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Globalization challenges of medical education library services in Uganda

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ABSTRACT
The paper focuses on globalization from the perspective of "information access, transfer, exchange and use". With the advancement in information and communication technology (ICT), information now flows more easily and quickly, regardless of barriers of country boarders, time and distance. The paper shows that the 21st Century African medical Library user is slowly but steadily complimenting the traditional way of accessing and sharing library resources in print format, with a more advanced electronic way, which is proving to be more efficient, but with a lot of challenges to a developing continent. Participants in this study were medical students, academic staff and librarians from three selected schools in Uganda. The preliminary findings indicate inadequate funding as the underlying cause of the challenges faced by Uganda medical libraries.

1. INTRODUCTION

In this era of rapid technological advancement, every area of human existence is undergoing change that is affecting people's social, political and cultural way of life. This change has also affected medical education as well as the health of individuals in Africa. This paper focuses on the challenges of globalization in medical education libraries, with particular reference to Uganda. In the UNDP Human Development Report, Raychaudhuri (1999) indicates that the benefits of globalization have gone mainly to the developed countries while developing countries are still left behind. The report indicates 70 telephone lines per 100 people in Sweden, and just 0.8 and 0.2 lines per 100 citizens in Kenya and Uganda respectively. This is slowing African countries from being part of the global village.

Contributions of Albert Cook to Scientific Medicine in Uganda

Scientific medicine in Uganda is greatly indebted to the Church Missionary Society which was responsible for the earliest studies of Ugandan diseases between 1876 and 1910 (Foster, 1970). Explorers and missionaries came to Uganda with medical practitioners such as Moffat and Dr. Albert Cook who identified the main diseases of Uganda as Malaria, syphilis, sleeping sickness, dysentery and pneumonia among others. In December 1896, the first surgical team, composed of Dr. Cook, Baxter and Miss. Timpson was formed, and tended to both fellow missionaries and Africans on their way from Mombasa to Uganda. They based their medical work at Mengo in February 1897, seeing outpatients in a little shed which one of the missionaries was already using as a dispensary. Soon, with the help of the Katikiro (Buganda Kingdom Prime Minister), a hospital was built with a ward for male and female patients, where over 17,000 were seen at the dispensary during the following year. I89 patients were admitted, while 134 minor surgical operations were performed, and 140 more serious ones. During that time, Dr. Cook kept hand written patient clinical and care notes which were later donated to the present Makerere University Medical School. They are presently part of the Albert Cook Library archives and are currently widely referred to by medical students and researchers the world over. The Library was later named after Sir. Albert Cook. It houses some of the oldest journals like the Lancet, the British Medical Journal and the Journal of Tropical Medicine that were sent to Dr. Albert Cook during that time. The Albert Cook Library, being the first medical library in Uganda and serving the whole country (internal and external users) will be referred to in this paper, more than other medical libraries.

Medical education in Uganda

- ***Makerere University Faculty of Medicine***

Makerere University, the first public and one of the oldest universities in Africa was established in 1922. In 1924, when the University started offering medical education among other few courses at that time, the Faculty of Medicine was established. In 1946, the Albert Cook Medical Library, which was established by Sir Albert Cook, started serving higher medical education. Presently, the Albert Cook Library is Uganda's major biomedical/health sciences library. It serves the Faculty of Medicine students (both undergraduate and graduate), staff, researchers (local and international), the Mulago Teaching Hospital, and all other hospitals in Uganda (http://mulib.mak.ac.ug/acooklib).

- ***Mbarara University of Science and Technology (MUST)***

MUST was founded in 1989 when the National Resistance Council passed a Statute establishing the University. The University started as the second public university in Uganda after Makerere University, with the Faculty of Medicine as the first faculty. Later other faculties were established. These include the Faculty of Science and Faculty of Development Studies. Undergraduate programmes started in October 1989 for students taking courses leading to the degree of Bachelor of Medicine and Bachelor of Surgery. Today, the Faculty of Medicine offers a range of undergraduate courses. This is a second

Public University in Uganda. The MUST library provides access to the various electronic resources to the whole university.

- ***Gulu University***

Gulu University the third public higher education institution in Northern Uganda established in 2003. The university targets science teacher education, medicine, technology, business management, and rural transformation among others. It is therefore poised to make a significant contribution to peace, stability, reconstruction and sustainable development in Uganda. Courses offered includes among others, Science Education; Business & Development Studies; Medicine; Technology; Agriculture and Environmental Sciences. PhD, Masters; undergraduate degree, postgraduate diploma, ordinary diploma and certificate programmes in various fields are also offered. Gulu is a member of the consortium of Uganda university libraries (CUUL).

- ***Uganda Martyrs University, Nkozi (UMU)***

UMU is a catholic founded private university that was established in 1993 with two faculties, 84 students and 7 staff. It is located 82 km west of Kampala city, adjacent to the Equator. The university started offering courses in development studies, Ethics and African studies, at diploma, Bachelors and Masters levels. In 2001, a department of Health Sciences started as part of the Faculty of Business Administration and Management. In January 2005, the department was promoted to faculty level and today offers the following courses: Master of Science in Health Services Management; Diploma in Health Services Management; Diploma in Health Promotion and Education; Certificate in Health Services Management; Certificate in Health Promotion and Education.

The Archbishop Kiwanuka Memorial Library offers the various library services to the clientele (staff, students and researchers) of the University. UMU is a member of CUUL and therefore has access to e-resources such as HINARI and EBSCOhost. Other health information resources on CR-ROMs are accessed at University level, not consortium level.

- ***Kampala International University (KIU)***

KIU commenced operation as a private University in October 2001. The main campus is located 3 Km from Kampala city centre. However, the School of Health Sciences and the Faculty of Science & Alternative Medicine are located in Western Uganda. KIU is not a member of the consortium but they access electronic resources from their institutional collaborators, and also from open access sources.

2. LITERATURE REVIEW

The Ugandan scene

Thapisa (2000) notes in his paper that Africa is lagging behind in the race to catch up with the information revolution. Where as electronic services offer information that travels across global networks, Africa does not yet have sufficient infrastructure,

knowledge and skills required to provide access to online content. Nonetheless, the limited infrastructure, knowledge and skills have enabled medical libraries in Uganda to get involved in global access to information, to an extent.

Uganda is a small East African country covering an area of about 236,040 sq km, with a population of about 26 million people. The political insurgence during the 1970s and 1980s affected most of the social services, including education and health facilities. However, some of these facilities have since recovered and are involved in catching up on the fruits of globalisation. It is worth noting however that globalisation is being felt by a few people in urban Uganda. Out of the population of 26 million, 85% live in rural areas with no access to electricity and ICT infrastructure (UNAIDS/WHO Report, 2006). The literature reviewed indicates that so far, nothing has been written on globalisation of medical education library services in Uganda.

The African scene

A review of literature reveals that little has been written on globalisation of medical education library services. Eni et al (2005) have tackled globalisation of library services in Nigeria, without specific reference to medical libraries. A lot has however been written on globalisation, with the use of telecommunications technology for medical diagnosis and patient care where the provider and client are separated by distance (telemedicine). According to Raychaudhuri (1999), doctors in Africa had very limited access to up-to-date information about combating disease, until a few years ago when stakeholders started using ICT to access information.

Although many health library associations around the globe are tackling agendas specific to their own countries, issues of international concern are emerging in common. These issues are grouped under globalization, partnerships and cooperation, electronic access, especially open access and working with the developing world in a number of ways to improve the health of the population by providing the best possible access to information (Madge, 2005). ICTs are the major tools for these partnerships, though about 10 years ago, very few universities had computers connected to the Internet. The information revolution is slowly leading to realized globalization and partnerships.

In Nigeria for example, over the past five years Nigerian university libraries have developed a web presence and provided facilities for staff and students to have internet access (Agragba-Akpore, 2004).

HealthNet, an information service that connects 30 developing countries, including 22 in Africa, has found a way around the problem of lack of access to health information. It uses cheap computer networks based on radios and telephones and a low-earth-orbit satellite to give doctors access to medical libraries. Doctors in Central Africa used it to fight the Ebola virus outbreak in 1995, and malaria researchers in Ghana use it to keep in touch with the London School of Hygiene and Tropical Medicine (UNDP Report, 1999).

For many Africans, the concept of the global information village is not possible currently, given that communication within and across villages is not yet attainable. According to Shibanda et al (2000), it will take Africa as much to eradicate its poverty and ignorance as it will to provide adequate information and telecommunication infrastructure. And yet information is power, and free access to information will finally eradicate poverty.

While Nairobi University Medical School Library - a top medical school in East Africa - subscribes to only 20 journals, a typical US medical school subscribes to about 5,000 journals. (UNDP Report, 1999).

In South Africa, the best-connected African country, universities usually have a single terminal that is shared by up to 1,000 people. Most African countries unfortunately cannot afford this (Ibid).

The US National Library of Medicine (1998), using information and computer technology invested in scientific research has created a revolution in the biological, medical and material sciences unique in human history. This has brought new knowledge to billons of people across the globe in terms of biomedical information resources, at no cost to users.

Shibanda et al (2000), on introduction of modern IT by African governments, laments that the main problem is financing, which leaves African countries dependent on the dominance of western technologies, values and content on the Internet and on-line services. He cautions that this will lead to a new information gap: the "have" and the "have-nots", with information rich and poor countries.

Globalisation and Libraries

Ani et al (2005) define globalisation of library services as a concept that describes the ever growing cooperation, integration and interdependence among different libraries in the world, in terms of library resources, both human and material. Globalisation can be looked at as an integration of countries or regions and the breaking down of artificial barriers to allow for the flow of information, knowledge, services across national boarders.

Murphy (2008) relates globalization to the growing demand for online information for clinicians, health service managers, students and the general public. One manifestation of this new market is the 'globalization of education', which has the potential to improve health training and health education. He further defines globalisation as one of the characteristics that define the 21st Century. Indeed, the term has become more important during this era of information explosion and ICT which have facilitated information creation, exchange and use by all, irrespective of geographical boundaries. Globalisation depends on ICT, which is the driving force for information creation transfer and sharing.

Globolisation Perspective in Ugandan Medical Education Libraries

This paper highlights the increased interaction between Libraries through various projects in Uganda medical libraries focusing on challenges arising from opportunities of

Globalisation. This paper focuses on the various collaborations between Ugandan Medical libraries. The collaborations have focused on different projects ranging from creation of digital libraries to preserve and make local content accessible online, to document delivery services. Medical libraries in Uganda are in one way or the other in collaboration with other partner libraries to make effective use of their resources in a bid to improve medical research, teaching and learning. An INASP chapter by Musoke and Kinengyere (still under publication) gives a highlight of the electronic resources accessible to Makerere University and other consortium members. It is without doubt that globalisation has been heavily supported by ICT, without which resource sharing would be but a slow process. Below are some of the projects/initiatives that are benefiting from globalisation.

The Uganda Scholarly Digital Library (USDL)

USDL is a collection of scientific research publications from the major science institutions and organizations in Uganda. The pilot phase of the project was based on publications from the Science Faculties at Makerere University. USDL was launched in 2005 by Makerere University, Uganda and the University of Bergen, Norway. Its main objective is to collect content (research done in and about Uganda), digitize it if necessary and using the D Space software, upload it for online access. The project is aimed at serving the whole country and beyond. The communities in USDL include the Faculty of Medicine conference presentations, research articles, theses and dissertations which can be accessed at: http://dspace.mak.ac.ug/handle/123456789/12. A digital library is not just a collection of materials in electronic form. Sharma and Vishwanathan (2001) describe it as including a browser interface and data can be made available through communication networks to anyone, anywhere, while facilitating searches with speed.

Electronic Library Information Navigator (ELIN)

The ELIN system integrates data from several publishers, databases and e-print open archives. The service allows users to search documents from multiple sources using a single user-friendly interface. In ELIN, one can:

- get an overview of all online resources recommended by the libraries
- cross search among different types of documents from different providers using a single user-friendly interface
- request all articles available in full text
- browse table-of-contents
- download bibliographic data in other formats, e.g. for End Note or any other Reference Manager
- get an alert system that automatically notifies one about new documents matching a saved query
- get an alert system that automatically notifies one about new issues of his/her favorite journals

In ELIN, the information is downloaded from a remote server in Sweden to the local server in Makerere where they are then downloaded for users when the Internet use is at its lowest (usually at night). Apart from accessing information remotely, the ELIN system has reduced the problem of bandwidth in Uganda since information is uploaded on the local server at night and downloaded the following day (http://elin.mak.ac.ug).

Health Net

At the Albert Cook Library, in addition to the then Medline, AIDSline and Popline CD-ROMs, the Library also accessed electronic information when it joined the Healthnet[1] family. Healthnet is a computer network, established to facilitate the exchange of information among health professionals primarily in developing countries, and to link them with their counterparts abroad. In Uganda, a Healthnet ground station was established in 1990 at the Makerere University Medical Library. Using a combination of computers, low earth-orbit satellites, simple ground stations, telephone lines and radio links, the project provided access to current medical literature. Soon that technology was overtaken by technological developments, and an electronic mail dial-up system was preferred. Since then, there have been many developments and the e-mail/ Internet service is much more developed (Musoke, 2006).

Partnership in Health Information (PHI)

PHI is a United Kingdom charity, building partnerships between health libraries in UK and developing/transitional countries. By building partnerships between health libraries, PHI supports access to reliable health information. PHI began its operations in Uganda in 2000 and has so far done the following:

- Built on existing information services in the country
- Emphasized the importance of professional development
- Used opportunities offered by technology
- Supported and cooperated with the initiatives of other agencies

The main aim of PHI is to encourage the free flow of health related knowledge between nations through training, staff exchange and document delivery.

THE CONSORTIUM OF UGANDA UNIVERSITY LIBRARIES (CUUL)

To strengthen the network of librarians, researchers and academics, the International Network for the Accessibility of Scientific Publications (INASP) encouraged librarians to form national consortia. Makerere University Library (Maklib), as the country coordinator for the Program for the Enhancement of Research Information (PERI), mobilised other universities in Uganda, which realised the need to cooperate in 2001. In a workshop, "Library Cooperation for effective provision of information in Uganda and beyond" CUUL was established. Eligible members are university libraries and research institutions in Uganda. Areas of cooperation include resource mobilization and sharing, training and marketing of member libraries (Kinengyere, 2007). As already indicated,

[1] Healthnet stations were established by SatelLife (an NGO based in USA) in several African (and Asian and Latin American) Universities, such as Ghana, Kenya, Uganda, Tanzania, Zambia and Zimbabwe, which provided the first e-mail facilities in the medical schools.

INASP has worked with CUUL and Maklib to organise training programmes to impart, among others, negotiation skills to enable member institutions to be able to negotiate with publishers when the INASP project comes to an end.

One of the challenges being addressed by CUUL is the sustainability of e-journals subscription at the end of donor funding. In November 2005, CUUL decided on the mechanism of cost-sharing the e-resources, starting in 2006. For a start, one or two most popular and broad databases were subscribed to, and the cost shared equally by participating institutions. In 2007, one database (EBSCO Host) was subscribed to by CUUL, with contributions from 11 institutions. The call for participation in the pooling of funds towards the subscription of e-resources was made to all the PERI – Uganda registered institutions, with the proposition for CUUL to make provisions of accommodating other institutions/organisations that are not yet members according to its constitution. Out of the 43 registered PERI-Uganda institutions (2006 statistics), only 11 responded to the e-resources sustainability initiative in time for the 2007 subscriptions. The funds generated could only purchase one database, and that is what was achieved. In 2008, with contributions from member institutions, EBSCO Host and Emerald databases have been subscribed to and it is hoped this will be sustained by the consortium.

Electronic databases in medical libraries as avenues of globalisation

E-resources facilitate globalization in medical libraries in Uganda especially those accessed free of charge. Makerere and the Consortium access several other databases through institutional subscriptions and collaborations including;

- **Access Medicine**

In collaboration with the University of Yale Library, Makerere University now has free access to a collection of electronic books, providing content in disciplines such as dentistry, pharmacology and over 800 disorders all accessible, with the database logged into remotely at Yale.

- **Health InterNetwork for Access to Research Initiative (HINARI)**

This is an initiative by the World Health Organisation (WHO). HINARI is accessed free by Uganda and other developing African countries. Ugandan institutions that are registered to use HINARI include: Makerere University; Gulu University; Infectious Diseases Institute; Uganda Virus Research Institute; The Uganda AIDS Support Organisation; Uganda Christian University; Uganda Martyrs University; Mbarara University of Science and Technology and the Ministry of Health among others. HINARI has made access to current research information very easy, creating a global village of HINARI users globally.

- **NLM Gateway**

Resources accessed courtesy of the US National Library of Medicine (NLM) gateway include Medline (via Pub Med), e-books, clinical trials and Medline Plus among others, providing more free access for Ugandan medical practitioners, researchers and students.

- **Ovid**

OVID resources have been made freely accessible, courtesy of McMaster and St. Josephs universities in Canada. Databases accessed via Ovid are: e-books, CIHNAL, Medline and Ovid full text journals among others.

- **Free medical journals / free medical books**

These are free online after a certain period of time, ranging from six months to two years (http://www.freemedicaljournals.com) and http://www.freemedicalbooks.com.

- **African Index Medicus (AIM)**

This is a regional database of bibliographical records supported by the World Health Organisation (WHO). The AIM coordinating centre is at the WHO Regional Office for Africa (http://www.afro.who.int/library/about_en/).Uganda participates by inputting data in AIM.

Resources that are fee-based include:

- E-books purchased for Makerere University community from Net Library at: http://www.netlibrary.com .
- Databases: Cochrane, Emerald, EBSCOHOST, Blackwell, Palgrave Macmillan Journals, Springer, Royal Society of London among others. (http://mulib.mak.ac.ug/col-link/e-resources.html

Contribution of INASP/ PERI to Universities/Research institutions in Uganda:

INASP has been facilitating access to information and knowledge by developing and transitional countries, as its mission statement shows (http://www.inasp.info/uploaded/documents/31-mar06.html). In 2000/1, INASP, through PERI, introduced the provision of full text electronic journals to the research and academic community in Uganda. As already indicated, Satellife, through Healthnet, had pioneered the provision of e-resources to the Medical community in Uganda and other selected developing countries in early 1990. The PERI programme, however, was broader in coverage as it included almost all disciplines in Makerere University and other academic institutions in Uganda. INASP has been able to support Uganda by:

- Negotiating with publishers for fair pricing to ensure accessibility of the PERI resources. INASP has been involved in different African countries. In Tanzania, for example, licenses for access to the PERI resources have been negotiated by INASP (Manda, 2005).
- Providing training and training manuals in the use, evaluation and management of electronic information and Information and Communication Technologies (ICTs).
- Supporting member universities through workshops which included: the Monitoring and Evaluation of E-resources Usage (MEERU); Working Together

workshop for Librarians and Researchers; Licensing and Negotiation Skills for Librarians, Electronic Journals and Electronic Resources Library Management and Web authoring workshop (Kinengyere, 2007).

- Running the HIF-net at WHO mailing list which is an essential reading on what is happening in health information in developing countries (Madge et al, 2005).

Globalisation through Electronic Document Delivery Services (DDS) at Albert Cook Medical Library

The electronic DDS started in 1994 when the requests were sent by e-mail to Case Western Reserve University (CWRU) Library, Ohio, and the articles faxed to the Medical library. When faxing became expensive, the documents were sent by post, which was taking between 10-20 days. This was too long, and a solution to the 'snail' postage method had to be found. The majority of the EDD requests are from graduate students and academic staff. The Medical Library gets most of the documents from CWRU Library supported by the Fogarty Foundation. From October 2004 to-date, a modification to the slow method was to receive the articles by e-mail. However, this also became problematic due to the fact that e-mail accounts have limited space/quota. A database was then designed by CWRU Library accessed at http://129.22.120.23/Illiad/illiad.dll with username and password, and this is a fast method as the library can get the articles within a day or two. In 2004 alone, 856 articles were received while in 2006, 905 articles were received as the tables 1 and 2 indicate.

Table 1: Albert Cook Medical library document delivery in 2004

MONTH	**NUMBER OF ARTICLES RECEIVED**			
	BY POST	**BY E-MAIL/ WEBSITE**	**BY FAX FROM KSS**	**TOTAL**
December	-	107	-	107
November	34	63	-	97
October	120	33	-	153
September	99	-	-	99
August	27	-	-	27
July	15	-	-	15
June	44	-	-	44
May	72	-	-	72
April	68	-	-	68
March	77	-	3	80
February	68	-	-	68
January	26	-	-	26
Total	**650**	**203**	**3**	**856**

Table 2: Albert Cook Medical library document delivery from Case Western Reserve University in 2006

MONTH	NO. REQUESTED FOR	NO. OF ARTICLES CANCELLED	NO. OF ARTICLES RECEIVED
December	54	2	52
November	88	19	69
October	103	7	96
September	82	4	78
August	142	3	139
July	74	0	74
June	79	0	79
May	81	5	76
April	158	2	156
March	31	1	30
February	33	4	29
January	28	1	27
Total	**953**	**48**	**905**

KSS Document delivery service is limited in scope because most times, the requests are not found on the Union list of Serials on the CD-ROM (showing the holdings in the Kent, Surrey and Sussex (KSS) Library Network). Otherwise, the service has a dedicated fax machine and the KSS partners meet the cost of faxing articles. The medical library sends the requests by e-mail.

3. METHODOLOGY

As Jimba et al (1998) indicate, the tools of globalization are the internet and the World Wide Web. These provide access to information from any part of the world and are important tools for information exchange and use. Despite the opportunities and benefits already mentioned, there is no doubt that there are a lot of challenges that come with globalization of medical libraries in Uganda. A web-based questionnaire was sent out to three medical school libraries within the consortium, to examine the challenges of globalization of medical library services. The respondents included 3 graduate medical students, 3 lecturers and 3 librarians, from each institution. Respondents were selected because of their academic and professional knowledge to adequately contribute to this study. 9 questionnaires were sent to each institution, making a total of 27 respondents. These institutions were included in the study because they are the only schools countrywide that offer graduate medical education. The questionnaire was divided in two categories. The first category covered what the respondents considered to be the challenges to access and use of current, relevant and timely health information for their research, teaching and learning. Questions covering areas like internet use for medical literature searching, linkages/partnerships with other institutions abroad, awareness of online information and free access initiatives were included in this category. The second category covered what were considered to be the main challenges to globalization of

library services in medical education. As earlier indicated, ICTs are the major tools for globalization, so both categories of questions would give more concrete information on both ICTs and globalization.

Table 1: The first category of questions

Library	Linkages/partnerships	Resource/service accessible	No of computers for users / staff	Internet access
Albert Cook, Makerere University	Case Western Reserve University	DDS	23	Yes
	British Library	DDS		
	Kent Surrey and Sussex Health Services	DDS, staff exchange, website		
	Lund University	ELIN		
	Yale University	Access medicine		
	INASP	HINARI, EBSCO, Emerald, Cochrane Library, Blackwell, etc		
	University of Bergen	USDL		
	McMaster and St. Joseph's universities, Canada	Ovid		
Aga Khan	Head Office (Karachi)		10	Yes
	INASP	EBSCO, HINARI		
Archbishop Kiwanuka UMU, Nkozi	INASP	EBSCO, HINARI, Emerald	14	Yes

Table 2: Second category of questions – challenges to globalisation

	Challenge	No. of respondents
1	Limited library budgets	20
2	Inadequate infrastructure	19
3	Limited partnerships	20
4	Unreliable power supply	22
5	Limited bandwidth (slow internet)	14
6	Inadequate ICT skills	10
7	Poor African authorship (one-way-flow of information)	4

4. FINDINGS

Out of the 27 questionnaires only 22 were filled and sent back, making a response rate of about 81%.

The results are discussed under various headings in accordance with questions that were raised.

- **Limited library budgets**

Generally, libraries in Uganda are usually restricted on budgets as compared to other sections in faculties. This has also been reported by Kamau and Ouma (2005) about Kenya, and Mostert (1999) about South Africa. 20 respondents (91 %) indicated that inadequate funding limits the number of resources they have access to, the number of computers in their libraries and low bandwidth, all of which greatly affect access to information.

- **Inadequate ICT infrastructure**

This issue has been raised by many African countries, including Nigeria: Ani (2005); Africa: Thapisa (2000); Kenya: Kamau & Ouma (2005). 19 respondents (86%) mentioned infrastructure as one of the main challenges to globalization. For effective globalization of library services in Medical education, there is need for efficient and adequate infrastructure, i.e.: computers, bandwidth, telephones, computer networks and the like. This issue usually comes about as a result of limited budgets, and faculties looking at other priority areas other than the library.

- **Limited partnerships with libraries abroad**

As Madge (2005) clearly puts it, libraries across the globe have become more dependent on each other. This dependence is only possible if there is collaboration of some sort. Apart from Makerere University Faculty of Medicine, most Ugandan medical schools do not have that collaboration with many institutions or medical schools abroad, (as Table 1 indicates). This has made it difficult for these institutions to realize the opportunities of globalization.

- **Limited electric power supply**

Like any other African country, electric power supply has a vital role to play to ensure effective use of ICTs. The interruption of power supply makes effective use and access to e-resources a night mare. This issue also has to do with limited budgets which cannot allow individual sections in faculties afford power generators as alternative sources of power during load shedding hours. All the 22 respondents, (100%) cited unreliable power supply as a challenge to globalization of library services.

- **Low bandwidth**

This has greatly affected access to the Internet and usage of e-resources in Uganda. Too much time is spent on trying to open up websites while the internet is very slow, especially during peak hours. Apart from the ELIN system which has gone a log way to support bandwidth problems, libraries still face a challenge of mot being able to access information as fast as expected. This discourages library users who either give up or end up doing their assignments late. 64% of the respondents cited the challenge of bandwidth.

- **Inadequate ICT and information management and competence skills**

45% percent of the respondents mentioned inadequate ICT skills as another challenge of globalization of library services. To be able to cope with the challenges of globalization, medical libraries need qualified personnel. Just knowing how to use the internet, and to

do a literature search would not be enough for today's librarian. With digital libraries and websites emerging, librarians require added skills such as web developers, systems analysts and programmers. There are still very few librarians with such qualifications in Uganda.

- **Poor African authorship**

This leads to a one-way-flow of information. Thapisa (2000), in his asked: "In which directions do communications flow? Are the benefits distributed equally or proportionally among participants?" Uganda and Africa in general has become the recipient of information from developed countries rather than a two-way communication where both parties benefit. This is probably because of the challenges already mentioned, that African authorship is not as well developed as in developed countries. Only 4 respondents (18%) raised this challenge.

5. CONCLUSION AND RECOMMENDATIONS

Globalisation appears to be a fact of life that will influence many professions and walks of life. However, despite the opportunities and benefits of globalization of medical library services, Africa and most developing countries still face a lot of challenges. On top of the list are limited budgets which lead to limited access to library resources from other countries, low bandwidth, inadequate infrastructure, unreliable power supply and lack of adequate ICT skills by library services users.

The following are recommended:

- Building and putting in place a viable information and telecommunication infrastructure will improve Ugandan medical schools' access to information.

- Creating a conducive environment through legislation and sound rules will ensure fair play and pluralism in the information and communication sector.

- There is urgent need to eradicate poverty and ignorance that have inflicted the Africans to the extent of being marginalized and a reduced ability to participate in the democratic information age.

- A few countries like Uganda and Rwanda have tried to reduce the problem of bandwidth by introducing the ELIN system which uploads information overnight so as not to compromise the limited bandwidth. Other African countries can emulate this.

- A project to install undersea data cables to improve bandwidth for broadband communications is underway along the East African coast. This, if completed, will hopefully reduce the bandwidth problem in 13 countries, Uganda inclusive (http://www.infoworld.com/article/08/01/18/African-marine-cable-construction-under-way_1.html). Furthermore, resources on CD-ROMs for example Pop line and MEDLINE have been purchased as back up, especially during information literacy sessions. African countries should introduce such backups.

- Some medical schools, as plan B, have resorted to other sources of power generation to ensure continued power supply in libraries and lecture rooms. This should be emulated by all libraries.

- African countries in general need to accept IT as a priority area for development and invest in it accordingly.

- There is need for continued human resource development in the field of ICT.

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