



UNIVERSITY OF BOTSWANA

DEPARTMENT OF LIBRARY AND INFORMATION SERVICES

Dissertation Title:

**The Role of Librarians in Medical Education at University of Botswana Faculty of
Medicine (UBFOM)**

By

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**A dissertation submitted in partial fulfillment of the requirements for the award of a
Master's Degree in Archives and Records Management.**

DEDICATION

This work is dedicated to my children and my mother. You have made me stronger, better and more fulfilled than I could have ever imagined. Love you all.

DECLARATION

I the undersigned declare that the work presented in this dissertation is entirely my own unaided work. Wherever published or unpublished, printed, electronic and other information sources have been used as contribution or component of this work, these are explicitly, clearly and individually acknowledged by appropriate use of quotation marks, citation, references and statements in the text.

Signature of student:

Date:

Signature of supervisor:

Date:

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ABSTRACT

This study investigated the role of librarians in medical education at the University of Botswana Faculty of Medicine (UBFOM). The study and the libraries roles may add to the knowledge base of skills and attitudes needed for successful practice in all aspects of teaching and learning as users then are advanced with knowledge and know where and when to access the readily available information

The primary objective was to ascertain whether the services librarians provide meet the needs of physicians and students at UBFOM. The population included doctors, post graduates (residents) and undergraduates' students. The data was collected through interviews and questionnaires and the study highlighted librarians' requisite skills, knowledge and competencies that medical librarians in other countries possess, (Hannigan & Raimondo, 2016). The study revealed that all the librarians attached at FOM are not medical librarians, but traditional librarians with degrees in library and information science (LIS), archives and records management, and other general disciplines. They also lack sufficient technology modernization, inadequate resources to meet users' needs, and the core competencies such as scholarly communication whereby they should work with faculty members to enhance their ability to share their research broadly and effectively by addressing a range of issues, including changes in publishing, funder requirements for sharing research, open access models for disseminating new knowledge, digital publishing, and exercising author rights to broaden sharing of research. Even though the users (doctors, residents and students) express satisfaction with the services librarians provides, the librarians still need more trainings and professional development to keep up with the latest trends in medical librarianship. The study recommends that librarians at the Faculty of Medicine should consider furthering their study and most importantly doing a course on medicine or health related topics and benchmarking with other medical schools. There are professional associations they can also join to learn more and be efficient and effective in service delivery.

The findings from the study respond to the study's research questions and helped identify the services librarians provides, their qualifications and experiences, the users perceptions and the challenges they face in delivering those services. Doctors acknowledged librarians as they are able to manage, access, evaluate and share information at the point of care and throughout the hospitals. The findings shows that even though the librarians do not have qualification as medical librarians,

they tend to excel in trainings given to their clients. They understand the resources and they market them well to their clientele. Users explained that the knowledge and expertise they receive tend to affect their patient care practices in a good way as it is of great value and had changed the way they handle patients and are able to make the right and informed decision. They recognize the key roles librarians play in ensuring patient safety at the point of need to support clinical decision making and decreases mortality rate. The study has recommended further trainings for librarians and doctors and students to utilize the services librarians provides.

Key Words: UBFOM, medical library, medical librarian, librarian, residents, doctors, and students

LIST OF ABBREVIATIONS

1. BOLESWA..... University of Botswana, Lesotho and Swaziland
2. BSc.....Bachelor of Sciences
3. CCE.....Centre for Continuing Education
4. CL.....Clinical librarians
5. ELF.....Engaged Librarian Framework
6. FOM.....Faculty of Medicine
7. HIV/AIDS.....Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome
8. ICT.....Information and communication Technology
9. IT.....Information Technology
10. KBI.....Knowledge Based Information
11. LIS.....Library and Information Studies
12. Mah.....Mahalapye
13. MARM.....Masters in Archives and records management
14. Mau.....Maun
15. MBBS.....Bachelor of Medicine and Surgery
16. MLA.....Medical Library Association
17. MLIS.....Masters in Library and Information studies
18. MMed.....Masters in Medicine
19. ORD.....Office of Research and development
20. ORI.....Okavango Research Institute
21. OSUL.....Ohio State University Libraries
22. RSS.....Really Simple Syndicate
23. SPSS.....Statistical Package for Social Sciences
24. TEC.....Tertiary Education Council
25. UB.....University of Botswana
26. UBBS.....University of Basutholand, Bechuanaland and Swaziland
27. UBFOM.....University of Botswana Faculty of Medicine
28. UBRISA.....University of Botswana Research, Innovation and Scholarship Archive
29. UK.....United Kingdom
30. WI- FI.....Wireless Fidelity

Glossary

Librarian: Librarians are skilled professionals who assist with resources and research in the medical professions. The focus of the librarians in medical education is to emphasize the use of evidence based research and practice (Roper, 2006).

Medical librarian: A person who works in a library of medical information kept for reference in a teaching hospital, using web based resources to conduct research and help generate evidence based approaches to healthcare (Mosby's medical dictionary 2013).

Medical Library: Adio, Akewukereke, Ibitoye (2007) define medical libraries as institutions established to provide services and information resources to support and advance the mission to patient care, research and bio medical education for health institutions. Medical libraries play a critical role in medical education and provide a balanced perspective on medical issues.

Medical Practitioner: An individual accredited, licensed, and/or registered as a health professional upon meeting specified requirements. A qualified person who works as a doctor in the hospital or private practice or someone who practices medicine (Colli Dorland 2003).

Resident: A physician who has finished medical school and is receiving training in a specialized area, such as surgery, internal medicine, pathology or radiology (Younger, 2003).

Medical Student: A student in medical school who is training to become a physician. A person following a course of study leading to qualification as a doctor of medicine (Younger, 2003).

CHAPTER 1: INTRODUCTION

1.0 Background to the Study

This study investigated the role of librarians in medical education at the University of Botswana Faculty of Medicine (UBFOM) formerly known as School of Medicine (UBSOM). A number of studies have shown that librarians working in hospitals and academic medical facilities play an active role in educating medical students, residents, and attending physicians, as well as other health care professionals (Adio, Akewukereke, & Ibitoye, 2007; Ojo, 2015). According to Adio et al (2007), medical libraries are designed to assist physicians, health professionals, students, patients, consumers and medical researchers in finding health and scientific information to improve, update, assess or evaluate health care. Although researchers and information providers agree that librarians in medical set ups play critical roles in medical education, little is known about these roles in many African institutions. For this reason, it has become relevant for a study to be conducted in Botswana to examine the role librarians play in the provision of medical education in the country.

The increased growth of information sources and the use of information and communication technologies in information gathering, processing, storage and retrieval has impacted significantly on library services. Today the productivity of libraries is no longer measured in terms of circulation of materials, but on their value and contribution to the objectives of the organizations they support. The profession has undergone radical changes over the last 20 years as collections have become increasingly electronic and librarians are more deeply involved in the provision of instruction in information literacy, medical informatics, evidence-based research skills, and problem-based learning (Linton, 2016). However, they author further explained that they have not abandoned core professional values of information integrity, usability, and accessibility, but instead adding technology, collaboration, instructional design, and teaching skills to their professional toolbox.

The desire to improve health care services delivery through the training of Batswana medical doctors locally was among the primary reasons behind the establishment of FOM in 2009 (Kebaetse, Mokone, Badlangana, & Mazhani, 2016). The idea was in recognition of the country's

severe shortage of medical doctors (World Health Organization, 2012), a failed external training strategy (Mokone et al., 2014), and high disease rates especially of HIV/AIDS (World Health Organization, 2013). Since its inception, FOM has contributed significantly towards the training of medical students in the country. It is reported that about 136 doctors have been trained at FOM out of 484 students that have enrolled in the school since 2009 (Kebaetse et al., 2016), with the first batch of 36 graduating in 2014.

While the initiative of opening a medical school in Botswana has been applauded, the role of librarians in advancing medical education in the context of Botswana has remained unexamined. Librarians and libraries can play a critical role in medical education and provide a balanced perspective on medical issues. Adio et al (2007) listed the following roles of medical librarian:

- provision of current information to users in a quick and cost effective manner
- provision of balanced perspective on medical issues
- provision of alternatives to formal learning in the form of material support for continuing medical education
- And provision of value services, which improve information delivery.

Other roles include dissemination of health information and promotion of healthy lifestyles, satisfying the health information needs of the community, locating and assisting in the development of relevant information or materials, information outreach with others librarians (i.e. workshops, conferences, community events;) and integrating health information into ongoing programs of the target population in the community, thereby empowering members of the health community. (Adio et al, 2007)

In regards to all the above mentioned, the Medical Library Association identified essential professional skills and abilities that can be observed, measured, and taught for lifelong learning towards professional success, (Hannigan & Raimondo, 2016). They are as follows:

- Understand the health sciences and health care environment and the policies, issues, and trends that impact that environment.
- Know and understand the application of leadership, finance, communication, and management theory and techniques.

- Understand the principles and practices related to providing information services to meet users' needs.
- Have the ability to manage health information resources in a broad range of formats.
- Understand and use technology and systems to manage all forms of information.
- Understand curricular design and instruction and have the ability to teach ways to access, organize, and use information.
- Understand scientific research methods and have the ability to critically examine and filter research literature from many related disciplines.

1.1 University of Botswana

The University of Botswana (UB) is a premier tertiary institution in Botswana that offers certificates, diplomas, degrees, and postgraduate programs in many academic disciplines. The history of the UB started in 1964 with the opening of the University of Basutholand, Bechuanaland and Swaziland (UBBS), which later became the University of Botswana, Lesotho and Swaziland (BOLESWA) in 1966 (University of Botswana, 2018). Since the formal inauguration of UB in 1982 by the then-president of Botswana, His Excellency Sir Ketumile Masire, the University has been involved in the national development process, particularly on the training and production of qualified human resources needed to develop and drive the economy.

The university has six branches: one in the capital city Gaborone (Main campus), Francistown (CCE), Lobatse (Psychiatric Hospital), Mahalapye Hospital and in Maun (ORI and Letsholathebe Hospital). Currently, the University is divided into eight (8) faculties: Business, Education, Engineering and Technology, Health Sciences, Humanities, Medicine, Science, and Social Sciences. According to the University of Botswana Calendar (2006), the mission of the UB is to improve economic and social conditions for the nation while advancing itself as a distinctively African university with a regional and international outlook. Specifically, mission statement states that the University will:

- Provide excellence in the delivery of learning to ensure society is provided with talented, creative and confident graduates.
- Advance knowledge and understanding through excellence in research and its application.

- Improve economic and social development by high impact engagement with business, the professions, government and civil society (UB Calendar, 2006).

Since its inception, the university has focused primarily on teaching. In 2008, a decision was taken to move the focus of the institution to becoming research intensive by the year 2012 (Cloete, Bailey & Pillay, 2015). This is given expression in the strategic plan and research strategy. The research strategy aims to broaden and further encourage participation of research by most academics at the university through increasing the number of graduate students at the doctoral level and through more graduate programs. It has research themes that are linked with those of the government, through the Ministry of Communications, Science and Technology (Cloete et al. 2015). The research strategy also aims to enhance the infrastructure for research by putting in place the positions of research chairs, research fellows and post doctorates. Arrangements are also being made to transfer the funding of the university from the Ministry of Education to the Tertiary Education Council (TEC).

1.1.1 University of Botswana Faculty of Medicine (UBFOM)

The University Of Botswana Faculty Of Medicine (UBFOM) was established in 2009 to help address the chronic shortage of physicians Botswana has been experiencing for many years (Mokone et al., 2014). Before the establishment of the school, Botswana relied exclusively on foreign medical schools for the training of its medical students. This strategy posed a lot of challenges for Botswana, especially in meeting its health care obligations to citizens. Apart from the huge cost expenditure associated with the external training strategy, some citizens' doctors trained abroad failed to return home (Mokone et al., 2014), as many preferred to work in foreign countries due to better remunerations. Thus, Botswana depended heavily on expatriates and had difficulty in holding onto its own citizen-doctors.

In 1998, partly due to growing demand for physicians and the limited success achieved through external training strategy, the then-president of Botswana issued a directive to establish a medical school at the University of Botswana. This directive saw the opening of the country's first medical school in August 2009. The school enrolled its first 36 medical students the same year for a five-year degree program after completing one year of pre-medical basic sciences. Six months later, the school established residency programs in internal medicine, pediatrics, public health,

anesthesia, emergency medicine, family medicine, and pathology (Mokone et al., 2014). Since inception, UBFOM has successfully trained more than 100 doctors. The school currently has about 400 medical students, 75 residents (postgraduate students) and 80 teaching doctors.

1.2 Statement of the Problem

Librarians working at UBFOM are expected to provide timely and relevant information to physicians and students, yet they do not possess the requisite training or credentials in medical librarianship required to perform this role. Preliminary observations revealed that all the librarians attached to UBFOM are not medical librarians, but traditional librarians with degrees in library and information science (LIS), archives and records management, and other general disciplines. According to Giuse, Sathe and Jerome (2006), in order to provide effective clinical library services, a librarian requires a high level of clinical knowledge, demonstrable research skill, subject knowledge, teaching expertise, and accomplishment in other areas. Most librarians that perform the role of librarians do not possess these knowledge and skills. Thus, the concern that the role of librarians in UBFOM is being carried out by librarians without the necessary training forms the basis for this study.

The librarians lack ICT skills and are not equipped with the new trends. Rowland (1998) stated that many libraries still do traditional librarian and that is the case in Botswana. Many libraries lack the infrastructure and manpower to keep up with the technology. Medical library Association listed all competencies for one to be recognized as a medical librarians and it is not the case in Botswana. The curriculum also for LIS does not favor medical librarians as they should specialized librarian courses so as to have special librarians with the required knowledge, skills and qualifications. The role of librarians in advancing medical education in the context of Botswana has remained unexamined.

Effective information service depends largely on understanding fully users' information needs and information-seeking behavior (Agosto & Hughes-Hassell, 2005; Hepworth, 2007; Wilson, 2006). Physicians and students require timely and right information in order to improve the quality of learning and be abreast of developments in field of medicine. The excellence and usefulness of a library and the librarians is now consider by the range of resources that its staff are able to deliver

to users by conventional and electronic means from a growing variety of services. In line with this, Ekene, Agbo, and Onyekweodiri (2016) stressed the need for evaluation of the role of medical libraries. He argues that in no distant time, the excellence and usefulness of a library will be measured not only by the state and quality of its collections, but also by the range of resources that its staff are able to deliver to users by conventional and electronic means from a growing variety of services. Under this situation, users will no longer ask what the library has, but what it can provide.

Despite the fact that there are new emerging roles for librarians in the technology era, it is not the case in Africa. This study therefore investigated the role librarians play in educating students at UBFOM. It was worth emphasizing that librarians play an important role in the dissemination of health information and promotion of quality health care services. It was important to investigate the type of services librarians provide for physicians and students in order to determine the challenges faced and interventions that should be made to enhance medical education in the country. In addition, the study underscored the role of librarians in medical education and advocated for the training and professional development of librarians in order to meet the information needs of clients

1.3 Objectives of the Study

1.3.1 Main Objective

The primary objective of this study was to investigate the role of librarians in medical education at the UBFOM. Specific objectives were:

1.3.2 Specific Objective

1. Identifying the type of services that librarians provide for clients at UBFOM.
2. Examining the type of training and qualifications librarians at UBFOM possess.
3. Assessing users' perceptions of the library services at UBFOM in terms of service quality.
4. Identifying challenges affecting the provision of library services to clients at UBFOM.

1.3.3 Research Questions

1. What type of services do librarians provide for clients at UBFOM?
2. What types of training and qualifications do librarians serving at UBFOM possess?

3. How do users perceive the quality of library services at UBFOM?
4. What are challenges affecting the provision of library services to clients at UBFOM?

1.4 Justification and Significance of the Study

The proposed study was important for a number of reasons. To begin, the study will be useful to stakeholders in the health care sector: government, medical professionals, librarians, medical students, researchers, and patients. For example, medical professionals may find the study useful as it will suggest ways of improving the quality of health care services through the provision of accurate information to physicians and other health care professionals.

Furthermore, the study through its findings exposed librarians to know what is expected from them for efficient provision and dissemination of health information to users. It will also assist medical libraries and librarians in providing appropriate information to support decision making of medical professionals, and explains the importance of health information in medical libraries and how medical professionals and students can access the available information resources and materials. The results will be shared with library management, UBFOM, and also be available in UBRISA (University of Botswana Research, Innovation and Scholarship Archive), a digital research repository of the research output of UB whose purpose is to enable researchers to publish their research and provide free access to information.

The study with its findings will assist librarians on making effective use of new medical information systems for developing an effective strategic tool to provide information to users. The study will assist medical libraries' management to identify areas of deficiencies in provision of resources and materials for efficient health care services. It will also add to the literature of librarianship in Botswana and help in the dissemination of information in the country. In fact, the literature search suggested that the current research was the first empirical study to be conducted on this area at UBFOM. The public will benefit from the study as it will suggest how medical libraries can support and advance the provision of efficient health care services in society by making health information accessible at the point of need.

The finding will provide library educators, information specialists and librarians with improved curriculum and training programs for educating librarians, and enhancing the skills of librarians.

In addition, the study will clearly indicate the importance of efficient medical library services in the attainment of Botswana's health care policy: provision of efficient health care services to the population.

1.5 Scope of the Study

The study was conducted at the Faculty of Medicine, Gaborone. In particular, the study focused on the role of librarians in medical education. It covered the services librarians provided for medical practitioners, the challenges librarians faced in their profession, and ways of improving the provision of effective health information. The target population included physicians, residents, librarians, and students at FOM. The population was chosen because the roles that are being examined are for librarians under the department of Medicine (medical librarians) and the services are provided to them for research, education and patient care.

1.6 Limitations of the Study

Limitations of study refer to those conditions beyond the control of the researcher, which may affect the results of the study (Best & Kahn, 2006). Medical education is a highly challenging field that involves both classroom and practical work. As a result, some targeted respondents were not available to provide information on the subject being investigated. Also, it was possible to anticipate some vital information required was not supplied as some respondents were unwilling to do so. However, the researcher made sure that it did not make a significant impact on results of the study. Such steps included ensuring the anonymity of participants to encourage participation with medical professionals and interviews that were done with librarians.

1.7 Organization of the study

The study comprises of six chapters. The first chapter of the study dealt with background to the study from the broader picture of the University of Botswana to the narrow part of the Faculty of medicine. The chapter briefly spells out the statement of the problem, objectives, research questions, the justification, significance, scope and limitations of the study. Chapter 2 reviews the literature on the roles of medical librarians, user's perceptions and the theoretical frameworks that guides the study and chapter 3 provides the research design and methodologies adopted for the study. Chapter 4 presents the analysis and the presentation of the results while chapter 5 is the interpretation and discussions of the study. Finally, chapter 6 provides conclusions, and recommendations for future work.

1.8 Summary

This chapter has presented the study background from the University of Botswana at large and narrowed to the University Of Botswana Faculty Of Medicine which the study was focused on, research objectives and questions which addresses the roles librarians play in medical education. It has also highlighted the justification, significance, scope and all the limitations encountered carrying out the study.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

This chapter provides a review of literature on the role of librarians in medical education. The chapter examines the roles of medical libraries and librarians in educating medical students. For a better appreciation of what has been done on this area, the review covers both empirical and theoretical literature. The contents of the chapter includes a theoretical framework adopted, the value of medical library services to medical education, challenges faced by medical libraries, and measures to promote effective service delivery in medical libraries. The chapter also discusses the gap in literature and concludes with a summary.

2.1 Theoretical Framework

In research endeavor, it is always important to firstly consider relevant theoretical materials and constructions underpinning the knowledge base of the researched phenomenon (Sinclair, 2007, Kathurima, 2011). Theoretical frameworks are discussed in literature as the foundation from which all knowledge is built and the bases for the structure and support for the rationale for the study (Osanloo, 2016). Theoretical frameworks are both social and scientific constructs that guide processes in reality. They are generally accepted principles offered to explain how things work, how to do things or how certain human activities function. The next section provides details on the SERVQUAL Model as the chosen theoretical framework for the study.

2.1.1 The SERVQUAL Model

The SERVQUAL model was developed by Parasuraman, Zeithaml and Berry (1988), based on the disconfirmation paradigm. The model is also referred to as the “gap model,” underscoring the expectancy disconfirmation theory. The gap model defines service quality as a function of the gap between customers’ expectations of a service and their perceptions of the performance of actual service delivery by an organization. Based upon five domains, tangibles, reliability, responsiveness, assurance and empathy, the authors posited that service quality could be measured by obtaining the difference between perceptions of performance and the expectations in those domains (Blixrud, 2012). Zeithaml, Parasuraman, Berry and Berry (1990) added that SERVQUAL precisely defines the difference between ideal and real, where the institution must focus its efforts in order to determine a significant improvement in the perceived quality of their service. The core domains principles in SERVQUAL model are explained in literature as follows:

- Tangibility is related to the physical environment, facilities and the employees' appearance.
- Reliability is the ability to carry out the services consistently and accurately.
- Responsiveness is the willingness of the employees in helping the customer to solve the problem.
- Assurance is the adequate knowledge that the employees possess and the ability of the employees in entrusting the confidence.
- Empathy is associated with the organization providing the caring and individualized attention to their customers.

The five key domains in SERVQUAL model are discussed in literature to be the principal criterion in which two structured categories of questionnaires are used to strategically address gaps (Luk, & Layton, 2002). Each structured category of questionnaire have a total of twenty two questions. The first category is such that the questionnaire requests the respondents to provide their expectations of the ideal service firm in that service category. The second category of the questionnaire requests the respondents to provide their expectation on service quality delivery of specific firms in that industry. The SERVQUAL model is paramount in addressing seven core major gaps in the service quality concept (Luk & Layton, 2002).

2.1.2 Rationale for using SERVQUAL Model as theoretical framework

This study sort to investigate the role of librarians in medical education at the UBFOM. To ascertain this broad objective the study needed a framework that can address the type of services that librarians provide for clients at UBFOM, training and qualifications, users' perceptions of the terms of service quality and challenges affecting the provision of library services to clients at UBFOM. Following a rigorous review of literature the study chose SERVQUAL model as the theoretical framework for the study. The chosen theoretical framework was critical to ascertain the abilities, expectations and quality in services offered by medical librarians. In line with addressing the objective of quality assurances at UBFOM the SERVQUAL model offers an opportunity to measure reliability and responsiveness. Such a process allow the opportunity to measure ability to carry out the medical library services consistently and accurately at UBFOM. Through 'Assurance' domains in SERVQUAL model this allowed the study to address the adequacy of knowledge (training and qualifications) that the medical librarians have at UBFOM.

2.1.3 Limitations in the SERVQUAL Model

Despite various advantages in using theoretical frameworks there are also limitations through which users need to take into considerations. Generally the SERVQUAL is limited by the fact that it is still debatable on how to define the term ‘service quality’ (Luk & Layton, 2002; Blixrud, 2012). The SERVQUAL model is however limited by the fact that the model is a broad model with no specific competencies required for medical librarians. In order to revamp such limitations the study adopted the Medical Library Association competences under the Engaged Librarian Framework (ELF) as a guide or benchmark standard. The rationale for ELF is based on the observation that the role of subject librarians in academic libraries continues to evolve due to significant changes occurring in higher education. Its points that “engagement” must be made a top priority for subject librarians in medicine. The principle contains five main categories of engaged librarian responsibilities – *Engagement, Research services, Scholarly communication, Collection development, and Teaching and learning* (The Ohio State University Libraries, 2016). The EFL principle is designed to improve the capacity of librarians to provide effective and satisfactory services to clients. This objective resonates with the primary focus of the current study that deals with the role of librarians at FOM. This reason justifies the choice and suitability of making additional concepts to SERVQUAL for the study. Jaguszewski and Williams (2013) emphasized that the increasing pressure on researchers to plan and manage their output, and a growing adoption of open access publishing, research libraries are now compelled to understand and support all processes of instruction and scholarship, which calls for librarians’ engagement. Table 1 provides an overview on how the SERVQUAL model with ELF competences additions were utilized to address the study objectives.

Table 1: Table Linking Theory to Objectives/Research Questions

Research objectives	Research questions	Data gathering	Subject	Constructs	Questionnaires and interview questions that address research questions
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1. Identify the type of services that librarians provide for clients at UBFOM	What type of services do librarians provide for clients at the UB Faculty of Medicine	Questionnaire, Interview	Librarians Clients	ELF -all five sections and MLA roles and competencies ServQual-Assurance	<ul style="list-style-type: none"> • Librarian questionnaire number 7, 8, 9,11,13, 16, 17 • Interview question no: 1 • Clients questions no: 1 from section B
2. Ascertain whether UB librarians are adequately trained to provide effective services to medical clients.	What type of training and qualifications do UB librarians serving at UBFOM possess?	Questionnaire, Interviews	Librarians	ELF section on Teaching and learning. MLA competencies	Librarians questionnaire no: 10, 12,15 Interview question number: 2
3. Assess users' perceptions of the medical library services in terms of service quality.	How do users perceive the quality library services at UBFOM?	Questionnaire	Clients	ServQual- All domains to assess customer satisfaction	Users questionnaire number: Section B question no:2
4. Identify challenges impacting the provision of library	What are challenges impacting the provision of library services	Interview, Questionnaire	Librarians	ELF sections / MLA competencies	Librarian interview question no: 3

**services to clients in the
clients in the medical field?
medical field.**

Questionnaire
question no: 14

2.2 Role of the Medical Library and Medical Librarians in Medical Education

Medical libraries are categorized under special libraries as a result of their special nature and the kind of clientele they serve. As a special library, the nature of information materials found in hospital libraries differ in a number of ways from information found in other conventional libraries. According to Izuchukwu (2014), the nature of information resources found in medical libraries should be carefully selected and therefore should pay enough attention to the needs of its users. For this reason, it is suggested that librarians should use their professional skills and mastery in information selection/acquisition, retrieval, packaging and repackaging as well as dissemination to provide quality service for medical personnel, patients and other medical library users in search for health related information.

By definition, a medical library is an institution that acquires, organizes and preserves recorded knowledge and makes it available for medical clients (whoever is in need of medical information) (Ojo, 2015). A medical librarian is a professional who holds a bachelor's degree in a medical related course and a master's degree in library or library and information science from a recognized university (Ojo, 2015). According to Aina (2004) he listed the following as the role of librarians, and by application medical librarians, as lending services, interlibrary loan services, document delivery, preservation services, provision of seating and study facilities, reference services, current awareness service exhibition and displays, library publications, user education, information literacy programs, literature searching, selective dissemination of information, referral service, translation service, extension and outreach services and rental of premises. These myriad roles are the primary responsibilities of medical librarians.

In addition Tannery and Maggio (2012) explained that medical librarians also provide basic training and instruction to students on information search/acquisition on specialized areas.

The author further explained that librarians and information specialists have a variety of responsibilities including: teaching, searching or information gathering, clinical roles, and involvement with research. The following were the examples given

- Teach students how to search the literature for drug information.
- Teaches about finding information on herbs and dietary supplements.
- Other librarians have provided sessions on finding and evaluating resources to both students and health care practitioners.
- One information specialist regularly scans the literature, finds relevant studies, and alerts his team.
- Another information professional focuses on information management and infrastructure.
- He also maintains his group's databases and provides his team with information that is used to make decisions about grant opportunities.
- Another librarian is responsible for gathering information about free CAM resources and posting them on a Website

For example, Tennant and Miyamoto (2002) state that medical librarians are taking the lead in providing instruction about molecular-information resources and consultation services to researchers, clinicians, and graduate and professional students. Tennant and Miyamoto also mention that several librarians and information specialists have published papers on the central role of medical libraries in meeting the information needs of their patrons in these subject areas.

Murphy (2008) investigated the role of medical librarians in preparing tomorrow's doctors to manage information in the UK. The purpose of the survey was to provide baseline data as to what medical schools are doing to prepare students to collect, share and use information, for research, education and patient care. The author found that librarians have much to offer medical students, although students may not fully recognize their expertise. With the introduction of new medical curricula, there is evidence that medical librarians are becoming more involved in both the planning and the teaching process.

Tan and Maggio (2013) examined the roles of clinical librarians who were embedded in patient-care teams at hospitals in Canada and the United States. The authors found that those librarians support patient care through a number of roles, interacting with both clinical-care teams and with patients. Clinical librarians' chief roles are fulfilling requests for medical research (including some time-sensitive research requests); instructing medical practitioners on how to perform medical research; and providing information to medical staff and patients through readily accessible and easily comprehensible virtual libraries, e-mails, and other means. Tan and Maggio also found that the librarians' presence on wards and at clinical team meetings helps clinicians better understand librarians' roles and the information they provide. In addition, the research findings suggest that clinical librarians' detachment from direct patient care enables them to provide objective analysis to clinical-care teams.

Ojo (2015) studied the new role of medical librarian in the ICT age. The author examined the traditional roles of medical librarians and the new roles brought about by the emerging of ICTs. He highlighted the meaning, types and benefits of ICTs application to medical library services, as well as, the new role brought about by the application of ICTs. The study explored areas where ICTs can be applied to deliver effective library services. The study concluded that for quality library services to be achieved, medical librarians should give priority to application of information technology if they are to efficiently perform the role of information provider to library users.

Zipperer (2004) advocates that physicians should recognize the key roles librarians play in ensuring patient safety. Drawing reference from previous studies, Zipperer states that the expertise of librarians can make a difference in clinical care by locating materials that remind practitioners of facts or details, support various courses of diagnostic or therapeutic action, or provide new pieces of information that modify or redirect clinical activities. According to him, librarians have the opportunity to demonstrate how effective access to information and knowledge for clinical, research, and organizational efforts can improve patient safety through: (1) programs supporting the informationist concept; (2) evidence-based medicine; and (3) librarians' contribution to the sharing of knowledge at the point of care and throughout hospitals.

The role of librarians in the medical sector has also been acknowledged by authors such as Brettle, Maden and Payne (2016) who state that medical librarians provide quality assured information to health professionals at the point of need to support clinical decision making. Drawing examples from the United Kingdom (UK), Brettle et al (2016) noted that medical librarians tend to follow an outreach model which delivers services such as literature searching and training across health care organizations. In a similar vein, studies by Weightman and Williamson (2005) and Wagner and Byrd (2004) show that medical librarian services are well used and liked by clinicians, but provide little evidence of the effectiveness or impact of such services. This underscores the need for empirical examination of the services provided by librarians to determine their effectiveness and relevance to intended users.

Rankin, Grefsheim and Canto (2008) analyzed numerous characteristics of informationists (librarians). Their analysis focuses on broad issues relating to informationists, such as defining characteristics of informationists, their educational and professional qualifications, and their roles in the workplace. In addition, the authors report two prominent categories of informationists, distinguished according to their priorities: “clinical informationists,” who first acquire service experience and later develop technical focus, and “research informationists,” who first develop a technical focus and later become involved in personal service. Furthermore, the authors identified several factors essential for successful informationist service, such as continuous learning, embedding in clinical-care delivery, and knowledge of particular medical topics.

Materials reviewed in this section unanimously agreed that medical libraries offer specialized services to medical practitioners, students and patients. They also play key roles in supporting medical education through the acquisition, organization, preservation and dissemination of medical information to doctors and students. The role of librarians in medical education has also been acknowledged in literature as clearly indicated by the materials reviewed above.

2.3 Library Services and Medical Education

Linton (2016) in the study stated that the profession of medical librarianship has undergone radical changes over the last twenty years as collections have become increasingly electronic and librarians are more deeply involved in the provision of instruction in information literacy, medical

informatics, evidence based research skills, and problem-based learning. Librarians have often “left the building itself” to work within the programs and departments they support. Emerging and changed roles have resulted in a shift in professional identity with health sciences librarians moving toward a collaborative, consultative practice that is more closely aligned to user needs.

Mulvaney, Bickman, Giuse, Lambert, Sathe and Jerome (2008) conducted a study to determine how clinicians use the information that clinical (medical) librarians (CLs) provide. The researchers paid particular attention to clinicians’ intended and actual courses of care, both in cases where CLs provided information and in cases where clinicians sought information for themselves. The findings provided moderate evidence, but not strong evidence, that CLs have an impact on many types of clinical decisions, particularly decisions concerning the addition of new or different treatments. Mulvaney et al (2008) found that clinicians who received information from CLs tended to feel that such information could affect their future patient-care practices. In addition, clinicians expressed greater satisfaction with information provided by CLs than with information they had obtained by themselves.

Winning and Beverley (2003) attempted to determine whether clinicians use the services of CLs and whether such services affect patient care and are cost-effective. The study was based on existing literature on clinical librarianship. The authors found that health-care professionals do use the services of CL in clinical settings, and they have a high opinion of those services. The authors also found that the few existing studies of clinical librarian services have too many variations in their reporting methods, rendering them unreliable as a source of data on CL services’ cost-effectiveness, on the influence of those services on patient care, or on clinicians’ use of research literature in clinical practice. Consequently, the authors concluded that existing studies are indeterminate about the effectiveness of CL services on clinical care, and that further high-quality research is necessary to determine reliably the effectiveness of those services on health-care practice.

Ajayi and Mudasiru (2014) examined the effect of library services on medical students’ skill in evidence-based education in Nigeria. The objectives of the study were to evaluate the activities of medical students when using library resources, to determine the purpose for using the library

services, to find out the sources most frequently used for current information, and to find out the category of medical students (basic or clinical) who use the library most. The results show that medical students most frequently visited the library for the purpose of accessing the e-library and OPAC. The authors further observe that the majority of the respondents relied on library e-resources while some still depended on textbooks. Those in the basic medical class rely heavily on e-resources for current information than those in the clinical class. The study recommended that an advanced library instruction programs should be incorporated into the curriculum of the clinical students where the use of e-resources and information technology will be taught.

2.4 User Perceptions of Library Services Available in Medical Institutions

In medical library and information science research, information can be seen as a consumable product that can only be consumed together with certain information delivery systems and services. The satisfaction of medical library users is a function of quality of information products received, the quality of information system, and library services provided to access the information product. Therefore satisfaction is a function of three main sources, quality of the information product, the information system and the services that make the information product available. These three levels of measure of satisfaction are defined by the information resources, facilities and services in this study. These sources of satisfaction, when properly harnessed may contribute to users overall satisfaction. The accuracy and relevance of information materials obtained from library by a user are measures of the product performance.

According to Somaratna, Peiris and Jayasundara (2010), satisfaction is an important measure of service quality in libraries. But incidentally, users' perceptions about libraries seem to have been largely ignored by library management in developing countries. The assessment of service quality provides an important feedback for libraries to assess and improve their service to users. The authors state that, "the survival of a library very much depends on the benefits it brings to users. Its existence will be in question when users begin looking for alternatives to library services. One way to show value is by providing quality service. It is therefore important for the library to be aware of changing user expectations and to continually strive to provide quality service to its users" (Somaratna et al., 2010: 9).

The authors further introduced the idea of “user satisfaction” to higher education libraries. According to them service quality in higher education libraries is usually associated with the question of user satisfaction, which in turn is based on user perceptions of service quality. The relationship between service quality and customer satisfaction is a complex one. Service quality is defined as a component of user satisfaction. They used this term and defines user satisfaction as the emotional reaction to a specific transaction or service encounter. They points out that satisfaction may or may not be directly related to the performance of the library on a specific occasion. Customers can receive an answer to a query but be dissatisfied because of an upsetting or angry encounter. Conversely, although the query might remain unanswered, another customer might feel satisfied because the encounter was pleasant, and the helper was interested and polite (Somaratna et al, 2010).

Enhancing user satisfaction is integral to a successful service oriented organization including medical libraries, because satisfied users remain loyal, have positive feelings and recommend the service to others. This is best achieved when librarians keep in contact with users and understand their information needs. Users’ information needs and expectations are continuously changing in this age of information and communication technology, thus libraries need to update their resources, facilities and services to keep pace with these advancements. Evidence from library evaluation studies has shown that users are the key stakeholders, and their feedback is the most reliable factor in measuring the usefulness and effectiveness of a library (Mairaj & Naseer, 2013). Although users’ priorities and expectations vary, a good librarian does her best to fulfill the users’ demands in order to achieve the highest level of user satisfaction (Creaser, 2006; Satoh, Nagata, Kytomaki, & Gerrard, 2005). Library and Information Science (LIS) researchers and practitioners are making efforts to understand the ‘satisfaction formation processes’ in library users. They believe that along with delivery of quality information, certain information delivery services and/or systems equally contribute to users’ satisfaction. Many research studies have been conducted on this theme in the developed world but an overarching theoretical model of user satisfaction or dissatisfaction has not yet been developed, which is commonly accepted by the LIS community (Shi, Holahan, & Jurkat, 2004).

2.5 Barriers to Information Provision and Use in Medical Institutions

According to Murphy (2008), the two main challenges that are likely to have the greatest impact on the role of librarians in future will be the growing need to prepare future doctors to search for, appraise and use the best available evidence and the expansion of Internet-based information sources. Fairlie, London, Pastor and Rosner (2006) state that there are two major challenges facing librarians: rapid growth in information technology and the growing population of students, many of whom lack access to relevant information and appropriate technological skills. These challenges are particularly significant for librarians as information providers and have led to the emergence of the key roles of the library leadership and vision, strategy, partnership development and problem solving.

Ajayi and Mudasiru (2014) mentioned that the challenge for librarians is to demonstrate that the services they provide actively support clinical care (teaching, learning and research). To ensure this the authors advised that librarians should organize a program to systematize and unify initiatives, such as current awareness services, a point of access to technology and a conducive place for training. According to them, good library services need to have a number of characteristics. These include being quality assured, responsive, open to all, efficient, and flexible; committed to education, training and long-life learning; and committed to evidence-based care.

Khan and Bhatti (2012) reviewed the problems and challenges of library professionals in developing countries paying particular attention to Pakistan. The authors noted that the revolution in information technology has affected the skills and responsibilities of the librarians and academicians. The technology has changed not only the face of information but also the information seeking behavior of the users. Thus, Khan and Bhatti (2012) concluded that due to changing scenario of information, librarians working in developing countries are facing common problems such as inadequate technical skills, advanced searching skills, inadequate trained and skilled manpower, use of digital sources of information, different library soft-wares, poor fiscal condition of libraries, inadequate infrastructure, inadequate trainings, low rates of information literacy and professional status. They recommended among others that librarians should acquire technical skills, IT skills, managerial skills and communication skills to work in a digital environment.

In addition to the above mentioned points, the existence of non-degreed and non-credentialed librarians constitutes a barrier to accurate and effective provision and dissemination of information in specialized institutions. Many librarians in universities, hosting medical schools perform the duties of medical librarians without specialist credentials or training in medical librarianship. For example, studies have shown that librarians that perform the role of health information professionals possessed little or no training in clinical librarianship (Rossell, Boyes, Montacute & Doherty, 2008). This is the case with the UB, where librarians with degrees in library and information (LIS), records and archives management and other general disciplines have been employed to specialist services to physicians and students at UBFOM.

2.6 Measures to Promote Effective Services in Medical Libraries

Medical libraries in various academic institutions have employed a number of strategies to promote effective library services. For example, the Cambridge University Medical Library (2015) outlined the following as measures to improve library services: enhance the availability and accessibility of information sources; ensure that the library provides conducive environment for study and research; ensure support for high quality staff; and ensure that adequate resources are in place to meet the needs of users. The above mentioned factors are part of the strategic plan designed by the Cambridge University Medical Library to improve library services in the institution. While it is right to admit that these strategies have potential of improving library services, it is not known how they actually impact library services. Thus, an empirical study is required to determine how these strategies impact service delivery in medical libraries.

For example, Sawyer (2006) notes that traditionally, library measures of effectiveness have been made in terms of inputs (resources/investments) and/or outputs (activities/services). Haruna, Mtoioki, Gerendasy and Detlerfsen (2016) added that medical librarianship is a specialized field, education for medical librarianship needs special courses and lectures; medicine has its own subject classification systems, different from that used by librarians in non-medical information. Botswana is among the developing countries with no academic library science programs for medical librarianship. The authors stated that some colleges and universities in Tanzania do offer library, information management, and information science courses at general levels; these

diploma/degree/masters programs cover general library/information science concepts and competence, and graduates are prepared primarily for work in the academic and public library sectors. Thus, a specialized curriculum in medical librarianship is needed to prepare information professionals who can deliver health information services that will make a difference in health care services and clinical research. A thorough investigation of contemporary medical information needs is necessary to inform medical librarian curriculum development, and this understanding must be based on an understanding of users' needs.

Fabunmi (2004) describes effectiveness as including information customized to meet individual needs, stating that effective library systems are timely in delivery, meet their specific needs, are easy to understand/use, and are delivered by courteous and knowledgeable staff. In light of the above, the Medical Library Association in America developed standards in 2002 for hospital libraries which will serve as a guide for hospital administrators, librarians, and accrediting bodies to ensure that hospitals have the resources and services to effectively meet their needs for knowledge-based information (KBI). Knowledge-based information refers to current expert information, produced externally to the organization. These include journals, texts, documents, and databases in print or electronic format; benchmarks, best practices, guidelines, consensus development statements; research studies and quality-filtered Internet resources. Knowledge-based information is vital to the hospital because it supports patient care, managerial and strategic decision making, performance improvement and patient safety, patient and family education, research initiatives and lifelong learning and the professional competence of hospital and medical staff.

Yi (2016) argues that in order to keep pace with evolving information technologies, librarians use a group of software applications including blogs, wikis and podcasting, media-sharing tools such as YouTube and Flickr, and social networking services such as Twitter and Facebook to market their services and resources. Also, information professionals use tools such as RSS (Really Simple Syndication), tagging and bookmarking as a means of promotion. Sheare, Seymour & Capitani (2002) on the other hand discussed the evolving roles for medical librarians that have gone on for years have taken on a new sense of urgency, because new opportunities, which many are eager to explore, await librarians

2.7 The Gap in Literature

Despite the large body of literature that exists on medical librarianship, few studies focused on developing countries. In fact, the literature search shows that the subject of medical librarianship has received scant scholarly attention, especially from African scholars. The researcher observes that the few studies (e.g., Ajayi & Mudasiru, 2014; Ojo 2015; Umenwa, Agbo & Onyekweodiri, 2016) undertaken in this area focused on Nigeria and countries in West Africa; none was found on Botswana. Besides, the existing studies on the continent focused on issues unrelated to the current study such as the role of librarians in patient care and the role of medical librarian in the ICT age and so on (Adio, Akewukere & Ibitoye, 2007; Fairlie, London, Pastor & Rosner 2006; Khan & Bhatti 2012; Murphy, 2008). The few published studies on Botswana addressed factors behind the establishment of UBFOM (Kebaetse et al., 2016) and training of doctors (Mokone et al., 2014) and not on the role of librarians.

It is important to reiterate that the role of librarians at UBFOM differs from those of medical librarians as discussed in literature in that they do not possess specialist training in the field of medical librarianship. All these constitute fundamental gaps in knowledge. Thus, the study hopes to provide empirical information on this subject and also bridge the gap in knowledge. The competencies proposed in the ELF is designed to improve the capacity of librarians to provide effective and satisfactory services to clients. This objective resonates with the primary focus of the current study that deals with the role of librarians at FOM. This reason justifies the choice and suitability of the framework for the study.

Linton (2016) explained that as a library science educators and medical librarians, they need to identify skills needed for evolving library practice, the formal documentation of new roles within curriculum development and revision will add to the knowledge base of emerging roles for librarians and begin to enumerate the corresponding skills, knowledge, and attitudes required for successful practice. An emerging electronic publication era leads to the conclusion that it is likely to be a complex and confusing scene, in which staff and students whose major concern is necessarily their own subject field, and not computer and information sciences, will not be able to look after their own information needs without assistance.

2.8 Summary

This chapter has reviewed relevant literature on the role of medical librarians in medical education. The review noted that medical librarians play important roles in training and educating of future doctors. Apart from the conventional roles associated with librarians (e.g. lending services, document delivery, preservation services, and provision of information to clients) librarians also provide basic training and instructional guidance to students on information search/acquisition in various disciplines within the medical field. Literature reviewed shared a common opinion that libraries are essential for the advancement of medical education in the sense that they provide valuable information that influences physicians' decision making and provide services that support teaching and research. But in spite of their important roles and functions, medical libraries and librarians face a number of challenges that impact the quality of services and performance. To address these challenges and improve service delivery, a number of strategies have been adopted by medical libraries in several institutions. This includes availability and accessibility of information sources and materials, and provision of adequate and relevant training for librarians.

CHAPTER 3: RESEARCH METHODOLOGY

3.0 Introduction

This chapter describes the research design and methodology that the researcher used in the investigation. Methodology is the cornerstone of any good research because it links methods of the research to the research outcomes. According to Creswell (2017), methodology governs the choice and use of research methods, instruments, procedures and techniques used in collecting and analysing data. Porta and Keating (2008:28) describe methodology as “the way methods are used.” It discusses techniques and instruments that are employed to carry out research or acquire knowledge. The chapter, therefore, discusses how information was collected, interpreted and analysed in order to find out the role of librarians in medical education. It covers the research design, research methods, data collection instruments, pilot testing, reliability and validity of instruments, data analysis techniques and population of the study.

3.1 Research Paradigm

A research paradigm is defined by Johnson, Onwuegbuzie and Turner (2007:112) as “perspective about research held by a community of researchers that is based on shared assumptions, concepts, values and practices”. According to Johnson et al (2007) the most commonly utilized paradigms in research are positivist, post positivist, interpretive, pragmatic and critical social theory. The objectives of this study were aimed at identifying the type of services that librarians provide for clients at UBFOM, training and qualifications, challenges and assessing users’ perceptions of the library services at UBFOM in terms of service quality. In order to address such questions both qualitative and quantitative approach were critical. This study therefore was conducted within the pragmatic paradigm. For the purpose of addressing the research questions in this study a concurrent approach was utilized through which both qualitative and quantitative data was collected at the same time during data collection process. This was important in order to adequately and complimentarily address the research questions for the study. The pragmatic approach is the mixed methods approach associated with strategies that involve collecting data in a simultaneous or sequential manner using methods that are drawn from both quantitative and qualitative traditions in a fashion that best addresses the research question/s (Creswell, 2017).

3.2 Research Design

Studies reveal a number of research designs: descriptive (e.g. survey), experimental, semi-experimental, and review. Given the contextual setup of the objectives of the study, it was important that the researcher address the objectives by obtaining both qualitative and quantitative data. Therefore the study adopted mixed methods approach. The approach was set such that integration of both qualitative and quantitative data was collected especially during the questionnaire process. The study adopted the simultaneous process to allow respondents to further elaborate certain questions that might need additional opinions or clarity by the respondents. Mixed research methods as the name suggests is an inquiry that involves collecting, analyzing and integrating quantitative and qualitative methods. Johnson et al. (2007: 113) defined mixed research methods as those that include at one quantitative method (designed to collect numbers) and one qualitative method (designed to collect words) where neither type of method is inherently linked to any particular paradigm. Creswell (2017) further explained that the mixed method approach uses results from one method to elaborate on results from the other method.

3.2.1 Quantitative method

Quantitative approach emphasizes quantification in the collection and analysis of data. Creswell and Creswell (2017) defines quantitative research as the numerical representation and manipulation of observations for the purpose of describing and explaining the phenomena that those observations reflect. Berg (2004) states that quantitative research attempts to quantify a problem by way of generating numerical data that can be transformed into usable statistics. This study utilized quantitative method to address its objectives using SERVQUAL as the model for the study. The method was adopted in order to quantify attitudes, opinions, behavior and other defined variables in relation to medial librarians at the UBFOM.

3.2.2 Qualitative method

Qualitative research on the other hand refers to “inquiry in which the researcher carries out research about people’s experiences, in natural setting, using variety of techniques such as interviews and observations, report findings mainly in words rather than statistics” (Chilisa & Preece, 2005: 142). According to Creswell (2014), qualitative research is about exploring issues, understanding phenomena and answering questions by analyzing and making sense of unstructured data. The data that was collected from librarians through in-depth interviews addressed the objectives above.

3.3 Population

The core objective of the study was to investigate the role of librarians in medical education at the UBFOM. The study had to limit itself to the population with knowledge and experiences in relation to medical libraries. Therefore the population of this study included librarians, undergraduates, postgraduate (residents) students, and doctors (lecturers) at UBFOM. Currently, UBFOM has 250 undergraduates, 80 residents and 45 lecturers, giving a total of 375 (University of Botswana Calendar, 2017). A total population sample of the 6 librarians who work with UBFOM was also involved. Total population with clients and librarians was 381, all working for UBFOM and working closely with the medical librarians for research, information literacy and library instruction.

3.4 Sample Size

Sample size refers to the elements of the population considered for actual inclusion in the study. Maylor and Blackmon (2005) define the study sample as a subset of the population who represent the entire population the researcher wants to study. A study sample is important and helpful in the sense that it provides the researcher with a good number of participants that represent the target population by providing vital and important information pertaining to the research topic. Given the statistical information obtained from the University of Botswana Calendar (2017), the UBFOM has a total of over 381 possible participants. Given the limitations in terms of time and the resources only a portion of the population was used. The study adopted Krejcie and Morgan (1970) strategy in which S (required sample) is chosen at a given percentile from the N (Population size). The strategy allowed an efficient method of determining the sample size needed to have a minimum representative of the UBFOM populations. The details on the choice of sample size in each category of population sample is readily available and provided as a table in literature (Appendix 11). The following are the sample sizes; Students= 152/250, Residents= 66/80, Doctors= 40/45, Librarian= 6/6 which all added up to 264.

3.5 Sampling Technique

Sampling technique is a strategy used by a researcher to draw conclusions for the entire population after conducting a study. In order to obtain a representative sample for an investigation, the researcher must use the appropriate sampling technique. There are different types of sampling techniques such as probability and non-probability sampling. This study used three types of

sampling: stratified sampling for students, simple random sampling for doctors and residents, and census (total) sampling for librarians. The use of stratified sampling enabled the researcher to select a representative sample of students by ensuring that an equitable number of students at different levels of the study are included in the sample. The first level had the largest number of students at around 80 students and over half, 44 of students were sampled. The second level had around 70 students and third level had 60 students. Thirty eight and 30 were sampled respectively. The last fourth level had around 40 students and they were all sampled. The total of the students sampled from all the levels met the minimum sample size of 152 as proposed in the table (Appendix 11) provided by Krejcie and Morgan (1970). In stratified sampling, the researcher controls the relative size of each stratum rather than letting random processes control it. This guarantees representativeness or fixes the proportion of different strata within a sample (Neuman, 2013). The stratified sampling was intended to give a better cross- section of the population and to ensure that all segments of the population are equally represented in the sample.

Doctors and residents were selected using simple random sampling technique. A random table drawn from the list of doctors and residents at UBFOM was used to select participants. From a table of 80 names of residents 14 names were randomly removed from the table to remain with 66 wanted. Similar strategy of random sampling was also done for doctors. One of the great advantages of the simple random sampling method is that it is free from errors in classification and offers every participant an equal chance of being selected. Furthermore, simple random sampling is representative of the population and is totally free from bias and prejudice. Total or census sampling, as the name suggests, a method that includes every member of the population in the sample.

For sampling composition of clients Krejcie and Morgan’s (1970) table was used to determine the population sizes and the sampling size. The following are the figures from Faculty of Medicine (2018).

Table 2: Sample composition of clients (Krejcie and Morgan population sample table.)

Categories	Population size	Sample size
-------------------	------------------------	--------------------

1. Undergraduate (MBBS)	250	152
2. Post graduates (Residents)	80	66
3. Doctors	45	40
4. Librarians	6	6
Total no. of clients	375	264

Sample size (of all categories added = 258 + 6 Librarian) = **264**

Total Sample size= 264

3.6 Data Collection Instruments

Data was collected using questionnaires and interviews. A description of the instruments is presented below.

3.6.1 Questionnaire

A questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents (Silber & Foshay, 2009). The questionnaire had some ratings where the respondents will indicate their responses within the parameters of the ratings given. The questionnaire was ideal for quantitative data and easy to administer. It ensured anonymity and allow standard questions. Questionnaires were economical and covered a large number of doctors, students, librarians and residents. Questions were both close-ended and semi-structured, which is a mix of unstructured and structured questionnaires. The questionnaire were divided into sections according to the objectives. Separate questionnaires were self-administered to clients and librarians and collected after a week by the researcher. UBFOM students were given printed copies of the questionnaires while soft copies were emailed to the doctors and librarians.

3.6.2 Interviews

An interview is a specialized pattern of interaction, for a specific purpose, and focusing on specific content (Creswell, 2017). Interviews can be conducted face-to-face or telephone by the researcher with the participants. According to Aina (2004), interviews are ideal in that they allow immediate

follow up and probing to obtain more data and clarity. In this study, telephone interviews were used to gather the opinions of librarians. Interviews were conducted with 6 librarians who work for UBFOM. The librarians were interviewed to provide further and clarity on information related to the study objectives. All the interviews were conducted using English language.

3.7 Data Collection Procedures

Holmes and Opara (2014) describe the data collection exercise as an important aspect of any research study. This opinion is premised on the argument that inaccurate data can impact the results of a study and ultimately lead to invalid results and erroneous generalizations. Data collection requires a data gathering plan, which involves a pre-collection phase, data collection process, data management and analysis (Holmes & Opara, 2014). As per the University of Botswana regulations, the researcher applied for permission through written application to Office of Research and Development (ORD) to conduct the research in the university. The permission was granted (see appendix 8), the researcher informed the participants about the study and seek their cooperation through consent forms. Two different methods to collect data for the study were used, undergraduates where given printed copies of the questionnaires to fill while soft copies where emailed to doctors and librarians.

3.8 Data Analysis

This study constituted of four datasets collected in the study in the form of data from students (undergraduates), residents (postgraduates), doctors, and librarians. The data collected was analysed in two stages. Quantitative data was summarised and coded for computer analysis using Statistical Package for Social Sciences (SPSS). Analysis of results carried out using descriptive statistics, frequency and simple percentage presented in tables. The SPSS software is ideal for quantitative data as it saves time in data processing and can also manipulate complex data. Also, SPSS can perform highly complex data manipulation and analysis with simple straightforward instructions from a menu. The qualitative data was analysed using thematic analysis. Thematic analysis is a method for identifying, analyzing, and reporting patterns (themes) within data (Braun & Clarke, 2006). According to Braun and Clarke (2006), thematic analysis involves the following stages: transcribing data, generating codes, searching for themes, reviewing themes, defining and naming themes, and producing the report. Following this guideline, the researcher firstly

transcribed the telephonic interviews with the participants (5 librarians). Secondly, the researcher listened attentively and took notes while interviewing and reading the transcripts in order to obtain a better understanding of the data and to check the accuracy of the transcriptions. Thirdly, patterns were identified to formulate themes. Inferences and conclusions were drawn based on the themes that emerged. Lastly, the findings were compared with the quantitative results to check for the level of conformity or variation between the two data sources. Given that the study adopted a mixed method approach with simultaneous integration, after data analysis both qualitative and quantitative data was presented and discussed simultaneously to address the specific objectives of the study under chapter 5.

3.9 Pilot Study

The pilot study is the preliminary study carried out before the main research. The purpose of the pilot study was to test the reliability of the research instruments. The researcher conducted a pre-test by administering questionnaires to few randomly selected UBFOM physicians and students placed at Princess Marina hospital for some rotations. The results helped the researcher finalise the questionnaires and edited a better process of data collection especially to doctors as they were out of the offices most of the time. Email was the best. The questionnaires were much clearer, predictable and informative. They were excluded from the study as it was their study end of year.

3.10 Ethical Considerations

Creswell (2017) advises that all codes of ethics should be considered by the researcher at the beginning. This has to do with the way one should conduct herself or himself throughout the research process. A research permit has to be sought from the relevant body that regulates research. In this case, an application to carry out this research was sought from the Office of Research Development of the University of Botswana through a written application.

The permit was used for data collection to assure the respondents that ethical issues were considered throughout the research process. A consent was designed reflecting the purpose of study and, the researchers' personal details as well as the institution of affiliation which was University of Botswana Faculty of Medicine. This was done to provide assurance for protection

of their human rights and also to guarantee them confidentiality. The researcher found it necessary to mention that the research works as medical librarian in UB. It was done so as it may raise the issues of objectivity since the subject matter of the research relates to the role of librarians in medical education, the very field the researcher belongs to. However, objectivity was ensured through pilot study. As mentioned earlier, the primary objective of pilot study was to ensure reliability of the instruments.

3.11 Reliability and Validity

Reliability and validity are important aspects in research. Mohajan (2017) mentioned that an important aspect in research is to also discuss the validity and reliability of measurement instruments that are used in research. The author further stated that validity concerns what an instrument measures, and how well it does so and reliability concerns the faith that one can have in the data obtained from the use of an instrument, that is, the degree to which any measuring tool controls for random error. This study adopted a mixed method approach with the hope to improve the validity and reliability of the study. The questionnaires and interviews used in this study comprised questions that addressed the key objectives of the research and the challenges affecting both service providers (Librarians) and the users, thus they fulfilled the content validity and reliability requirements. Each method of data collection complimented for the weaknesses of another method and vice versa, hence, the results are reliable.

3.12 Limitations of Methodology

This study adopted a pragmatic stance through which to a certain extent both qualitative and quantitative information was collected at the same time. The process in itself is complex and still under numerous debates by various researchers (Romm & Ngulube, 2015). The methodological gaps observed in the study are mainly due to the fact that it is difficult to clearly or statistically account on the extent of integration of qualitative and quantitative information. The study respondents tended to mainly respond to the quantitative section/questions leaving or providing minimal answers to the questions that were qualitative. The interviews in the study were purely qualitative whilst only the questionnaires integrated both qualitative and quantitative information. The chosen methodology was also limited by time and resources. As a result other sets of the

population were not interviewed to get detailed information. Only a single set of population (the librarians) were interviewed.

3.13 Summary

This chapter discussed the research methodology used for the study. It indicated that quantitative and qualitative research method was adopted for the study. The qualitative approach helped to explain what quantitative research methods entail and its advantages. Furthermore, the chapter discussed the population and study sample, highlighting how sample size was determined and selected. Discussion on data collection instruments and data analysis methods was also presented in the chapter.

CHAPTER 4: DATA ANALYSIS AND PRESENTATION

4.0 Introduction

This chapter presents and analyzes data. It begins with qualitative **data** analysis of the interviews with librarians then moves on to quantitative data analyses for doctors, undergraduate medical students, librarians and residents. Demographic data are interspersed. The highest and lowest indicated responses are broken down here. Full details of all the analyses done in Chapter 4 are provided in Table 39 and 40.

The primary objective of this study was to investigate the role of librarians in medical education at the University Of Botswana Faculty Of Medicine (UBFOM). The specific objectives were to:

1. Identify the type of services that librarians provide for clients at the Faculty of Medicine (UBFOM).
2. Examine the type of training and qualifications librarians at the Faculty of Medicine (UBFOM) possess.
3. Assess users' perceptions of the library services at the Faculty of Medicine (UBFOM) in terms of service quality.
4. Identify challenges affecting the provision of library services to clients at the Faculty of Medicine (UBFOM).

4.1 Librarians Response

4.1.1 Data collection and analysis

Qualitative data were collected by the use of telephone interviews. Five librarians out of six expected participants were interviewed within a period of one week for a response rate of 83%. Data were analyzed according to Braun and Clarke's (2006, 2012, 2013) guidelines of thematic analysis. The objectives addressed by this thematic analysis were 1, 2, and 4 as stated above.

4.1.2 Librarian demographics

The demographic characteristic of the librarians who participated in the interview include gender, department, number of years at UB library, number of departments served by the librarian, qualifications and the campus at which the librarian serves. Table 3 shows the details of the analysis of the demographic characteristics of participants in the current study. The analysis in Table 3 indicates that three (60%) participants were males and two (40%) were females. The

participants served various departments including biomedical science, pathology, surgery, family medicine, psychiatry, pediatrics and emergency. Three (60%) had served at UB library for 1-5 years. Furthermore, librarians serving at the Faculty of Medicine had a minimum qualification of a bachelor's degree in various fields including information technology, computing, and library studies and archives. All the librarians, except one, served at different branches of the main library (at the University of Botswana). The branches are located at Marina Hospital, Mahalapye, Maun and Lobatse.

Table 3: Demographic Characteristics of the Librarians

Characteristics of participant	Frequency
Gender	
Male	3
Female	2
Department	
1 Bio Medical Science, Pathology & Surgery	1
2 Family Medicine (Mah)	1
3 Psychiatry	1
4 Family Medicine (Mau)	1
5 Pediatrics & Emergency	1
6 Other (specify)	0
No. of Years at UB library	
1-5 years	3
6-10 years	1
11-15 years	0
16-20 years	1

Above 20 years	0
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No. of Depts. served

1-2	3
3-4	1
5-6	1

Names of Departments.....

- 1 Bio Medical Science,
Pathology & Surgery**
- 2 Family Medicine (Mah)**
- 3 Psychiatry**
- 4 Family Medicine (Mau)**
- 5 Paeds & Emergency**

Qualifications

Diploma in library/Archives	0
Degree in library/Archive	3
Masters in library/Archives	1
Other qualifications, Specify...BSc. (Computing).....	1

Campus

Gaborone Main Campus	1
Maun	1
Lobatse	1
Mahalapye	1
Marina	1

4.1.3 Librarians services

The services provided by the librarians are shown in Table 4. The results of this study show that librarians at the Faculty of Medicine provide a variety of services including general basic and circulation services (such as lending and collecting library resources and helping users with internet search), technical and technology-related services, outreach services (programs), research support services and internet-related services as indicated by the following excerpts: "... I issue and collect books from users such as students and lecturers as well as external borrowers. I also help them with internet searches when need arises". Another participant said "...I help clients with information retrieval and reprographic services where possible".

Table 4: Services librarians provides to users

Theme	Sub-them (category)	Code
General basic and circulation services	Lending and collecting library resources	Issuing and collecting/circulating, reprographic services
Technical and technology-related services	Reference, machines and software training and support	Training and support of some users and staff
Outreach services (programs)	Outreach	Publicize and create awareness for library services, sometimes offer outreach services to users and potential users.
Research support and Internet-related Services	Research, support and Internet	Online information retrieval, Internet search for both internal and external users

4.1.4 Librarians qualifications and trainings

Librarians hold various and relevant qualifications (degrees) which can enable them deliver quality services at ease, as noted in Table 5 Interview results also reveal that librarians sometimes receive

in-service training at the main library in Gaborone. This works well for librarians working at the University and in Gaborone. However, librarians working outside Gaborone can only attend such training at their own cost. This was expressed by one librarian who stated that “... If I wanted to attend the in-service workshop in Gaborone, I’d have to do so at my own cost especially transport, food and accommodation and such a cost can be prohibitive”. Another participant said “...for us working at the library branches, we get little support in terms of in-service training which usually takes place at the main library or in Gaborone. I, for example, would like to offer quality service to our customers and I feel in-service training would help me improve my knowledge and skills but I don’t have extra money to cater for accommodation and transport to go to Gaborone for such activity”. Table 5 shows the main themes and sub-themes that emerged during the interviews with participants.

Table 5 Training and qualifications of librarians

Theme	Sub-theme (category)	Code
Training	In-service training (for some librarians especially those in main campus)	In-service
Qualification	Bachelor Degree, Masters	BSc (IT), BSc (Computing), Bsc (Library & Information Studies), MA (Library/IT), MLIS

4.1.5 Challenges affecting the provision of library services at the Faculty of Medicine

Results reveal that there are a number of challenges affecting the provision of library services. The main challenges include inadequate resources, inadequate support for training and self-development, tight or inflexible time schedules and financial constraints with limited budgets, which in turn restrict in-service training of librarians, especially at the branch libraries. Other factors include insufficient technology modernization and loneliness of librarians who work at the branch libraries. Participants expressed their views regarding challenges in different ways. For example, one participant said “... We don’t have adequate resources especially at the branches. We

do not have enough computers and furniture here”. Another participant said Wi-Fi is unreliable outside the main library: “We are struggling to access services through the internet”. Another participant stated that “...wireless services are not well catered for here. It is frustrating to try and access such services in this area”. Yet another participant said “...the time schedule, especially at the branches, is not flexible. We open at 9.00 am and close at 4.30 pm. We have neither time for break, lunch nor for brunch (breakfast and lunch combined in one sitting)! We work non-stop. Moreover, some of the library users would prefer to use the library after 4.30 because they are busy in the hospital during the day”. Regarding financial resources, one participant stated that “...the budget is limited. There is no overtime allowance and no resources to enable us to attend in-service training in Gaborone”. Table 6 shows the challenges affecting provision of library services at the Faculty of Medicine.

Table 6 Challenges affecting the provision of library services

Theme	Sub-theme (Category)	Codes
Challenges	Inadequate resources	Few computers, inadequate furniture, limited space and internet services (especially Wi-Fi outside the main library), lack of printing and photocopying services
	Inadequate support/training	Limited skills development and workshop attendance especially by branch library staff.
	Tight time schedule (opening and closing hours)	Libraries open at 9.00 am, operate non-stop until 4.30 pm without a break for tea or lunch. Users would like to use the library during and after hours as they are busy during working hours
	Financial constraints	Limited budget for outreach programs and other related activities, inadequate in-service training (especially for

		branch library staff), professional development, educational waiver and overtime allowances
Insufficient modernization	technology	Still traditional technology or ways in use especially in branch libraries
Loneliness		Librarians especially at branch libraries, sometimes feel lonely

4.2 Doctors Response

4.2.1 Data collection and analysis

This section deals with analysis of quantitative data collected using questionnaires which were returned by doctors at the University of Botswana, Faculty of Medicine. It addresses research objectives 1 and 3, which are identifying the types of services/roles that librarians provide for the clients at the Faculty of Medicine and assessing users' perceptions of the information provided at the Faculty of Medicine. Data collected using questionnaires were analyzed descriptively (with mean, standard deviation, frequency, percentage and mode) using SPSS version 25. Twenty-one (21) doctors out of the expected 40 responded to the questionnaire giving a response rate of 52.5%. However, two or three items had missing data at some point and were excluded from the data analysis leaving about 20 valid responses on which this report is based. The results are presented according to the research objectives.

4.2.2 Demographic Data

The demographic characteristic of respondents included gender, department, number of years in the profession, highest qualification attained, whether they have an account with the library, how often they visit the library, what they use the library for and whether the library is adequate or not. Table 7 shows the details of the analysis of the demographic characteristics of respondents in the current study. The analysis in Table 7 shows that the majority, 16 (76.2%) of respondents, were male and five (23.8%) of the respondents were female. The respondents belonged to various departments including three at Biomedical Sciences (15.8%), eight at Family Medicine (42.1%), four at Medical Education (21.1 percent), one at Obstetrics and Gynecology (5.3%), two at

Psychiatry (10.5%), and one at Radiology (5.3%). The majority (16 for 76.2%) of respondents had seven years and above in the profession while two (9.5%) had 3-4 years in the profession and another two (9.5%) had 5-6 years. Only one (4.8%) respondent had 1-2 years in the profession. The majority of respondents (12 at 57.1%) were post graduates while four (19.0%) of had undergraduate qualifications and five (23.8%) had PhD qualification.

The majority (15 at 83.3%) had accounts with the library while three (16.7%) did not. Moreover, the majority (8 at 40.0%) visited the library monthly while four (20.0%) visited the library 2-3 times a week and one (5.0%) visited the library weekly. Surprisingly, seven (35.0%) of the respondent visited the library rarely, never or twice in a year. A large number (15 at 33.3 %) of respondents visited the library for reading and equal numbers (6 at 28.6% and another 6 at 28.6%) of respondents visited the library for borrowing books and for research services respectively.

Table 7 Demographic characteristics of Doctors

Characteristic of respondent	Frequency	Percent
Gender		
Male	16	76.2
Female	5	23.8
Department		
Biomedical Sciences	3	15.8
Family medicine	8	42.1
Medical Education	4	21.1
Obstetrics/Gynecology	1	5.3
Psychiatry	2	10.5
Radiology	1	5.3
Number of years in the profession		
1-2 years		

3-4 years	1	4.8
5-6 years	2	9.5
7 years and above	2	9.5
	16	76.2
Highest qualification		
Undergraduate	4	19.0
Post graduate	12	57.1
PhD	5	23.8
Have account with library		
Yes	15	83.3
No	3	16.7
How often you visit library		
2-3 times a week	4	20.0
Weekly	1	5.0
Monthly	8	40.0
Other	7	35.0
Use library for		
Reading	7	33.3
Borrowing books	6	28.6
Searching catalogue	1	4.8
Research services	6	28.6
Other	1	4.8

4.2.3 Services doctors receive

Respondents were asked to indicate the extent to which they agreed with the statements under the types of services/roles that librarians provide to clients. Results indicated that librarians provide a

variety of services/roles for clients at the Faculty of Medicine. Table 8 shows a summary of the analysis of the types of services/ roles librarians provide at the Faculty of Medicine as reported by doctors.

Table 8 Services provided by librarians to doctors

Item	Section B	A	SA	D	SD	NS	MEAN	STD	MODE
	Statements/measure	%	%	%	%	%		DEV	
1	I receive timely and right information from librarians	52.4	38.1	0.0	0.0	9.5	4.29	.644	4
2	Librarians provide timely and accurate information for reference questions	52.4	38.1	0.0	0.0	9.5	4.29	.644	4
3	I receive usual health information resources from the library	47.6	19.0	9.5	0.0	23.8	3.76	.889	4
4	Librarians enhance information literacy instructions and development of learning objects and resources	47.6	23.8	0.0	0.0	28.6	3.95	.740	4
5	I can use the resources to accomplish my planned activities	42.9	42.9	0.0	0.0	14.3	4.29	.717	4
6	I am able to deliver through the training I have with the librarians	61.9	9.5	0.0	0.0	28.6	3.81	.602	4
7	My benefit from the training can easily	30.0	35.0	0.0	0.0	35.0	4.00	.858	3

	make changes to myself and those around me									
8	I collaborate with librarians in developing instructional content	33.3	19.0	23.8	9.5	14.3	3.29	1.309	4	
9	I recognize the library as a teaching partner	42.9	42.9	0.0	4.8	9.5	4.19	.981	4	
10	I formulate considered and reasoned ethical judgment for responsible use of information.	50.0	15.0	10.0	0.0	25.0	3.70	.865	4	
11	I effectively and responsibly use information for problem solving and decision-making	57.1	28.6	0.0	9.5	4.8	3.95	1.17	4	
12	I work effectively with colleagues in the libraries to enhance acquisition, access, discovery and use of library collections	33.3	33.3	4.8	4.8	23.8	3.86	1.108	4	

The results show that the most important types of services/roles reported doctors were receiving timely and right information from librarians; librarians providing timely and accurate information; being able to use the resources to accomplish their planned activities which obtained mean scores of 4.29 each. The least rated services/role were collaborating with librarians in developing instructional content.

Most rated type of service/role that librarians provide for doctors at the Faculty of Medicine:

Tables 9, 10, 11, 12 and 13 shows the results of the analysis of data relating to these services.

Table 9 Timely and right information from librarians

	Frequency	Valid Percent
Strongly disagree	0	0
Disagree	0	0
Not sure	2	9.5
Agree	11	52.4
Strongly agree	8	38.1
Total	21	100.0

The majority of respondents (19 at 90.5%) agreed or strongly agreed with the statement that they received timely and right information. Only two (9.5%) of the respondents were not sure whether to agree with the statement or not. No respondent disagreed with this statement. This item had a mean score of 4.29 making it one of the highest rated and most important type of service/role, librarians at the Faculty of medicine at the University of Botswana, provide for their clients.

Table 10 Timely and accurate information (Mean - 4.29)

	Frequency	Valid Percent
Strongly disagree	0	0
Disagree	0	0
Not sure	2	9.5
Agree	11	52.4

Strongly agree	8	38.1
Total	21	100.0

The majority of respondents (19 at 90.5%) agreed or strongly agreed with the statement that librarians provide timely and accurate information. Only two (9.5%) of the respondent were not sure whether to agree with the statement or not. No respondent disagreed with this statement. This item, also, had a mean score of 4.29 making it one of the highest rated and most important type of service/role librarians at the Faculty of Medicine at the University of Botswana, provide for their clients.

Table 11 Usage of resources (Mean- 4.29)

	Frequency	Valid Percent
Strongly disagree	0	0
Disagree	0	0
Not sure	3	14.3
Agree	9	42.9
Strongly agree	9	42.9
Total	21	100.0

The majority of respondents (18 at 85.8%) agreed or strongly agreed with the statement that they can use the resources to accomplish their planned activities. Only three (14.3%) of the respondents were not sure whether to agree with the statement or not. No respondent disagreed with this statement. This item, also, had a mean score of 4.29 making it one of the highest rated and most important type of service/role librarians at the Faculty of Medicine at the University of Botswana, provide for their clients.

Table 12 Library as a teaching partner (Mean- 4.19)

	Frequency	Valid Percent
Strongly disagree	1	4.8
Disagree	0	0
Not sure	2	9.5
Agree	9	42.9
Strongly agree	9	42.9
Total	21	100.0

The majority of respondents (18 at 85.8%) agreed or strongly agreed with the statement that they recognize the library as a teaching partner. Two (9.5%) of the respondent were not sure whether to agree with the statement or not. One (4.8%) respondent strongly disagreed with the statement that they recognize the library as a teaching partner. This item had a mean score of 4.19 making it one of the highest rated and most important type of service/role, librarians at the Faculty of Medicine at the University of Botswana, provide for their clients.

Least rated type of service/role that librarians provide for doctors at the Faculty of Medicine:

The least rated type of service/role that librarians provide for the clients was collaborating with librarians in developing instructional content. Table 13 shows the result of analysis of data related to this service/role.

Table 13 Collaboration in developing instructional content (Mean- 3.29)

	Frequency	Valid Percent
Strongly disagree	2	9.5

Disagree	5	23.8
Not sure	3	14.3
Agree	7	33.3
Strongly agree	4	19.0
Total	21	100.0

Only about a half (11 at 52.3%) of the respondent agreed or strongly agreed with the statement that they collaborate with librarians in developing instructional content, while three (14.3%) were not sure whether to agree or not with the statement. Seven (23.3%) of the respondents disagreed with the statement. This item obtained a mean score of 3.29 making it the least rated type of service librarians provide for their clients at the Faculty of Medicine.

4.2.4 User perceptions on the information provided at the Faculty of Medicine

Doctors were asked to indicate the extent to which they agreed with the statements relating to the information provided by the librarians at the Faculty of Medicine. They were given options, on a 5- point Likert type scale, to choose from. The options ranged from strongly disagree to strongly agree. The results of the analysis indicate that doctors hold a variety of perceptions on the information provided at the Faculty of Medicine. Table 14 shows a summary of the analysis of doctors' perceptions of the information provided at the Faculty of Medicine.

Table 14 Doctors' perceptions of the information provided (Mean 3.97)

Item	Section D	A	SA	D	SD	NS	MEAN	STD	MODE
	Statements/measure	%	%	%	%	%		DEV	
1	The training I get from librarians is relevant	40.0	45.0	0.0	5.0	10.0	4.20	1.005	5

2	The information I received meets my needs	66.7	19.0	9.5	0.0	4.8	3.95	.805	4
3	The services they provide at the library are the best	30.0	15.0	5.0	5.0	45.0	3.45	.999	3
4	The librarians are qualified/experienced in what they do	42.9	42.9	4.8	4.8	4.8	4.14	1.062	4
5	I am able to apply what I am taught by librarians in looking for information	57.1	23.8	4.8	0.0	14.3	4.00	.775	4
6	I am able to get help anytime I need assistance from librarians	52.4	28.6	4.8	4.8	9.5	3.95	1.024	4
7	I recognize librarians, services and collection librarians provide as a resource for life-long learning	30.0	50.0	10.0	0.0	10.0	4.20	1.005	5
8	The librarians are engaged in deep level of sustained, high quality, mutual beneficial interaction in liaison with academic programs	52.4	14.3	4.8	0.0	28.6	3.76	.768	4
9	They are always willing to assist at any time I need assistance (responsiveness)	47.6	47.6	0.0	4.8	0.0	4.33	.913	4

10	The librarians are able to provide the promised services or resources needed by users dependably and accurately in a way that could satisfy the expectations of library users	55.0	15.0	5.0	5.0	20.0	3.70	.979	4
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The most important perceptions were that librarians were always willing to assist at any time clients needed assistance (mean 4.33); the training clients get from librarians was relevant (mean 4.20); recognizing librarians services and collection librarians provide as a resource for life long learning (mean 4.20); and librarians were qualified/experienced in what they did (mean 4.14) making them the most highly rated and major perceptions by users of the library at the Faculty of Medicine.

The most rated perceptions by doctors about information provided at the Faculty of Medicine: Tables 15, 16, 17, 18, 19 and 20 shows the details of the analysis of data relating to these items.

Table 15 Librarians willingness to assist (Mean- 4.33)

	Frequency	Valid Percent
Strongly disagree	1	4.8
Disagree	0	0
Not sure	0	0
Agree	10	47.6
Strongly agree	10	47.6
Total	21	100.0

The majority (20 at 95.2%) of the respondents agreed or strongly agreed that librarians are always willing to assist at any time. Only one (4.8%) disagreed with the statement. This item obtained a mean score of 4.33 making it the most highly rated item.

Table 16 The relevance of training (Mean – 4.20)

	Frequency	Valid Percent
Strongly disagree	1	5.0
Disagree	0	0
Not sure	2	10.0
Agree	8	40.0
Strongly agree	9	45.0
Total	20	100.0

The majority (17 at 85.0%) of respondents agreed or strongly agreed that the training they got from librarians was relevant. Two (10.0%) were not sure whether to agree with the statement or not. One (5.0%) of respondents strongly disagreed. This item obtained a mean score of 4.20, making it one of the most highly rated important user perceptions about information provided by librarians at the Faculty of Medicine.

Table 17 Librarians’ services and collections for life-long learning (Mean - 4.20)

	Frequency	Valid Percent
Strongly disagree	0	0.0
Disagree	2	10.0
Not sure	2	10.0
Agree	6	30.0

Strongly agree	10	50.0
Total	20	100.0

The majority (16 at 80.0%) of respondents agreed or strongly agreed that they recognize librarians as a resource for life-long learning. Two (10.0%) of the respondents were not sure whether to agree with the statement or not. Two (5.0%) disagreed with the statement. This item obtained a mean score of 4.20, making it one of the most highly rated main user perceptions about information provided by librarians at the Faculty of Medicine.

Table 18 Librarians qualification and experienced (Mean- 4.14)

	Frequency	Valid Percent
Strongly disagree	1	4.8
Disagree	1	4.8
Not sure	1	4.8
Agree	9	42.9
Strongly agree	9	42.9
Total	21	100.0

The majority (18 at 85.8%) of respondents agreed or strongly agreed that librarians are qualified/experienced in what they do. Two (9.6%) of the respondent disagreed with the statement. This item obtained a mean score of 4.14, which made it one of the most highly rated and important items.

The least rated perceptions by doctors about information provided at the Faculty of Medicine:

The least rated perceptions were that the services they provide at the library are the best and librarians are able to provide the promised services or resources needed by users dependably and accurately. Tables 19 and 20 show the results of the analysis of data relating to this item.

Table 19 Services provided (Mean- 3.45)

	Frequency	Valid Percent
Strongly disagree	1	5.0
Disagree	1	5.0
Not sure	9	45.0
Agree	6	30.0
Strongly agree	3	15.0
Total	20	100.0

Nine (45.0%) respondents agreed or strongly agreed that the services provided at the library are the best. That is, fewer than half of the respondent agreed with the statement. Nine (45.0%) were not sure whether to agree with the statement or not and two (10.0%) disagreed with the statement. This item obtained a mean score of 3.45, which made it the least rated perception.

Table 20 Dependability and accuracy of information given (Mean 3.45)

	Frequency	Valid Percent
Strongly disagree	1	5.0
Disagree	1	5.0
Not sure	9	45.0
Agree	6	30.0
Strongly agree	3	15.0
Total	20	100.0

Only nine (45.0%) of respondents agreed or strongly agreed that librarians are able to provide the promised services or resources needed by users dependably and accurately. Another nine (45.0%) were not sure whether to agree with the statement or not. Two (10.0%) of the respondents disagreed with the statement. This item obtained a mean score of 3.70, which made it one of the least rated user perceptions about the information provided at the Faculty of Medicine.

4.3 Medical students (Undergraduates) Response

4.3.1 Data collection and analysis

This section deals with analysis of quantitative data collected using questionnaires, which were returned by undergraduate medical students at the University Of Botswana Faculty Of Medicine. It addresses research objectives 1 and 3, which are identifying the types of services/roles that librarians provide for the clients at the Faculty of Medicine and assessing users’ perceptions of the medical library services in terms of service quality respectively. Data collected using questionnaires were analyzed descriptively (with mean, standard deviation, mode, frequency and percentage) using SPSS version 25. One hundred undergraduate medical students (from first to fifth year of study) out of the expected 152 responded to the questionnaire giving a response rate of 65.8%. Furthermore, any item with missing data was excluded from the analysis. This also affected the total number of valid responses. The results are presented according to the research objectives.

4.3.2 Demographic data

The demographic characteristics of the students who responded to the questionnaire included gender and year of study. All respondents were studying for Bachelor of Medicine Bachelor of Surgery (MBBS) qualification at varying levels as indicated by year of study in Table 21, which shows the details of the analysis of the demographic characteristics of participants in the current study. Table 21 indicates that 45% of respondents were male and 55% were female. Third year students were the majority, at 25%.

Table 21 Demographic characteristics of undergraduate students

Characteristics respondents	of Frequency	Percent
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Gender		
Male	45	45.0
Female	55	55.0
Year of study		
First year	21	21.0
Second year	24	24.0
Third year	25	25.0
Fourth year	14	14.0
Fifth year	16	16.0
Total	100	100.0

4.3.3 Services provided to students

Respondents were asked to indicate the extent to which they agree with the statements under the types of services/roles that librarians provide to clients. Respondents were provided with options (SD = strongly disagree; D = Disagree, NS = Not sure; A =Agree and SA = strongly agree) to choose from. Results of data analysis indicate that librarians provide a variety of services/roles for clients at the Faculty of Medicine. Table 22 shows a summary of the types of services/roles librarians provide at the Faculty of Medicine as reported by undergraduate medical students.

Table 22 Services provided by librarians (Mean- 3.70)

Item	Section B	A	SA	D	SD	NS	MEAN	STD	MODE
	Statements/measure	%	%	%	%	%		DEV	

1	I receive timely and right information from librarians	49.5	17.2	4.0	6.1	23.2	3.68	1.008	4
2	Librarians provide timely and accurate information for reference questions	42.4	22.2	6.1	4.0	25.3	3.73	1.008	4
3	I receive usual health information resources from the library	40.0	20.0	15.8	2.1	22.1	3.60	1.046	4
4	Librarians enhance information literacy instructions and development of learning objects and resources	41.4	31.3	8.1	6.1	13.1	3.84	1.140	4
5	I can use the resources to accomplish my planned activities	56.6	26.3	9.1	1.0	7.1	3.98	.892	4
6	I am able to deliver through the training I have with the librarians	43.9	20.4	11.2	4.1	20.4	3.65	1.056	4
7	My benefit from the training can easily make changes to myself and those around me	51.5	15.5	5.2	6.2	21.6	3.65	1.011	4
8	I collaborate with librarians in developing instructional content	32.3	13.5	19.8	5.2	29.2	3.29	1.095	4

9	I recognize the library as a teaching partner	49.0	21.4	10.2	3.1	16.3	3.76	1.006	4
10	I formulate considered and reasoned ethical judgment for responsible use of information.	52.6	14.4	6.2	1.0	25.8	3.73	.823	4
11	I effectively and responsibly use information for problem solving and decision-making	58.2	19.4	4.1	3.1	15.3	3.87	.881	4
12	I work effectively with colleagues in the libraries to enhance acquisition, access, discovery and use of library collections	46.5	17.2	7.1	6.1	23.2	3.62	1.047	4

The results showed that the most important types of services librarians provide are from the following statements: I can use resources to accomplish my activities (mean 3.98); I effectively and responsively use information for problem solving (mean 3.87); and librarians enhance information literacy instructions and development (mean 3.84). Figures 1, 2 and 3 show the results of the analysis of data relating to these types of services/roles that librarians provide for clients at the Faculty of Medicine.

The highest rated services/roles that librarians provide for undergraduates at the Faculty of Medicine

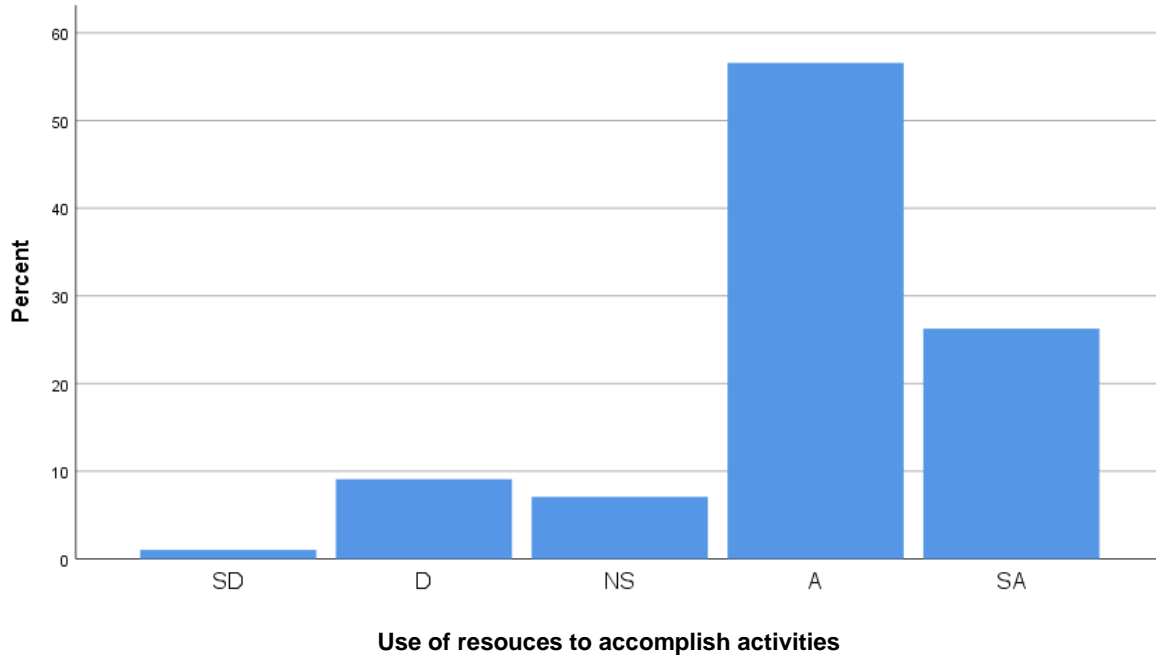


Figure 1: Use of resources to accomplish activities

The majority (82 at 82.9%) agreed or strongly agreed that they could use resources to accomplish their activities. Ten (10.1%) of the respondents disagreed with the statement while seven (7.1%) of the respondents were not sure whether to agree or not with the statement. This item obtained a mean score of 3.98, which made it the highest rated major service/role librarians at the Faculty of Medicine provide for their clients at the Faculty of Medicine.

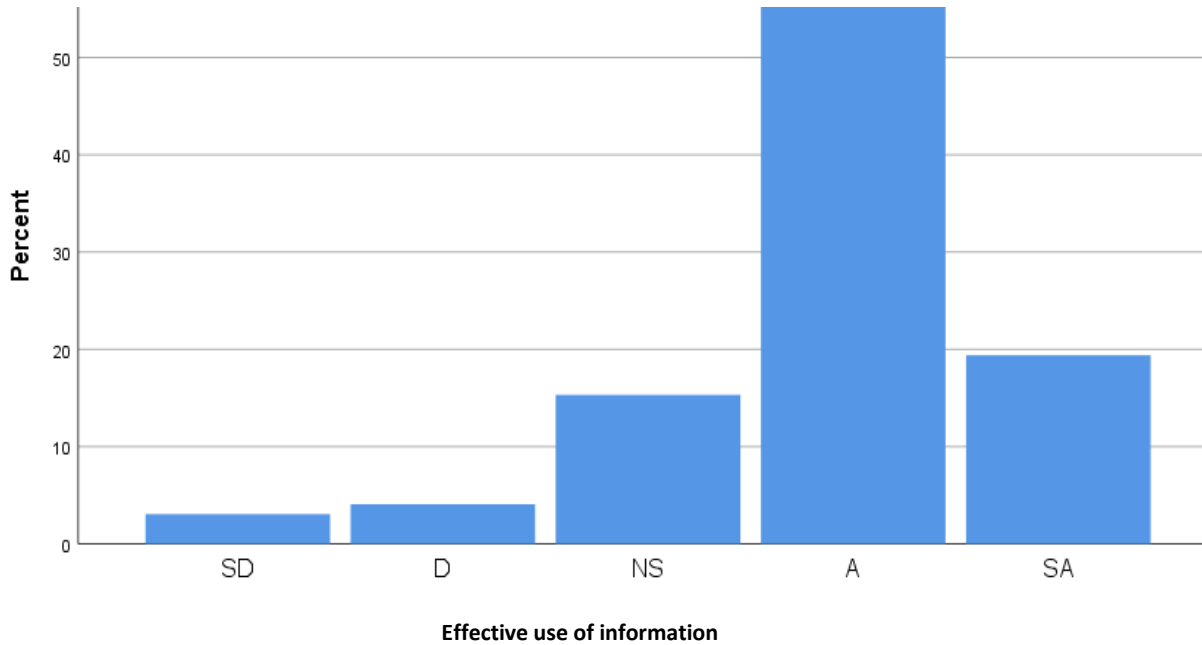


Figure 2: Effectively and Responsibly Use Information for Problem Solving

Figure 2 shows that the majority of respondents (76 at 77.6%) agreed or strongly agreed that they effectively and responsibly used information for problem solving and decision-making. However, seven (7.2%) disagreed with the statement and 15 (15.3%) were not sure whether to agree with the statement or not. This item obtained a mean score of 3.87 making it one of the highest rated and most important type of service/role, librarians at the Faculty of Medicine provide for their clients.

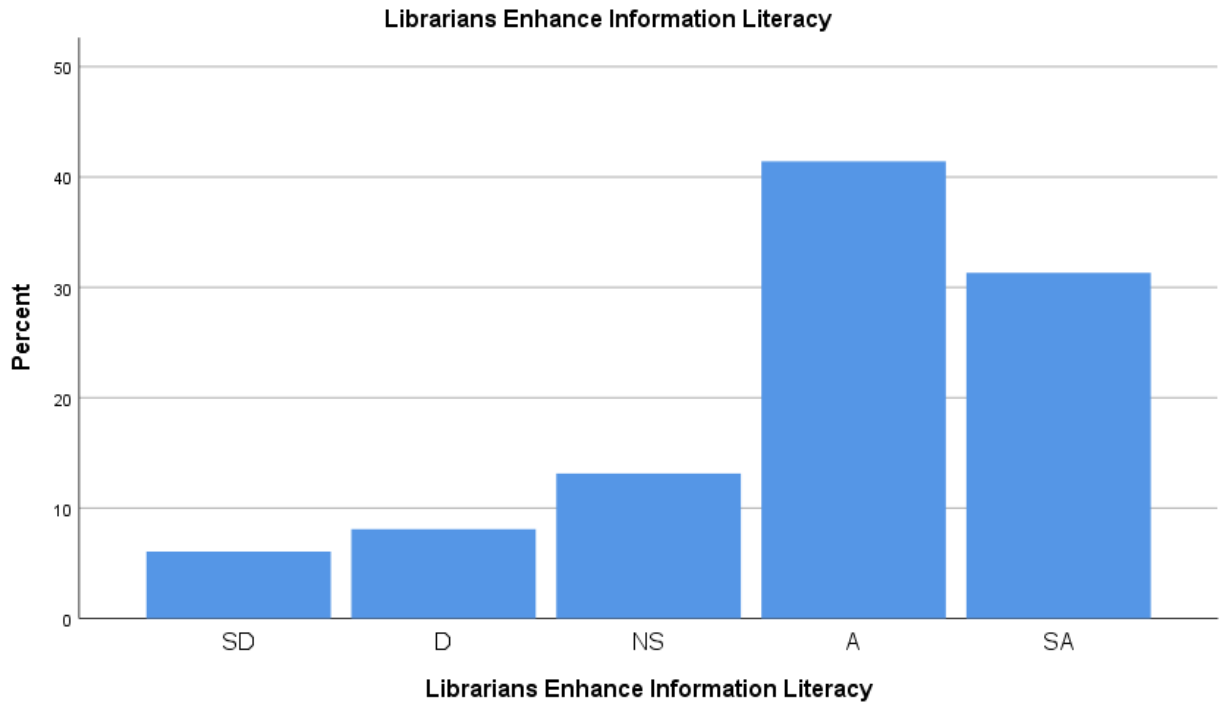


Figure 3: Librarians and information literacy

Figure 3 shows that the majority (72 at 72.7%) of respondents agreed or strongly agreed that librarians enhance information literacy. However, some (14 at 14.2%) of respondents disagreed and strongly disagreed that librarians enhance information literacy and some (13 at 13.1%) of respondents were not sure whether to agree or not with the statement. This item obtained a mean score of 3.84, which placed it among the main types of services/roles librarians provide at the faculty of medicine.

The least rated services/roles that librarians provide for clients at the Faculty of Medicine

A number of services/roles were rated low by undergraduate medical students at the Faculty of Medicine. The least rated services/roles were: collaborating with librarians in developing instructional content (mean 3.20) and receiving usual health information resources from the library (mean 3.60). Figures 4 and 5 show the details of the analysis of responses to these items.

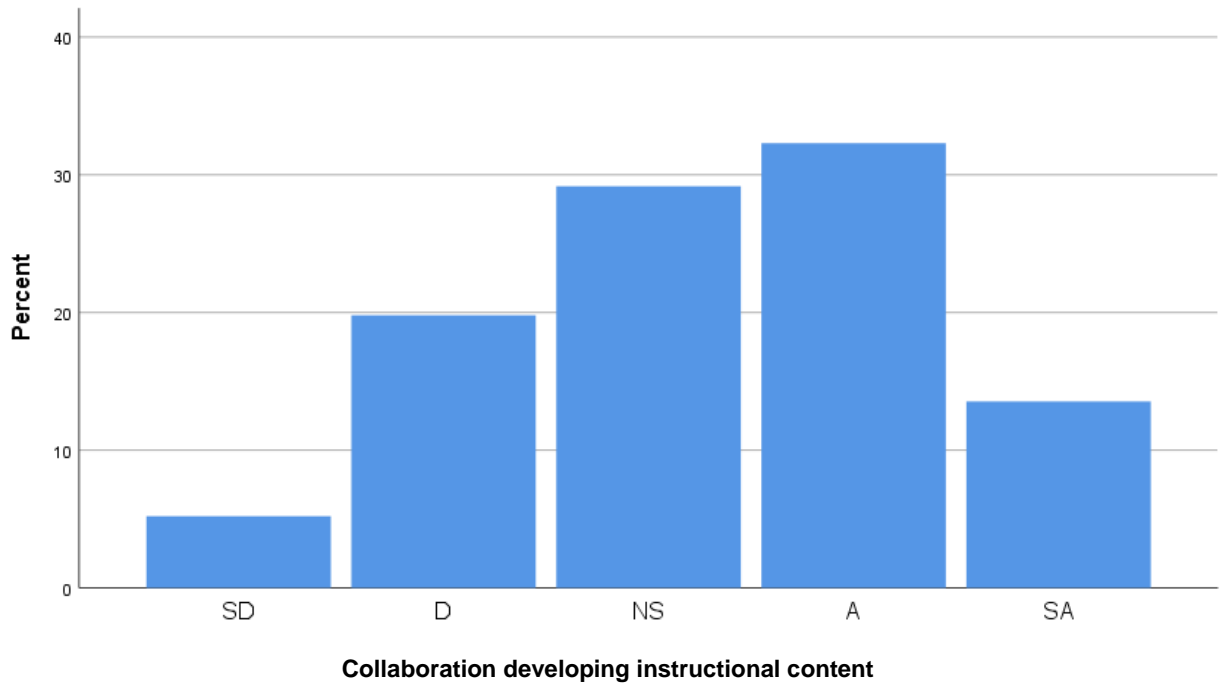


Figure 4: Students (undergraduates) and librarians in developing instructional content

Figure 4 shows that less than half (44 at 45.8%) of the respondents agreed or strongly agreed that they collaborate with librarians in developing instructional content. A large number (28 at 29.2%) were not sure whether to agree with the statement or not, while 24 (25%) of respondents disagreed with the statement. This item obtained a mean score of 3.20, which made it the least rated type of service/role that librarians provide at the Faculty of Medicine.

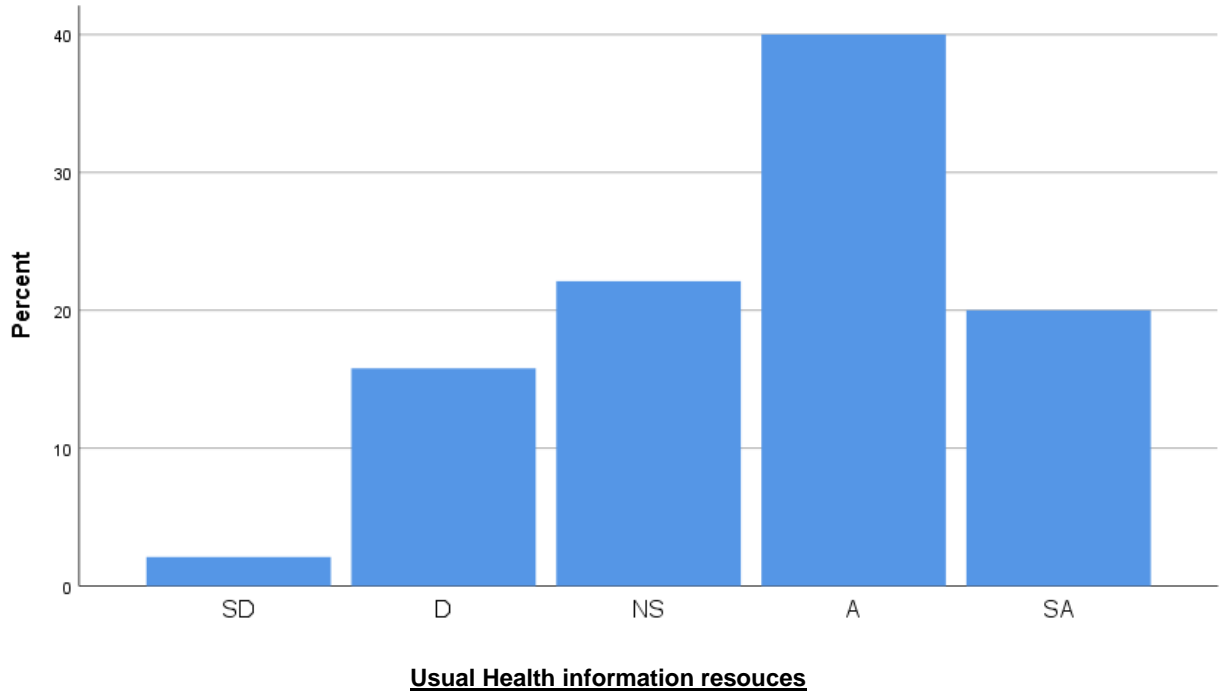


Figure 5: Usual health information resources from the library received.

Figure 5 shows that only 57 (60.0%) of respondents agreed or strongly agreed that they received usual health information resources from the library. However, 21 (22.1%) of the respondents were not sure whether to agree or not with the statement, while 17 (17.9%) disagreed with the statement. This item obtained a mean score of 3.60, which placed it among the lowest rated type of service/roles librarians provide for clients at the Faculty of Medicine.

4.3.4 Users' perceptions of the information provided at the Faculty of Medicine

Undergraduate medical students held a variety of perceptions on the information provided at the Faculty of Medicine. Table 23 shows a summary of the analysis of undergraduate perceptions on the information provided at the Faculty of Medicine.

Table 23 User perceptions of the information provided (Mean- 3.72)

Item	Section D	A	SA	D	SD	NS	MEAN	STD	MODE
	Statements/measure	%	%	%	%	%		DEV	

1	The training I get from librarians is relevant	50.0	28.0	6.0	9.0	7.0	3.85	1.175	4
2	The information I received meets my needs	53.0	19.0	6.0	5.0	17.0	3.75	.999	4
3	The services they provide at the library are the best	45.0	13.0	9.0	6.0	27.0	3.50	.999	4
4	The librarians are qualified/experienced in what they do	46.0	24.0	3.0	5.0	22.0	3.81	1.002	4
5	I am able to apply what I am taught by librarians in looking for information	49.0	22.0	4.0	5.0	20.0	3.79	.998	4
6	I am able to get help anytime I need assistance from librarians	46.0	17.0	4.0	7.0	26.0	3.62	1.042	4
7	I recognize librarians, services and collection librarians provide as a resource for life-long learning	54.0	22.0	5.0	5.0	14.0	3.83	.995	4
8	The librarians are engaged in deep level of sustained, high quality, mutual beneficial interaction in liaison with academic programs	46.9	21.4	6.1	4.1	21.4	3.76	.995	4
9	They are always willing to assist at any time I need	55.7	12.4	5.2	6.2	20.6	3.63	.982	4

assistance (responsiveness)									
10	The librarians are able to provide the promised services or resources needed by users dependably and accurately in a way that could satisfy the expectations of library users	44.8	17.7	4.2	7.3	26.0	3.61	1.061.	4

The highest rated perceptions by undergraduates about information provided at the Faculty of Medicine

The results of the analysis show that the main users' perceptions emerged from the following statements: I recognize librarians and collection librarians provide as a resource for life-long learning (mean 3.83); the training I get from librarians is relevant (mean 3.82); and librarians are qualified experienced in what they do (mean 3.81). Figures 4.6, 4.7 and 4.8 show the details of the analysis of data obtained from the questionnaire regarding these items.

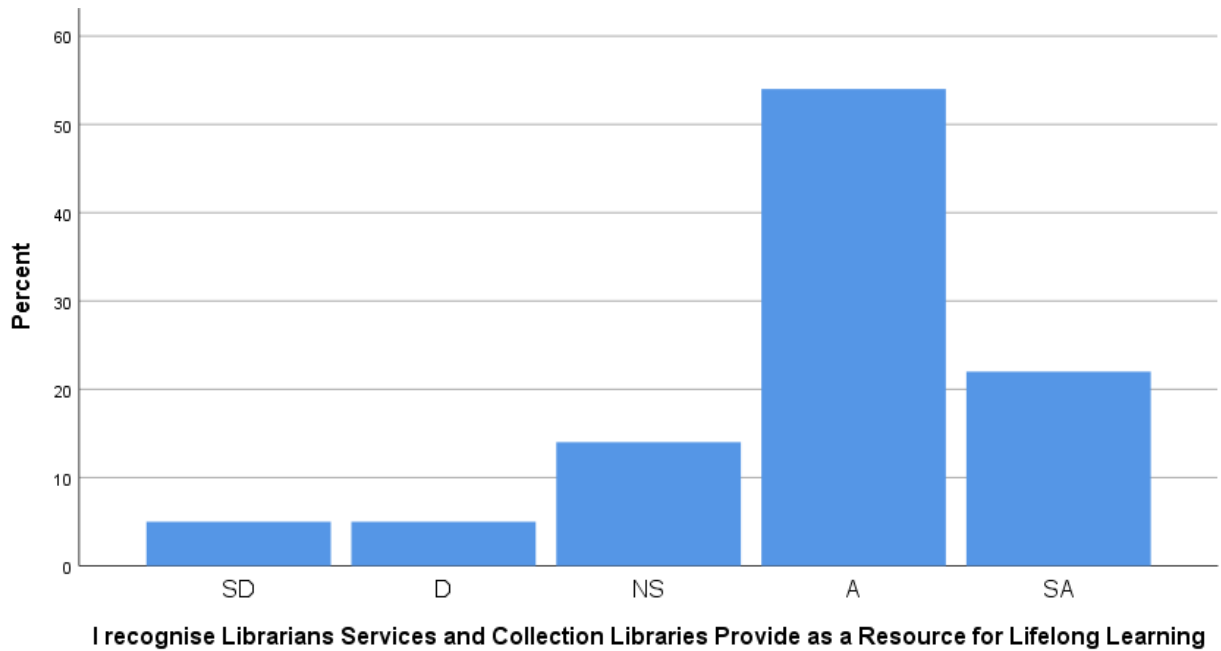


Figure 6: Services provided by librarians as a resource for life-long learning

Figure 6 shows that the majority (76 at 76.0%) of respondents agreed or strongly agreed that they recognize librarians' services and the collection librarians provide as a resource for life-long learning. However, 14 (14.0%) were not sure whether to agree or not with the statement, while 15 (15.0%) disagreed with the statement. This item obtained a mean score of 3.83 which placed it as the highest rated item among user perceptions of information provided by librarians at the Faculty of Medicine.

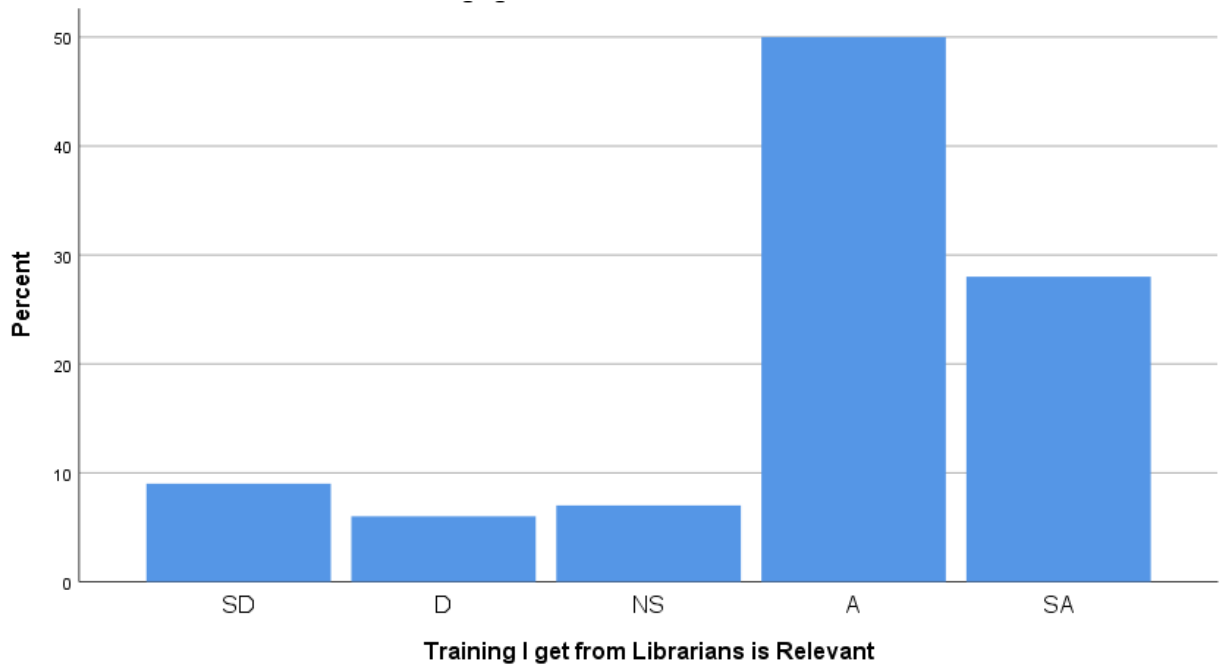


Figure 7: The relevance of trainings from librarians

Figure 7 shows that the majority (78 at 78.0%) of respondents agreed or strongly agreed that the training they got from librarians was relevant. However, 15 (15.0%) disagreed with the statement while seven (7.0 percent) were not sure whether to agree with the statement or not. This item obtained a mean score of 3.82, which placed it among the highest rated items concerning users’ perceptions of the information provided by librarians at the Faculty of Medicine.

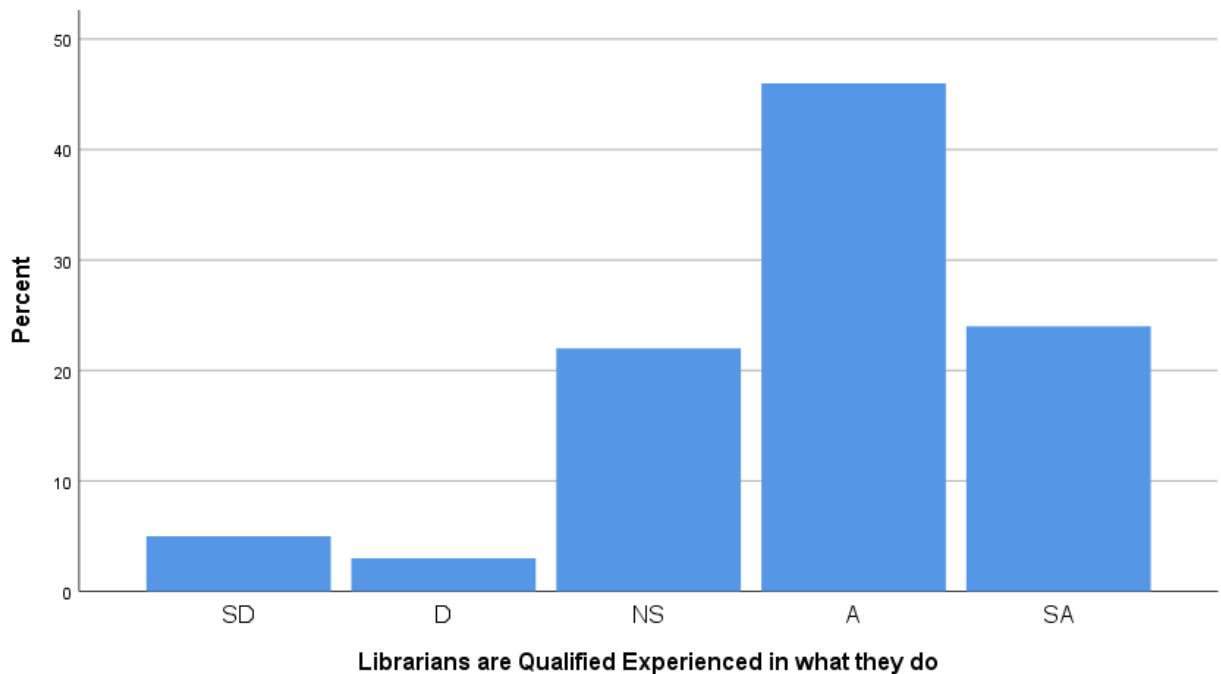


Figure 8: Qualification and experience by librarians

Figure 8 shows that the majority (70 at 70.0%) of respondents agreed or strongly agreed with the statement that librarians are qualified and experienced in what they do. However, 22 (22.0%) were not sure whether to agree with the statement or not, while eight (8.0%) disagreed with the statement. This item obtained a mean score of 3.81 making it one of the highest rated items about user perceptions of the information provided at the Faculty of Medicine.

The least rated perceptions by undergraduates about information provided at the Faculty of Medicine

The least rated user perceptions were: the services provided at library are the best (mean 3.50); users were able to get help anytime they needed assistance from librarians (mean 3.62); librarians were always willing to assist anytime users needed assistance (mean 3.63); and librarians were able to provide promised services or resources needed by users dependably and accurately in a way that could satisfy expectations of library users (mean 3.61). Figures, 9, 10, 11 and 12 show the details of the analysis of responses to these items.

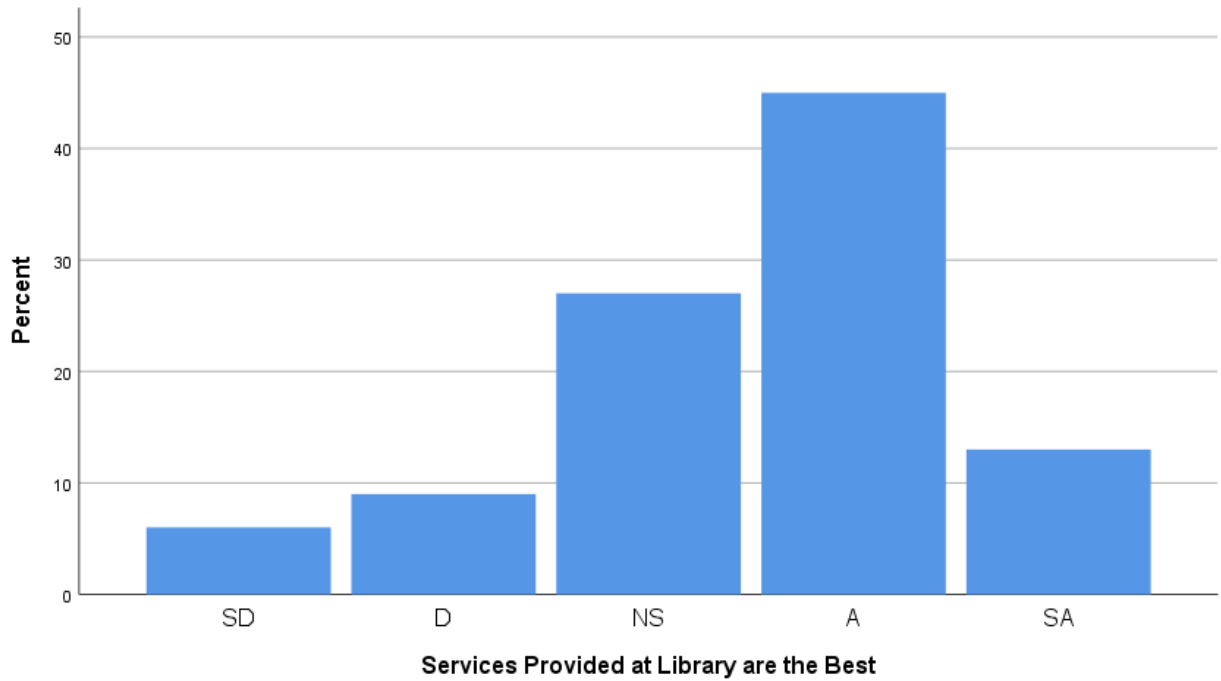


Figure 9: Library services provided are the best

Results show that only 58 (58.0%) of the respondents agreed or strongly agreed that the services provided at library are the best. Moreover, some of the respondents (27 at 27.0%) were not sure whether to agree or not with the statement that the services provided at the library are the best. Fifteen (15.0%) disagreed with the statement. This item obtained a mean score of 3.50 which placed it as the least rated perception among all other items rated by users.

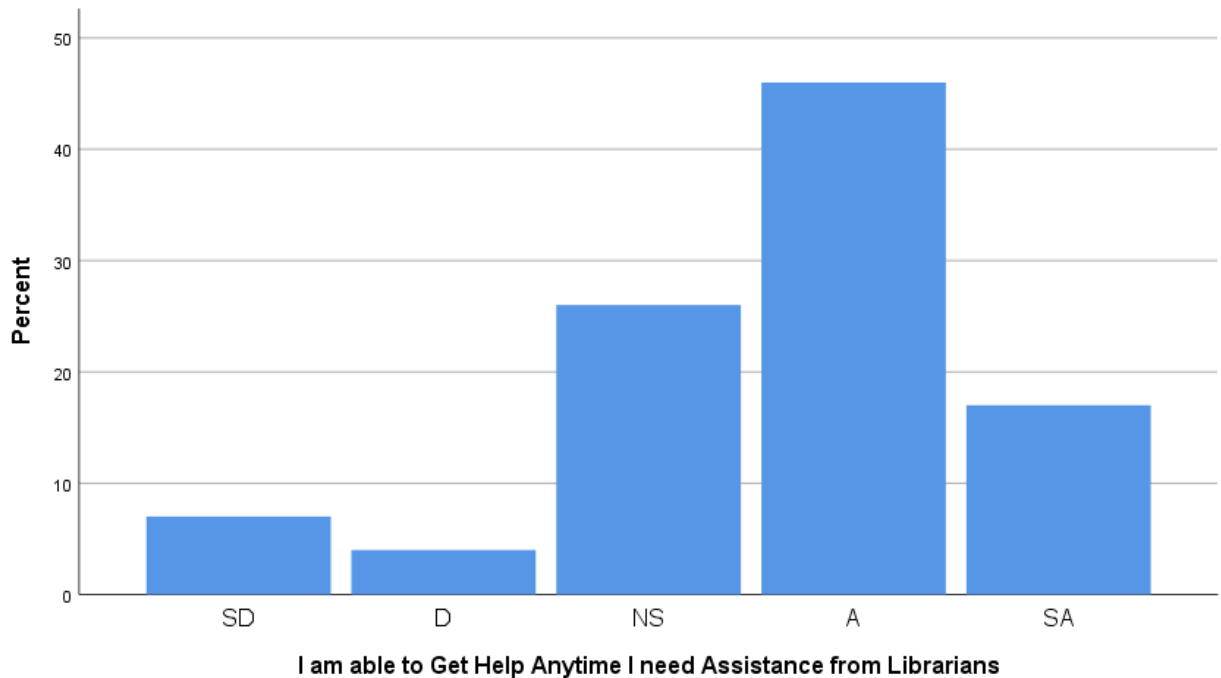


Figure 10: Assistance from librarians

Figure 10 shows that 63 (63.0%) respondents agreed or strongly agreed that they were able to get help anytime they needed assistance from librarians. Twenty-six percent of respondents were not sure whether to agree or not with the statement that they are able to get help anytime they needed assistance from the librarians while 11 (11.0%) of respondents disagreed with the statement. This item obtained a mean score of 3.62 which placed it among the lowest rated perceptions by users of the library at the Faculty of Medicine.

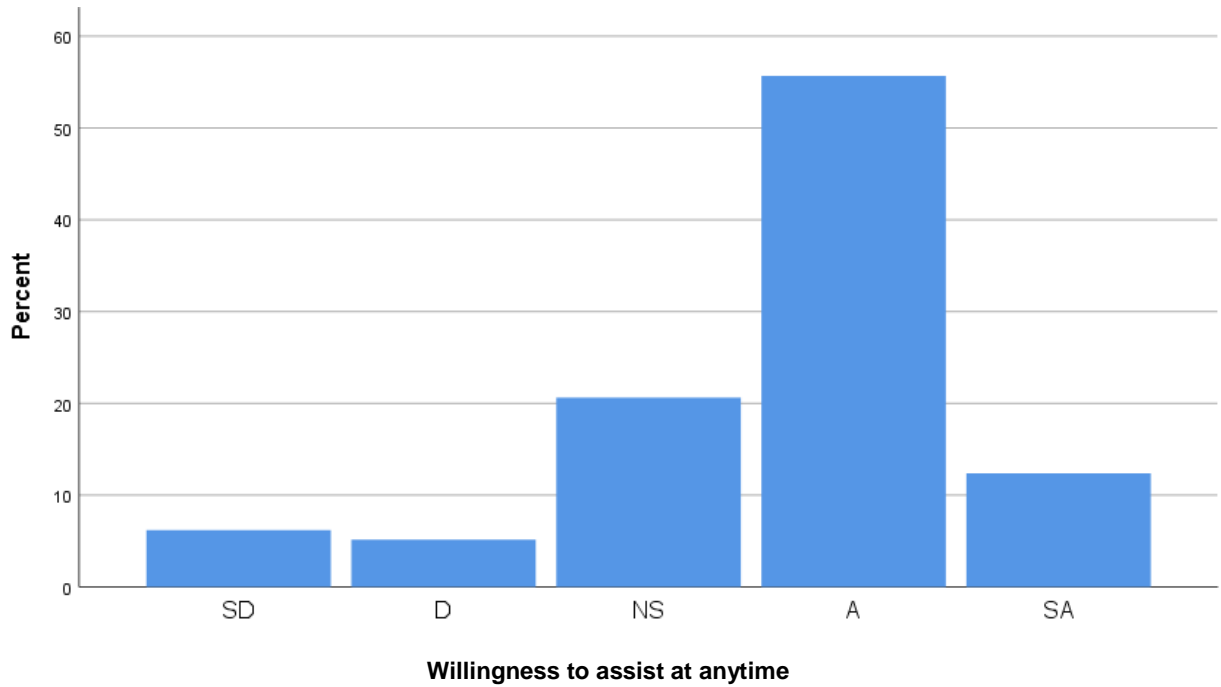


Figure 11: Willing to assist at anytime

Figure 11 shows that 66 (66.0%) respondents agreed or strongly agreed that librarians are always willing to assist anytime the users needed assistance, while 20 (20.0%) were not sure whether to agree or not with the statement. Eleven (11.0%) of respondents disagreed with the statement. This item obtained a mean score of 3.63 which placed it among the low rated items by library users at the Faculty of Medicine.

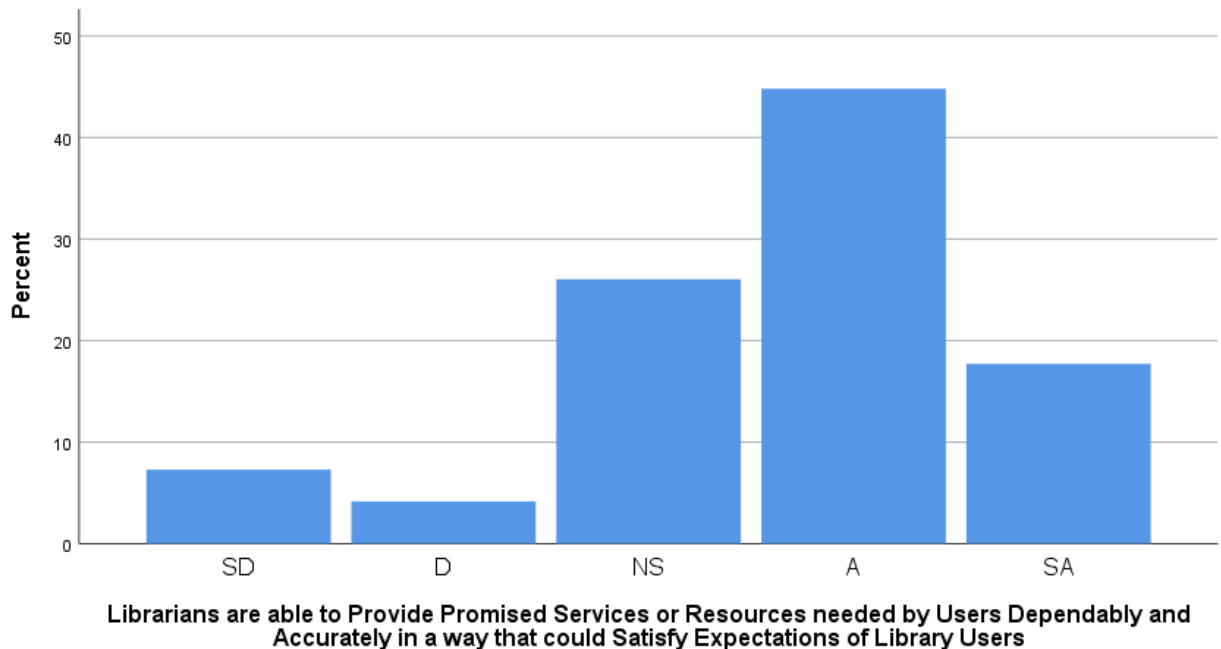


Figure 12: Provision of services or resources needed by users

Figure 12 shows that 62 (62.5%) of respondents agreed that librarians were able to provide services or resources needed by users dependably and accurately in a way that could satisfy expectations of library users. Moreover, 25 (26.0%) respondents were not sure whether to agree with the statement or not. Only 11 (11.5%) respondents disagreed with the statement. This item obtained a mean score of 3.61 which placed it among the lowest rated items as far as library users at the Faculty of Medicine were concerned.

4.4 Residents Response

4.4.1 Data collection and analysis

This section deals with analysis of quantitative data collected using questionnaires, which were returned by residents at the University of Botswana, Faculty of Medicine. It addresses research objectives numbers 1 and 3, which are identifying the types of services/roles that librarians provide for the residents at the Faculty of Medicine and assessing users' perceptions of information provided at the Faculty of Medicine respectively. Data was collected using questionnaires were analyzed descriptively (with mean, standard deviation, frequency, percentage and mode) using SPSS version 25. Thirty-six (36) residents out of the expected 66 responded to the questionnaire giving a response rate of 54.6%. However, one of the respondents has never visited the library at the Faculty of Medicine and did not respond to any of the items concerning the types of

services/roles librarians provided and users' perceptions of the information provided. This respondent's questionnaire was excluded from the analysis of data. One other respondent did not provide any response to most of the items in the questionnaire, and was also excluded from data analysis, leaving 34 valid responses on which this report is based. Furthermore, any item with missing data was also excluded from the analysis. This also affected the total number of valid responses, in some cases. The results are presented according to the research objectives.

4.4.2 Demographic data

The relevant demographic characteristic of the residents who participated in the interview include gender, department, year of study, whether they had an account with the library or not, frequency of visiting the library and the purpose of visiting and using the library. Table 24 shows the details of the analysis of the demographic characteristics of participants in the current study. The analysis in Table 24 indicates that the majority 20 (55.6%) of respondents were male and 16 (44.4%) were female. The respondents were placed at various departments including 12 at Family Medicine (48.0%), four at paediatrics/adolescent health (16.0%), six at public health (24.0%) and three at internal medicine (12.0%). Four (11.4%) other respondents did not indicate their departments. All respondents (36 at 100.0%) were residents at the Faculty of Medicine. Respondents visited the library in different ways, for example 2-3 times a week (3 at 8.6%), weekly (4 at 11.4%), monthly (18 at 51.4 percent) and other (10 at 28.6%). Thus, the majority of respondents visited the library monthly. The majority, 13 (37.1%), of respondents used the library for reading while nine (25.7%) of them used the library for research services. A few, one (2.9%) and two (5.7%) used the library for reading magazines and newspapers, and borrowing books respectively. Other notable visits to the library include rarely, twice in a month, once in a year and never.

Table 24 Demographic characteristics of the residents

Characteristics of participant	Frequency	Percent
Gender		
Male	20	55.6
Female	16	44.4

Department		
Family medicine	12	48.0
Public health	6	24.0
Internal medicine	3	12.0
Paediatrics/Adolescent health	4	16.0
Other	3	14.3
Year of study (resident)	36	100.0
Have account with library		
Yes	22	61.1
No	14	38.9
Visit the library		
2-3 times a week	3	8.6
Weekly	4	11.4
Monthly	18	51.4
Other	10	28.6
Use library for		
Reading	13	37.1
Borrowing books	6	17.1
Internet	2	5.7
Research services	9	25.7
Reading magazines and newspapers		

Other	1	2.9
	4	11.4

4.4.3 Librarians services to residents (post graduates)

Residents were asked to indicate the extent to which they agree with the statements under the types of services/roles that librarians provide to clients at the Faculty of Medicine. Results of data analysis indicate that respondents had different levels of agreement regarding the type of services/roles provided for clients. Table 25 shows a summary of the analysis of data regarding residents' responses to the types of services/roles librarians provide for clients.

Table 25 Services provided by librarians (Mean- 4.00)

Item	Section B	A	SA	D	SD	NS	MEAN	STD	MODE
	Statements/measure	%	%	%	%	%		DEV	
1	I receive timely and right information from librarians	48.5	33.3	6.1	0.0	12.1	4.09	.843	4
2	Librarians provide timely and accurate information for reference questions	59.4	21.9	6.3	0.0	12.5	3.97	.782	4
3	I receive usual health information resources from the library	41.2	11.8	14.7	2.9	29.4	3.44	.991	4
4	Librarians enhance information literacy instructions and development of learning objects and resources	52.9	36.3	2.9	0.0	8.8	4.21	.729	4

5	I can use the resources to accomplish my planned activities	67.6	23.5	2.9	0.0	5.9	4.12	.640	4
6	I am able to deliver through the training I have with the librarians	67.6	23.5	2.9	0.0	5.9	4.12	.640	4
7	My benefit from the training can easily make changes to myself and those around me	64.7	29.4	2.9	0.0	2.9	4.21	.641	4
8	I collaborate with librarians in developing instructional content	33.3	12.1	12.1	3.0	39.4	3.39	.966	3
9	I recognize the library as a teaching partner	45.5	51.5	6.1	0.0	0.0	4.45	.666	5
10	I formulate and considered and reasoned ethical judgment for responsible use of information.	60.6	15.2	6.1	0.0	18.2	3.85	.755	4
11	I effectively and responsibly use information for problem solving and decision-making	48.5	45.5	3,0	0.0	3.0	4.36	.699	4
12	I work effectively with colleagues in the libraries to enhance acquisition, access,	42,4	24.2	9.1	3.0	21.2	3.76	1.032	4

discovery and use of
library collections

The results showed that the most important types of services librarians provide are from the following statements: I recognize the library as a teaching partner (mean 4.45); I effectively and responsibly use information for problem solving (mean 4.36); librarians enhance information literacy instructions and development of learning objects and resources to enrich teaching research and support (mean 4.21); and my benefit from the training can easily make changes to myself and those around me (mean 4.21). Tables 26, 27, 28 and 29 shows the results of the analysis of data relating to these services.

The highest rated services/roles that librarians provide for clients at the Faculty of Medicine

Table 26 Library as a teaching partner (Mean- 4.45)

	Frequency	Valid Percent
Strongly disagree	0	0.0
Disagree	1	3.0
Not sure	0	0.0
Agree	15	45.5
Strongly agree	17	51.5
Total	33	100.0

The majority of respondents, 32 (97.0%), agreed with the statement that they recognize the library as a teaching partner. Over half of these, (17 at 51.5%) strongly agreed that they recognized the library as a teaching partner. This indicates a strong perception on the type of service/roles librarians provide. However, one (3.0%) of the respondents disagreed with the statement. This item had a mean score of 4.45 making it the highest rated and most important type of service/role, librarians at the Faculty of Medicine provide for their clients.

Table 27 Use of information for problem-solving (Mean- 4.36)

	Frequency	Percent
Strongly disagree	0	0
Disagree	1	3.0
Not sure	1	3.0
Agree	16	48.5
Strongly agree	15	45.5
Total	33	100,0

The majority of respondents, 31 (94.0%), agreed or strongly agreed with the statement that they effectively and responsibly used the information for problem solving. One (3.0%) respondent was not sure whether to agree or not with the statement, and another one (3.0%) of the respondents disagreed with the statement. This item obtained a mean score of 4.36 making it the second major service/role librarians provide for their clients at the Faculty of Medicine.

Table 28 Enhancement of information literacy instructions and development by librarians (Mean- 4.21)

	Frequency	Percent
Strongly disagree	0	0
Disagree	1	2.9
Not sure	3	8.8
Agree	18	52.9
Strongly agree	12	35.3
Total	34	100

The majority of respondents, 30 (88.2%), agreed or strongly that librarians enhance literacy instruction and development, while three (8.8%) of the respondents were not sure whether to agree or not and one (2.9%) disagreed with the statement. This item obtained a mean score of 4.21 making it one of the main types of services/roles librarians provide for their clients at the Faculty of Medicine.

Table 29 The impact of training (Mean- 4.21)

	Frequency	Percent
Strongly disagree	0	0.0
Disagree	1	2.9
Not sure	1	2.9
Agree	22	64.7
Strongly agree	10	29.4
Total	34	100

The majority of respondents, 32 (94.1%), agreed that librarians enhance literacy instruction and development while one (2.9%) was not sure whether to agree or not with the statement and another one (2.9%) disagreed with the statement. This item obtained a mean score of 4.21 making it one of the main types of services/roles librarians provide for their clients at the Faculty of Medicine.

The least rated services/roles that librarians provide for clients at the Faculty of Medicine

The least rated types of services/roles were collaborating with librarians in developing instructional content (mean 3.39) and receiving usual health information resources from the library (3.44). Tables 30 and 31 show the details of the analysis of the least rated types of services/roles provided by the librarians.

Table 30 Collaboration in developing instructional content (Mean- 3.39)

	Frequency	Percent
Strongly disagree	1	3.0
Disagree	4	12.1
Not sure	13	39.4
Agree	11	33.3
Strongly agree	4	12.1
Total	33	100.0

Thirteen (39.4%) respondents were not sure whether to agree or not with the statement that they collaborate with librarians in developing instructional content. Fifteen (45.4%) of the respondents agreed or strongly agreed with the statement. Five (15.1%) disagreed with the statement. This item obtained a mean score of 3.39 making it the lowest rated type of service/role librarians at the Faculty of Medicine.

Table 31 Usual health information received (Mean- 3.44)

	Frequency	Percent
Strongly disagree	1	2.9
Disagree	5	14.7
Not sure	10	29.4
Agree	14	41.2
Strongly agree	4	11.8
Total	34	100.0

The majority, (18 at 53.0%), of respondents agreed or strongly agreed that they received the usual health information resources from the library. However, a large number of respondents 10 (29.4%) were not sure whether to agree or not with the statement and six (17.6%) of the respondents disagreed or strongly disagreed with the statement. Thus, the respondents were divided over the statement with only slightly over a half of them agreeing with the statement. This item obtained a mean score of 3.44 making it one of the lowest rated type of service/role provided by librarians for their clients at the Faculty of Medicine.

4.4.4 Users perceptions of information provided by librarians at the Faculty of Medicine

The results of the study indicated that residents hold various perceptions on the information librarians provide at the Faculty of Medicine. Table 32 shows a summary of the analysis of residents' perceptions on the information librarians provide.

Table 32 User perceptions of the information provided (Mean- 3.79)

Item	Section D	A	SA	D	SD	NS	MEAN	STD	MODE
	Statements/measure	%	%	%	%	%		DEV	
1	The training I get from librarians is relevant	67.7	9.7	9.7	0.0	12.9	3.77	.762	4
2	The information I received meets my needs	51.6	25.8	12.9	0.0	9.7	3.90	.944	4
3	The services they provide at the library are the best	40.0	40.0	6.7	0.0	13.3	4.13	.900	4
4	The librarians are qualified/experienced in what they do	51.6	41.9	3.2	0.0	3.2	4.32	.762	4
5	I am able to apply what I am taught by	25.8	74.2	0.0	0.0	0.0	4.74	.445	5

librarians in looking for information									
6	I am able to get help anytime I need assistance from librarians	64.5	35.5	0.0	0.0	0.0	4.35	.486	4
7	I recognize librarians, services and collection librarians provide as a resource for life-long learning	48.4	45.2	0.0	0.0	6.5	4.39	.615	4
8	The librarians are engaged in deep level of sustained, high quality, mutual beneficial interaction in liaison with academic programs	6.5	3.2	38.7	25.8	25.8	2.23	1.023	2
9	They are always willing to assist at any time I need assistance (responsiveness)	6.5	0.0	54.8	32.3	6.5	1.87	.806	2
10	The librarians are able to provide the promised services or resources needed by users dependably and accurately in a way that could satisfy the expectations of library users	51.6	38.7	0.0	3.2	6.5	4.23	.845	4

The results show that the most important user perceptions include: the training I get from librarians is relevant ‘I am able to apply what I am taught by librarians’, ‘I recognize librarians’ services and

collection librarians provide’, ‘librarians are qualified and experienced in what they do. These types of services were rated very high and quite closely as indicated by their mean scores, which are, 4.47, 4.35, 4.32 and 4.26 respectively. Items with missing data were excluded from the analysis. Tables 33, 34, 35 and 36 show the details of the analysis of the respondents’ perceptions on information provided at the Faculty of Medicine.

The highest rated perceptions by residents about information provided at the Faculty of Medicine

Table 33 The relevance of training received (Mean- 4.47)

	Frequency	Percent
Strongly disagree	2	5.9
Disagree	1	2.9
Not sure	1	2.9
Agree	5	14.7
Strongly agree	25	73.5
Total	34	100.0

The majority of respondents, 30 (88.2%), agreed or strongly agreed that the training they get from librarians was relevant. Of these 25 (73.5%) strongly agreed with the statement, indicating a very strong opinion, and only 3 (8.8%) of the respondents disagreed with the statement. This item obtained a mean score of 4.47 making it the highest rated main user perception of the services/information provided by librarians for their clients at the Faculty of Medicine.

Table 34 Recognition of the services provided (Mean- 4.35)

	Frequency	Percent
Strongly disagree	1	2.9

Disagree	2	5.9
Not sure	1	2.9
Agree	10	29.4
Strongly agree	20	58.8
Total	34	100.0

The majority of respondents, 30 (88.2%) agreed that they recognized librarian services and the collection librarians provided. Moreover, out of those respondents who agreed, 20 (58.8%) strongly agreed with the statement indicating a very strong perception towards librarians' services and collections. This item obtained a mean score of 4.35 making it one of the main user perceptions of the services/information provided by librarians for their clients at the Faculty of Medicine.

Table 35 Applying what is learnt (Mean- 4.32)

	Frequency	Percent
Strongly disagree	1	2.9
Disagree	2	5.9
Not sure	0	0.0
Agree	13	38.2
Strongly agree	18	52.9
Total	34	100.0

The majority of respondents, 31 (91.1%) of the respondents believed that they were able to apply what they were taught by the librarians, and over half 18 (52.9%) of those who agreed, strongly agreed with the statement indicating a strong opinion about the statement. However, a few

respondents 3 (8.8%) disagreed with the statement. This item obtained a mean score of 4.32 making it one of the main user perceptions on the information provided by librarians at the Faculty of Medicine.

Table 36 Librarians qualification and experience (Mean- 4.26)

	Frequency	Percent
Strongly disagree	1	2.9
Disagree	2	5.9
Not sure	0	0.0
Agree	15	44.1
Strongly Agree	16	47.1
Total	34	100.0

The majority of respondents, 31 (91.2%), agreed that librarians are qualified and experienced in what they do. Moreover, most of them (16 at 47.1%) strongly agreed that librarians are qualified and experienced, indicating a strong and positive stand on the statement. This item obtained a mean score of 4.26 making it one of the main user perceptions of the services/information provided by librarians for their clients at the Faculty of Medicine.

The least rated perceptions by residents about information provided at the Faculty of Medicine

The least rated perceptions were that librarians were engaged in a deep level of sustained high quality mutual beneficial interactions and the users of the library at the Faculty of Medicine were able to get help anytime they needed assistance. These perceptions were least rated because they obtained the lowest mean scores of 3.79 and 3.85 respectively, as indicated by tables 37 and 38.

Table 37 Level of sustained high quality mutual beneficial interactions (Mean 3.79)

	Frequency	Percent
Strongly disagree	2	6.1
Disagree	2	6.1
Not sure	4	12.1
Agree	18	54.5
Strongly agree	7	21.2
Total	33	100.0

The majority of respondents, 25 (75.7%) agreed or strongly agreed that librarians are engaged in deep levels of sustained high quality mutual beneficial interactions. However, four (12.2%) of respondents disagreed or strongly disagreed with the statement. This item obtained the lowest rating as shown by the mean score in table 3.79

Table 38 Availability of librarians (Mean- 3.85)

	Frequency	Percent
Strongly disagree	1	2.9
Disagree	5	14.7
Not sure	4	11.8
Agree	12	35.3
Strongly agree	12	35.3
Total	34	100.0

Twenty-four (70.6%) respondents agreed or strongly agreed that they were able to get help anytime they needed assistance. Four respondents (11.8%) were not sure they could get help any time they needed assistance while six (17.6%) of the respondents disagreed or strongly disagreed with the statement. This item obtained a mean score of 3.85 making it the second lowest rated user perception on the information provided by the librarians at the Faculty of Medicine.

Table 39 Summary of the findings for librarian’s roles

Item	Section B	Doctors	Students	Residents
	Statements/measure	%	%	%
1	I receive timely and right information from librarians	90	66	81
2	Librarians provide timely and accurate information for reference questions	90	64	80
3	I receive usual health information resources from the library	66	60	62
4	Librarians enhance information literacy instructions and development of learning objects and resources	70	72	88
5	I can use the resources to accomplish my planned activities	84	82	90
6	I am able to deliver through the training I have with the librarians	70	63	90
7	My benefit from the training can easily make changes to myself and those around me	65	66	93
8	I collaborate with librarians in developing instructional content	52	45	45
9	I recognize the library as a teaching partner	84	70	96
10	I formulate considered and reasoned ethical judgment for responsible use of information.	65	67	75

11	I effectively and responsibly use information for problem solving and decision-making	85	77	93
12	I work effectively with colleagues in the libraries to enhance acquisition, access, discovery and use of library collections	66	63	66

The high percentages from the doctors, higher than the residents and students, indicate a better appreciation of the roles provided by the librarians in that order and this forms an opinion in satisfaction of services.

Table 40 Summary of users perception on services provided

Item	Section D	Doctors	Students	Residents
	Statements/Percentage	%	%	%
1	The training I get from librarians is relevant	85	78	66
2	The information I received meets my needs	85	72	76
3	The services they provide at the library are the best	45	58	80
4	The librarians are qualified/experienced in what they do	85	70	92
5	I am able to apply what I am taught by librarians in looking for information	80	71	99
6	I am able to get help anytime I need assistance from librarians	80	65	99
7	I recognize librarians, services and collection librarians provide as a resource for life-long learning	80	76	99
8	The librarians are engaged in deep level of sustained, high quality, mutual beneficial interaction in liaison with academic programs	66	67	9

9	They are always willing to assist at any time I need assistance (responsiveness)	94	67	6
10	The librarians are able to provide the promised services or resources needed by users dependably and accurately in a way that could satisfy the expectations of library users	70	61	89

The results show that doctors' ability to acquire information from librarians vary at a significant level depending upon the profession and experience. Doctors are more satisfied than the students and residents. The services they receive which are relevant scored 83% while undergraduates scored 78% and residents were rated less with 66%. Doctors agree that the information they get is relevant unlike the others. Residents noted that "I effectively and responsibly use information for problem solving and decision-making" and the students were the least rated. Doctors do not agree that the services librarians provide are the best. It is the least rated at 45%. Moreover, residents are showing that librarians are less responsiveness and also they show low beneficial interactions with them, they rated 9%.

4.5 Summary

The findings of this study have shown that librarians provide a variety of services including issuing and collecting books from users, internet search and information retrieval. The findings have also indicated that librarians at the main library receive in-service training. However, librarians away from the main library receive limited support in line with in-service training, which is usually done in Gaborone, the capital city of Botswana. Librarians also hold a variety of qualifications including bachelors and master's degrees in different subject specializations. Finally, librarians face a number of challenges which affect the provision of quality services. Some of the main challenges are inadequate resources such as computers, Wi-Fi and furniture, and tight time schedules or inflexible working hours, especially at the branch libraries. Librarians also face limited financial resources and support, which could enable their full participation in the in-service training and provision of quality service at the Faculty of Medicine.

The most important types of services/roles reported by doctors were receiving timely and right information from librarians, librarians providing timely and accurate information, being able to

use the resources to accomplish their planned activities and recognizing the library as a teaching partner. The least rated types of services/roles were collaborating with librarians in developing instructional content and recognizing the library as a teaching partner. The most important perceptions were that librarians were always willing to assist at any time clients needed assistance; the training clients get from librarians was relevant; recognizing librarians' services and the collection librarians provide as a resource for life long-long learning; and librarians were qualified/experienced in what they did. The least rated services/roles were collaborating with librarians in developing instructional content and librarians were able to provide the promised services or resources needed by users dependably and accurately.

According to undergraduate medical students, the most important types of services librarians provide were from the following statements: I can use resources to accomplish my activities; I effectively and responsively use information for problem solving; and librarians enhance information literacy instructions and development. The least rated services/roles were collaborating with librarians in developing instructional content and receiving usual health information resources from the library. The highest rates perceptions of undergraduate medical students emerged from the following statements: I recognize librarians and collection librarians provide as a resource for life-long learning; the training I get from librarians is relevant; and librarians are qualified/experienced in what they do. The least rated undergraduate perceptions were: the services provided at library are the best; users were able to get help anytime they needed assistance from librarians; librarians were always willing to assist anytime users needed assistance; and librarians were able to provide promised services or resources needed by users dependably and accurately in a way that could satisfy expectations of library users.

According to residents, the most important type of services/roles librarians provide for clients include recognizing the library as a teaching partner, effectively and responsibly using information for problem solving and decision-making, benefits from training can easily make changes to clients and those around them, and librarians enhance information literacy instructions and development of learning objects and resources to enrich teaching, research and support. The least rated services include collaborating with the librarians in developing instructional content, receiving usual health information resources from the library, and working effectively with colleagues in the libraries to enhance acquisition, access, discovery and use of library collections. The most important resident

perceptions were from the following statements: the training I get from librarians is relevant; I recognize librarian services and collection librarians provide as a resource for life-long learning; I am able to apply what I am taught by librarians in looking for information; and librarians are qualified/experienced in what they do. The least rated perceptions include librarians are engaged in a deep level of sustained, high quality, mutual beneficial interaction in the liaison role with academic programs; I am able to get help anytime I need assistance from librarians; and the services they provide at the library are the best.

CHAPTER 5 INTERPRETATION AND DISCUSSIONS

5.0 Introduction

This chapter presents an interpretation of the findings. The findings are mapped onto the research objectives and questions for all user groups (librarians, doctors, residents and students) at the Faculty of Medicine (FOM) and linked to the SERVQUAL model. Benchmarking was conducted with Medical Library Association (MLA) and the literature.

5.1 Services that librarians provide to clients at Faculty of Medicine.

The first question was geared towards identifying the type of services that librarians provide for clients at the FOM. This question was in line with SERVQUAL theory in relation to the physical environment, facilities and the employees' services at UBFOM (Luk, & Layton, 2002). Five (5) librarians participated in both interviews and questionnaires and all who participated indicated that they provide research and support services to their clients, circulation services, reference services, reprographics services and training/instruction. Out of five librarians, three are from branches at the teaching hospitals (Marina Hospital, Sabrana Hospital and Mahalapye Hospital). The findings of this study have shown that librarians provide a variety of services including issuing and collecting books from users, internet searching, information retrieval, and research and support services. Such findings are relevant to the tangibility domain within the SERVQUAL theory in which the theory try to address the poor technology-job fit, customers' expectations versus management perceptions and service specifications versus service delivery (Shahin, 2004). The research and support services by the librarians include literature searches, referencing software, and teaching integrated courses. The findings on research and support services are very relevant to the responsiveness of willingness of the employees in helping the customer to solve the problem at UBFOM. These findings are the same as that of Rowland (1998) and Aina (2004), who revealed that librarians have been concerned with certain functions such as collection development and acquisition, cataloguing and classification, circulation, reference work and literature searching. The respondents added that they do instruction for their clients on how to perform medical research using library catalogues and databases the university is subscribing to. Tan and Maggio (2013) explained this concept as a librarian being an expert searcher and a teacher.

The Engaged Librarian Framework (ELF) responsibilities which were implemented to advance the transformative teaching and learning by engaging faculties to integrate the library resources and

services throughout the curriculum is shown under the theme “research and support” that was mentioned by the FOM librarians from the study. The competencies are considered “core” for all subject librarians which is the case for the subject librarians at the University of Botswana with the exception of scholarly communications. The competencies which they are involved in include engagement, research services, collection development, teaching and learning which all listed as themes from the field data in the study.

However, it is interesting to note that none of the librarians who participated in the interview mentioned offering highly specialized services such as bringing the latest diagnostic and treatment information to the patient’s bedside, connecting electronic resources and decision tools into a patient’s electronic records, or designing and managing health information websites, internet blogs and digital libraries, which are the key performance indicators from the Medical Library Association (MLA) and that of scholarly communication.

The findings of the study revealed that 38.1% strongly agree (SA) whilst 52.4% of the doctors were of the view that they just agree (A) that they receive timely and right information from librarians. In addition 18 at 85.8% of the doctors indicated that they are able to use the resources to accomplish their planned activities and recognizing the library as a teaching partner. According to SERVQUAL theory, (Shahin, 2004), such findings reveal that the service delivery in such instances is satisfactory and exceed expectations by customers. As stated in Chapter 2, Weightman and Williamson (2005) and Wagner and Byrd (2004) emphasized that medical librarian services are well used and liked by clinicians. Weightman and Williamson (2005) further explained that library services do contribute to more efficient clinical decision making, by making information more easily accessible at all times. The doctors indicated that 57.1% agree (A) and 28.6% strongly agree (SA) that they effectively and responsibly use information provided by UB medical librarians for problem solving and decision-making. The study also revealed that undergraduate medical students use most of library resources to accomplish their study activities, and residents added that they effectively and responsively use information for problem solving as the librarians enhance information literacy instructions and development. The quantitative information observed from the study reveal that the majority of students (82 at 82.9%) agreed or strongly agreed that they could use resources provided by medical librarians at UBFOM to accomplish their activities in their studies. The findings also revealed that 81.8% of residents agreed or strongly agreed that

they receive timely and right information from the medical librarians at UBFOM. Such findings one way or the other indicate that the medical librarians do provide satisfactory services to the UBFOM.

One such an important aspect was to determine the collaborative aspects on services provided by medical librarians at UBFOM. This is an important services delivery in librarianship. The Ohio State University libraries engaged the ELF as it encourages librarian's engagement a priority. The findings in this study show that slightly less than half (44 at 45.8%) of the students respondents agreed or strongly agreed that they collaborate with librarians in developing instructional content. According to the SERVQUAL prepositions such findings are dissatisfactory on the service provided. A large number (28 at 29.2%) were not sure whether to agree with the statement or not, while 24 (25%) of respondents disagreed with the statement. Similar findings were also observed under doctors (11 at 52.3%) although slightly above 50%. In relation to such findings, the ELF model explains the role of librarians in academic libraries continues to evolve because of the changes occurring throughout higher education, simultaneous hyper specialization and interdisciplinary, by the movement of learning experiences toward the online and the mobile, and by changes in user behaviors in library spaces. This should be an encouragement to FOM librarians that traditional reference service is less needed in a time of ubiquitous access to information resources, but greater explanation, context-setting, and interpretation for library users to make sense of their research projects. Its positions medical (subject) librarian to improve on their expertise within the workflows of users and adopt effective collaboration routes.

5.2 Librarians qualifications and expertise

The objective was to know the type of training and qualifications the medical librarians serving at the FOM possess. Ojo (2015) defined a medical librarian as a professional who holds a bachelor's degree in a medical related course and a master's degree in library or library and information science from a recognized university, which is not the case at the University of Botswana. All of the respondents do not have a medical related course but do have experience in the field. They all noted that they have more than three years as medical librarians. They hold various relevant qualifications and experience which can enable them deliver quality services at ease. Khan and

Bhatti (2012) recommend that LIS curriculum should be re-structured to meet new technological trends in the profession as they lack skills in the profession.

The findings reveal that librarians sometimes receive in-service training at the main library in Gaborone. This works well for librarians working in Gaborone, but disadvantages those working at the branches. Teaching and learning as stated by the ELF theory involves collaborating with colleagues within and beyond the libraries on planning, delivering, improving, and assessing information literacy initiatives within the context of the larger curriculum of the university, which in most instances is not the case at UB. Khan and Bhatti (2012) added that librarians in developing countries are facing common problems such as inadequate technical skills, advanced searching skills and trained and skilled manpower, therefore they should acquire skills such as technical, IT, managerial and communication skills to work in any digital environment.

FOM librarians indicated that they are assigned different departments in medicine to serve and this enhance the quality of health care as they understand their user's needs. The users are the doctors, residents and students on rotations in specific teaching hospitals. From the data residents (99%) and doctors (80%) agreed that they get help anytime they need assistance. Doctors showed that they get relevant trainings from the librarians (85%) unlike the residents and students, with lower percentages. This is emphasized by MLA on encouraging excellence in the professional practice and leadership of health sciences library and information professionals in order to enhance the quality of health care, education, and research. Residents agreed at 99% that they are able to apply what they are taught by librarians in looking for information. Students findings are that they do not agree that the services they get from the librarians are the best, but they believe what they get is relevant (78%).

Rankin, Grefsheim and Canto (2008) report two prominent categories of informationists, distinguished according to their priorities: "clinical informationists," who first acquire service experience and later develop technical focus, and "research informationists," who first develop a technical focus and later become involved in personal service. These are essential for a successful informationist service and continuous learning, embedding in clinical-care delivery, and knowledge of particular medical topics. The ELF encourages collaboration with colleagues within and beyond the libraries on planning, delivering, improving, and assessing information literacy

initiatives within the context of the larger curriculum of the university. The Medical Association on the other hand recommends the following:

- Build your professional development education by identifying specific competencies you wish to improve on.
- Create your personal professional development plan by searching for courses using competency search criteria.
- Use Professional Competencies to further your career and demonstrate the value of your library: brand yourself as an expert in your organization, in those areas you excel in. Feel free to use the terminology in the description to promote your value and the value of your department.
- Check out the Grants and Scholarship program, which offers funds to assist members with the professional development activities.

The training the librarian get through training office at the UB Library is not enough because it is general not specific to the competences one need to assist the specialized faculty. Out of six librarians at FOM, two does not have qualification in librarianship as they are IT specialist. They gain experience as they provide services to their client.

5.3 Assess users' perceptions of the library services at UBFOM in terms of service quality.

The research objective was to see how users perceive the quality of library services at UBFOM using the SERVQUAL theory on domains assessing customer satisfaction. The model defines service quality as a function of the gap between customers' expectations of a service and their perceptions of the performance of actual service delivery by an organisation. Based upon five domains: tangibles, reliability, responsiveness, assurance and empathy, the service quality can be measured by obtaining the difference between perceptions of performance and the expectations in those domains.

The satisfaction of medical library users as the theory suggest is a function of quality of information products received, the quality of information system, and library services provided to access the information product which is the case at UBFOM. Both undergraduates and post graduates (residents) students agrees that the services they receive from medical librarians are the

best. Cullen (2001) introduced the idea of “user satisfaction” to higher education libraries. According to him service quality in higher education libraries is usually associated with the question of user satisfaction, which in turn is based on user perceptions of service quality. The relationship between service quality and customer satisfaction is a complex one. Service quality is defined as a component of user satisfaction. The findings in the study clearly indicate that all the respondents were satisfied by the library services. However certain services were adopted such as the collaboration aspect on librarians being able to engage in deep level of sustained, high quality, and mutual beneficial interaction in liaison with academic programs.

Somarathna et al.'s (2010) study revealed that users of the University of Colombo library are generally satisfied with the accuracy and relevance of information they received from the library. They always feel safe and secure when using the library and are also satisfied with sign posting that indicate clear directional signs for the collection. They also mentioned that they are highly satisfied with staff related attributes such as courteous, polite and friendly staff, willingness to help users, providing services at the promised time, knowledgeable about user questions, making users feel secure about transactions and performing services right the first time. UBFOM users (doctors and students) mentioned that the information they receive from their librarians is relevant and librarians are also willing to help them at any time when they need assistance.

The Cambridge University Medical Library (2015) outlined measures to service quality which are to improve library services, enhance the availability and accessibility of information sources, ensure that the library provides conducive environment for study and research, ensure support for high quality staff, and ensure that adequate resources are in place to meet the needs of users. It is their strategy to improve service quality in their institution. While it is right to admit that these strategies have potential of improving library services, it is not known how they actually impact library services and users' perceptions. However the participants in this study somehow indicated that indeed there was impact made by medical librarian services.

UBFOM users' (doctors and students) most important perceptions were that librarians were always willing to assist at any time. They strongly agreed that they receive timely and relevant information at their times of need. Brettle et al. (2016) explained that medical librarians have a critical role in health literacy programs and in providing support for their clients in their exploration of health related information, as well as improving health literacy of the health professionals. Students

emphasized that the librarians are experienced in what they do as they provides services that are dependable and accurate.

5.4 Identify challenges impacting the provision of library services to clients in the medical field.

This objective looked at the challenges impacting the provision of library services to clients in the medical field. Results reveal that there are a number of challenges affecting the provision of library services. The main challenges include inadequate resources, inadequate support for training and self-development, tight or inflexible time schedules and financial constraints, which in turn restrict in-service training of librarians, especially at the branch libraries. The other factors include insufficient technology modernization and loneliness of librarians who work at the branch libraries. Branch librarians do not have services of reprographics or training to grow them professionally, unlike at the main campus.

Inadequate resources and lack of trainings for self-development as stated by librarian at UBFOM as a challenge what discussed also by Fairlie et al. (2006). He mentioned the rapid growth of information which librarians need to keep up with. Murphy (2008) mentioned in his study that one of his respondents mentioned the library's role at present being more to do with the acquisition of materials to support evidence-based practice than with direct teaching of medical students.

The insufficient technology modernization to UBFOM medical librarians disadvantages them towards service delivery. Rapid growth in information technology and the growing population of students who lack access to relevant information and appropriate technological skills is a risk to the profession. Khan and Bhatti (2012) highlighted that due to changing scenario of information, librarians working in developing countries are facing common problems such as inadequate technical skills, advanced searching skills, inadequate trained and skilled manpower, use of digital sources of information, different library software, poor fiscal condition of libraries, inadequate infrastructure, inadequate trainings, low rates of information literacy and professional status. They recommended among others that librarians should acquire technical skills, IT skills, managerial skills and communication skills to work in a digital environment.

Rossell et al. (2008) showed that studies have shown that librarians who perform the role of medical librarians possessed little or no training in clinical librarianship, which is the case with the

UBFOM librarians, where librarians with degrees in library and information studies (LIS), records and archives management and other general disciplines have been employed to specialist services to physicians and students at the UBFOM.

ELF emphasizes disseminating new knowledge, actively seeking opportunities to foster interdisciplinary collaborations in the provision of research and information services across the university, but it is not the case with medical librarians in branch libraries. Shearer et al. (2002) mentioned that large hospitals in the US often turn to information brokers and not medical librarians, who are better suited and more familiar with a hospital's needs, for information required to meet quality-assurance objectives. This is the case at medical librarians at teaching hospitals as they mentioned that they are bored, reason being the staff of the hospital are not utilizing the services they provide. There are less engaged in service delivery because of limited resources also.

5.5 Summary

This chapter discussed the findings on the roles librarian play at the FOM. The discussions were structured such that they address the four research questions of the study. The first research question of the study was encored on identifying the type of services that librarians provide for clients at UBFOM. The discussions in this chapter indicates that in summary the medical librarians provide a variety of services including issuing and collecting books from users, circulation services, reference services, reprographics services and training/instruction on internet searching. Furthermore the findings revealed information retrieval, providing research and support services to their clients as critical types of services that librarians provide for clients at UBFOM. In line with SERVQUAL model these services somehow meet the minimum required services quality. The second research questions was aimed at determining training and qualifications librarians at UBFOM possess. Mixed thoughts were observed in the findings. The findings and discussions of the study indicates that the librarians are experienced but do not have qualifications as medical librarians. They need training on new emerging roles so that they play a vital role in the excellence of medical research as source that provides scientific resources and information. Their roles continue to evolve because of the information need in the current era. The librarians are more on traditional librarianship which makes their services limited. Another research question of the study was assessing users' perceptions of the library services at UBFOM in terms of service quality. In

summary the findings and discussions indicate that the doctors, residents and students at FOM are satisfied with the services they get as they get reliable and current information at all times. Most of them have access to library resources and also support teaching, research and learning from the librarians. The focus was more on users' perceptions and customer needs not the library systems on the organizational perceptions. The last of objective of the study was to identify challenges affecting the provision of library services to clients at UBFOM. In summary this chapter reveals that the challenges observed include inadequate resources, modern technological challenges, and inadequate support for training and self-development. The findings revealed tight or inflexible time schedules and financial constraints. Social aspects such as loneliness were also observed as challenges associated to the medical librarians at UBFORM.

CHAPTER 6: CONCLUSIONS, RECOMENDATIONS AND SUMMARY

6.0 Introduction

This chapter presents the conclusions and recommendations. Conclusions are based on the research questions, and the recommendations are given to address the findings noted in the study. Strategies for improvement of quality of service and service delivery to enhance the role the librarian in medical education at the FOM and areas of further research are suggested.

6.1 Conclusions

The primary objective of this study was to investigate the role of librarians in medical education at the UBFOM. This was prompted by the observed gap of lack of knowledge and research on the role of librarians in advancing medical education in the context of Botswana. To address its objectives the study was guided by a SERVQUAL theoretical model, with the aim of assessing the excellence and usefulness of library services, users' perceptions of the library services, training and skills, and identifying the challenges associated with such services at the UBFOM. The study measured not only the state and quality of services, but also the range of resources and competencies that its staff are able to deliver to users. To achieve its endeavor, the study adopted a mixed method approach through which both qualitative and quantitative information was collected through means of using questionnaires and interviews.

The findings in the study revealed a significant number of the types of services that librarians provide for clients at UBFOM. The study observed that issuing and collecting books from users, internet searching, information retrieval, and research and support services were the core services offered. It can therefore be concluded that the medical librarians at UBFOM provide relevant information to their clients hence confirming with SERVQUAL principle of providing satisfactory services beyond the expectation by clients. All the users indicated that they were aware of the services provided and they do make use of those services claiming that they receive quality resources at the right time as needed. However collaborative aspect was viewed as lacking behind with slightly less than half (44 at 45.8%) of the students who agreed or strongly agreed that there was collaboration in service delivery. Regarding users' perceptions of the library services at UBFOM in terms of service quality, the findings reveals positive responses. The findings revealed

that customers were of the view that librarians provide timely, accurate information, and that the services enhances information literacy and development of learning objects and resources. The users' perception was that they can use the resources to accomplish their planned activities, learning process and were able to benefit from the training they receive from librarians. Therefore the study concludes that in indeed the role of medical librarians at the UBFOM is to understand and satisfy the needs of the users. This can be achieved by providing relevant information at the right time, updated and available to customers. Such a process should allow customers to solve problems and make decisions, formulate considered and reasoned ethical judgment for responsible use of information resources. The conclusions in this study concur with Shearer et al. (2002) who mentioned that medical librarians should be able to assist physicians, health professionals, students, patients, consumers and medical researchers in finding health and scientific information to improve, update, assess or evaluate health care information. They should be abreast with ICT skills as they are required to train users on databases, research and trainings.

The findings in the study revealed that despite that the librarians had qualifications in librarianship, the librarians did not have any degrees related to medicine. The librarians need proper training especially in the field of medicine to fully support the faculty. Libraries are valued at the service they provide not the collection they have, so it is important to have adequate information resources and be proactive in promoting their role as expert searchers. Despite positive findings on types of services provided by medical librarians, users' perception on services and training and skills, a significant number of challenges was observed. The study observed limitations in terms of lack of sufficient technology modernization, limited finances, lack of skills, and inadequate resources. In order to improve on the challenges observed in the study the next section provides recommendations for improvement.

6.2 Recommendations

Based on the findings from this study, the researcher came up with the following recommendations:

- The study found that librarians lack sufficient technology modernization, as they still do traditional technology therefore the researcher recommends that librarians go to trainings to keep them abreast with new technologies (web pages, blogs, and web 2.0), attend conferences and benchmark with other medical libraries.
- To enhance the medical education literature and contribute to the reproducibility of studies, librarians should be advocating with stakeholders for advancing sustainable models of research, teaching, and learning. This could be achieved through marketing resources during meetings with stakeholders, increasing partnerships in research, and establishing staff and students exchange programs. They should work on gaining more experience by benchmarking with other medical schools, joining associations and furthering studies.
- The study found that librarians at the branches deal with inadequate resources such as computers, Wi-Fi and furniture, and tight time schedules or inflexible working hours. Therefore the researcher recommends that there should be clear collection policies to address issues of limited resources, also the policy should stipulate more e-resources over print for cost effectiveness.
- Concurring with ELF the researcher recommends that the core competencies for librarians is to work with faculty members to enhance their ability to share their research broadly and effectively by addressing a range of issues, including changes in publishing, funder requirements for sharing research, open access models for disseminating new knowledge, digital publishing, and exercising author rights to broaden sharing of research.

6.3 Recommendations for further research

- Future research should be done to examine the role of the librarian as an expert searcher and collaborator in other research areas.
- The same study can also be conducted in other medical libraries across the country, using the same model and research methodology in order to find out if the results would be same with those of UBFOM.
- The same study can also be conducted using a different theoretical model to find if it would yield similar results or not. In other words, this would enable the researcher to find out if the theoretical model has any influence on the findings of the study.

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APPENDICES

APPENDIX 1: Interview Guide for Librarians

Research questions

1. What type of services do librarians provide for clients at the UBFOM?

Librarians questions

- a) What type of information/services do librarians provide for physicians and students at UBFOM?
- b) How do you do the collection development and management of UBFOM books?
- c) List activities or engagements that you do to reach out to faculty or community at UBFOM
- d) For the users doing research how best do you assist them?
- e) Are you a member of any association/ journal club for your faculty and what is it that you do to assist them?
- f) Do faculty engage you in the school curriculum and support you in service delivery?
- g) Are you able to locate, evaluate, synthesize, and deliver authoritative information in response to users need?
- h) How do you manage information in your respectful faculty?
- i) How do you evaluate research studies, use research to improve practice, conduct research, and communicate research results (Evidence Based Practice)?

2. What type of training and qualifications do UB librarians serving at UBFOM possess?
- j) How do you market your library to your clients?
 - a) What qualifications and experience do librarians in UBFOM have?
 - b) In your opinion, what can be done to improve the quality of medical library services at UBFOM?
 - c) What would you suggest or recommend to promote professional development of medical librarians in Botswana?
 - d) What gap in your field do you think need to be upgraded to be considered a medical librarian?
 - e) What requisite skills you possess as a librarian working at UBFOM?
 - f) Which health information professions do you collaborate with for professional growth?
3. What are challenges impacting the provision of library services to clients in the medical field?
- a) Are there any challenges or barriers impacting provision, dissemination or/and use of information at UBFOM?
 - b) How do these challenges affect your role as a librarian?
 - c) What support are you given by the institution in regard to professional development and the competences you wish to improve on?

- d) Do you have a good relationship with your faculty? If not what do think should be done?
- e) Do you think time, budget, facilities, and technology meet institutional goals?

APPENDIX 1.1- Setswana Interview guide

Dipotso tsa research

Dipotso tsa badiri ba motlobo wa dibuka

1. Ke dife Dithuso tse le di neelwang badirisi ba motlobo wa dibuka ba sekolo sa bongaka sa University ya Botswana

a) Di dife dithuso tse babereki ba motlobo wa dibuka ba di neelang dingaka le baithuto ba sekolo sa bongaka?

b) Lo dira jang fa lo tlahabolola motlhobo wa dibuka le gore le tlhokomelang jang dibuka tse di rekilweng?

c) Nankola dithamelo kgotsa dithuso tse le di neelang ba lephata la bongaka mo University ka kakaretso.

d) Baithuti baba dirang ditshekatsheko tsa dikitso o ba thusa jang o le mmereki wa motlobo ya dibuka?

e) A o leloko la mokgatlho mongwe wa lephata la gago? Fa go ntse jalo o ba thusa jang le ka eng?

f) A ba lophata ka bophara ba go tsenya mo go tsa thuto o le lephata la motlobo wa dibuka?

g) A o kgona go thusa bana ba bongaka ka dikitsiso tse di tla ba sologelang mosola mo dithutong tsa bone ka go

bona kitso mo maranyaneng le mo dibukeng?

- h) O dira jang ka kitso e e mo motlobong wa dibuka ya lephata la gago?
- i) O dira jang ka tsa ditshekatsheko tse di dirilweng gore o bone tota gore di siame gore di tokafatse boitsaanape mo dingakeng?

O dira jang gore ba lephata la gago ba dirise motlobo wa dibuka ka dinako tsotlhe?

2. Di dife dikitso kgotsa dithutego tse babereki ba motlobo wa dibuka ba lephata la sekolo sa bongaka ba nang le tsone?

- a) Ke dife dithuto tsa badiri ba motlobo wa dibuka ba sekolo sa bongaka sa University ya Botswana ba nang le tsone?
- b) Ka kakanyo ya goga, o ne o bona go ka dirwa jang go tokafatsa dithuso mo sekolong sa bongaka ke ba motlhobo wa dibuka?
- c) O bona go ka dirwa dithuto dife go tlhabolola ba motlobo wa dibuka mo Botswana?
- d) O bona ba motlobo wa dibuka mo lephateng la botsogo ba tlhela go le kae go nna mo seeming se se siameng go ka thusa ga maemo?

- e) Dikitso tse o nang le tsone jaaka o bereka mo sekolong sa botsogo mo University ke dife?
- f) O mo bokopanong bofe le baitsaanape jaaka wena ba dikitso tsa botsogo?
3. Ke afe mathata a le kopang le one fa le thusa bana ba ba ithutelang bongaka?
- a) A go nale dikgoreledi dingwe tse di dirang gore o seka wa kgona go dira tiro sentle le ba botsogo
- b) Dikgwetlo tseo di go amajang o le Modiri wa motlobo wa dibuka?
- c) Fa o berekang teng ba go thusa jang go kgona dikgwetlo tseo, gape ba go thusa jang ka go ikoketsa dithuto le bokgoni?
- d) A o dirisaya sentle le ba lephata la gago? Fa go sa nna jalo o akanya go ka dirwa jang go thusiwa?
- e) A o akanya gore nako, didirisiwa le boranyane bo fitlhelela maikaelelo a University?

APPENDIX 2: QUESTIONNAIRE - Librarians

Dear participant,

Thank you for your time and willingness to participate in this study. The study aims to investigate **the Role of Librarians in Medical Education at University of Botswana Faculty of Medicine (UBFOM)**. Please answer all the questions as honestly as possible. The questionnaire is completed anonymously, thereby providing **full confidentiality**.

SECTION A: DEMOGRAPHIC ITEMS

Instruction: Please tick \checkmark in the relevant box and supply details where applicable

1. Gender

Male

Female

2. Department

3. Number of Years at UB Library

1-5years

5-10years

11-15years

16-20years

Above 20years

4. How many departments do you serve

1-2

3-4

4-6

State
them.....

5. What are your qualifications

Diploma in Library/ Archives

Degree in Library/ Archives

Masters in Library/Archive

Other qualifications,
specify.....

**6. Which campus are you working
in?**

Gaborone, Main campus

Maun

Lobatse

Mahalapye

Marina

N.B: For the below questions, indicate how you feel about each question. Tick the appropriate boxes i.e. Strongly agree (SA) , Disagree (D) etc.

7. Engagement Section-the liaison role with academic programs.

Keys: Strongly Disagree –SD, Disagree – D, Not Sure – NS, Agree – A, Strongly agree - SA

Items	SD	D	NS	A	SA
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- a) Communicating effectively with members of the assigned departments, individually or in groups, in both face-to-face and virtual venues

b) Developing partnerships when appropriate between the library and the assigned area on teaching and learning issues, grants or research projects, or other areas of mutual interest

c) Creating new programs and services (or improving existing programs and services) that respond to identified needs and priorities of students and faculty and to strategic directions of the Library

d) Facilitating problem-solving for the assigned programs in relation to library services

e) Championing the library as an intellectual meeting place for programming, conversation, and inquiry

8. Research services and scholarly communication

Keys: Strongly Disagree –SD, Disagree – D, Not Sure – NS, Agree – A, Strongly agree - SA

Items	SA	A	NS	D	SD
a) Analyzing and understanding users' research and information needs to develop, refine, assess, and sustain research and information services and programs in all formats					
b) Actively seeking opportunities to foster interdisciplinary collaborations in the provision of research and information services across the campus					
c) Providing research consultations that involve subject or other in-depth specialized areas of expertise					
d) Providing on-demand research and information support in multiple formats					

e) Continuously evaluating and assessing research and information-related services

f) Describes evidence-based practice; formulates questions; develops search strategies; locates relevant, credible, and transferable published evidence.

g) Work with members of the university community to enhance their ability to share their research broadly and effectively by addressing a range of issues, including changes in publishing, funder requirements for sharing research, open access models for disseminating new knowledge, digital publishing, and exercising author rights to broaden sharing of research

h) Any additional research service, add and explain.....
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9. The roles and competences that librarians at UBFOM have

Keys: Strongly Disagree –SD, Disagree – D, Not Sure – NS, Agree – A, Strongly agree - SA

Items	SA	A	NS	D	SD
a) Teaching health professionals how to access and evaluate information;					
b) Helping patients and consumers find authoritative health information					
c) Attending morning rounds with the health care team;					
d) Bringing the latest diagnostic and treatment information to the patient's bedside					

e) Connecting electronic resources and decision tools into a patient's electronic medical record;

f) Conducting community outreach programs on topics such as health information literacy

g) Designing and managing health information websites, Internet blogs, and digital libraries

h) Serving on patient safety and quality control committees in hospital;

i) Please explain your answers

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10. Professional development

Keys: Strongly Disagree –SD, Disagree – D, Not Sure – NS, Agree – A, Strongly agree - SA

Professional development	SD	D	NS	A	SD
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a) Register for online webinars and courses

b) Join other colleagues for innovative and practical continuing education (CE) courses.

c) Bringing the latest diagnostic and treatment information to the patient's bedside

d) Connecting electronic resources and decision tools into a patient's electronic medical record

e) Serving on patient safety and quality control committees in their hospitals;

f) Contributing to the development of new treatments, products and services as members of university and pharmaceutical research teams

g) Explain if your answer fall under SD, D, Not sure

11. What roles and services do you offer to your clients at the appointed office?

12. Share an experience in which you used new training skills, ideas, or a method to adapt to a new situation or improve an ongoing one.

13. Describe an experience in which you identified the educational needs of your students and successfully developed a way to teach/train them.

14. What kind of challenges do you face in service delivery to your clients?

15. Tell me about the professional development activities you have engaged in.

16. How do you manage resources and increase the value of collections for users' research, teaching, and learning (collection development)?

17. How do you negotiate with teaching faculty on timing, purpose, and learning outcomes for information literacy instruction?

Thank you

APPENDIX 2.1- Setswana translation

Potsosiso – Babereki ba motlobo wa dibuka

Go motsaya karolo,

Ke lebogela nako ya gago ya go araba dipotso tse di latelang. Ke dira tshekatsheko ya dikitso tse badiri ba motlobo wa dibuka ba di neelang ba bongaka mo UBFOM. Ka tsweetswee araba dipotso tsotlhe ka tshosologe. Potsolotso e tsile go nna sephiri , ga gona yo o tsileng go itse ka seabe sa ga go.

KAROLA YA NTLHA: DEMOGRAPHIC ITEMS

Molao: Tshwaya \sqrt mo lebokising le le maleba

1. Bong Rre

Mme

2. Lephata

3. Palo ya dingwaga o bereka mo 1-5years

UB Library 5-10years

11-15years

16-20years

Above 20years

4. O thusa maphata a le kae a 1-2

UBFOM

3-4

4-6

A

nankole.....

5. Dithutego tsa gago

Diploma in Library/ Archives

Degree in Library/ Archives

Masters in Library/Archive

Other qualifications, specify.....

6. O berekela kae?

Gaborone, Main campus

Maun

Lobatse

Mahalapye

Marina

Tse di latelang kwala maikutlo a gago ka potso e e boditsweng. Tshwaya ka fa tlase fa mafoko a a latelang a: Strongly agree (SA) , Disagree (D) jalo jalo.

7. Tirisanyo ya gago le ba lephata .

Keys: Strongly Disagree –SD, Disagree – D, Not Sure – NS, Agree – A, Strongly agree - SA

Dintlha

SD D NS A S
A

a) Ke dirisana sentle le ba lephata lame ka nako tsotlhe, ba le mokawana kgotsa ka bonosi ba bone.

b) Ke dira gore go nne le tirisanyo magareng ga motlobo wa dibuka le lephata ka tsa dithuto le di ditiro tse ba di dirang

c) Ke tswa ka mananeo le ditlhamelo tsa go tokafatsa dithuso tse di kgotsofatsang badirise ba motlobo wa dibuka

d) Ke rarabolola bothata jo badirise ba motlobo wa dibuka ba kopang le bone mo dithusong le dithamelolo tsa motlobo wa dibuka.

e) Ke etelela tiriso ya motlobo wa dibuka mo lephateng lame fa go nale bokopano, dipuisano jalo jalo

8. Tirelo ya dipatlisiso

Keys: Strongly Disagree –SD, Disagree – D, Not Sure – NS, Agree – A, Strongly agree - SA

Dintlha

SA A NS D SD

a) Ke sekaseka le go tthaloganyana botlhoko jwa diphatlisiso mo baithuting, mefuta ya dikitso tse re nang natso go fitlhelela botlhoki jwa badirisi ba dibuka.

b) Ke leka ka thata go batla dirisanyo le baitsaanape ba bangwe mo go tsa dipatlisiso go thusa ba lephata mo Mmadikolo.

c) Ke kopana le bone baitsaanape ka dithutego ka go farologana mo go tseneletseng go godisa dipatlisiso mo lephateng

d) Ke thusa ka go ba neela thuso e e batliwang thata ka dikitso le dithuto tse di tshegetsang boitsaanape ka bophara

e) Ke tshwelela ka go seka seka le go tthatlhoba dikitso tse ba loiphata ba di dirileng ke lebile le kitso e neng ba e dirisa go tswa mo motlobong wa dibuka

f) Ke thusa ka go reka dibuka tse badirisiwa ba di tlhoka
g) ng mo motlobong wa dibuka ka mefuta e e farologaneng

h) Ke neela badirise ba motlobo dithuso tsotlhe tse ba dibatlang le dikitso ka go farologana

h) E nngwe thuso e ke e ba neelang ka ditshekatsheko tsa bone.....
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9. Seabe le bokgone jwa babereki ba motlobo wa dibuka mo UBSOM

Keys: Strongly Disagree –SD, Disagree – D, Not Sure – NS, Agree – A, Strongly agree - SA

Dintlha

SA A NS D SD

a) Go ruta baitsaanape jwa bongaka go batla le go sekaseka dikitso tse ba di dirisang mo motlobong wa dibuka.

b) Go thusa badirisi ba dikitso le balwetse kgotsa ba ba amegang go batla thuso e e tlhomameng

c) Ke tsenelela bokopano jwa mo mosong le ba bongaka mo sepatela.

d) Thusa ka go neela balwetse dikitsiso le dithuso mo sepatela ba ba robaditsweng

e) Ke thusa ka tsa boranyane mo ditshwetsong tsa balweste le ditirisong tsa bongaka .

f) Ke thusa morafeng ka dikitso ba bongaka le boranyane mo dikitsong ka segompieno

g) Ke asimolola le go laola diriso ka tsa boranyane mo motlobong wa dibuka go laola tiriso ya dikitso tsa maranyane

h) Ke thuso mo sepatela ka tsa itlhokomelo le tsofarelo ya ditlhamelo mo sepatela

i) Tlhalosa ka botlalo dikarabo tse di fa
godimo.....
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10. Tsa ikgodiso mo tirong.

Keys: Strongly Disagree –SD, Disagree – D, Not Sure – NS, Agree – A, Strongly agree - SA

Itlhathosa dithuto

SD D NS A SD

- a) Ke a ikwadisa dithuto mo boranyaneng go ikoketsa
- b) Ke kopana le badire ka nna go ikgodisa mo go tsa dithuto le go godisana ka tiro e ya motlobo wa dibuka

- c) Ke thusa ka go tla ka ditlhamelo tsa sesha tsa tlathoba le kitso tsa balwetse mo sepatela

- d) Ke ikoketsa dithuto go re ke kgone ke thuse badirise ba motlobo sentle

- e) Ke dirile dithuto tse di thusang kgona tse di amanang le se ke se rutang badirise ba motlhobo wa dibuka.

- f) Bahiri bame ba nthusa ka go ikoketsa dithuto gore ke thusa badirise ba motlobo mo go feletseng

g) Tlhalosa ka boripana dikarabo tsa gago fa godimo

11. Ke dife dithuso tse o di neelang badirise ba gago ba motlobo ya dibuka?

12. Senola boitsaanape bongwe jo o kileng wa bo dirisa go tsoletsa kitso ya gago le go baaakanya seemo mo tirong.

13. Tlhalosa ka fa e reng o bona letlhoko mo baithuting o bo o baakanya.

14. Mathata a o kopanang nao fa o thusa baithuti kgotsa dingaka tsa lephata la gago ke afe?

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15. Tlhalosa ka go ikoketsa dithuto mo o go dirileng kgotsa o go dira.

16. O dira jang go oketsa ditlhamelo tsa baithuti ba gago?

17. O dira jang go kopana le ba lephata la gago go ipapatsa ka dithuso tse o di neelang badirisi ba motlobo wa dibuka?

Ke a leboga

APPENDIX 3: QUESTIONNAIRE (Students)

Dear participant,

Thank you for your time and willingness to participate in this study. The study aims to investigate **the Role of Librarians in Medical Education at University of Botswana Faculty of Medicine (UBFOM)**. Please answer all the questions as honestly as possible. The questionnaire is completed anonymously, thereby providing **full confidentiality**.

SECTION A: DEMOGRAPHIC ITEMS

Instruction: Please tick \checkmark in the relevant box and supply details where applicable

1. Gender Male

Female

2. Department

3. Year of Study

4. Do you have account with the Yes

library No

5. How often do you visit the Daily

library 2-3 times in a week

Weekly

Monthly

Other specify.....

- 6. What to do use the library for?**
- Reading
 - Borrowing books
 - Searching the catalog
 - Internet
 - Research services
 - Reading magazines and newspapers

Others, specify? -----

- 7. Are library resources adequate?**
- Adequate
 - Inadequate
 - Indifferent

Please explain your answer.....

.....

.....

.....

N.B: For the below questions, indicate how you feel about each question. Tick the appropriate box i.e. Strongly agree (SA) Disagree (D) etc.

SECTION B:

1. Type of services/ roles that librarians provide for clients at UBFOM

Keys: Strongly Disagree –SD, Disagree – D, Not Sure – NS, Agree – A, Strongly agree - SA

Items	SD	D	NS	A	SA
a) I receive timely and right information from librarians					
b) Librarians provide timely and accurate information for reference questions					
c) I receive usual health information resources from the library					
d) Librarians enhance information literacy instructions and development of learning objects and resources to enrich teaching, research and support					
e) I can use the resources to accomplish my planned activities					
f) I am able to deliver through the training I have with librarians					
g) My benefit from the training can easily make changes to myself and those around me.					
h) I collaborate with librarians in developing instructional content					
i) I recognise the library as a teaching partner.					
j) I formulate considered and reasoned ethical judgment for responsible use of information					
k) I effectively and responsibly use information for problem solving and decision making					
l) I work effectively with colleagues in the Libraries to enhance acquisition, access, discovery, and use of library collections					

Section D:

2. Users Perceptions of Information Provided at UBFOM

Keys: Strongly Disagree –SD, Disagree – D, Not Sure – NS, Agree – A, Strongly agree - SA

Items	SA	A	NS	D	SD
a) The training I get from the librarians is relevant.					
b) The information I received meets my needs.					
c) The services they provide at the library are the best					
d) The librarians are qualified/ experienced in what they do.					
e) I am able to apply what I am taught by librarians in looking for information					
f) I am able to get help anytime I need assistance from the librarians					
g) I recognise librarians, services and collection libraries provide as a resource for lifelong learning					
h) The librarians are engaged in a deep level of sustained, high quality , mutual beneficial interaction in the liaison role with academic programs					
i) They are always willing to assist at any time I need assistance (responsiveness)					
j) The librarians are able to provide the promised services or resources needed by users dependably and accurately in a way that could satisfy the expectations of library users					
k) How are the existence of physical and functional facilities, equipment experiences/knowledgeable personnel and communication materials promoting effective services in the library? Explain----- -----					

l) Any suggestions on improving service delivery by Librarians?.....
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APPENDIX 3.1: Dipotso ta badirise ba motlobo wa dibuka

Go motsayakarolo,

Ke lebogela nako ya gago ya go araba dipotso tse di latelang. Ke dira tshekatsheko ya dikitso tse badiri ba motlobo wa dibuka ba di neelang ba bongaka mo UBFOM. Ka tsweetswee araba dipotso tsotlhe ka tshosologe. Potsolotso e tsile go nna sephiri, ga gona yo o tsileng go itse ka seabe sag ago.

KAROLO YA NTLHA: Tsa bong

Molao: Tshwaya ✓ fa go tshwanetseng mo go tse di latelang

1. Bong Rre

Mme

2. Lephata

3. O dira ngwaga wa bokae?

5. A o leloko la motlobo wa Ee

dibuka Nnyaa

6. O ya motlobong wa diboka ga Tsatsi le letsati

kae 2-3 mo bekeng

Ka beke

Ka kgwedi

Kwalo fa se sele.....

7. O dirisa motlobowa dibuka go dira eng?

Go bala

Go adima dibuka

Go senka mo catalog

Tsa boranyane

Tsa dipatlisiso

Go bala dimpampiri tsa dikgang

Tse dingwe? -----

8. A mme didirisiwa mo motlobong wa dibuka di lekanetse?

Di lekane

Ga di a lekana

Ga di a siama

Tlhalosa

karabo.....

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N.B: Supa ka go tshwaya go supa gore o dumela / kgotsa ga o dumele i.e. Strongly agree (SA) , Disagree (D) etc.

SECTION B:

1. Mefuta ya dithuso tse o di neelwang ke babereki wa motlobo wa dibuka

Keys: Strongly Disagree –SD, Disagree – D, Not Sure – NS, Agree – A, Strongly agree - SA

Dintlha

SD D NS A SA

- a) Ke neelwa kitso e e feletseng ke babereki ba motlobo
-
- b) Ba neele kitso ka nako ebile thuso e le ya maemo a ntlha.
-
- c) Kitso e ntsi ya bongaka e teng mo motlobong wa dibuka
-
- d) Babereki ba motlobo wa dibuka ba ruthuntsha ka ditiriso le dithuso tse re do tlhokang mo tirong go tshegetsa tsa thuto ya rona
-
- e) Ke gona go di dirisa dithuso tsa bone go dira tiro yame
-
- f) Ke kgona go dirisa mo ke go ithutileng go tswa mo go babereki ba motlobo.
-
- g) Se ke se ithutileng mo bokopanong le ba motlobo, ke a go se dirisa go fetola thuto yame mo sekolong
-
- h) Ke dirisanya le ba motlobo go tllhabolola dithuto tsa bonyaka
-
- i) Ke leboga ba motlobo wa dibuka e le ba ke tshwanetseng go nna ke kopa thuso go fetsa dithuto tsa me
-
- j) Ke kgona go ikemela le go sekaseka boleng ba kang fa kenale diputso ka thuto e ke eithutileng
-
- k) Ke kgona go dirisa thuso e ke e rutilweng go tsay ditshwetso tse di maleba go agisanya
-
- l) Ke bereka sentle le bakaulengwe bame ba motlobo wa dibuka fa ba reka dibuka,go dirisa ditlhamelo le go di dirisa
-

Section D:

2. Dikakakanyo tsa badirisisi ba motlobo wa dibuka mo UBSOM

Keys: Strongly Disagree –SD, Disagree – D, Not Sure – NS, Agree – A, Strongly agree - SA

Dintlha	SA	A	NS	D	SD
a) Thuthuntsho e ke e bonang mo babereki ba motlobo e nale boleng mo go nna					
b) Thuthuntsho e ke e neelwang e kgotsafatsa botlhoki jwa me					
c) Dithuso tse ba di re neelang ke tsone tota					
d) Babereki ba bamotlobo wa dibuka ba itse se ba buang ka sone					
e) Ke kgona go bona thusa fa ke dirisa se ba se nthutileng					
f) Ke kgona go bona thuso nako nngwe le nngwe e ke batlang thuso mo go bone.					
g) Ke ithemogela gore thuto yotlhe e ke e neelwang le didirisiwa tsotlhe tsa thuso di ka nthusa ka lobaka tota.					
h) Babereki ba ba motlobo ba tseneletse tota mo go re thuseng gore re ye kgakala tsa dithuto					
i) Mmereki wa motlobo wa dibuka o tsibogelang dithuso tsa baithuti mo nakong e khutshwane.					
j) Babereki ba motlhobo wa dibuka ba nale bokgone, boikarabelo , bo ammaaruri le tlhomamo mo go le thuseng ka ditirelo tsa bone					
k) Go nna teng ga dikago, babereki le didirisiwa tsa motlobo wa dibuka di thusa jang go tsholetsa dithuso le ditirelo tsa bone?Tlhalosa----- -----					

1) Dikgakolole tse lo ka di neelang babereki ba motlobo wa dibuka?.....

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APPENDIX 4: QUESTIONNAIRE (Doctors)

Dear participant,

Thank you for your time and willingness to participate in this study. The study aims to investigate **the Role of Librarians in Medical Education at University of Botswana Faculty of Medicine (UBSOM)**. Please answer all the questions as honestly as possible. The questionnaire is completed anonymously, thereby providing **full confidentiality**.

SECTION A: DEMOGRAPHIC ITEMS

Instruction: Please tick \checkmark in the relevant box and supply details where applicable

1. Gender Male

Female

2. Department

3. Number of years in profession

4. What is your highest qualification

4. Do you have account with the Yes

library No

5. How often do you visit the Daily

library 2-3 times in a week

Weekly

Monthly

Other specify.....

6. What to do use the library for?

Reading

Borrowing books

Searching the catalog

Internet

Research services

Reading magazines and newspapers

Others, specify? -----

7. Are library resources adequate?

Adequate

Inadequate

Indifferent

Please explain your answer.....

.....

.....

.....

N.B: For the below questions, indicate how you feel about each question. Tick the appropriate box i.e. Strongly agree (SA) Disagree (D) etc.

SECTION B:

3. Type of services/ roles that librarians provide for clients at UBSOM

Keys: Strongly Disagree –SD, Disagree – D, Not Sure – NS, Agree – A, Strongly agree - SA

Items	SD	D	NS	A	SA
a) I receive timely and right information from librarians					
b) Librarians provide timely and accurate information for reference questions					
c) I receive usual health information resources from the library					
d) 4. Librarians enhance information literacy instructions and development of learning objects and resources to enrich teaching, research and support					
e) 5. I can use the resources to accomplish my planned activities					
f) 6. I am able to deliver through the training I have with librarians					
g) 7. My benefit from the training can easily make changes to myself and those around me.					
h) 8. I collaborate with librarians in developing instructional content					
i) 9. I recognise the library as a teaching partner.					
j) 10. I formulate considered and reasoned ethical judgment for responsible use of information					
k) 11. I effectively and responsibly use information for problem solving and decision making					

-
- l) 12. I work effectively with colleagues in the Libraries to enhance acquisition, access, discovery, and use of library collections
-

Section D:

4. Users Perceptions of Information Provided at UBSOM

Keys: Strongly Disagree –SD, Disagree – D, Not Sure – NS, Agree – A, Strongly agree - SA

Items	SA	A	NS	D	SD
a) The training I get from the librarians is relevant.					
b) The information I received meets my needs.					
c) 3. The services they provide at the library are the best					
d) 4. The librarians are qualified/ experienced in what they do.					
e) 5. I am able to apply what I am taught by librarians in looking for information					
f) 6. I am able to get help anytime I need assistance from the librarians					
g) 7. I recognise librarians, services and collection libraries provide as a resource for lifelong learning					
h) 8. The librarians are engaged in a deep level of sustained, high quality , mutual beneficial interaction in the liaison role with academic programs					
i) 9. They are always willing to assist at any time I need assistance (responsiveness)					
j) 10. The librarians are able to provide the promised services or resources needed by users dependably and accurately in a way that could satisfy the expectations of library users					

k) How are the existence of physical and functional facilities, equipment experiences/knowledgeable personnel and communication materials promoting effective services in the library? Explain-----

l) Any suggestions on improving service delivery by Librarians?.....

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APPENDIX 4.1: Dipotso ta badirise ba motlobo wa dibuka

Go motsayakarolo,

Ke lebogela nako ya gago ya go araba dipotso tse di latelang. Ke dira tshekatsheko ya dikitso tse badiri ba motlobo wa dibuka ba di neelang ba bongaka mo UBSOM. Ka tsweetswee araba dipotso tsotlhe ka tshosologe. Potsolotso e tsile go nna sephiri, ga gona yo o tsileng go itse ka seabe sag ago.

KAROLO YA NTLHA: Tsa bong

Molao: Tshwaya ✓ fa go tshwanetseng mo go tse di latelang

1. Bong Rre

Mme

2. Lephata

3. O nale ngwaga tse kae o ntse o le ngaka?

4. O nale dithutego dife?

5. A o leloko ya motlobo wa Ee

dibuka Nnyaa

6. O ya motlobong wa diboka ga Tsatsi le letsati

kae 2-3 mo bekeng

Ka beke

Ka kgwedi

Kwalo fa se sele.....

7. O dirisa motlobowa dibuka go dira eng?

Go bala

Go adima dibuka

Go senka mo catalog

Tsa boranyane

Tsa dipatlisiso

Go bala dimpampiri tsa dikgang

Tse dingwe? -----

8. A mme didirisiwa mo motlobong wa dibuka o lekanetse?

Di lekane

Ga di a lekana

Ga di a siama

Tlhalosa

karabo.....

.....

.....

.....

N.B: Supa ka go tshwaya go supa gore o dumela / kgotsa ga o dumele i.e. Strongly agree (SA), Disagree (D) etc.

SECTION B:

3. Mefuta ya dithuso tse o di neelwang ke babereki wa motlobo wa dibuka

Keys: Strongly Disagree –SD, Disagree – D, Not Sure – NS, Agree – A, Strongly agree - SA

Dintlha

SD D NS A SA

- a) Ke neelwa kitso e e feletseng ke babereki wa dibuka
-
- b) Ba neele kitso ka nako ebile thuso e le ya maemo a ntlha.
-
- c) Kitso e ntsi ya bongaka e teng mo motlobong wa dibuka
-
- d) Babereki ba motlobo wa dibuka ba ruthuntsha ka ditiriso le dithuso tse ne nang tsone mo tirong go tshegetsatsa thuto ya rona
-
- e) Ke gona go di dirisa dithuso tsa bone go dira tiro yame
-
- f) Ke kgona go dirisa mo ke go ithutileng go tswa mo go babereki ba motlobo.
-
- g) Se ke se ithutileng mo bokopanong le ba motlobo, ke a go dirisa go fetola thuto yame mo sekolong
-
- h) Ke dirisanya le ba motlobo go tlabolola dithuto tsa bonyaka
-
- i) Ke leboga ba motlobo wa dibuka e le ba ke tshwanetseng go nna ke kopa thuso go fetsa dithuto tsa me
-
- j) Ke kgona go ikemela le go sekaseka boleng ba kang fa kenale diputso ka thuto e ke eithutileng
-
- k) Ke kgona go dirisa thuso e ke e rutilweng go tsay ditshwetso tse di maleba go agisanya
-
- l) Ke bereka sentle le bakaulengwe bame ba motlobo wa dibuka fa ba reka dibuka, go dirisa ditlhamelo le go di dirisa
-

Section D:

4. Dikakanyo tsa badirisisi ba motlobo wa dibuka mo UBFOM

Keys: Strongly Disagree –SD, Disagree – D, Not Sure – NS, Agree – A, Strongly agree - SA

Dintlha	SA	A	NS	D	SD
a) Thuthuntsho e ke e bonang mo babereki ba motlobo e nale boleng mo go nna					
b) Thuthuntsho e ke e neelwang e kgotsafatsa botlhoki jwa me					
<hr/>					
Dithuso tse ba di re neelang ke tsone tota					
<hr/>					
c) Babereki ba bamotlobo wa dibuka ba itse se ba buang ka sone					
<hr/>					
d) Ke kgona go bona thusa fa ke dirisa se ba se nthutileng					
<hr/>					
e) Ke kgona go bona thuso nako nngwe le nngwe e ke batlang thuso mo go bone.					
<hr/>					
f) Ke ithemogela gore thuto yotlhe e ke e neelwang le didirisiwa tsotlhe tsa thuso di ka nthusa ka lobaka tota.					
<hr/>					
g) Babereki ba ba motlobo ba tseneletse tota mo go re thuseng gore re ye kgakala tsa dithuto					
<hr/>					
h) Mmereki wa motlobo wa dibuka o tsibogelang dithuso tsa baithuti mo nakong e khutshwane.					
<hr/>					
i) Babereki ba motlhobo wa dibuka ba nale bokgone, boikarabelo , bo ammaaruri le tlhomamo mo go le thuseng ka ditirelo tsa bone					
<hr/>					

j) Go nna teng ga dikago, babereki le didirisiwa tsa motlobo wa dibuka di thusa jang go tsholetsa dithuso le ditirelo tsa bone?Tlhalosa-----

k) Dikgakolole tse lo ka di neelang babereki ba motlobo wa dibuka?.....

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APPENDIX 5: LETTER REQUESTING PERMISSION TO UNDERTAKE RESEARCH

Department of Library and Information Studies
University of Botswana
P/Bag 0022
Gaborone

12 March 2018

The Director
University of Botswana School of Medicine
P/ Bag 0022
Gaborone

Dear Sir/Madam

Re: Request for permission to undertake research

My name is Stella Kube, an employee and student of the University of Botswana. As part of my Master's Degree programme, I am undertaking required research and my topic is "The Role of librarians at the University of Botswana Faculty of Medicine".

I therefore write to request permission to carry out the research in the University of Botswana between March and May 2018

Your assistance in this regard would be greatly appreciated.

Yours sincerely

Stella Kube (Ms.)

APPENDIX 6: INFORMED CONSENT FORM

PROJECT TITLE: The roles of librarians at University of Botswana Faculty of Medicine (UBFOM)

Stella Kube- Librarian for Medicine

Phone number(s): 3555642/ 71280248

What you should know about this research study:

- We give you this informed consent document so that you may read about the purpose, risks, and benefits of this research study.
- You have the right to refuse to take part, or agree to take part now and change your mind later.
- Please review this consent form carefully. Ask any questions before you make a decision.
- Your participation is voluntary.

PURPOSE

You are being asked to participate in a research study of the roles Librarians play at UBFOM. The purpose of the study is to contribute to the local literature on the role of librarians in advancing medical education in Botswana. You were selected as a possible participant in this study because of the valuable contribution you can make in terms of highlighting your views on librarian impact on learning, services and resources provided. You may also explain whether the library is offering appropriate training on how to use e-resources to improve patient care. Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

PROCEDURES AND DURATION

If you decide to participate, you will be invited to complete the attached questionnaire.

RISKS AND DISCOMFORTS

The primary concern of the researcher is the safety of the research participant. Protecting subject safety by investing all available information to identify potential risks to the subject, to minimizing those risks, and to continually monitor the ongoing research for adverse events experienced by subjects. The researcher is prepared to stop the study if serious unanticipated risks manifest. There are no known risk with the study.

BENEFITS AND/OR COMPENSATION

While participation in this study is voluntary, wide participation is essential for the validity of the results and the success of the study. There will be no benefits or compensation that will be given.

CONFIDENTIALITY

The data from this investigation will be highly confidentiality and anonymity are guaranteed as questionnaires are not signed. Information collected will be compiled into a report which may be used by the medical staff, librarians and students in the future. A copy of this report will be available upon request. None of these will be used for commercial use.

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. If you decide not to participate in this study, your decision will not affect your future relations with the University of Botswana, its personnel, and associated institutions. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty. Any refusal to observe and meet appointments agreed upon with the central investigator will be considered as implicit withdrawal and therefore will terminate the subject's participation in the investigation without his/her prior request. In this event the subject will be paid what if owed to him/her or forfeit a proportionate amount of relative payment mentioned earlier in this document. In the event of incapacity to fulfill the duties agreed

upon the subject's participation to this investigation will be terminate without his/her consent and no compensation will be offered under these circumstances.

AUTHORIZATION

You are making a decision whether or not to participate in this study. Your signature indicates that you have read and understood the information provided above, have had all your questions answered, and have decided to participate.

Name of Research Participant (please print)

Date

Signature of Staff Obtaining Consent

Date

(Optional)

YOU WILL BE GIVEN A COPY OF THIS CONSENT FORM TO KEEP.

If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research participant; or if you feel that you have been treated unfairly and would like to talk to someone other than a member of the research team, please feel free to contact the Office of Research and Development, University of Botswana, Phone: Ms Dimpho Njadingwe on 355-2900, E-mail: research@mopipi.ub.bw, Telefax: [0267] 395-7573.

APPENDIX 6.1: FOMO YA TUMALANO YA GO TSAYA KAROLO

SETLHOGO SA PATLISISO: Tshekatsheko ya dikitso tse badiri ba motlobo wa dibuka ba di neelang ba bongaka mo UBFOM.

Mogolwane wa Dipatlisiso : Stella Kube

Nomere ya mogala : 3555642/ 71280248

Se o tshwanetseng go se itse ka patlisiso e:

- Re go neela pampiri e ya tumalano ya go tsaya karolo gore o ka bala ka mosola, dikgwetlho le dipoelo tsa patlisiso e.
- O na le tshwanelo ya go gana go tsaya karolo kana go dumela jaanong kana go fetola mogopolo mo tsamaong ya nako.
- Tswee tswee bala pampiri e ya tumalano ya go tsaya karolo ka kelotlhoko. Botsa dipotso dipe fela pele ga o tsaya tshwetso.
- Go tsaya karolo ga gago ke ga boithaopo.

BOTLHOKWA/MOSOLA WA PATLISISO

O kopiwa go tsaya karolo mo patlisisong ya tshekatsheko ya dikitso tse badiri ba motlobo wa dibuka ba di neelang ba bongaka mo UBFOM. Botlhokwa jwa patlisiso e, ke go oketsa kitso ka kgang tsa ditlhamelo tse badiri ba motlobo wa dibuka ba di neelang badirise mo Botswana, le go oketsa kitso mo lefatsheng la rona.. O tlhophilwe jaana go thusa patlisiso e ya go sekaseka dithuso ba tsa motlobo wa dibuka mo UBFOM. Pele ga o ka baya pampiri e monwana, tlhomamisa gore o botsa ka ga sepe fela se o sa se tlhologanyeng ka patlisiso e. O ka tsaya nako ya gago go akanya ka yone.

TSAMAISO LE SEBAKA

Fa o tsaya tshwetso ya go tsaya karolo, o tla lalediwa go tla lelediwa go tsaya karolo mo nakong ya beke e le enngwe.

DITLAMORAGO LE DIKGORELETSI

Fa o tsaya karolo re go netefalela tshireletso ka nako tsotlhe ka tsela tsotlhe tse re ka di boning gore o seka wa itsiwe, re leka ka that go ela tlhoko ditlhabetsi tsotlhe tse di ka tlang ka patlisiso e. Fa go ka nna le botlhabetsi bongwe re tla emisa patlisiso gore re seka ra go tsenya mo diphatseng, mm emo patlisisong ena ga gona borai bope.

DIPOELO LE/KANA DIKATSO

Tirisanyo le lona o patlisisong e, ke boithaope and re leka ka bojotlhe gore re dirisanye le palo e mokawana go bona maduo a gomotsang, go sena dituelo dipe.

TSHOMARELO SEPHIRI

Patlisiso ena le tirisanyo ya gago re go netefaletsa gore ga gona ope kana sepe se se tla supang gore o ne o tsere karolo.

GO ITHAOPA GO TSAYA KAROLO

Go a ithaopiwa go tsaya karolo mo patlisisong e. Fa o tsaya tshwetso ya go seke o tsee karolo, ga go kake ga ama tirisano ya gago le University of Botswana mo nakong e e tlang kgotsa le makalana a a amanang le yone. Fa o tsaya tshwetso ya go tsaya karolo, o gololesegile go ka boela morago nako nngwe le nngwe ntleng ga tuediso epe. Ga o ka gana go kopana le mmatlisisi ka nako e le e dumalaneng, go tla a tsewa e le sesupo sa gore o ikgogetse morago mme ka jalo kamano ya gago mo patlisisong e e tla busediwa morago le fa o sa fa kopo epe. Fa o palelwa kgotsa o retelelwa ke go diragatsa ditumalano tse di dumalanweng tsa go tsaya karolo mo patlisisong e, kamano ya gago mo patlisisong e e tla emisiwa o sa rerisiwa e bile o sa fiwa phimola keledi epe.

TESELETSO

O dira tshwetso ya go tsaya kgotsa go seke o tsee karolo mo patlisisong e. Monwana wa gago o supa fa o badile e bile o tlhalogantse ditlhaloso tse o di filweng fa godimo, e bile dipotso tsa gago tsotlhe di arabesegile, gape o tsere tshwetso ya go tsaya karolo.

Leina la mo tsaya karolo (kwala)

Letsatsi

Monwana wa mo tsaya karolo kana moemedi

Kamano le mo tsaya karolo

Monwana wa mosupi

Monwana wa mmereki yo o tsayang tumalano

(Fa o batla)

O TLA A NEELWA PAMPIRI E NNGWE YA TUMALANO GORE O E BEE SENTLE

Fa o na le dipotso tse di amanang le patlisiso e, kgotsa tumalano e ntleng ga tse di arabilweng ke mmatlisisi, ga mmogo le dipotso ka ga patlisiso e, ditshwanelo tsa gago o le mo tsaya karolo; kana o akanya gore ga o a tsewa sentle, ka tswée-tswée utlwa o gololesegile go ka ikgolaganya le ba ofisi ya patlisiso le ditlhabololo (Research and Development) ko University ya Botswana, mogala: Mme Mary Kasule mo 355 2911/2900, Email: mary.kasule@mopipi.ub.bw Telefax (0267) 395-7573

APPENDIX 7: RESEARCH PROPOSAL SCHEDULE OF ACTIVITIES

The proposed research will be completed in two phases over a one-year project period or one university academic year (August 2017- May 2018). Specifically, the following schedule is planned, assuming a start date is around August 1, 2017 when the university opens from the winter vacation:

PHASE I	TARGETED
TASKS	COMPLETION
	DATE
Establishment of a research topic through consulting literature in the research area: The role of Librarians in Medical Education: A case study of the University of Botswana Faculty of Medicine	Completed.
Formulating the problem statement and statement of research objectives: with the aid of the relevant literature and the experience gained working as the librarian in medical education.	Completed.
Constructing methodology, theoretical framework, location of the study and target population is identified through consulting and benchmarking techniques used in the studies in order to solicit their findings in relation to this research study. Through the literature review, relevant research tools were identified as well as the theoretical framework was opted for in order to serve as a guide for the research instruments and data collection needed for the research study.	Completed.
Submission of the research proposal for marking or moderation to the course instructors.	Completed

PHASE II

Dissertation presentation to the academic staff in order to defend the research proposal and to be approved.	Completed
Pilot Testing	Completed
Data collection	Completed
Data analysis	Completed
Data coding and cleaning	Completed
Final research report writing and submission	May 2019

APPENDIX 8: ORD PERMISSION TO CONDUCT RESEARCH



Office of the Deputy Vice Chancellor (Academic Affairs)

Office of Research and Development

Corner of Notwane and Mobuto Road,
Gaborone, Botswana
Pvt Bag 00708
Gaborone, Botswana
Tel: [267] 355 2900
Fax: [267] 395 7573
E-mail: research@mopipi.ub.bw

Ref: UBR/RES/IRB/SOC/GRAD/133

4th June 2018

University of Botswana
P/Bag 0022
Department of Library and Information Studies
Gaborone, Botswana

RE: PERMISSION TO CONDUCT RESEARCH

Project Title: "The Role of Librarians in Medical Education at University of Botswana School of Medicine (UBSOM)".

Researcher(s): Ms Stella Kube (200105993)

Since it is a requirement that everyone undertaking research in Botswana should obtain a Research Permit from the relevant arm of Government. The Office of Research and Development at the University of Botswana has been tasked with the responsibility of overseeing research at UB including facilitating the issuance of Research permits for all UB Researchers inclusive of students and staff.

I am glad to advise that approval has been granted for the above study to be conducted at the University of Botswana. Since the study is to be conducted within the confines of UB, the study has accordingly been exempted from Government Research Permit requirements. In reaching the above decisions, it was noted that the above study involves minimal risk. Before proceeding with the study, the researcher is required to ensure the following:

- **The study will only be conducted within the confines of UB following the approved proposal version.**
- **No investigations will be conducted outside UB as part of the study before permission is sought from UB authorities as necessary.**
- **APPROVAL DATE** : 4th June 2018
- **EXPIRATION DATE** : 3rd June 2019
After this date, this project may only continue upon renewal. For purposes of renewal, a progress report should be submitted to ORD one month before the expiration date.
- **MODIFICATIONS:** Prior approval is required before implementing any significant changes to the protocol.
- **TERMINATION OF STUDY:** On termination of this study, a report has to be submitted to ORD.

www.ub.bw

- **Other:**
 - **The researchers may accordingly proceed with the above study after fulfilling the above requirements.**

If you have any questions about the information in this letter, please contact the IRB Officer Ms. Dimpho Ralefala at Tel: +267 3552432, E-mail: dimpho.ralefala@mopipi.ub.bw. Contact information is also available at our website: www.ub.bw

Sincerely



Dr M. Kasule

Assistant Director Research Ethics Office of Research and Development



APPENDIX 9: BUDGET

The following is a budget that the researcher used during the whole process of conducting a research. It tells how much each process cost to facilitate the study. The table below displays the summary.

Item	DESCRIPTION	NO. OF DAYS	QUANTITY		AMOUNT (Pula)
			NUMBER	MEASURE	
1	Stationery				
	a. Plain papers		4	reams	P215.00
	b. Stapler, staples and punching machine		1	number	P100.00
2	Facilities and equipment for data collection				
	a. Tape recorder		1		P650.00
	b. Tape		3		P150.00
4	Miscellaneous				
	Meals	30	1	person	P250.00
	Others				P100.00
TOTAL					P1465.00

APPENDIX 10: CURRICULUM VITAE/ RESUME

Stella Kube

P O Box 70472

Gaborone

Cell: 71280248

stellakube@ymail.com/stellakube@mopipi.ub.bw

PERSONAL

Date of Birth: January 21,1979

Place of Birth: Mmathubudukwane, Kgatleng

Citizenship: Motswana

Visa Status: Permanent Resident

OBJECTIVE

To find a challenging job to meet my competencies, capabilities and qualifications in the field of librarianship, information management, and records management.

EMPLOYMENT

UNIVERSITY OF BOTSWANA LIBRARY

July 3, 2013- Present

Librarian

Duties

- Enhancing student's experiences and learning.
- Collaboration with stakeholders and the faculty to reach organizational goal
- Intensify research performance for my departments
- Enhance teaching and learning experience for faculty members and students
- Outreach activities and community engagement
- Library services to the following departments which are Obstetrics and Gynecology, Public Health, Radiology, Anastasia and Family Medicine.
- Collection development and management for medicine books.

ABM UNIVERSITY COLLEGE LIBRARY

October 27, 2007 - 2013

Assistant Librarian-**Duties**

- provides a full range of information support in an automated library environment; including collection development, management and evaluation;
- liaison with academic staff and students to determine information needs

- Develop resources and services responsive to their needs; provide evening and weekend services on a rota basis.

Library Officer- BOCDOOL(Botswana College of Distance and Open University

Feb 2005-Feb 2007

Library Officer

- Provide service to customers via telephone and email
- Cataloguing and classification
- Lending and photocopying services
- Library orientation to staff member and students
- Filing, shelving and attending to users queries

AL- NUR SCHOOL

May –August 2007

Library officer- (ATTACHMENT)

- Cataloguing and classification
- Type official correspondence
- Distribute mail and interoffice memoranda
- Library orientation
- Lending services

Tirelo Sechaba- Math- Kwane Village Reading Room (1998)

- Filing
- Lending and returning library books
- Shelving
- Displaying information to the library users
- Sending and receiving mail

EDUCATION

University of Botswana

Master's Degree in Archives and Records Management

Aug 2015- May 2018

Ongoing

University Of Botswana

Bachelors degree in Library and Information Studies

Aug 2004-May 2006

Obtained: Merit 2:i

University Of Botswana

Diploma in Library and Information Studies

Aug 2001-2003

Obtained : Distinction

COSC- MOLEFI Senior Secondary School

Obtained: Second Class pass

Aggregate: 31

SKILLS

Managing the library effectively

Customer oriented

Professionalism

Communication skills and interpersonal skills

Negotiation skill.

Language - Fluent in English, Setswana

Computer Skills - Microsoft Office, Internet ,

REFERENCES

MS B. KEBONANG

ABM University

Private Bag 00331

Gaborone

Mr K. Mmili

ABM University College

Private Bag 00331

Gaboron

Dr T. Masupe

University of Botswana School of Medicine

P/ Bag 00390

Mrs N, Maphakwane

BOCODOL

P O BOX BO187

Bontleng

Ms Dineo Ketshogileng

University of Botswana Library

Private Bag 00390

Gaborone

ketshogdk@mopipi.ub.bw

Gaborone

Tiny. Masupe@mopipi.ub.bw

APPENDIX 11: POPULATION SAMPLE TABLE



King Mongkut's University of Technology North Bangkok
Faculty of Information Technology

Using Table: Krejcie and Morgan

- Assume population proportion of 0.5 and confidence 95%

Population Size	Sample Size	Population Size	Sample Size	Population Size	Sample Size
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346