeking behavior of rural and urban nurses.
3. A comparative study of information seeking behavior of public and private hospital nurses.

References

- Anita, L.H. (2004). *Library and information science text for Africa*; Ibadan: Third World Information Services Ltd.
- Alghanim, S. A. (2011). Information needs and seeking behavior among primary care physicians in Saudi Arabia : Implications for policy and practice, *Scientific Research and Essays*,6(8), 1849–1855.
- Anwar, F., Shamim, A., & Khan, S. (2011).Barriers in Adoption of Health Information Technology in Developing Societies. *International Journal of Advanced Computer Science and Applications*, 2: 8.
- Andualem, M. (2012). *Information Needs and Information seeking Behavior among Health Professionals Working at Government Hospitals and Health Centers In Bahir Dar Town, Amhara Region, Ethiopia*. (Unpublished master's thesis), Addis Ababa University, Addis Ababa, Ethiopia.
- Anyanwu, E., Oparaku, D. & Benson, O. (2016) "meeting the information needs of nurses for effective healthcare delivery in Nigeria: a case study of federal medical centre, owerri imo state". *Journal of library philosophy and practice*.
- Asemahagn, M. A. (2015). SM Gr up Challenges of ICTs Utilization among SM *Journal of Public Health and Health Professionals : The Case of Public Hospitals in Addis Ababa Ethiopia*, 1(3), 36–41.
- Andualem, M. (2012). *Information Needs and Information seeking Behavior among Health Professionals Working at Government Hospitals and Health Centers In Bahir Dar Town, Amhara Region, Ethiopia*. (Unpublished master's thesis), Addis Ababa University, Addis Ababa, Ethiopia.
- Asika, N. (2006).*Research Methodology in Behavioral Sciences*, First Edition. Ibadan: Longman Publishers Nig. Ltd.
- Ataklti T. (2008). *Determinants of Adoption and Intensity of Adoption of Vegetable Cultivation in the Irrigated Fields: The Case of Laelaymychew District, Central Tigray*. MSc. Thesis, Haramaya University, Haramaya, Ethiopia.

- Australian Bureau of Statistics, (ABS) (2004). Sampling methods. (<http://www.abs.gov.au.websitdb>).
- Barrett, A. (2005). The Information- Seeking Habits of Graduate Students in the Humanities. *The Journal of Academic Librarianship*, 31(4): 324-331.
- Bhatti, R., Asghar, M.B., Mukhtar, S. & Chohan, T. (2011). Internet use by social Scientists at the Bahauddin Zakariya University, Multan, Pakistan: A Survey. *Library Philosophy and Practice*.
- Blythe, J. & Royle, A. (2000). Assessing nurses' information needs in the work environment. *Bulletin of the Medical Library Association*, 81(4). 433-435.
- Case, O. (2002). Looking for information: A Survey of research in information seeking needs, and behaviour. Amsterdam: Academic Press.
- Case, O. (2006). Looking for information: a survey of research on information seeking, needs, and behaviour, 2nd ed. Bingley: Emerald Group Publishing.
- Creswell, J. & Plano, C. (2007). Designing and conducting mixed methods research. Sage, Thousand Oaks, California.
- Cogdill, K. (2003). Information needs and information seeking in primary care: a study of nurse practitioners. *Journal of the Medical Library Association*, 91 (2), 203- 215.
- Daas, P. & Beukenhorst, D. (2008). Databronnen van het CBS: Primaire en secundaire bronnen (Statistics Netherlands data sources: Primary and secondary sources). Internal report Statistics Netherlands: Heerlen.
- Davies, K. (2007). The information seeking behavior of doctors: review of the evidence. *Health Information and Libraries*, 24, 78–94.
- Dee, C., & Stanley, E. E. (2005). Information-seeking behavior of nursing students and clinical nurses : implications for health sciences librarians. *Journal of the Medical Library Association*, 93(2), 213–222.
- Devadason, F. & Lingman, P. (2000). A methodology for the identification of information needs of users. *IFLA Journal*, 23 (1), 41-51.
- Dousari, E. (2009). Information needs and seeking behavior of Doctors in Kuwait government hospitals: an exploratory study. A doctoral thesis in Kuwait.

- Ebenezer, C. (2015). Nurses and midwives' information behavior: a review of literature from 1998 to 2014. *New library world*, 116 (3/4). 155- 172.
- Ekoja, I.I. (2002). Channels of Communicating Agricultural Information Preferred by Nigerian Farmers. *IAALD Quarterly Bulletin*, 47 (2): 38-42
- Ellis, D., Cox, D., & Hall, K. (1993). A comparison of the information seeking patterns of engineers and researchers in the physical and social sciences. *Journal of Documentation*, 49(4), 356-369.
- Emmanuel E. (2013). Information needs and seeking behaviors of nurses, *Health Education* Vol. 113 Iss 3 pp. 183 – 195.
- Fiankor, K. & Adams, M. (2004). Information seeking behaviour and Information use by the students of the department of information studies, University of Ghana, Legon, Ghana *Library Journal*, 16, 45-60.
- Gebbie, K. M. (2000). The public health work force: enumeration 2000. US Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, National Center for Health Workforce Information and Analysis.
- George M. & Gatero. (2010). Utilization of ICTs for accessing health information by medical professionals in Kenya: A case study of Kenyatta national hospital. *Journal of health informatics in developing countries*.
- González-gonzález, A. I., Dawes, M., Sánchez-Mateos, J., Riesgo-Fuertes, R., Escortell-Mayor, E., Sanz-Cuesta, T., & Hernández-Fernández, T. (2007). Information Needs and Information-Seeking Behavior of Primary Care Physicians. *The Annals of Family Medicine*, 5(4), 345-352.
- Gorman, P. (2001). Information needs of physicians, *Journal of American Society for Information Science*, Vol. 46 No. 10, pp. 729-36
- Grace, M., & Jeyshankar, R. (2014). information seeking behaviour of the nursing professionals of Apollo college of nursing. *International journal of information research*, 3(3), 284–294.
- Israel, L. (2009). Assessment of access to health information resources among health professionals working in HIV/AIDS and family health units of public health centers in Addis Ababa, Ethiopia ((Doctoral dissertation, Addis Ababa University).
- Jamali, R. & Nicholas, D. (2013). Inter disciplinarily and the information-seeking behavior of

- scientists. *Information Processing & Management*, 46(2), 233-243.
- Johnson, J. D. (2003). On contexts of information seeking. *Information processing and management*, 39, 735–760.
- Laki, D. G. (2016). Factors Influencing Health Information-seeking Behavior among Health Care Providers at Health Facilities in Tanga Region : A Case Study of Muhef Project, 4(6), 279–297.
- Kennedy, L. (1997). “Connecting Online Searching Strategies and Information Needs: A User-centered Focus-Labeling Approach.” *RQ*; Chicago. Vol. 36, (4), pp. 562-568.
- Kothari, K. (2004). *Research methodology: methods and techniques*. 2nd ed. New Delhi: New Age International.
- Khan, G. (2010). *Information needs and seeking behavior of the law faculty members: The survey of the University of Peshawar and its affiliated law colleges*. UN published M. Phil thesis, Islamia University of Bahawalpur, Bahawalpur.
- Khayesi, M. K. (2011). *Information behavior in health-care of home-based elderly people in Nakuru District, Kenya*. (Doctoral dissertation, University of South Africa, Pretoria).
- Kuhlthau, C.C. (1993). A Principle of uncertainty for information seeking. *Journal of Documentation*, 49(4): 339-355.
- Kumar, A. (2013). Assessing the Information Need and Information Seeking Behavior of Research Scholars of M. B . P . G . College : A Case Study. *International Journal of Digital Library Services*, 3(3), 1-12.
- Kumaran, M., & Chipanshi, M. (2015). Exploring the information seeking behaviour of internationally educated nurses in saskatchewan. *Journal of the Canadian Health Libraries Association*, 36(2), 45–53.
- Kuruppu, D. C. (1999). Information needs and information seeking behaviour of users in organizations. *Journal of information studies*, 5(1), 53–66.
- Leckie, G., Pettigrew, K., & Sylvain, C. (1996). Modeling the information seeking of professionals: a general model derived from research on engineers, health care

- professionals, and lawyers. *Library Quarterly*, 66(2), 161-194.
- LaPelle NR, Luckmann R, Simpson EH & Martin E. (2006) Identifying strategies to improve access to credible and relevant for public health professionals: a qualitative study. *BMC public health*, 6(1), 89.
- Majid, S., Zhang, S., Chang, B. & Mokhtar, I. (2011). Information use and literature searching skills of nurses. *Third international conference on quantitative and qualitative measures in libraries, Attens & Greece* 13(2), 1-12.
- Marshall, C. & Gretchen, B. (2006). *Designing Qualitative Research*, 4th edition, Thousand Oaks, Sage Publication, pp. 97 – 150.
- McKnight, M. (2006). The information seeking of on-duty critical care nurses: evidence from participant observation and in-context interviews. *Journal of Medical Library Association*, 94 (2), 145.
- Mishra, M., Ramesh, D., Nanda, S., Jena, S., & Khuntia, S. (2015). Study on Information need and seeking behavior of the Health Science Students of an Indian Deemed University. *Library Philosophy and Practice (e-journal)*. Paper 1318.
- Moly, T. M. (2015). Information Needs and Information Seeking Behaviour of Academics in College of Agriculture and Environmental Sciences, Haramaya University, Ethiopia. *Journal of library and information science*, 3(2), 1996–2012.
- Moly, T. M., & Teshome, T. A. (2015). Information Seeking Behaviour of Academic Staffs of Assosa University, Ethiopia (MSc research, Haramaya University).
- Morris, M., & Roberto, K. R. (2016). Information-seeking behaviour and information needs of LGBTQ health professionals : a follow-up study, *Health Information & Libraries Journal*, 33(3), 204-221.
- Nakhumicha, A. (2014). Information needs and seeking behaviour of medical teaching staff of the faculty of health sciences, Egerton university, Kenya.(Unpublished MSC thesis).
- Neuman, W. (2006). *Social Research Methods*, 6th ed., Boston, MA: Pearson Education.NHS (National Health Service). Introduction to health informatics.
- Nwman, K., Dobbins, M. & Ciliska, D. (2007). Information-seeking practices of public health

professionals: implications for quality in higher education in, 6(1), 40–52.

- Nkomo, N.(2009).A comparative analysis of the web information seeking behavior of students and staff at the University of Zululand and the Durban University of Technology (Doctoral dissertation).
- Oyewo, O.M. (2006), A Survey of the Information Needs Uses and Seeking Behaviour of Pharmacists in Oyo State, Africa Regional Centre for Information Science, University of Ibadan, Ibadan.
- Pettigrew, K.E. (1996), Community Information Seeking using the Internet: Findings from three public library community network systems. *Information Science Technol.* 53 (11), 894-903
- Popoola, S.O. (2002). Information and Development External Studies programme Services University of Ibadan.
- Ricks, E. & Ten Ham, W. (2015). ‘Health information needs of professional nurses required at the point of care’, *Curationis* 38(1), 1-8.
- Romanov K, & Aamio M. (2006).A survey of the use of electronic scientific information resources among medical and dental students. BMC Medical EducationStudies, Nairobi: Jomo Kenyatta Foundation, 6(1), 28.
- Sarkhel, J., & Khan, M. (2014). Information needs and information seeking behavior of faculty members of agricultural universities in Bangladesh : a study Review of Related Literature, *The International Journal of Social Sciences*, 24(1), 23-36.
- Satija, P., & Singh, K. (2006). India ’ s Research on Information Seeking Behaviour of Agricultural Scientists :Library Herald, 44(1).
- Smyth, R. (2004).Exploring the usefulness of a conceptual framework as a research tool: a researcher's reflections. *Issue in educational research*, 14(2), 167.
- Tannery, N. H., Wessel, C. B., Epstein, B. A., & Gadd, C. S. (2013). Hospital nurses' use of knowledge based information resources. *Nursing Outlook*, 55(1), 15-19.
- Thomas, S. (2012). a case study of the information needs of nurses at a universityhospital trust in the east midlands: looking towards how information provision could be improved(Doctoral dissertation, Aberystwyth University).

- Tury, S., Robinson, L. & Bawden, D. (2015). The Information Seeking Behaviour of Distance Learners: A Case Study of the University of London International Programmes. *Journal of Academic Librarianship*, 41(3),
- Uwazie, E., Oparaku, D., & Benson, O. (2016). Meeting the information needs of nurses for effective healthcare delivery in Nigeria: a case study of federal medical Centre, owerri, Imo state. *Library philosophy and practice(e- journal)*. Paper 1427.
- Wilson, T. D. (1999). Models in information behaviour research, *Journal of Documentation* 55 (3), 249-270.
- Wilson, T. D. (2000). Recent trends in user studies: action research and qualitative methods. *Information research*, 5(3), 5-3.
- Wilson, T.D. (2005). Evolution in information behavior modeling: Wilson's model, in Fisher, K.E., Erdelez, S. and McKechnie, L. (Eds), *Theories of information behavior*, 31-36.
- Wilson, T. D. (2006). On user studies and information needs. *Journal of documentation*, 62(6), 658-670.
- World Health Organization,(2006). *Electronic Health Records: manuals for developing countries*.
- Zach, L. (2005). When is "enough" enough? Modeling the information-seeking and stopping behavior of senior arts administrators. *Journal of the American Society for Information Science and Technology*, 56(1), 23-35.

5. 1 & 2 6. 1, 2, 3

9. How often do you use an internet to get Health Information that can support your work?

- 1. Daily 2. Two times a week
- 3. Three time a month 4. Once a month
- 5. Prefer not to mention

10. For what purpose do you use internet? (You can select more than one)

- 1. E-mail 2. Research purpose
- 3. Drug information 4. Patient care information
- 5. For business 6. Entertainment
- 7. News 8. Downloading files

11. Which browser do you use frequently for internet access?

- 1. Google chrome 2. Internet explorer
- 3. Mozilla 4. Opera

12. Did you face any problem while searching information in the internet? 1. Yes 2. No

13. If your answer is yes for question #12, what problem did you encounter? (Please you can select more than one)

- 1. Poor internet connection 2. High internet cost
- 3. No enough computers for users 4. Limited access terminals
- 5. Retrieval problems 6. Lack of relevant information resources
- 7. Lack of time for searching 8. Lack of training / help in using IT resources
- 9. Required materials is not available

14. Which information format do you prefer to satisfy your information needs? (You can choose more than one)

- 1. Printed information 2. Electronic information 3. Both print and electronic source

15. Does your organization subscribe journals, books, research papers and others related to your work type? A. Yes B. No

16. If your answer is **yes** for question #15, are these information sources up to date?

- A. Fully updated B. Partially updated
- C. Least updated D. not updated

17. A. Do you use public or health Library to meet your information needs? Please tick (√) only one appropriate option. A. Yes () B. No ()

b. If **yes**, how often do you use the library? A. Very Often () B. Often ()

C. Fairly Often () D. Undecided ()

c. In your opinion, does the Library satisfy your information needs?

Yes () No ()

d. If your answer No, why do not use library?

1. Internet connection is not available 2. No latest print resources 3. Have my own resources

4. I am not interested

18. Do you need training on how to access E-resources? A. yes () B. No ()

19. What are the reason/ purposes of seeking information? Mark if you use and if you do not use

Reason /purpose of seeking information		Response
19.1	Research works	
19.2	Updating knowledge	
19.3	Carry out their responsibility in hospital	
19.4	Personal development	
19.5	Entertainment	
19.6	For communication/networking (E-mail , chatting)	
19.7	improving their personal competencies	
19.8	To solve immediate practical problem	

20. The communication channel that you use most frequently for your need (Rank as 1st, 2nd, 3rd.....); Mark ✓ for you choose from the rank listed.

	Communication channel	1st	2nd	3rd	4th	5th
20.1	Health library					
20.2	Internet					
20.3	Meeting/Colleagues					
20.4	Personal collection					
20.5	Media (TV/Radio etc...)					
20.6	Telephone					

III. Sources of information

1. What are the major sources preferred to obtain relevant information for your purpose? Mark ✓ for your choose from the five preferred words

Sources of information	Most preferred	Preferred	Moderately preferred	Slightly preferred	Least preferred
E-Journals					
Books (online and print)					
Websites					
Discussion with Colleagues					
Online database					
Social media					
Internet					
Periodicals					
Attending seminars/Conferences					
Ask (Drs/pharmacists/other members of multidisciplinary team)					
Dissertations					
Patients notes (medical notes and					

nursing notes)					
Personal collections & Personal digital assistants					

2. How often seeking information from any source? Click (✓) one from the list.

A, Daily () B, Weekly () C, Monthly () D, When need arise ()

3. Are you satisfied with the information sources provided inside and outside your work area?

A. Yes () B. No ()

4. If your answer in question #3 is No, why (please justify)?

.....

IV. Factors that affect/facilitate information seeking behaviour of nurses

1. What factors affect your information seeking? In a scale of 4 please indicate by ticking (√) once in each row: 4 Most Serious, 3 Serious, 2 Slightly Serious, 1 Not Serious

Factors affecting information seeking behavior	More serious(4)	Serious(3)	Slightly serious(2)	Not serious (1)
Lack of adequate time				
Distance from the source				
Less quality of information sources				
Accessibility of the source				
Latest information sources are not Available				
Format of sources				
Level of familiarity of sources				
Poor internet facilities				
Poor searching skill				
Lack of training/help in using IT Resources				
Poor computer skill				

Education level				
Year of experience				
Inaccessibility of library				
High cost of information resources				
Inadequate material in library				
Language barrier				
Your information use habit				
Your attitude towards ICT & reading habit				
Diseases prevalence and incidence				
Health information resources performance				

2. What do you think should be done to overcome factors you have mentioned in question 1?

v. Ideas as to how information provision for you could be improved.

1. In your opinion, what new or different services you would like to see provided in the hospital that relevant for your information seeking? You can give any comments?

2. Suggestions for meeting your information needs?

a. For Hospital

.....
.....

b. For library

.....
.....