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Indoor Noise in Academic Libraries: A Case Study of University of Ilorin Main Library, Nigeria

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Abstract

This study assessed indoor noise at the University of Ilorin Main Library in Nigeria, using semi-structured questionnaire and sound level meter. Sources, subjective rating, extent of noise disruption, and ambient daytime and night-time noise levels in the library were determined. The study revealed that noise rating and extent of disruptions were divergent. Daytime sound pressure level in the library is equally location dependent, fluctuates, and most of the measurements surpass the recommended maximum limit of 45 Decibels. It is suggested that a noise policy should be formulated for the library, in addition to acoustic upgrading and library space reclassification.

Keywords: Library, Noise, Ilorin, Empirical Assessment, Subjective Assessment

Introduction

Certain indoor environments such as libraries require quietness and cannot tolerate any form of noise at any time of the day. This is because absolute silence is required for comprehension, skill development and proofreading. Though libraries are custodians of book and non-book materials, modern libraries play more important roles as work, study and meeting spaces, and cheap public access points to Internet and multimedia services (Markham, 2004). Hence, libraries now experience more patronage than ever before, and more physical facilities are often provided to cope with the needs of library users. Environmental factors such as ventilation, noise and physical facilities are variables that are likely to influence the use of a library (Saka *et al*., 2012). Noise, in particular, has a high tendency to discourage library use; in a learning environment, too little background noise can make the slightest sound noticeable thereby enhancing distraction, while too much noise leads to low concentration and annoyance (Hodgson and Moreno, 2008).

Established acceptable noise level in libraries range between 35–45 decibels (Kiely, 1997; Duggal, 2007; Davis and Cornwell, 2009), and library noise could also be evaluated based on perception of library users. Some research outcomes conclude that cognitive task performance such as students' concentration and librarian's consultation is hindered by background noise (Kjellberg et al., 1997; Sullivan, 2010). Findings of the research by Gordon-Hickey and Lemley (2012) indicate that the influence of background noise on cognitive activities has physiological rather than psychological origins.

Therefore, students accurately self-assess their acoustic study environment needs while it is recommended that academic libraries should offer multiple acoustic study environments for college students. Invariably, incorporation of objective acoustical standards should be an important principle when embarking on library design projects (Salter, 2002).

Recently, some authors used subjective and/ or empirical means to assess noise levels in libraries. Ntui (2009) found that the levels of noise in the University of Calabar Library, Nigeria was between 43.5 and 88.5 dB (A). The high noise level was attributed to conversation of people, automobiles, aircrafts, cellular phones, and in some equipment in the library. A student satisfaction survey (Elliot, 2012), conducted at Bamford Library in Harper Adams University College U.S.A. , indicated that most students prefer working in a quiet place, few prefer a place with small amount of distractions, while minority choose to work with friends. In all, 358 respondents were satisfied with the noise level in the library, 40 students wanted a quieter library, while 34 respondents would like stricter enforcement of existing rules. Balanli *et al*. (2007) reported that in addition to difficulties in accessing resources, poor lighting quality and visual pollution, 20.50 per cent and 8.30 per cent of library users at the Yildiz Technical University Library, Istanbul, Turkey complained about high indoor and outdoor noise respectively. A similar study at Kwame Nkrumah University of Science and Technology Library, Ghana (Senyah and Lamptey, 2011) examined susceptibility of the library to outdoor noise pollution. Majority of respondents (94 %) indicated that the most disturbing noise emanates from Royal Parade Grounds; 88.1% observed high noise infiltrating from the Great Hall; 71.4% observed noise from the Halls of Residence as a source of worry while 48.8%, 23.8% and 9.5%, are concerned about noise from vehicles, library users, and staff respectively.

Invariably, noise rating is based on location and perception of the library user. Nevertheless, every library user has the responsibility to respect the rights of other library users by ensuring that there is less noise while using the library. Conducive environment for all library clientele to study is a cardinal policy of libraries. While trying to guarantee high level of quietness in the library, users often exhibit some acts of disturbances or behaviours which are inimical to the noise policy of the library. Examples of inappropriate and unacceptable behaviours that create discomfort for library users include loud conversation, use of audio players, rowdiness, and noisy group study. The scale of discomfort which is socio-demographic or physiologic is not, however, uniformly experienced by library users across libraries. Because of differing acoustic, operational level and outdoor environment of libraries, individual library noise assessment would give a better understanding of specific acoustic needs, noise sources, noise control measures, and policy formulation. In the light of the above, the paper investigates the sources of noise, its subjective rating and effects, and the ambient noise level at University of Ilorin library.

Study Area

The University of Ilorin Library is a second generation academic library established in 1976 with its parent body, the University of Ilorin. It was commissioned for use in March, 1990 with a capacity for about 2,000 users when fully utilized. The library has a collection of about 450,000 volumes of books, excluding pamphlets, journals, theses/dissertations and documents (archives). Like its parent institution, the library is a hybrid conventional system and its collections are developed along departmental, faculty and course consideration. The library is also stocked with audio-visual materials and databases that can be accessed on CD-ROM and the internet. The library offers a wide range of services to its clientele which include borrowing of books, inter-library loan, book reservation, photocopy, and 24-hour opening service during semester examinations. There are also facilities for private and group reading and discussions. At present, the library serves staff and students from thirteen (13) faculties.

The library is a magnificent one-storey building with a basement. The library basement contains the bindery unit, photocopy stand, reading space for 300 readers, and books in science, agriculture, pharmacy and library science. The ground floor consists of two wings. The left wing houses books in engineering and technology and can accommodate 400 readers. The right wing contains reference books, document materials and newspaper reading section. The ground floor serves as the entry and exit point to the library,

and also contains the cloak room, photocopy stand, technical services division, and the circulation and reference sections where various consultations and loan transactions take place. The first floor contains the University Librarian's office, serials section, audio-visual facility, reading section with 250 seating capacity, and books in arts, social and management sciences, and education. The library is normally very active between 8am and 6pm, especially during examination periods.

Research Method

The method employed in this study to assess interior noise at the University of Ilorin Library is by questionnaire survey (subjective assessment) and physical measurement (empirical assessment). Both assessments were carried out between May, 2013, which was the peak of academic activities and August, 2013 when students were on break.

Subjective Assessment

A structured questionnaire was designed and administered by the researchers on randomly selected library users to elicit information on noise at the University of Ilorin library. The solicited information included background information of respondents, subjective noise rating, source(s) of noise, and extent of noise disturbance. The number of undergraduate and postgraduate students (population size) during the 2012/2013 academic session was 30,742 (University of Ilorin, 2013). The sample size for a known population size is given as (Krejcie and Morgan, 1970; Kothari, 2004):

$$n = \frac{z^2 p(1-p)N}{e^2(N-1)+z^2 p(1-p)}$$

Where
n is the sample size;
z = standard variate at a given confidence level;
P = sample proportion;
e = margin of error;
N = population size.

For *N*= 30,742, at 95 % confidence level (z = 1.96) and 4% margin of error (e = 0.04), 50% baseline level of indicators (P= 0.5), the sample size (*n*) from equation (1) is 588 respondents. Assuming the return rate for duly filled questionnaires is 95%, a minimum of 618 questionnaires is appropriate for the survey.

A total of seven hundred (700) copies of the questionnaire designed for the study were produced and administered on a one-to-one basis. This approach is known to have high return rate since the questionnaire is usually delivered directly to the respondents and collected immediately after completion. Out of the 700 copies of the administered questionnaire, 692 were retrieved from respondents, representing approximately 99% reclamation, out of which 679 (97%) were fully completed and usable for analysis. The 13 unusable responses contained unanswered questions or multiple answers.

Empirical Assessment

Noise can be appropriately measured in decibels (dB(A)) units using a sound level meter because it closely replicate the loudness perceived by the human ear ((Kiely, 1997).The equipment used in this study to measure noise level is the digital datalogging sound level meter, model HD600 manufactured by Extech® Instruments Corporation, U.S.A. The equipment meets Type 2 requirements of ANSI S1.4 and IEC 61672-1, and measures and displays Sound Pressure Level (SPL) from 30dB to 130dB (±1.4dB accuracy) in 3 measurement ranges. Noise measurements were taken following the prescribed procedure stipulated in HD600 User's Guide. The equipment was set to measure A-weighted sound levels at a sampling interval of 59s for 10 hours (8.00am to 6pm). Measurements were replicated thrice at several locations within each floor for one week. The sound level meter was positioned at a height of 1.5m above the ground and at least 1.5m away from reflecting surfaces. Noise descriptors used in this study are:

a) Maximum noise level (L_{max}); Minimum noise level (L_{min}); Average noise level (L_p)

$$L_p = 20\log\frac{1}{n}\sum_{j=1}^{n}10^{\left(\frac{L_j}{20}\right)}$$

Where

n = number of SPL taken;

L_j = j^{th} SPL; j = 1, 2, 3, …., n

b) Equivalent Sound Pressure Level (L_{eq}); is a constant noise level that, over a given time, expends the same amount of energy as the varying sound level over the same period of time.

Mathematically, $L_{eq} = 10\log \sum_{i=1}^{i=n} \left(10^{\frac{L_i}{10}}\right)(t_i)$

Where

n = total number of SPL samples taken

L_i = SPL in the *i*th sample

t_i = fraction of total SPL sample time

Noise pollution level (L_{NP})

$$L_{NP} = L_{eq} + K\sigma$$

Where

L_{eq} = Equivalent Sound Pressure Level;

K = 2.56 (Kiely, 1997);

ó = Standard deviation.

Results and Discussion

The demographic characteristic of respondents is presented in table 1. Most of the respondents were within 17–27 age group, and majority of them were undergraduates. Male and female represented 52% and 48% of the total respondents respectively. The answer provided by respondents on identified major source of noise in the library is presented in table 2.

Table 1: Background Information of Respondents

Age(years)	No. of respondents	%	Gender	No. of respondents	%	Level of student	No. of respondents	%
17-27	630	93	Male	355	52	100	153	23
28-37	43	6	Female	324	48	200	114	17
38 and above	6	1				300	153	23
						400	194	29
						500	44	6
						Postgraduate	21	3
Total	**679**			**679**			**679**	

Students were identified as the major source of noise in the library (41%) followed by equipment (25%) such as photocopiers, scanners, outdoor lawn mower, air conditioner, and ceiling fan. The use of cell phones in the library and loud conversation by library staff was also considered as a source of noise to 17% and 15% of library users respectively. Other identified sources of noise by 1% of respondents include footsteps, radio, personal stereo, trolley wheels, furniture (shoving) and doors (opening and closing). Perhaps the main reason why noise is prevalent among students is because University of Ilorin Library does not have any written policy or mechanism to control/prevent noise within the library. Library staff and students make or receive calls and listen to radio or music within the library because there is no special area designated for such activities. Also the circulation desk and reception are located between reading spaces in the ground floor, hence normal conversation by library staff members and students is unrestricted. Furthermore, disruptions are bound to arise from some equipment and the existing acoustic configuration which lacks noise absorbers.

Table 2: Sources of Noise in the library

Sources of noise	No.	(%)
Students	278	41
Equipment	173	25
Cell phones	118	17
Staffs	102	15
Others	8	1
Total	**679**	**100**

The subjective rating of library indoor environment and the extent of reading/learning disruption by noise are shown in table 3. More than half of the respondents (57%) considered the library as being quiet while 2% rated the library as being extremely quiet. About 29% of the respondents considered the library as being noisy while 8% and 5% indicated that the library as very noisy and extremely noisy respectively. Meanwhile, exactly half of the respondents considered the extent of disruption as "slightly" while 39% and10% were of the opinion that disruption in the library was "much" and "very much" respectively. About 1% of the respondents were not distracted by library noise. The inference is that more than half of the surveyed population thinks the library is quiet; a quarter thinks it is noisy; while disruptions are moderate or abundant.

Table 3: Subjective Rating of Library Indoor Environment and Extent of Disruption by Noise

Noise rating	No.	(%)	Extent of disruption	No.	(%)
Extremely quiet	53	8	Very Much	66	10
Quiet	387	57	Much	263	39
Noisy	196	29	Slightly	340	50
Very noisy	32	5	Not at all	10	1
Extremely noisy	11	2	Cannot say	0	0
Total	**679**	**100**	**Total**	**679**	**100**

The fluctuation of SPL (Sound Pressure Level) in the library during daytime (8am-6pm) in the basement, ground floor, and first floor is shown in Fig.1, Fig. 2, and Fig. 3 respectively. The basement recorded three peaks (>70 dB(A)); 71.6 dB(A) at 8.20 am, 74.1 dB(A) at 4.22pm and 75.7 dB(A) at 12.10 pm. These periods are known to have high library patronage, including the use of equipment and group studying. The minimum SPL was 38 dB(A) at 8.00am – a period where the reading room was empty. All other sound pressure readings fluctuated between 50 dB(A) and 68 dB(A), and are above the recommended values of 35-45 dB(A). In the ground floor, a peak SPL of 72.7 dB(A) was observed at 9.44am; the maximum SPL was 73.8 dB(A) at 11.37am, while another peak of 71.8 dB(A) was recorded at 3.39pm. The minimum SPL was 56.2 dB(A) at 9.02am. It was also observed that the SPL reduced and the readings varied slightly between 58.29 dB(A) and 61.63 dB(A) after 4.06pm. The reduction and slight variability may be attributed to fewer people in the library and less use of equipment. Actually at this period, most library staff members and casual workers have closed for the day and there is equally low patronage by students. In the first floor, a peak of 70.20 dB(A) occurred at 9.07 am while minimum of 47.4 dB(A) was observed at 8.08am. All the recorded sound pressure readings were above the recommended values.

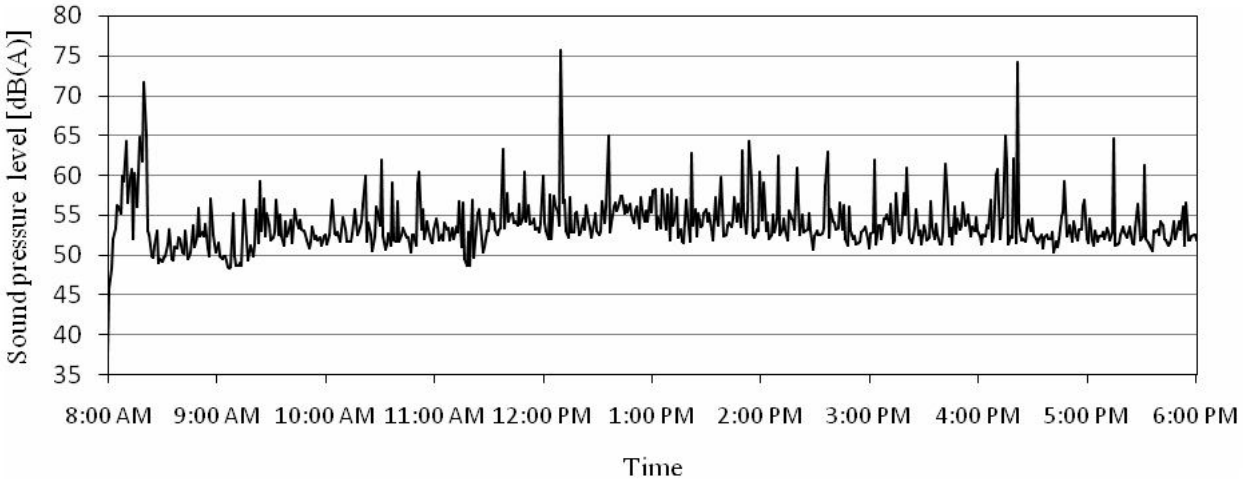

Fig. 1: Pattern of sound pressure fluctuation at the basement

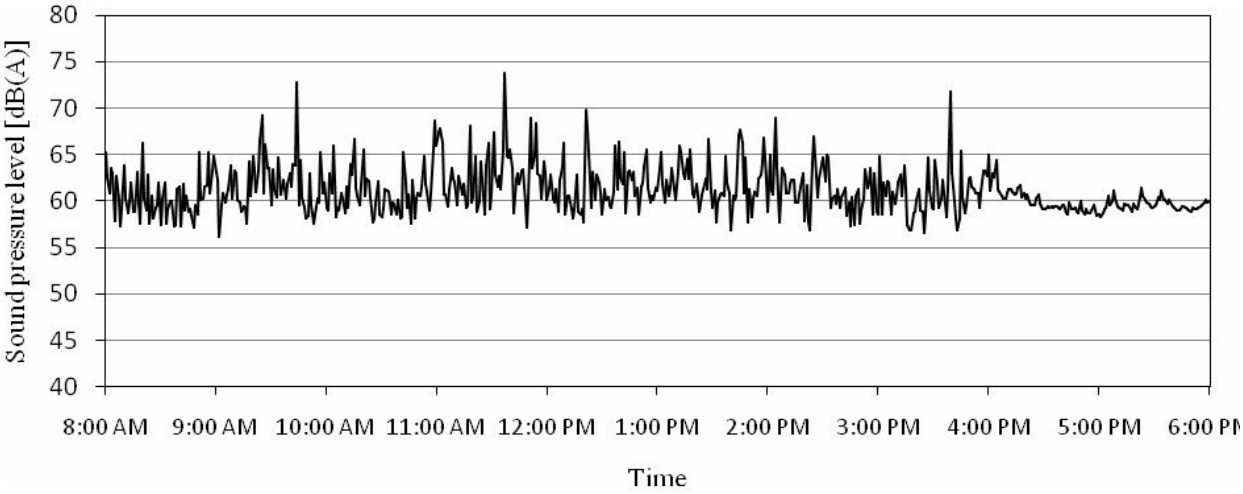

Fig. 2: Pattern of sound pressure fluctuation at the ground floor

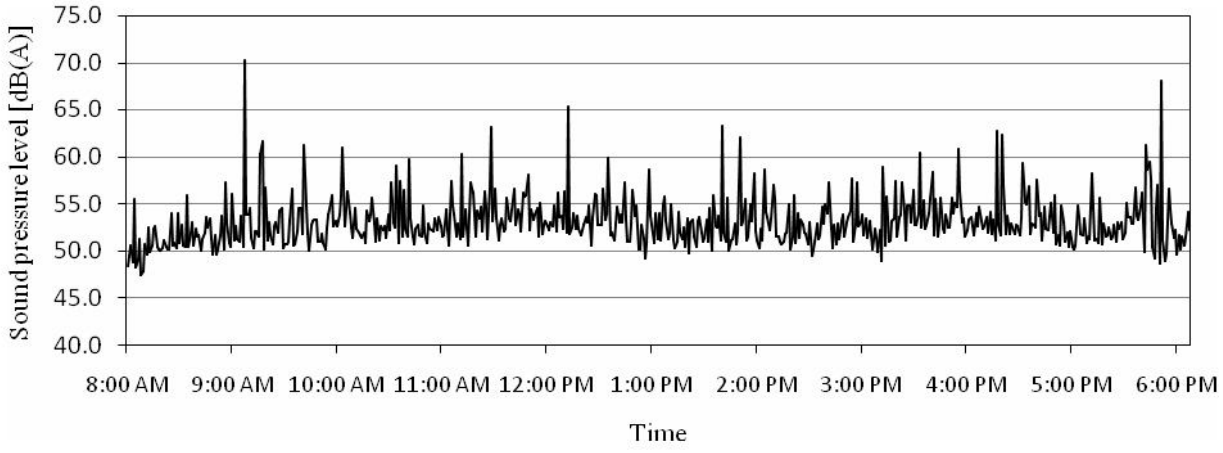

Fig. 3: Pattern of sound pressure fluctuation at the first floor

The fluctuation of SPL in the night (10 pm-7am) is shown in Fig. 4. At this period, the library is empty and all equipment have been turned off. The SPL varies from 31.5 dBA to 36.2 dBA. The calculated L_{eq} value is 32.4 dB(A) which is less than 52 dB(A) specified by FHWA (Federal Highway Administration) (1973) for interior noise of a newly constructed library. A summary of the noise descriptors for the library is presented in table 4. The average Noise Level (L_p) in the library during day-time is 56.85 dBA, Maximum Noise Level (L_{max}) = 73.80 dB(A) , Minimum Noise Level (L_{min}) =38 dB(A), Standard Deviation (ó) = 3.52, Equivalent Noise Level during the study period (L_{eq}) =63.57dB(A) and Noise Pollution Level (L_{NP}) =65.10dB(A). The L_{eq} and L_{NP} value fall within the same range and are greater than the recommended value for indoor library environment. Night-time readings are almost constant (ó=1.6), and are equally quieter (L_{eq} =35.11 dB(A) and L_{NP} =32.40 dB(A)). The difference in L_{eq} between the day-time and the night-time readings is 35.11 dB (A), and it reflects the expected level of noise to be reduced when the library is active.

According to WHO (2004), there is coherent evidence for annoyance in populations exposed to sound levels of 37 dB(A) for more than one year and severe annoyance at about 42 dB(A). In a related research, WHO (1999) observed that during daytime some people are highly annoyed at L_{eq} levels below 55 dB(A) and some are moderately annoyed at L_{eq} levels below 50 dB(A). Furthermore, L_{eq} values greater than 35 dB(A) have critical effects on speech intelligibility, disturbance of information extraction and message communication in indoor reading and learning environments. Evidently, the noise generated in the University of Ilorin Library is above these values and may lead to complaints or lower the use of the library.

The L_{eq} and L_{NP} value are within the same range and the resulting standard deviation (3.52) for day-time readings indicates a bit of uniformity (steadiness) in sound pressure readings. Though human behaviour is complicated, steady noises are always less disruptive than irregular outbursts of noise (Davis and Cornwell, 2009). Reported subjective evaluation of noise (Environment Agency, 2004) rates SPL below 30 dB(A) as quiet; between 30 dB(A) and 60 dB(A) as moderate; and SPL above 70 dB(A) is considered loud. The present empirical L_{eq} value in the library tends to agree with subjective evaluation of the library as being quiet or having moderate noise.

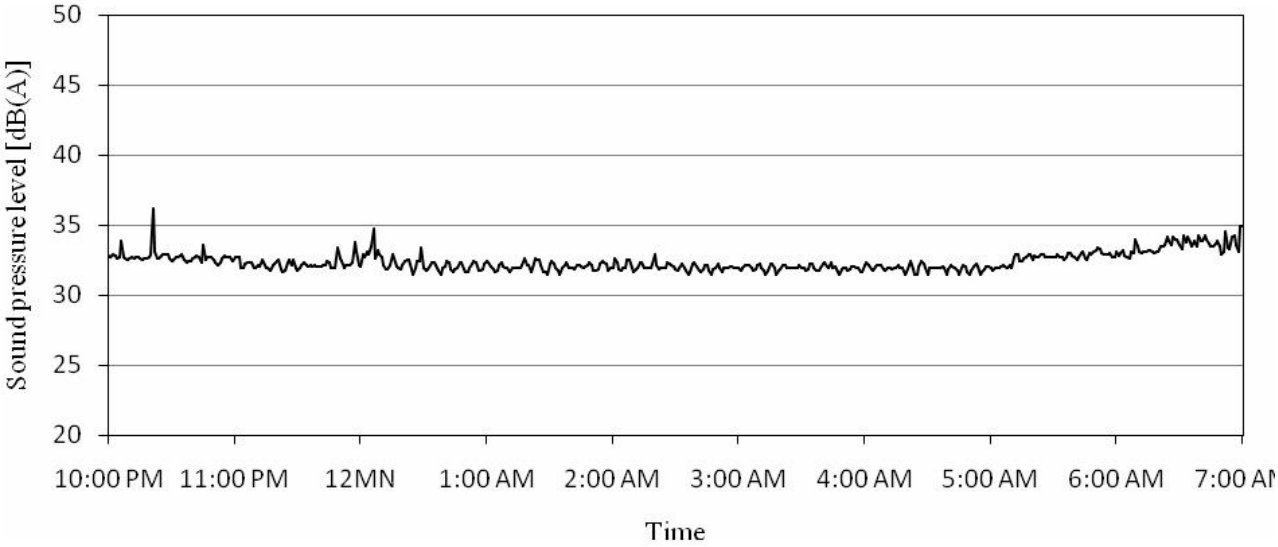

Fig:. 4 Night-time fluctuation in SPL

Table 4: Summary of Noise Descriptors for University of Ilorin Library

Location and period	L_{max} (dBA)	L_{min} (dBA)	L_p (dBA)	σ	L_{NP} (dBA)	L_{eq} (dBA)
Ground floor (daytime)	73.80	56.2	61.51	2.34	69.23	63.24
First floor (day time)	70.20	47.4	53.57	2.67	61.26	54.42
Basement (daytime)	75.70	38.00	54.69	3.36	65.11	56.52
Whole library (day-time)	75.70	38.00	56.85	3.52	65.10	63.57
Whole library (Night-time)	36.2	31.50	32.37	1.06	35.11	32.40

Conclusion and Recommendations

This study used empirical and subjective approaches to assess noise at the University of Ilorin Main Library in Ilorin, Nigeria. The identified major sources of noise in the library were students, library equipment, cell phones, and staff members, while minor distractions and aggravations come from footsteps, personal stereo, trolley wheels, and doors. Individual perception of noise and its effects varies, and it is usually subjective. The day-time noise level during the study period ranged from 38 dB(A) to 73.80 dB(A), and most of the readings were above the recommended limit of 45 dB(A) for library indoor environment. However, the library is quieter at night and the calculated L_{eq} is 35.11 dB(A). Within the library, the ground floor is the noisiest (L_{eq} = 63.24 dB (A)), followed by the basement (L_{eq} = 56.52 dB (A)), while the first floor has an L_{eq} value of 54.42 dB (A). The present empirical L_{eq} value in the library tends to agree with subjective evaluation of the library as being quiet or having moderate noise. It is suggested that the library authority should formulate a policy which will either control or prevent noise in the library. Also, equipment in the library should be maintained to prevent noise, and sound screens or absorbers should be provided in areas where an interior noise source is unavoidable. High, moderate and low noise designated zones should be provided within the library so as to cater for diverse requirement of reading environment and create avenue for group discussions/study, cell phone conversations, playing audio or video games and music, printing photocopying or scanning materials, and using some other equipment which may generate noise.

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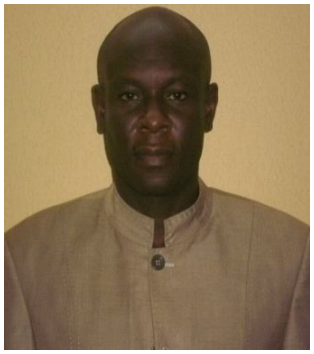

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A Comparison of Cataloguing and Classification Education (CCE) in Library and Information Science in South Africa, Brazil and the USA (SOBUSA): An Overview

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Abstract

This article reports on initial findings of a three-country (South Africa, Brazil and United States) study on cataloguing and classification education. Copies of the questionnaire were distributed to the heads of library schools and to cataloguing and classification instructors in South Africa, the United States, and Brazil. The substance of the two questionnaires was the same in all three countries, but changes were made primarily to clarify terminology and national conventions for ethics review. The questionnaires included multiple choice questions and open-ended questions, producing both quantitative and qualitative data. Findings were confirmed through interviews and course syllabi. The results of the study found more similarities than differences in CCE among the countries. The authors speculate that these differences among the three countries may be due to the influence of different European traditions on the development of LIS education in each country. Other differences include the use and availability of technology and the L-word/I-word controversy. The findings of the initial data analysis reported here reveal numerous areas that merit further scrutiny. Further results are derived from analysis of correlations in the data and qualitative analysis of the questionnaires' many open-ended questions.

Keywords: Cataloguing and Classification Education, CCE, Knowledge Organisation, Information Organisation, LIS Education, Brazil, South Africa, USA.

Introduction

Cataloguing and classification education (CCE) faces many challenges, even though professionals and educators agree that cataloguing and classification are at the core of library and information studies/ science (LIS). They strongly support CCE as an important component of LIS education (ALA, 2009; Blankson-Hemans & Hibberd, 2004; Bowen-Chang & Hosein, 2009; Cloete, Snyman & Cronje, 2003; Davis, 2008; Hill, 2004; Ocholla & Ocholla, 2014; Pattuelli, 2010; Shongwe & Ocholla, 2011). The major challenge affecting largely the developed countries such as USA is what Gorman calls "enemies of cataloguing."Gorman points out that " Enemies of cataloguing today include ill-informed administrators, information scientists in library schools, and those who think that alternatives [e.g. metadatologists] to vocabulary control and bibliographic architecture – such as Google-are better and cheaper than cataloguing" (Gorman, 2002). Thus, Gorman asserts, "those administrators believe that OCLC records grow on trees and their libraries can safely dispense with original cataloguers to rely on ill-paid staff to

pick the fruit of the OCLC trees and construct incoherent catalogues of increasingly less use to their users" (Gorman, 2002). This paradigm from possible LIS graduates' employers (Library administrators) tends to influence CCE in some LIS schools, even in the developing countries such as South Africa and Brazil. Nevertheless, challenges persist and they vary across countries and cultures including the three countries represented in the study reported here: South Africa, Brazil, and the United States (Ocholla et al., 11-17 August 2012).

South Africa has 25 public universities, 12 of which have LIS schools or information/library schools with different names and only 8 offers CCE. In South Africa, concerns include a shortage of cataloguers and circumstances that prevent full use of technology in CCE (Ocholla & Ocholla, 2011, 2014). The L-word (Library) and I-word (Information) that is referred to later as a concern in the USA also cause problems on decision to offer CCE or not in South Africa.

Brazil's LIS education has seen successful efforts to cooperate within the country and across the Mercosul region (Argentina, Brazil, Chile, Paraguay, and Uruguay), as well as across information and documentation professions. All types of schools have strong lines of communication with one another resulting in mutual collaboration. Information or knowledge organisation in the context of information science serves as the theoretical domain which furnishes a common theoretical and methodological basis for the applied domains including archival, library and museum sciences (Homulos, 1990; Mason, 1990; Smit, 1993; Smit, 2003).

In the United States, CCE is affected by the "L-word" (library) versus "I-word" (information) confrontation. Library schools are rapidly joining the iSchool group that appears to de-emphasise and devalue cataloguing and classification (Miller et al., 2006). They examined the issue in official lists of competencies, discussions on electronic lists, a meta-analysis of existing studies of curricula, and current curricula as represented in schools' websites (Miller et al., 2006). They concluded that while the principles of cataloguing and classification have remained in the curricula of most of the schools, the hands-on application of those principles that practicing professionals often believe to be essential is limited.

To explore the issues of different experiences and their potential for each other's futures this research addresses four questions:

a. Do cataloguing and classification curricula vary in different cultures/countries?

b. If so, what are the differences?

c. Why do they differ?

d. Is there sufficient similarity in conceptions, motivations, etc. that those who teach cataloguing and classification in a given country/ culture can learn from their counterparts elsewhere? Or are they too contextually specific?

These questions are very wide-ranging; so, the study which is of necessity also encompasses a variety of aspects of CCE.

Methodology

The questionnaire developed in South Africa (Ocholla & Ocholla, 2011) was distributed to the heads of library schools and to cataloguing and classification instructors in South Africa, the United States, and Brazil.ENREF 9 The substance of the two questionnaires was the same in all three countries, but changes were made primarily to clarify terminology (e.g. various terminologies for instructors other than professors) and national conventions for ethics review. However, the questionnaires remain largely the same. The differences made each of them more effective in context, not different in content.

The questionnaires included multiple choice questions and open-ended questions, producing both quantitative and qualitative data. The data gathering techniques were also adjusted for their audiences.

In South Africa (Ocholla & Ocholla, 2014), questionnaires were sent by email and follow-up visits to the heads and cataloguing and classification instructors of all eight South African library schools that teach CCE with a 100% response rate. Findings were confirmed through interviews and course syllabi. It is noted that the analysis of course content/ course description or syllabi seems to be quite common in related studies (Davis, 2008; Pattuelli, 2010).

In Brazil, the copies of the questionnaire were distributed by email to the heads and cataloguing and

classification instructors of all thirty-eight Brazilian undergraduate library schools (the thirteen Brazilian graduate information science schools did not take part of the research since the professional librarians are educated by undergraduate schools, and the graduate schools are devoted to forming professors and researchers in information science) with a 61% response rate. Findings were confirmed through searches of the library schools' homepages.

In the US, email messages were sent to heads and cataloguing and classification instructors in all 53 schools that offer master's degrees accredited by the American Library Association inviting them to participate. The messages included links to the online questionnaires using the Qualtrics survey software. US academics are more likely to respond to a questionnaire if the data will be anonymous which is what they expect to see. This anonymity is supported by Qualtrics. The response rate was low, as is common for online questionnaires, at 20-40%. This presentation reports the findings that have meaningful results from the initial analysis.

Findings

The focus of this presentation is on basic quantitative data analysis; that is, the more obvious results of this study. This first level of analysis partially answers the research questions and points the way to deeper analysis of selected topics as, is noted in the conclusion.

Before looking at the research questions, it is important to establish whether or not the respondents to the questionnaires felt that the topic of study itself is relevant. Do they believe that it is still necessary to teach cataloguing and classification in LIS schools? The popular opinion is that cataloguing and classification still belong to core competency and activities of librarians as reflected in ALA and IFLA core competency of librarian's guidelines. For instance, Gorman asserts that " we should teach cataloguing and classification because it is essential that those who wish to be librarians (not just those who wish to be cataloguers) understand the way in which recorded knowledge and information is organised for retrieval" (Gorman, 2002). Thus, it is nearly impossible to function effectively as a librarian without sound knowledge of library collection, how they are organised, where to find them and use them. In other words, 'if you cannot think like a cataloguer, you cannot think like a librarian and, therefore, cannot deliver effective library services" Gorman asserts. Increasingly, skills of a cataloguer are required in emerging organisation of information (OI) activities related to digitisation, and new titles such Medata Librarian, E-Resource Librarians among others are becoming common (Cerbo, 2011). Boydston and Leysen add cataloguing of local hidden collection or unique local library collection, non-MARC metadata, Internet resources, digital documents, vendor records for batch loading into library's catalogue and increasingly involved in creating institutional repositories (Boydston and Leysen, 2014).

The South African respondents (Ocholla & Ocholla, 2014) from the eight LIS schools offering CCE considered cataloguing and classification to be a core LIS course; the backbone of librarianship's professional qualification; a course that supports knowledge of library information and reference services; extremely useful for the critical analysis and synthesis of a library collection by knowledge domains/ structures for effective information services; and essential for the organisation of knowledge in libraries.

In Brazil, information processing, including classification, indexing, abstracting, cataloguing and information retrieval are believed to be the nucleus of LIS studies, and they constitute an average 25% of the hours of the total library course (in accordance to the Mercosul LIS educational agreements). Agreement on this basic concept rests on the relationship between the role of information science as a theoretical domain supporting the practical information domains like archival science, library science, as well as museology. All the respondents declared that classification and cataloguing teaching in library schools are "surely very important." They also consider the need for changes and adaptations to fit new users´ needs, including the need to furnish technological empowerment to librarians and users.

All but one of the US respondents agreed, although not whole-heartedly, that cataloguing and classification should be available to students. Most of them suggested it be an elective rather than a required course. Hsieh-Yee (2008) expresses this equivocation when she suggests that the traditional catalogue while trusted by users is not a first choice in finding information and is no longer cost-effective. She concludes, however, that theory and principles of knowledge organisation are still necessary and

need to be connected with technological knowledge. The broad range of CCE courses offered by the University of Wisconsin-Milwaukee as reported by Miller et al. includes : Organisation of Information, metadata; Indexing and Abstracting, including Controlled Vocabulary and Thesaurus; Information Architecture; Classification Theory; Comparative Bibliography; Social and Cultural Issues in Information Organisation; Linked Data for Libraries; Mashups, Semantic Web and Web 2.0; RDF; Ontologies and Semantic Web etc. This shows that CCE is essential, can be offered at different levels for different needs of students and work place (Miller et al., 2012).

What is the content of the curriculum in terms of modules, courses and content or units being taught?

A survey of cataloguing education in the USA by Davis divided cataloguing education into eight areas: Organising – focuses on general principles of bibliographic control and basic knowledge of information organisation; basic cataloguing– focuses on introduction to knowledge and related skills (e.g. AACR2, MARC, LC, DDC etc.), advanced cataloguing (AC) focuses on details and complex aspects and practicals; subject analysis focuses on subject cataloguing and classification, indexing and abstracting; metadata schema and applications, serials focusing on bibliographic control of serials, other focuses on issues and topics not covered in any of the seven categories (Davis, 2008). Except for basic cataloguing or organisation of knowledge, the other six could be categorised under advanced cataloguing (Pattuelli, 2010). Like Patuelli who analyses introductory courses in cataloguing in USA, Davis study concluded that "LIS programs are continuing to offer and require introductory courses in cataloguing and bibliographic control, they are relying more heavily on these introductory courses to provide the bulk of cataloguing education" (Davis, 2008). Unlike the South African scenario (Ocholla & Ocholla, 2014) where practical cataloguing/hands on is taught together with theory at all levels except at the UNISA (distance learning), cataloguing practical does not seem to be offered at basic levels in USA LIS Schools reviewed by Davis. Also many LIS Schools teach most of the eight content areas – mentioned by Davis – in one semester long (15 weeks) or two semester long courses. Janet Swan Hill and Sheila Intner, in Davis, cautions that "when a library school curriculum provides no opportunity for every student to perform a certain amount of actual cataloguing, many who might have loved the work will never apply for cataloguing positions" (Davis, 2008).

The quantitative data revealed a strong common core of concepts covered in CCE (see Table 1). Lussky analysed online employment advertisements for positions with a "cataloguing orientation" and found that demand was high for knowledge of traditional cataloguing standards, subject knowledge, and communication skills suited to working with people and data (Lussky, 2008). Demands for experience and technological skills were modest.

In South Africa (Ocholla & Ocholla, 2014) the contents of the cataloguing and classification courses fall within the following: AACR2; abstracting; authority control; bibliographic control; bibliographic description; cataloguing: theory, process, tools, manual, computerised, online, etc.; classification: theory, history, schemes, process, policies, practical, etc.; DDC; LCC; descriptive cataloguing; Dublin Core; indexing; information retrieval; LCSH; library catalogues; MARC 21; metadata; subject organisation and access; and thesaurus construction. These topics are virtually the same as those that Lussky ENREF_20 found in her study of job advertisements for cataloguing and related positions, but Lussky found more emphasis on technology (Lussky, 2008).

In Brazil, the content of CCE is very similar to that taught in South Africa. In terms of classification, DDC and UDC are taught in all the library schools and only a very few cover Library of Congress Classification (and under a historical approach) since this system is not used in Brazil. There is also an emphasis in special classification schemes, and it was possible to observe a deep concern on the subject analysis processes, with a strong French (Coyaud, Gardin) and English (CRG) influence.

Similar content is covered by courses in the US with the addition of Library of Congress

Table 1: Course Content

	South Africa	Brazil	USA
AACR2R	Yes	Yes	Yes
Abstracting	Yes	Yes	No
Authority control	Yes	Yes	Yes
Bibliographic control	Yes	Yes	Yes
Cataloguing theory/history	Yes	Yes	Yes
Cataloguing practice & manuals	Yes	Yes	Yes
Classification theory	Yes	Yes	Yes
Classification application, policies	Yes	Yes	Yes
DDC	Yes	Yes	Yes
LCC			Yes
UDC		Yes	
Dublin Core, metadata	Yes	Yes	Yes
Indexing	Yes	Yes	Yes
Information retrieval	Yes	Yes	No
LCSH	Yes	Yes	Yes
Library catalogues	Yes	Yes	Yes
Online cataloguing, MARC	Yes	Yes	Yes
Subject analysis	Yes	Yes	Yes
Thesauri	Yes	Yes	Yes

Classification. In many cases, theory is covered first in a prerequisite to cataloguing and classification which is an overview of information organisation. Generally, there is a greater technological emphasis in the coverage described by US instructors (Davis, 2008; Miller et al., 2012). Half of the instructors used a single textbook which will have a homogenising effect on course content. The other half was divided between only two other texts.

How are the courses being taught in terms of the methods used?

A variety of methods can be used for CCE but teaching both theory and practice is widely recommended (Al Hijji & Fadlallah, 2013; Hudon, 2010; Miller et al., 2012; Normore, 2012; Ocholla & Ocholla, 2014). Normore citing others refers to 'drill and practice' based on repetition, 'concept learning' or 'rule learning', 'decision making' and 'critical thinking' (Normore, 2012). An important argument by Normore is that "teaching cataloguing requires instructors to present and integrate information about

the variety and complexity of the field while providing adequate theoretical foundation for practice" (Normore, 2012) and suggests a problem solving approach called 'wayfinding' and use of cognitive/ mental maps as one of the approaches that can be used. Miller et al. provide innovative ways of teaching cataloguing and classification through online cataloguing education at the University of Wisconsin-Milwaukee that is quite novel and exciting (Miller et al., 2012).

The basic data show commonalities of pedagogical approach (see table 2 for tracking commonalities and differences). The differences are largely attributed to differences in access to technology.

In South Africa (Ocholla & Ocholla, 2014), cataloguing courses are taught mainly through lectures and manual exercises. Other methods include group discussions, practical and limited online assignments, workshops, seminars, projects, case studies, and quizzes. In Brazil, lectures, exercises and discussions based on previous readings are the most common teaching strategies. US courses are also taught predominantly with lectures and exercises, but the exercises are more likely to be online. Small group work is also common. Nearly half of respondents taught onsite face-to-face but as many taught online or in some other distance format in which the instructor and student interacted through ICT.

Who should study or be taught cataloguing and classification and at what levels are the courses being offered?

Essentially, all librarianship students should receive CCE. Who are the students? In South Africa (Ocholla & Ocholla, 2014), some LIS Schools, teaching vocational or general education, do not teach cataloguing and classification because they deem it irrelevant to their programs. Non-professional librarianship programs also omit cataloguing and classification. However, future professional librarians are expected to take the course. Generally, cataloguing and classification courses are taught in professional library schools to third and fourth year students and/or Graduate/Post Graduate students.

In Brazil, all LIS undergraduate schools (as well as the other Mercosul schools) have classification and cataloguing as mandatory disciplines in their curricula. On the other hand, the information science graduate schools (only Brazil has graduate schools in the information domain in the Mercosul area) do not focus their studies on classification and cataloguing themselves, but do consider them as a part of a broader theoretical domain called information organisation(IO) or even knowledge organisation(KO). In this sense, while undergraduate library schools are mostly concerned with classification and cataloguing as professional library practices, information science graduate schools are basically concerned with the theoretical basis of classification and cataloguing as parts of the IS branch of so-called information organisation.

The US responses show yet another different picture. Most library schools teach cataloguing and classification only at the master's level (although two reported it at both undergraduate and masters). Because the master's is the basic professional degree in the US and few master's students have an undergraduate degree in LIS, the levels are different in South Africa. Additionally, while some iSchools may not teach cataloguing and classification or may offer it only as a specialised elective because they view cataloguing in particular as not relevant beyond a library context. US iSchools describe themselves as "interested in the relationship between information, people and technology" (iSchools, 2012) and those that are library schools are generally regarded as the more elite library schools with PhD programs and plentiful external research funding and not 'limited' to libraries or librarians (iSchools, 2012).

Is there sufficient similarity in conceptions, motivations, etc. that those who teach cataloguing and classification in a given country/culture can learn from their counterparts elsewhere? Or are they too contextually specific?

Tables 1, 2, and 3 summarise the commonalities and distinctions among the library schools in South Africa, Brazil, and the US when it comes to cataloguing and classification courses. Similarities include the course content, and teaching methods to a large extent.

Differences are more conspicuous. South Africa (Ocholla & Ocholla, 2014) is faced with large

Table 2: Commonalities and Differences

	South Africa	Brazil	USA
Need for CCE	Yes	Yes	Equivocal yes
Course content – see Table 1 for details	Theory and established standards	Theory and established standards	As South Africa except theory may be in earlier overview course
Methods	Lecture and exercises (manual and limited online)	Lecture, exercises and discussions based on previous readings	As South Africa + influence of online
Programs	In professional library programs		May be elective for specialists
Levels	3rd-4th year undergraduate and master's	2nd-4th year undergraduate (masters are more concerned with the theory of information organisation)	Master's and occasionally undergraduate

classes of students, staffing problems or lack of instructors, a need for more cataloguing / classification tools and access to technology for teaching CCE in its library schools. Digital and manual tools for students to use in the course are expensive and scarce. The L-word/I-word dichotomy as it is manifested in South Africa has had an effect on CCE. For example, the Bachelor of Arts – Information Science programme at the University of Zululand, is aimed at the broad information service market; so, cataloguing and classification courses were initially removed for fear of losing students focused on information technology. However, the graduates found jobs in libraries where this gap in their education became a problem (Shongwe & Ocholla, 2011).

With Brazil's development of the IS graduate schools, many scientific venues were created like the Brazilian Association of Information Science Research and the Brazilian Chapter of ISKO. This means that, in Brazil, the L-world of LIS undergraduate schools and the I-world of the IS graduate schools have a strong dialogue and a mutual collaboration. Such a situation has promoted a "revival" of classification and cataloguing studies, especially with the challenges coming from digital information, new models of information organisations, and new forms of information retrieval.

The US is unique in having professional education for librarians at the master's level usually with no related undergraduate. As Ocholla and Ocholla note, level is one of the factors that "have a bearing on the levels and depth of cataloguing and classification teaching, learning and research" (Ocholla & Ocholla, 2011). The other factor of difference in the US context is the L-word/I-word friction. Different from the South African experience, the iSchool movement, which began in the US, has 36 members, 23 in the US, and 13 in other countries. It has had a major impact on the relationship between library schools and professional librarians and has fanned the L/I rhetoric (Miller et al., 2006). Cataloguing and classification expertise is an area in which some professionals suspect library schools of abandoning librarianship for the cachet of being iSchools.

What are the challenges arising from teaching the course?

In spite of some significant contextual differences, the challenges of CCE are surprisingly similar (see table 3).

Challenges encountered by instructors teaching cataloguing and classification in South Africa (Ocholla

Table 3: Challenges in teaching CCE

	South Africa	Brazil	USA
Students lack general knowledge	Yes		
Students lack critical thinking	Yes	Yes	Yes
No time for or interest in theory			Yes
Students are unprepared	Yes		Yes
Students need individual attention	Yes		Yes
Language concerns	Yes, first language may not be English which is the language of instruction	Yes, there is a "need for more instructional material in Portuguese	
Time allotted not enough	Yes		Yes
Not enough tools	Yes	Yes	
Not enough online work	Yes	Yes	
Students lack interest	Yes, in reading materials		Yes, in the course content
Instructors staying up-to-date	Yes	Yes	
Challenging content	Yes, especially classification	Yes, especially classification and applying rules	Yes, especially applying rules
University rules and regulations	Yes, required exam regulations	Yes, sometimes they act in conflict with the information market needs	
Content is dull			Yes, even an instructor found it dull

& Ocholla, 2014) included issues with many students who lack preparation, general knowledge and critical thinking skills. These students require individual attention. Most of the same issues arise in Brazil and the USA, except that Brazil has fewer challenges involving students. Another commonality between South Africa and the USA is the difficulty of fitting cataloguing and classification into a course of the standard length. Further, some instructors find the course content itself problematic for students in terms of being difficult or dull. Most change related challenges noted by Boydston and Leysen such as implementation of Resource Description and Access (RDA), acquisition of new skills, competition from vendors, decreased budgets for hiring cataloguers and increased need for accountability seem to affect the three countries in different ways (Boydston & Leysen, 2014).

What suggestions can be made for the future?

Meeting the challenges is necessary for effective CCE. Some of the suggestions are double-edged. For example, more time spent bringing individual students to the level of others in a class can have staffing implications. Replacing AACR2 with RDA can leave students ignorant of AACR2 making it difficult to deal with existing catalogue records. Table 4 draws on the open-ended responses to provide a sample of the suggestions.

Hsieh-Yee suggests three goals for CCE: 1) increasing awareness and appreciation of information

Table 4: Suggestions for overcoming challenges

	South Africa	Brazil	USA
Small group work		Yes	Yes
Individual consultation		Yes	Yes
Adequate staffing	For groups and individuals		
Constant curricular evaluation and improvement		Yes	
More practical exercises	Yes	Yes	Yes
More case studies		Yes	
More computer resources	A priority	Yes	
More technical visits		Yes	
Patience			Yes, mentioned by several
More emphasis on RDA		Yes	
Replace AACR2 with RDA	Yes, with lots of questions	Yes	Yes, with only a brief backward glance
Public funding for instructional material		Yes, in Portuguese	
Retirement			Yes, solution of two responses for addressing RDA

organisation, particularly cataloguing; 2) educating future cataloguers and metadata specialists; and 3) developing future leaders in the area of cataloguing (Hsieh-Yee, 2008).

Exploration of these same questions in relation to other countries may be useful. For example, Harvey and Reynolds describe the context of CCE in Australia in terms very similar to the L-word/I-word issues in the US (Hill & Intner, 2002), Harvey and Reynolds also note the responsibility of employers in the hands-on training of cataloguers in Australia.

Respondents in South Africa and the US are rapidly incorporating *Resource Description & Access* (RDA) into their courses as the new set of cataloguing rules. Most are setting aside the *Anglo-American Cataloguing Rules* 2nd ed. (AACR2), not surprisingly given the time constraints of university terms and the difficulty of covering all of the key standards and practices in cataloguing and classification. Several indicated a focus on *Functional Requirements for Bibliographic Description* (FRBR) and *Functional Requirements for Authority Data* (FRAD) which are conceptual frameworks rather than rules. This shift of focus could take CCE further from practice and further toward theory. Handling RDA seems likely to be a continuing question. Some US respondents left concrete measures behind and suggested that students' concerns be countered with patience and, in one case, "handholding." Two US respondents plan to cope with introducing RDA by retiring before it has to be done – not an option open to everyone.

Conclusions

The findings of the initial data analysis reported here reveal numerous areas that merit further scrutiny. Some are treated in this presentation including the interests and capabilities of students; sufficient and current staffing; linking theory and practice; the different impacts of technology in different countries and cultures; and the different yet similar manifestations of the L-word/I-word controversy. Other topics were too complex to include in this brief overview, particularly the delicate issue of instructors from the field and from the faculty and the language used in representing CCE (notably course titles). The researchers look forward to delving deeper into these topics as well as the broader discourses that characterise the local/global experience of CCE in South Africa, Brazil, and the US, and how they can be mutually supportive in recognising the importance of, teaching future professionals in, and fostering leadership for cataloguing and classification.

An unexpected finding is that CCE in South Africa and CCE in the US appear to be more similar to each other than to CCE in Brazil. It would be worthwhile to explore how much this difference grows from the different outside influences on each country's LIS education. South African LIS education was originally largely patterned on a British model. The US had its own pioneers like Dewey and Cutter, but their predecessors such as Panizzi brought a mainly British influence. British research, such as the Cranfield studies, also heavily influenced US practice.

In contrast, LIS in Brazil was built under a merging of different foreign influences. During the seventies and the eighties, the Brazilian Government generously funded sending professors abroad for getting their PhDs. They went to France, Canada (both British and French traditions), Spain, the UK ,and the USA. Those professors formed a Brazilian generation of LIS professors and researchers whose scientific profile is a melting pot of different foreign influences like Brazilian culture itself. One example for this is the common use of the expression 'documentary analysis' for subject analysis as well as 'documentary languages' for indexing languages, which reflects both the French and the Spanish influence, the studies on indexing in Archival Science as well as of Diplomatics in LIS (which reflects the Canadian influence), the ever growing research in classification theory (under a British influence). Extensive information retrieval research, as well as the widespread use and teaching of DDC, reflect a strong American influence.

Future research might combine historical traces of influence with differences manifested today to give us a much clearer picture of why we do what we do in CCE and beyond.

In spite of different influences, a preliminary conclusion to this study is that there are enough similarities to form a common foundation for the fruitful exchange of ideas. However, deeper analyses are needed to determine whether the commonalities

offer common solutions to common problems, leaving little to learn from each other; or, do the commonalities grow out of different contexts to lead to different solutions. Such a circumstance would indicate potential for constructive exchange of ideas to address our common problems.

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Accessing information through Zimbabwe's Parliamentary Constituency Information Centres (PCICs)

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Abstract

This article focuses on the performance of Zimbabwe's Parliamentary Constituency Information Centres (PCICs) in disseminating parliament generated information and providing a platform for public participation. Questionnaires were used to collect data from office assistants (OAs), members of parliament (MPs) and constituents. In-depth interviews were conducted with development partners, the Clerk of Parliament, and officers of parliament. Document analysis, site visits, and observations were also used to collect data for the study. It was found that although the introduction of PCICs was well received by various stakeholders, the information remains a critical concern because of its inadequacy and lack of currency. It was also found that there are challenges encountered in disseminating parliamentary information to constituents. The article recommends ways of improving the dissemination of parliamentary information through Zimbabwe's PCICs.

Keywords: Parliamentary Information, Constituents, Information Dissemination, Information Access, Zimbabwe

Introduction

In Southern Africa, the Parliament of Zimbabwe pioneered the creation of constituency offices (referred to as Parliamentary Constituency Information Centres in Zimbabwe), and a number of countries in the region, including Zambia, Botswana, South Africa and Malawi have followed up and developed constituency offices. There were three major reports dealing with information service reforms for the Parliament of Zimbabwe in the 1990s. These included The Zimbabwe Parliamentary Information Consultancy Report (Englefield, 1996); Report on the Provision of Information, Analysis, Parliamentary Education, Public Relations and Information Technology Services to the Parliament of Zimbabwe (Verrier, 1997); and The Parliamentary Reform Committee Report (1997). The Parliamentary Reform Committee Report led to the establishment of PCICs which is the main focus of this article. Section 62 of the Constitution of Zimbabwe Amendment (No.20) provides for access to information. In particular Section 62 (1) of the new Constitution clearly states that:

> *every Zimbabwean citizen or permanent resident, including juristic persons and the Zimbabwean media, has the right of access to any information held by the State or by any institution or agency of government at every level, in so far as the information is required in the interest of the public accountability.*

Parliament as an institution of government holds a lot of information for public interest, and has created PCICs to improve access to such information. A Parliamentary Constituency refers to a specific geographical area in Zimbabwe that a Member of Parliament (MP) represents in the House of Assembly. In view of its importance, many parliaments in developing countries have initiated programmes to establish parliamentary offices in each constituency, where MPs are available for consultation by constituents. Traditional sources of parliamentary information in Zimbabwe that receive process, store and disseminate information include *committees and journals, research, and public relations, and library departments*. These departments are physically located within parliament building. The Parliament of Zimbabwe reforms that were started in 1997 which included the need to reform the information services, involved a major exercise to establish PCICs in all the 120 constituencies during the life of the Fifth Parliament from 2000 to 2005. The aim was to close the gap that existed between parliament and the public and between the MP and the public as well.

The objectives for the establishment of PCICs were two-fold, namely to provide public access to parliamentary-generated information, and to act as a platform for public participation. The main parliamentary publication found at the PCICs is the *Hansard*. There is a need to provide information resources in various formats, such as television, radio, newspapers, bulletins, Internet and social media. The distribution of these publications to constituents is not evenly balanced because access to PCICs is affected by office location and political partisanship. The purpose of this article is to produce valid insight about the process, patterns, and constraints of the dissemination of parliamentary information by PCICs to both primary (MPs, constituents, OAs, and Officers of Parliament) and secondary users (Government Departments, local authorities, NGOs, researchers, schools and tertiary institutions). In doing so, it will identify the factors influencing the effective functioning of PCICs in Zimbabwe with a view to analysing the constraints and recommending methods for improving access.

Access to Parliamentary Information Services in Africa

The idea of access and public participation is part of wider trends reflected in declarations, international instruments and strategic plans which represent major efforts to universalise democracy and freedom of access to information, and freedom of expression. Examples that were found relevant for the study were The Universal Declaration of Human Rights (Article 19 of the UDHR, 2001), The Southern Africa Development Community (SADC, 2006 – 10) and Inter -Parliamentary Union (IPU, 2006) strategic plans, The Declaration on Parliamentary Openness, and the International Federation of Libraries Associations and Institutions (IFLA) Lyon Declaration on Access to Information and Development (2014). A recent declaration is *The IFLA Lyon Declaration on Access to Information and Development* (2014), *which* is expected to succeed the Millennium Development Goals. The declaration advocates the need for access to information and set the agenda for development for the next decade by: adopting policy, standards and legislation to ensure the continued funding, integrity, preservation and provision of information by governments, and access by people.

A number of African countries have introduced information services to disadvantaged areas, and there has been a steady and increasing, trickle of publications devoted to this topic. There have also been a number of conferences and workshops on the theme. Probably, the most complete synthesis of the information services theme was published by Sturges and Neill (1999). They suggested that the movement is influential in most countries of East, Southern and West Africa. It is found in Anglophone countries and also exists in particularly lively form in Francophone West Africa. Ideas and experiences from the Francophone countries have been drawn together very effectively by Ndiaye (1999) in his research entitled *Performance measurement and project evaluation for African rural information services*. From these research projects, the movement has produced speculative writing and some experimentation. The speculation has been fruitful; the research helpful and stimulating but it is the experimentation that is now most important. The movement is now much more than a matter of words.

Rosenberg (1998) questioned in 1993 if such services were sustainable beyond an experimental phase.

The importance of access to information by the public cannot be overemphasised particularly in developing countries. Information is so vital and that is why Nyerere (1967) stated that:

> *while other countries in the world aim to reach the moon, we must aim for the time being at any rate to reach the villages by providing them with necessary information.*

Thus, access to parliamentary information by the majority of the constituents could provide them with knowledge on the functions of parliament, as well as enable them to participate in parliamentary activities. This is so because the provisions of parliamentary information in Zimbabwe and in Africa at large are focused mainly in urban areas where the parliament is situated whereas parliamentary constituencies are scattered across the countryside where the majority of the people live. This is a scenario regarding information services in Africa that have been modelled on Western patterns, without taking account of the local environment and non-literate masses (Kantumoya, 1992). An access to information service encompasses the removal of any restrictions that would discourage citizens from enjoying equal services (Tell, 1998) and access to parliamentary information is crucial in this regard. Obholzer (2011) defines parliamentary information as:

> *Information about parliament's roles and functions, and information generated throughout the legislative process, including the text of introduced legislation and amendments, votes, the parliamentary agenda and schedule, records of plenary and committee proceedings, historical information, and all other information that forms part of the parliamentary record, such as reports created for or by parliament.*

With the establishment of constituency information centres, we are experiencing for the first time in history that citizens can have immediate access to information to participate in a democratic society. This view is supported by findings that several African countries have embraced the establishment of constituency information centres to provide access to parliamentary information, for well-known economic, political, and social reasons (Sawi, 2003). Parliament pursues a number of goals, including the development and dissemination of information, building support for the political system and providing services to all constituents. Both MPs and constituents need access to information about these goals. The Global Centre for ICT in Parliament's (2010) research for the World e-Parliament Report in 2010 showed that parliamentarians need access to information to generate and maintain public support. They also need to focus on opportunities that digital tools can offer to become more effective in information dissemination (Sobaci, 2012). Without ready and easy access to relevant information, MPs have no hope of keeping pace with rapid societal changes, nor will they be able to make the right decisions. Likewise, constituents want to be kept informed about decisions made in parliament that affect them. They need access to information in order to solve problems in their everyday lives. This information provides them with a sense of security, achievement and control.

Constituents however face certain difficulties in accessing parliamentary information. In a study of the problems being faced by various parliamentary information systems, Tell (1998) identified the difficulties of equal access by citizens and concluded that:

> *a genuine approach should operate freely along particular lines. Problems such as political power, leadership, democracy, liberty, and political systems are common to every state. Interests differ and solutions arrived at in one environment can sometimes fail to have a bearing on similar institutions in one area or several areas within the state.*

Nonetheless, if parliaments want citizens to have a say in the affairs of the country, they must first secure their right of unrestricted access to information that is necessary for participation in parliamentary activities. Kohl (1991) explains that once the legal obligation to respond to information

requests from parliament is binding upon all government agencies, then it guarantees the identification, analysis, condensation, and dissemination of, accurate, and up-to-date information on a strictly non-partisan basis.

Parliamentarians and Constituents' Information Needs

Information need is the lack of appropriate information on which to base choices that could lead to benefits that may improve the citizen's well-being (Tester, 1992). Tester's definition is a good starting point for a consideration of what we mean by information needs. It emphasises that we seldom want or need information for information sake. Information is a means to an end, something that enables us to make choices. Devadason and Lingam (1997) categorised information needs by distinguishing between unexpressed and dormant information needs. Dormant needs are needs of which a user is still unaware and that can be activated by an information system. With unexpressed needs, people are aware of their needs but do nothing about them. Smith (1991) classifies information needs as being either general or specific. General information need is the need for current information on topics of interest, while specific needs refer to problem, solving and solution– finding information. According to Atkins (1973), information need is:

> *a function of extrinsic uncertainty produced by a perceived discrepancy between the individual's current level of uncertainty about important environmental objects and a criteria state that he seeks to achieve.*

Kebede (2000) agrees that satisfying information needs of users is a dynamic process, and once knowledge has been accumulated, that can lead to renewed information needs. In a debate on legislative information services, Robinson (1991) concluded that, while legislative information services can be seen to provide specialised research in the narrow sense of providing services for a specialised clientele, they differ from libraries and other information service providers. The latter must provide information on the breadth of human knowledge, rather than concentrating on a range of subjects relevant to a specialist clientele. Parliamentary information needs to cover the whole universe of knowledge. Cuminghame (2009) argued that information needs relating to legislation must respond to the question: What do parliaments do? Answers to this question affect the need for, and functions of information in parliamentary libraries and information services. There is scope for endless debate but the truth is that parliamentary information services are dedicated to parliamentary activities. This means that its staff must understand how parliamentarians operate; what the information needs of citizens are; and how to respond to these needs.

The information needs of MPs and constituents relate to their varying roles. A survey conducted by the Global Centre for ICT Parliament (2010) showed that parliaments are struggling to meet ever growing citizen expectations. Data suggest citizens hold parliamentarians to account principally for the services they are able to deliver outside parliament, not for their law-making role, nor their ability to oversee the executive. Research has shown that parliamentarian capacity to deliver is being stretched to the limit, and might even be taking them away from their parliamentary duties. The Global Parliamentary Report 2011 surveyed over 600 parliamentarians, and suggests that working on citizen issues is the single most time-consuming aspect of a parliamentarian's work.

It is clear that constituency service is important both to citizens and MPs. Studies in different regions of the USA suggest that the public believes that some form of constituency service is the most important part of an MP's role, while MPs themselves no doubt see the benefit of meeting the public's needs for various reasons, not least to improve their chances of re-election. The same survey conducted for the Global Parliamentary Report in 2011 indicated that parliamentarians considered law-making to be their most important role (52.3%) of respondents; followed by holding government to account (17.2%); and solving constituent problems (12.5%). When asked what they thought citizens see as their most important role, however, the result was different. Parliamentarians believed that, in the eyes of the citizen, solving citizen problems was the parliamentarian's most important role (36.4%); followed by law-making (20.3%); holding government to account (16.2%); and promoting the interests and economy of their constituency (13.1%).

Figure 1: Ranking parliamentarians' roles
(*Source:* World e-Parliament Report 2008)

The 2008 World e-Parliament Report identified that many parliaments lag in their ability or effectiveness as public institutions to inform and interact with citizens. To avoid the risk of eroding public trust, parliaments need to define new strategies and a vision aiming to re-engage the electorate, interact with citizens, inform citizens, and provide multiple channels for receiving and disseminating information**.** Casini (2008) provided examples of parliaments moving from the almost "traditional" citizen input solutions to the more interactive and popular, social networking media. In Brazil, lawmakers connect with the constituents through various social media. The Brazilian e-Democracia project relies on the use of social media combined with offline legislative events, such as committee hearings, and conferences. The initiative is intended to reach a broad segment of the public, parliamentarians, researchers, non-governmental organisations and interest groups. The main goal is to permit easier access to the decision-making process by citizens not associated with strong interest groups or corporations that usually lobby for access to the centre of power in Brasilia, where the national government is located.

To involve constituents in parliamentary issues and challenges, there is a need to address the digital divide; access to technology for all citizens, complexity of multiple languages, literacy, and people with disabilities. This will encourage citizens to make effective input and valid comments through their representatives. Citizens are requested to make democratic choices. To do this, they need a considerable amount of information about what goes on in the parliament; the choices on offer; and the consequences of choosing one course of action in preference to another. The issues are clarified at critical decision-points, such as elections or referendums. But there is an underlying expectation that citizens will act as informed citizens, gathering, sifting and using information for the collective, personal, and individual benefit. This is a fundamental principle of democratic political systems.

Without understanding the above relationship between legislators and constituents, it would be difficult to make any meaningful information needs analysis of these two groups. Parliamentarians require free and easy access to relevant, accurate, timely and impartial information if they are to accomplish the difficult tasks they have been elected to implement. Similarly, constituents need feedback information from parliament and information generated within their constituency.

Zimbabwe's Information Policy and Legislation

Information providers across the country operate within the regulatory framework of the National Information Policy (NIP). Information policy regulates the kind of information collected, created, organised, stored, accessed, disseminated and retained (Nnamdi, 2008). According to Niegaard (2007), national information policies are put into practice through legislation and other state initiatives, national programmes, and projects. Usually associated with government information, information policy also establishes the rules, within which private information providers and the media operate, and establishes guidelines to regulate participation in the information sector. These arise from the political, economic and social needs and conditions existing within a country. Feltoe (2003) identifies some of the following NIP regulatory provisions in Zimbabwe:

- Constitution of Zimbabwe (Section 62) Amendment (No.20);
- National Libraries and Documentation Services Act (No.11 / 85);
- Censorship and Entertainment Controls Act (No. 694 / 81);
- National Archives Act (No. 8 /86);
- Access to Information and Protection of Privacy Act (AIPA), (Chapter 10:27); and
- Public Order and Security Act (POSA), Chapter (11:17).

The NIP should inform Parliament of Zimbabwe's (PoZ) information policy. In turn, PoZ's Information Policy should guide the operation of PCICs. However, this is not the case with regards to Parliament of Zimbabwe Information's Policy.

Methodology

Both quantitative and qualitative research approaches were found to be inevitable. However, the qualitative approach was predominant because it was found to be better for answering more fully the main research question. If the answers to the research question were to be obtained simply using statistical data, then measuring access to information through PCICs would be shallow and incomplete. A mixed methodology approach (Ngulube, 2010) was therefore used to collect and analyse data. The key target groups of the study were the administration of parliament– officers of parliament and development partners on the one hand and MPs, office assistants (OAs) and constituents on the other hand, justified the methods selected for this study. Questionnaires were used to collect data from OAs, MPs and constituents. In-depth interviews were conducted with Parliamentary Programme Coordinator, representing development partners, the Clerk of Parliament, and officers of parliament. Observations were also used to collect data during visits to PCICs to study constituents' behaviour in their natural set and other activities taking place within the PCICs. Document analysis was used to reinforce and compare with the participants' verbal accounts. Documents analysed included OAs monthly and annual reports, parliamentary reforms reports and Administration of Parliament reports. The response rate indicated that 255 out of 625 constituents completed and returned the questionnaire; 15 out of the 25 copies of the questionnaire were returned by office assistants; and 20 out of 25 returned by MPs.

An appropriate sampling strategy was adopted to obtain a representative and statistically valid sample of the whole population. The sample selected covered geographic sub-areas of the primary sampling units, that is, the provinces in which constituencies fall. It captured the rural-urban divide and population sub-groups. The sample plan used was purposive sampling in some instances, and random sampling in other clusters of target groups. This was an attempt to keep costs to a manageable level, while simultaneously avoiding too much focus on a convenient geographical region, such as areas close to Harare. This was also done to avoid bias and damaging effects on reliability. A purposeful or judgmental sample was selected based on the knowledge of a population and the purpose of the study.

Purposive sampling was used to choose the geographic province for the first stage of selection in the sample plan. This decision was based on opinions of which districts are typical or representative in some sense or context, for instance most Mashonaland districts were typically "ZANU PF (Zimbabwe African National Union-Patriotic Front)" districts, while the metropolitan and Matabeleland Provinces were typically "(MDC

Movement for Democratic Change)" and some were typically sway provinces. Neither political party was in control of sway provinces. Random sampling techniques provided the probability in the choice of elements from the sampling population. Saunders, Philip and Thornhill (2003) describe how a random sample can provide satisfactory and valid surveys for researchers. With regard to the sampling frame, stratification was done to avoid bias and subjective opinion on population subgroups. Stratification was chosen as it greatly decreased the likelihood of selecting an odd sample. With the stratified sample, every constituency in the sample frame had a chance of selection that was unbiased and unaffected by subjective opinion. The stratification ensured each stratum was as different as possible from other strata, thus the Bulawayo Metropolitan province was excluded as it just mirrored Harare. Most PCICs in Bulawayo and Harare fall under Movement for Democratic Change (MDC) party, hence the decision to choose one of the provinces. This ensured heterogeneity among strata with homogeneity within strata.

The reason for choosing urban and rural areas as two of the strata for the survey thus becomes clear. According to Denscombe (2003: 23), urban and rural populations are different from each other in many ways with regard to types of employment, source and amount of income and average household size. The total number of registered voters was obtained from *The Report on the Delimitation exercise for the 2008 Harmonised Election*. For example, from the 10 provinces in Zimbabwe, Mashonaland Central had 488477 registered voters from 18 constituencies. There are currently 7 PCICs operating; and from these, 4 PCICs were sampled. The four sampled PCICs had 106904 registered voters. Table 1 shows the sampling frame that was used.

Table 1: Sampling frame

Province	Total Constituencies	Total Registered Voters	Total PCIC	Total PCICs in Selected Provinces	Sampled PCIC	Registered Voters in Sampled PCICs
Bulawayo	12	313459	8			
Harare	29	766478	15	15	7	187082
Manicaland	26	709664	11	11	5	133630
Masvingo	26	699200	11	11	6	160356
Midlands	28	739502	11			
Mashonaland Central	18	488477	7	7	4	106904
Mashonaland East	23	624638	9			
Mashonaland West	22	583503	9			
Matabeleland North	13	345263	2			
Matabeleland South	13	342280	6	6	3	80178
Total	**210**	**5,612,464**	**89**	**50**	**25**	**668,150**

(S*ource:* Report on the Delimitation Exercise for Zimbabwe's 2008 Harmonised Elections)

There are no specific rules for sample size in qualitative research. On determining the sample size for this study, the researcher considered the availability of time and resources, and the extent of the need to provide valid and reliable data. The main sampling units considered for constituencies was 25 per PCIC, consisting of 12% of the 210 Constituencies, providing a sample greater than 10%. The sample size was 5/10 provinces, 25/50 PCICs, 668 150 /3006099 registered voters in sampled province**.** Sample size accounted for the spread of PCICs across the country. The costs and precision was optimally maintained, while also addressing the constituents' needs for those desiring data for sub-populations or sub-areas. The locations of PCICs selected were from the following categories (table

Table 2: Locations of PCICs

Province	**PCIC**	**Category**
Harare	1. Harare Central	Central Business District
	2. Mt. Pleasant	Low Density
	3. Budiriro	High Density
	4. Glen View South	High Density
	5. Kambuzuma	High Density
	6. Mbare	High Density
	7. St. Mary's Chitungwiza	Dormitory Town
Masvingo	8. Gutu North	Growth Point
	9. Gutu Central	Growth Point
	10. Masvingo Urban	Town
	11. Bikita West	Growth Point
	12. Mwenezi East	Rural set-up
Mash Central	13. Mazowe South	Communal
	14. Mazowe West	Farming
	15. Mt. Darwin West	Communal
	16. Mt. Darwin South	Growth Point
Matabeleland South	17. Bulilima South	Town
	18. Bulilima	Town
Matabeleland North	19. Umzingwane	Rural Community
Manicaland	20. Mtare Central	Border Town
	21.Makoni South (Nyazura)	Farming
	22. Mutasa South	Rural Community
	23. Dangamvura-Chikanga	High Density
	24. Headlands	Farming

2).

The locations of PCICs that were visited range across urban, rural, farming, border and dormitory town constituencies.

Discussion

Data for access related issues are discussed below under the following categories: why constituents visit PCICs, PCIC distance from constituent residence, number of monthly visitors, physical location and challenges in accessing parliamentary information.

Why Constituents Visit PCICs

Constituents visit PCICs primarily to find information about legislation. The data in figure 1 indicates that the *Hansard* was the most dominant publication consulted at PCICs with 49% of constituents visiting PCICs to collect or read this publication. The *Hansard* captures what happens in Parliament, and visitors to the PCIC enjoy reading the *Hansard* and visit the centre to monitor what is happening in Parliament. It provides information on current legislative debates. Constituents need current information about what is going on in parliament. They expect current awareness services (33%) and to be informed about availability of the latest copies of the *Hansard*, new bills being discussed in parliament and any other publications from parliament.

Beyond these reasons, people want to learn about parliament in general. Parliamentary study is taught at tertiary institutions throughout the country, and for this reason, PCICs are visited by researchers, teachers, students and lecturers. From time to time, MPs invite councillors and members of the public to the PCIC with a view to updating them on the latest developments discussed in parliament, as well as new laws and programmes. Given the challenges that the country faced before 2008, people had many grievances and would want to meet their MPs for assistance in solving their problems (27%), and seeking funds for projects (14%). The lower ranked reasons for visiting PCICs showed that constituents may also want to invite the MPs to officiate at community functions, such as graduations, school prize-giving ceremonies, weddings, and official community project openings, as well as access

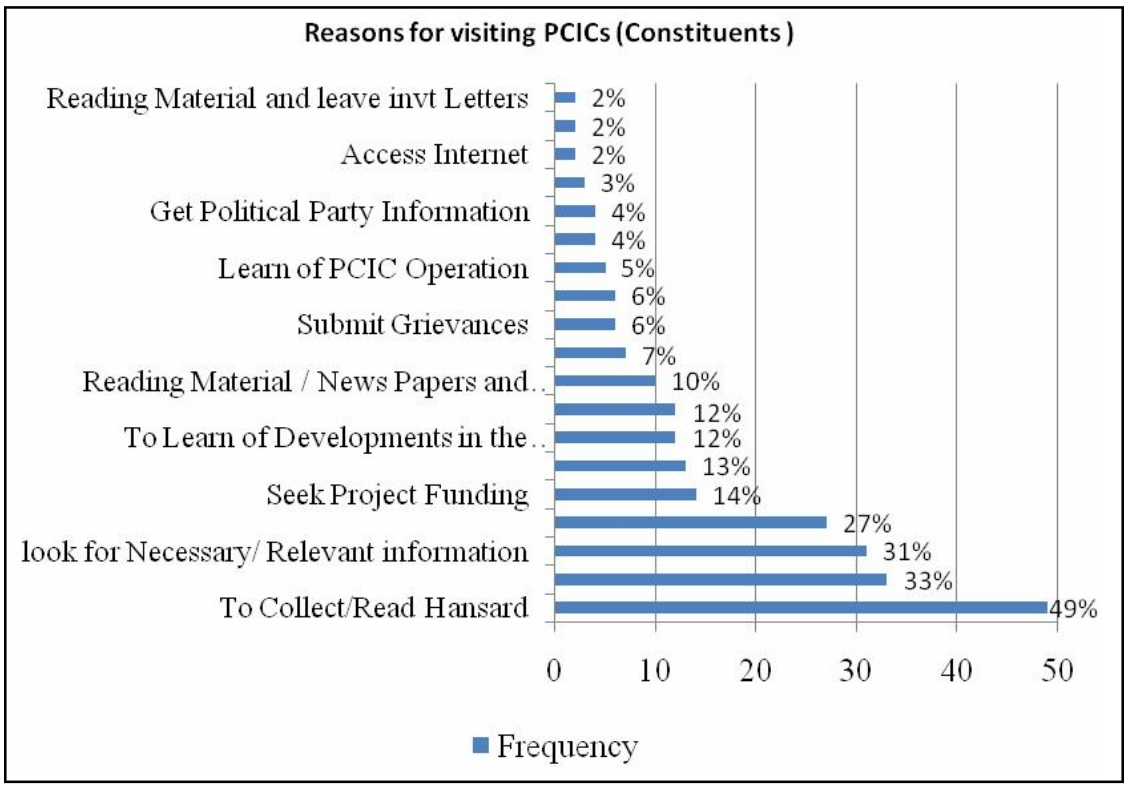

Figure1: Reasons for visiting PCIC

Internet (2%). The fact that none of the PCICs are connected to the Internet at the time of study explains this score.

These findings also harmonise with the interview response by the public relations officers. Public relations outreach programmes to educate the public about functions of parliament revealed that most constituents who had used the PCICs were found to be excited about obtaining copies of the *Hansard*. One constituent respondent had summed up his/her opinion in the questionnaire as follows:

> *If I don't find the Hansard on my visit to the PCIC then next time I won't visit…' 'I enjoy reading the Hansard especially when topical issues are being debated in Parliament.*

These are some of the various reasons why the public visit the PCIC. Some of the reasons have not been anticipated by the Parliament of Zimbabwe prior to implementation of the PCICs project. The significance of these findings is to provide pointers and urge Parliament to improve and increase the number of parliamentary publications that are allocated to PCICs constituents want to get the opportunity to improve their understanding and knowledge about activities that take place in Parliament.

The significance of the data provides pointers and urges Parliament to improve and increase the number of parliamentary publications that are allocated to PCICs. Inadequate parliamentary publication supplies affect access. Parliament of Zimbabwe has been unable to provide timely a variety of information sources in various formats required by the public. The PCICs mainly rely on MPs delivering parliamentary publications on return visits to parliament; and the gap increases when the MP is unavailable for long periods. Due to the late delivery of publications, it is difficult for the centres to obtain information or current awareness services timely. This has been a major respondent concern.

PCIC Distance from Constituent Residence

The majority of constituents came from within a 1km radius of the PCIC. About 25% of visitors travelled less than 1km to the PCIC; 50% travel 2km and less, while 75 % travelled between 2km and 7km.

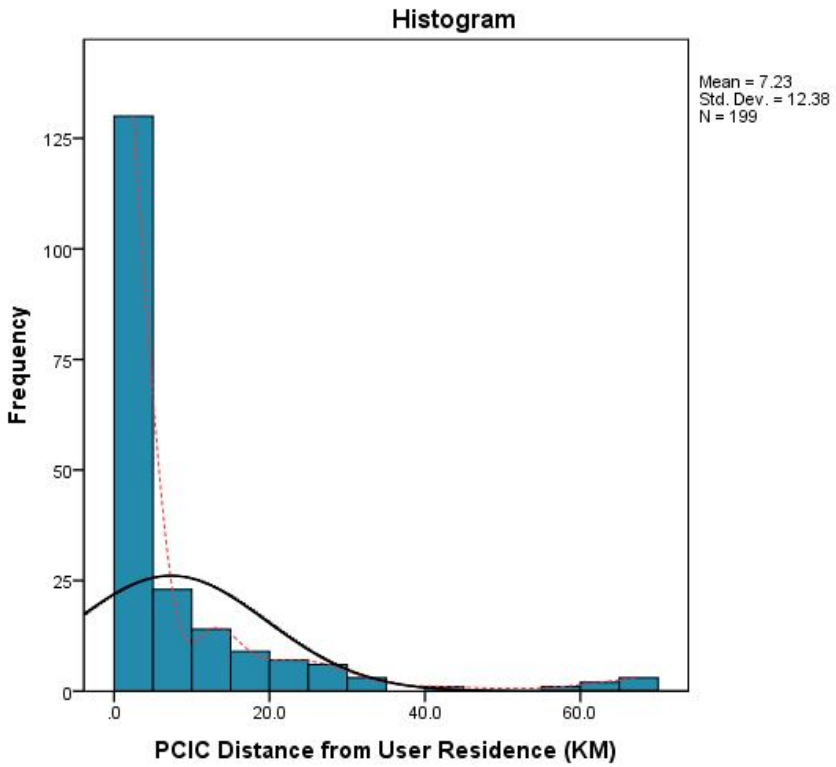

Figure 2: Constituents' distance from PCIC (KM)

Some constituents came as far as 60km from the PCIC as shown in figure 2. The mean distance travelled is 7.2km (see figure 2).

The aim of this indicator was to show how easy or difficult it is for constituents to reach and gain PCIC access, and to use its information resources and other services. This aspect of access relates to distance from constituents residences, centre locations, number of visitors per month, frequency of visits, and other access barriers. Constituents are affected primarily by the distance from the information centre. Visiting or not visiting the information centre could also be the result of information availability (see figure 1). However, there are also constituents, who travel very long distances, as far as 60km to visit a PCIC. These could be councillors coming for important constituency meetings, or individuals requiring MP interventions, or they could be teachers from distant schools visiting on pay day.

Physical Location

Location has an important bearing on access to the PCIC. Figure 3 shows that:

- most PCICs are located at Council premises (47.2%); and
- a significant number are located in towns, government institutions, growth points, private business premises and industrial areas.

Because Council premises and town centres have buildings and infrastructure such as telephone facilities, electricity, security and transport networks, these issues of centrality, infrastructure and political neutrality are of paramount importance with regard to PCIC location. PCICs that were located at private premises, residences and industrial areas were mostly those belonging to MDC stronghold because they could not obtain offices at Council premises. Documents analysed revealed Parliament administration's involvement in visiting council offices to appeal for space to accommodate PCICs after it was discovered that MPs belonging to MDC were failing to obtain offices for PCICs for political reasons. This occurred after it was discovered that rural district councils preferred MPs from one political party instead of others. As a result of failure of the parliament to pay rentals and rates, most MPs were chased away from rented premises. They moved to industrial areas, or used their own residences. Most

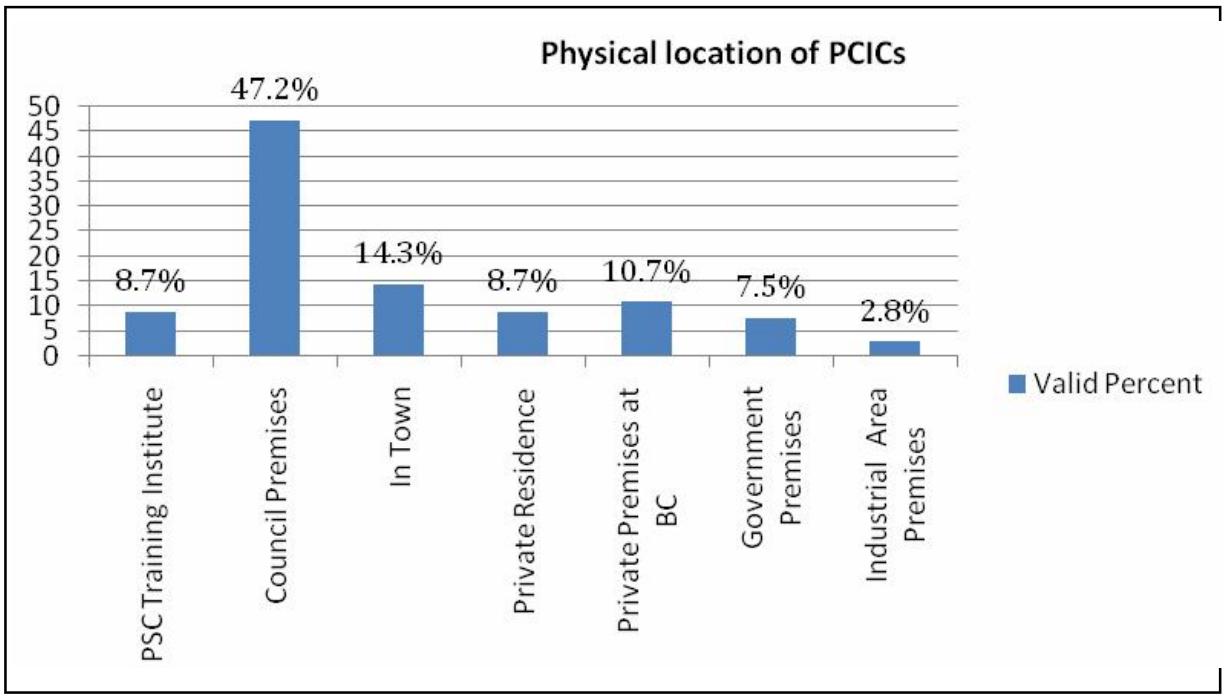

Figure 3: Physical location of PCICs

PCICs are located in council premises and the least number are located in industrial premises.

Two notable locations came to light through personal observation. The first one was the Harare Central PCIC which is located at Trafalgar Court, but which is not visible at all to constituents, even though it is in the Central Business District (CBD). The billboard is poorly placed, because there are no directions to the office from outside the building. Although the Harare Central PCIC is in the CBD, its location is not visible to most constituents. The second was Headlands PCIC whose location is at the MP's house, and is not convenient at all because respondents saw it as partisan and they felt uncomfortable to visit the MP's private residence. Thus, location of PCICs is a major factor affecting accessibility.

Political polarisation has also been widely cited by respondents as a reason for poor access to information through PCICs at various locations. The mixing of political and public interest is one reason why a number of PCICs have been seen as partisan. In many rural constituencies, political barriers hinder the ability of constituents to claim their right to information to demand better governance and public services. PCICs could have prevented this through continuous education of constituents, particularly highlighting that PCICs are not political party offices.

Number of Monthly Visitors

On average, there were 93 visitors per constituency, per month. The minimum was 20 and the maximum

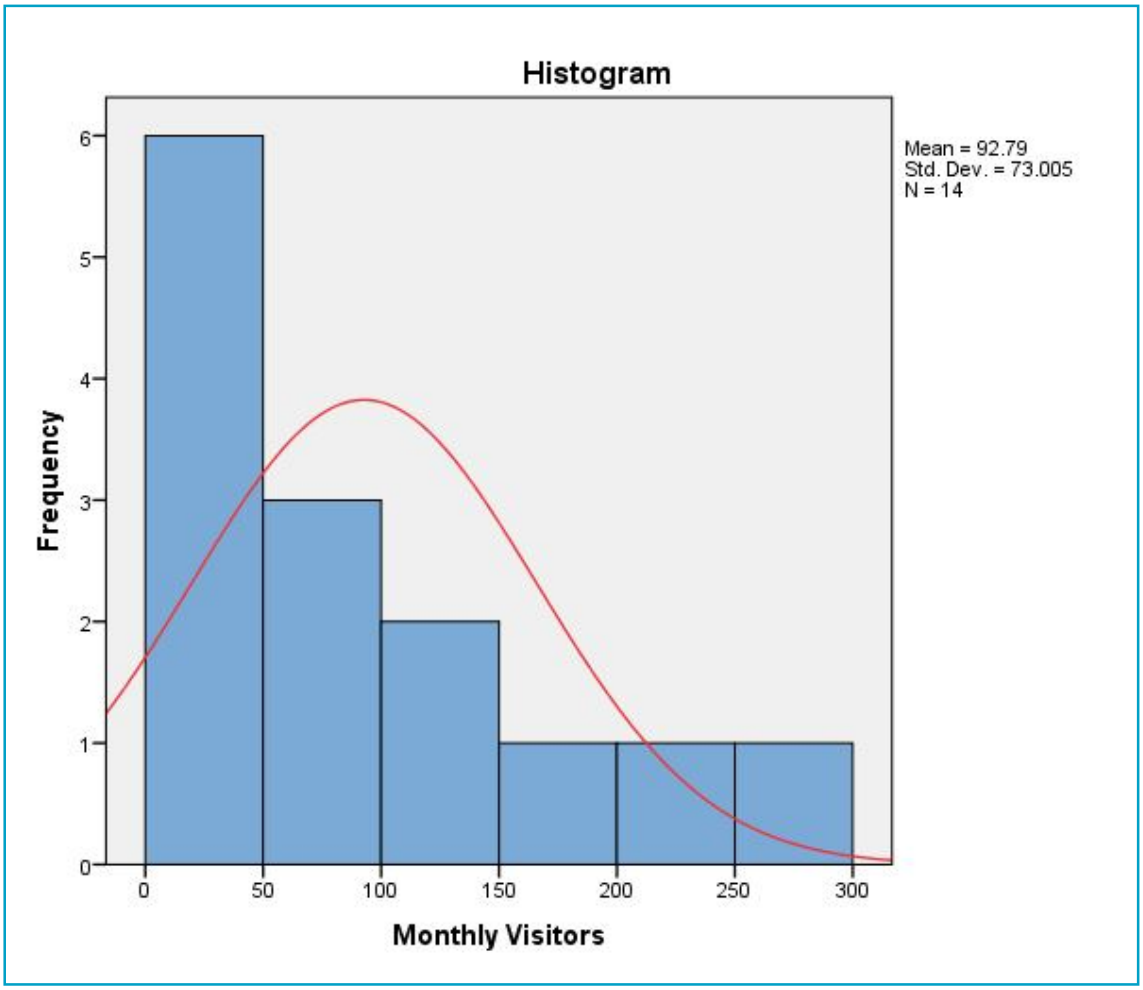

Figure 4: Histogram showing monthly visitors to PCICs

was 250 per month, as shown in figure 4.

This means the PCIC location, information source availability; population density and provision of a variety of activities affect the number of constituents who visit PCICs. Access to PCICs encompasses removal of any discouraging restrictions that might prevent constituents from fully utilising the centres. The rural-urban divide or the centre –periphery problem affect the effectiveness. PCICs are concentrated in towns and growth points. Equality of access had not considered the provision of the service to worst off segments of the population. This relates truly to PCICs. Do constituents receive fair and equal treatment or do they have equal access to their local MP? There are still a number of MPs who prefer to provide services to members of their political parties through the PCIC. Despite the above challenges, PCICs have operated and provided access to information resources generated from PoZ.

Challenges in Accessing Parliamentary Information

In addition to PCIC access factors discussed in the above section, there are other challenges faced by citizens in accessing parliamentary information services. Sturges and Neill (1999) emphasise the importance of long-term and comprehensive support. The need for long-term intervention is correlated with the effectiveness of PCICs. Development partners have played an important role in PCIC project, but they often perceive tension between stakeholders in long-term projects as damaging to their reputation.

They thus respond by turning to new opportunities, rather than continuing to coordinate a project with difficulties.

Conclusions and Recommendations

The establishment of PCICs to provide access to parliamentary information should be seen as a process which involves: establishing constituent needs; establishing objectives matching these needs; developing services to achieve the objectives; providing the services; monitoring and evaluation of outcomes; and revising the objectives in light of changing needs. We noted in this paper that many issues emerged from the study that PCICs are viewed in the light of:

- Providing access to parliamentary information;
- Providing a forum for public participation in democratic process;
- Development activities. Issues of public interest are discussed through coordination by MPs at PCICs;
- Oversight of MPs. Whereas parliament plays an oversight role to the executive and the judiciary, PCICs play an oversight role on the MP's activities within the constituency; and
- Evidence based data can be obtained through PCICs where all stakeholders within the constituency make their contributions. It is thus important that PCICs should ensure that needs of all constituents are met.

In order improve the PCIC performance of PCICs in providing access to parliamentary information, the recommendations are that:

- There is the need to educate citizens about the MP role by communicating clearly what the MP can and cannot do for them, and to redirect requests by informing constituents about existing government programmes that provide the kind of assistance they are seeking.
- PCIC offices must be centrally located for ease of accessibility not only to the centre but also to other community services, such as public utilities. In identifying the location, authorities should involve constituents because they are partners in the services they get, not just recipients. After the location has been identified, it is important to construct permanent, fixed, PCIC offices being guided by an appropriate PCIC model. If permanent offices are not constructed, PoZ should consider a pilot programme that would experiment with trial leases of PCICs in public buildings, such as centrally located and easily accessible libraries. PCICs can be housed in community libraries, schools, community halls, colleges and universities. Due to the lack of funding, institutions such as libraries or universities can be approached to donate surplus computers.
- Promotion and awareness should be a continuing

activity, and should focus on PCICs activities and their attempt to reduce the information gap. Formal launching activities advertised in the media, such as on radio and television, which is how most people are reached; promotional materials can also be supplied to constituents. PCIC location must be clearly sign-posted with visible, mounted billboards, giving directions to the centre. Billboards need to be re-done, because some are faded, rusty and not mounted.

- Traditional formats and Internet connectivity should be considered a priority. To empower and strengthen constituents in this digital age, staff must be introduced to ICT use. Also, given the vast distances and poor infrastructure in many constituencies, ICT holds the power to disseminate information; mobile technologies should also be used;

Finally, from this paper one can identify a number of areas where dissemination of parliamentary information can be fully understood from further research. The resource implications of service delivery require further investigation and discussion.

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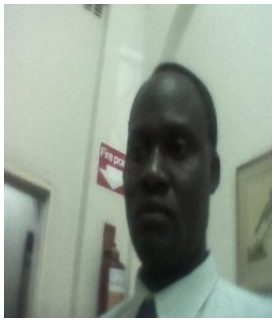

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Online Information Resources Availability and Accessibility: A Developing Countries' Scenario

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Abstract

Researchers from developing countries have been facing problems in accessing scientific literature emanating from their own countries and beyond for many years. This scenario has partly been attributed by constraints related to the inability of institutions from least developed nations to pay subscription for published literature due to inhibiting costs. Developments in information and communication technologies (ICTs) provide an opportunity to ease the availability of scholarly content to end users in both developed and developing nations. This paper examines the extent to which developing countries have taken advantage of the new developments in ICTs to improve scholars' accessibility and usage of scientific literature. Through a meta-analysis approach, core literature review published from 2005 to 2014 is used to assess the availability and usage of online scholarly content, as well as factors affecting effective exploitation of online scholarly information resources. The study reveals that although various initiatives capitalising on ICTs developments have eased the problem of availability of scholarly content in most developing countries, there are still obstacles to effective usage of online scholarly literature. Information Literacy (IL) delivery strategies and adoption of discovery tools are recommended for improving the accessibility and usage of online scholarly literature in the developing countries.

Keywords: Africa, Developing Countries, Discovery Tools, ICTs, Information Literacy, Library Consortia, Online Information Resources

Introduction

The availability and accessibility to scholarly information is very important for researchers' productivity. As an input in the research process, it is only justifiable to blame researchers' low research productivity if they have access to timely and relevant information resources. It is commonly reported that most developing countries fail to subscribe to scholarly content of their choice in order to satisfy information needs of the scholarly community (Ezema, 2009; Dulle, 2010; Islam, Alam and Sultana, 2011; Tariq, 2011). This is partly due to high subscription cost of scholarly literature. Although there many associated causes, scanty information resources probably play a role to the low knowledge contribution of developing countries to the global scholarly output pool. Developing countries' nations have been acknowledged to contribute less than 3% of the visible global literature (King, 2005; Gray, 2007; Ezema, 2009).

Current developments in ICTs have been acknowledged to bring both opportunities and challenges on the availability and accessibility of scholarly literature in developing nations (Frame, 2004; Gyamfi, 2005; Tilvawala, Myers and Andrade, 2009; Thanuskodi, 2012;). Due to reduced publishing and distribution costs of electronic publications as compared to their print counterparts, some publishers are no longer producing print journals. For example, a survey of publishers in 2008 found that over 90% of all scholarly journals were available online (Cox, 2008; Research Information Networks (RIN), 2010). As such, utilising ICT developments, publishers have also changed their business model from selling individual journals into journal bundles [christened as

"Big Deals"] (Look, Sparks and Henderson, 2005; Hahn, 2006; Ngozi, 2010; Tariq, 2011). With such kind of an arrangement, it is increasingly becoming difficult for individual libraries to afford the purchase of journals in bundles. Thus, many libraries are increasingly forming consortia to consolidate their purchasing power for electronic journals. It is evident that consortia building has been gaining momentum throughout the world (Carbone, 2007; Ossa, 2010; Gaur and Tripathi, 2012). According to Gaur and Tripathi (2012) for example, the International Coalition of Library Consortia (ICOLC), listed around 200 library consortia throughout the World by 2012. Some examples of existing library consortia in Africa include: South African Bibliographic and Information Network (SABINET); Free State Libraries and Information Consortium (FRELICO); Gauteng and Environs Library Consortium (GAELIC); Eastern Seaboard Association Libraries (esAL); CAPE Libraries Cooperatives (CALICO); South African National Library and In-formation Consortium (SANLiC) [all from South Africa]; Consortium of Nigerian Libraries (CONLIB); Consortium of Tanzania Universities and Research Libraries (COTUL); Consortium of Uganda Universities Libraries (CUUL); and Kenya Libraries and Information Services Consortium (KLISC) (Shibanda, 2006; Ngozi, 2010).

Some authors like Rogers (2009) and Weicher and Zhang (2011) expressed concerns regarding the "Big Deals" by citing problems of ownership and perpetual access to information resources subscribed through most consortia arrangements as some of the drawbacks of the new journal marketing system. It is acknowledged that most of the licensing arrangements used in subscription of e-resources allow libraries to use rather than own content (Bist, 2005; Rogers, 2009; Ossai, 2010). This kind of arrangement makes it impossible for scholars to have access to such resources once subscription is cancelled by their respective institutions. This is unlike the conventional purchase of print journals whereby subscription cancellation did not affect access to back issues since they remained part of the journal collection of an institution. Having realised such a problem, some publishers make it possible for perpetual access arrangements even though at additional costs (Hahn, 2006; Rogers, 2009; Gaur and Tripathi, 2012).

The other problem with "Big Deals" is that despite libraries having a big list of journals to access, some of such journals are irrelevant, and given choice is not in the priority list of subscribing institutions (Look et al., 2005; Hoskins and Stilwell, 2011). Furthermore, despite the acknowledged low production and distribution costs, some commercial publishers are also blamed for unrealistic pricing of scholarly content beyond the affordability of most developing countries (Bist, 2005; Dulle, 2010; Weicher and Zhang, 2011). Interventions by organisations such as the Electronic Information for Libraries (EIFL) and International Network for the Availability of Scientific Publications (INASP) are playing a significant role in ensuring developing countries purchase journals bundles from publishers at affordable prices. EIFL and INASP, for examples, negotiates with publishers to provide special and low journal subscription rates to developing countries' consortia (Harle, 2010; Tariq, 2011). For example, according to Harle (2010), INASP through its Programme for the Enhancement of Research Information (PERI) made it possible for developing countries to have access to over 23,000 full-text journals at a discounted prices offered by different publishers.

The UN funded programme known as Research for Life (R4L) is another recognisable initiative geared towards making online scholarly literature available to developing nations. This programme aims at facilitating access to high quality electronic journals to developing Nations. Currently, the four UN managed schemes including AGORA (Access to Global Online Research in Agriculture), ARDI (Access to Research for Development and Innovation), HINARI (Access to Research in Health) and OARE (Online Access to Research in the Environment) provide access to more than 20,000 electronic journals in various research fields, free of charge and or at subsidised cost to low and middle income countries respectively. Furthermore, through open access initiatives (Open Access Journals (OAJs) and Open Access Repositories (OARs) a variety of online information resources are accessible free of charge to end users (Dulle, 2010; Wandahl, 2009). For example, as observed from the Directory of Open Access Journals (http://doaj.org/), over 9,000 journals were available to users without price limitation by January 2015.

Based on the above observations, at the moment, the availability of scholarly content may not be considered as serious issue to most of the developing nations as it used to be some years back. In fact, some authors have the view that certain developing countries to date may not be differentiated with developed nations in terms of the available scholarly journals in both quality and quantity aspects (Wandahl, 2009; Harle, 2010; Tariq, 2011). The current concern is about inadequate usage of the available online scholarly information resources by the user community from developing countries. The main objective of this study, was to find out [through literature review] current developments on usage of online information resources and identify key constraints affecting effective exploitation of the resources in question. Specifically, the study attempted to answer the following questions:

- What is the current state of the availability and usage of online scholarly content in developing countries?
- What does the existing body of literature reveal about factors contributing to limited usage of online scholarly information resources?
- What are the gaps in the existing body of literature on this topic for future research?

Online information resources, also referred to as online scholarly information resources or simply scholarly content as used in this study imply peer reviewed publications [such as electronic books, electronic journals] made available and accessible on the Internet through subscription or open access means.

Conceptual Framework

This study was guided by the Quadratic Usage Framework (QUF) as illustrated in Figure 1. QUF is normally recommended in explaining factors that influence the acceptance and usage of a technology (Mardis, Hoffman and Marshall, 2008; Mtega, Benard and Dettu, 2014). According to developers of the Quadratic Usage Framework, the usage of any technology is affected by both technical and philosophical factors (Mardis, Hoffman and Marshall, 2008). Technical factors comprised the existence of the technology and competence of individuals in using such a technology. On the other hand, philosophical factors include individuals' cultural and personal values. In the context of this study, the usage of online information resources is based on the application of the Internet [technology]. Based on this model and the context of the study, the *technology* refers the Internet and accompanied facilities [computers, electricity, smart phones] making it possible for individuals to access online information resources. C*ompetence* consists of factors that affect the individual's skills, education, knowledge, and experience which impact their ability to use the technology to access online information resources. In this study, awareness on the existing information resources and information literacy on part of users is considered to shape the individuals' ability to access and utilise online information resources.

Cultural values include factors encompassing organisational settings and institutional policies. For example, an institution having in place a policy enforcing information literacy programme is likely to improve usage of online information resources at that particular institution. Finally, *personal values* are the individuals' preferences, beliefs, traditions, and trust that shapes their choice of whether to use or not to use online information resources. Behavioural change from using print versions of scholarly content to electronic or online information resources for example may require changes in personal values. Unless users of online information resources consider such information credible, they are less likely to prefer content from the Internet (Thelwall and Harries, 2004; Metzger, 2007).

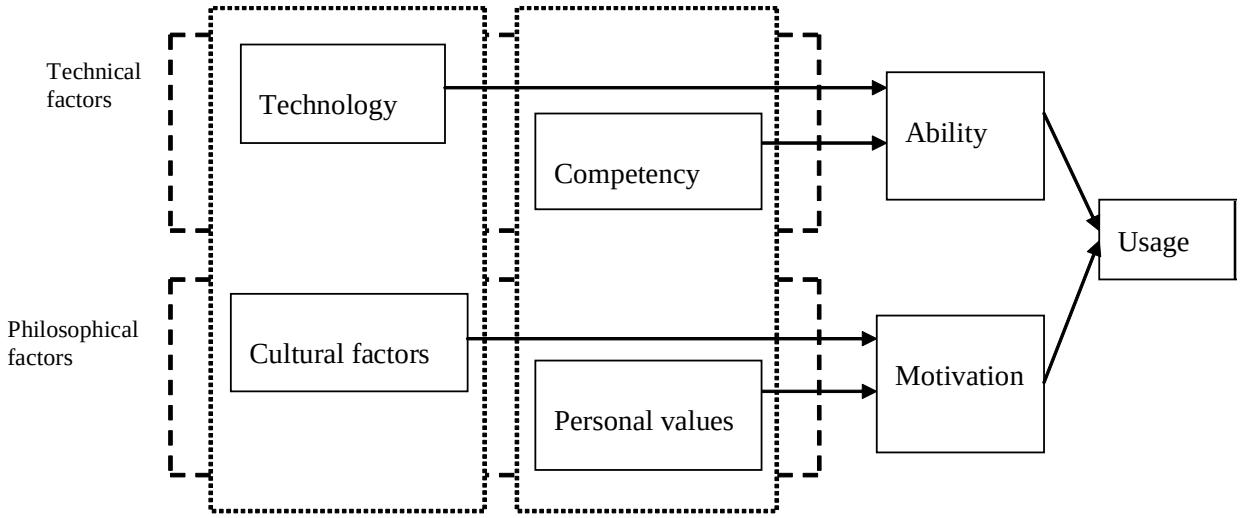

Figure 1: Quadratic Usage Framework (QUF) (Mardis, Hoffman and Marshall, 2008:24)

Research Methodology

The study adopted a meta-analysis approach of literature review to assess the current trend on the availability and factors affecting usage of online information resources in developing countries. Meta-analysis is a research approach through which related studies are identified and systematically reviewed to draw some insights about a subject under investigation (Mark, et al, 2008; Moore, 2005). According to Webster and Watson (2002), a good literature review and analysis is important to inform about the existing body of knowledge in a research discipline and discover areas needing further research attention. Searches [through combination of various research concepts) were conducted using the LiHub Kiox (a discovery tool) and Google scholar to retrieve scholarly documents about the availability and factors affecting usage of online scholarly resources developing countries. LibHub Kiox was used so as obtain relevant search results from across various online information resources that are subscribed by the Sokoine University of Agriculture [author's duty station] while Google scholar was necessary to complement literature obtained from the discovery tool in question. All searches were narrowed so as to obtain scholarly documents written in English language and published between 2005 and 2014, the period during which a number of initiatives for provision of online information resources to most developing countries have been in existence (Dulle, 2010; Harle, 2010; Tariq, 2011). Sorted on relevance basis, 1623 potentially relevant citations were identified from the first 100 search results of each query. These citations were assessed from their titles and abstracts for inclusion in the study. From the list of 183 full articles deemed relevant after omitting those with restricted access, 58 core scholarly documents were found to be relevant for the purpose of this study. Research findings presented below are envisaged to reflect the reality on the ground with respect to the availability and associated factors affecting effective usage of online information resources in developing countries.

Findings

Findings are organised in thematic areas on the basis of the study research questions as presented in the introductory part of this paper. The availability of online scholarly content in developing countries is highlighted before dwelling into a discussion of factors affecting the usage of such information resources. Gaps requiring the attention for future research are presented before concluding the study.

Availability and Usage of Online Information Resources

The documented evidence reveals a big improvement on the availability of online scholarly literature in most

of the developing countries unlike during print dominated era (Wandahl, 2009; Harle, 2010; Tariq, 2011). According to Harle (2010), basing on the Thomson Reuters/ISI Journal Impact Factor rankings as a proxy measure, European universities were comparable to those from Africa in terms of the availability of top journal titles in the year 2009. It is however acknowledged that the usage of online journals made available to developing countries does not conform to the available online scholarly resources being provided through various initiatives to such countries (Shibanda, 2006; Harle, 2010; Gakibayo, Ikoja-Odongo and Okello-Obura (2013). For example, Gakibayo, Ikoja-Odongo and Okello-Obura (2013) reports low usage of electronic resources at Mbarara University despite the abundance availability of such information resources at the institution in question.

A previous study by Shibanda (2006) also revealed low utilisation of online information resources that were provided to Kenyan institutions through the PERI programme. Similar findings are presented by Harle (2010) who observed researchers' complaints about literature availability at four African universities [National University of Rwanda, University of Dar es Salaam, University of Malawi and the University of Nairobi], despite the fact that about 79% of the top-ranked international journals were available online for free access at such institutions. Furthermore, Oyedapo and Ojo (2013), in their study at Obafemi Awolowo University in Nigeria, reveals that only 6% of the respondents reported to frequent use of online information resources made available at their respective institutions.

It is beyond reasonable doubt that low usage of online information resources is a concern to sponsors who make it possible for developing countries to access freely or at subsidised cost the resources at are valued millions of dollars. Several factors contribute to low exploitation of electronic resources in developing countries. Factors affecting access and usage of online scholarly content as revealed by various studies are discussed below.

Factors Limiting Exploitation of Online Information Resources

A variety of factors have been documented as contributing to less usage of online information resources in developing countries**.** Factors that are commonly cited to influence the usage of online information resources in the developing countries are discussed in the following sections.

Perpetual Access Rights

Contrary to print resources, most online resources are not purchased but licensed for access (Carbone, 2007; Gaur and Tripathi, 2012; Ngozi, 2010). Even though some providers of electronic databases provide licencing options for perpetual access, studies report that most consortia in developing countries do not bother considering aspects of access beyond the subscription period due to additional costs involved (Bist, 2005; Ngozi, 2010; Gaur and Tripathi, 2012). To some extent, this is also a commonly reported problem, even in developed countries (Hahn, 2006; Rogers, 2009). For example, as survey by Rogers (2009) reveals that less than 20% of libraries in New Zealand's tertiary educational institutions had their online resources licenced for long-term access. Even though none of the reviewed studies have reported empirical evidence as to how user communities are affected by the existing licenses, there is no doubt that researchers are likely to be frustrated whenever they do not to get journals they used to access before subscription cancellation by their respective institutions.

Unreliable Power Supply

Without power, it is impossible for researchers to gain access to online information resources. Unreliable power supply has frequently been cited as among the challenges that frustrate researchers in their attempts to access and use electronic resources in developing countries (Bist, 2005; Gyamfi, 2005; Ngozi, 2010; Oyedapo and Ojo, 2013). A study Oyedapo and Ojo (2013), for example, points out "frequent power outage" as the most significant factor that interfered researchers' access to online scholarly content. Similarly, Wema and Manda (2011) found frequent electrical power cuts as among the concerns of online information users in Tanzania. Also, in a previous study by Smith et al. (2007) that involved five African countries (Cameroon, Gambia, Nigeria, Tanzania and Uganda), it was revealed that power supply largely interrupted the usage of online information resources in the study area. Furthermore,

teachers and students at Baba Farid University of Health Sciences in India ranked electric failure as the second problem after information literacy which hindered them to effectively exploit online scholarly information resources (Manhas, 2008). Such a state of affairs suggests the need for feasible and concrete solutions to the problem of electricity availability problem in developing nations. Even though it is an expensive venture in terms of initial costs, developing countries' research institutions may consider investing in solar energy as a way of providing back up power supply for sustainable access to online information sources.

Inadequate ICT Infrastructure and Sporadic Internet Access

A state of the art ICT infrastructure is important for researchers to benefit from online information resources. Problems related to unavailability of networked computers and stable Internet connectivity have been frequently cited as contributing to less usage of online information resources in developing countries (Watts and Ibegbulam, 2006; Echezona and Ugwuanyi, 2010; Ossai, 2010; Harle, 2010; Wema and Manda, 2011; Islam, Alam and Sultana, 2011; Gakibayo, Ikoja-Odongo and Okello-Obura, 2013; Oyedapo and Ojo, 2013;). For example, during a survey involving four African Universities in 2009, Harle (2010) found that 20-30 students shared a single computer. Similar findings are reported by Smith et al. (2007) indicating hardware, Internet connections and computing facilities as hindrances to online information access in institutions that were involved in the study.

However, in recent years, the situation is significantly improving such that it is unlikely to find a research student or staff without a laptop (Harle, 2010; Manhas, 2008). Wireless connections invested in many institutions guarantees all individuals with a laptop to benefit from institutional Internet connection. Despite the notable constraints related to Internet connectivity, the reviewed literature also indicate significant improvement being made as a result of several countries getting connected to undersea Fibre Optic cables with high speed Internet. Such developments are reducing the problem of slow Internet and high connectivity costs which have persistently been reported to hinder usage of online information resources in Africa (Echezona and Ugwuanyi, 2010; Harle, 2010). Furthermore, capitalising on current ICTs developments, researchers can use their smart phones to access internet at relatively low cost.

Inadequate Awareness on the Availability of Information Resources

Awareness on part of online information users is very important for them to use of specific online information resources. Several studies point out that low researchers' awareness on the accessible online information resources at their respective institutions is a key hindrance to usage of such resources (Frame, 2004; Harle, 2010; Islam, Alam and Sultana, 2011; Gakibayo, Ikoja-Odongo and Okello-Obura, 2013;). A study by Harle (2010,) for example, reports that only 40% of the respondents from ACU survey that involved 240 researchers claimed to have a high or good level of awareness while the majority were unaware about a range of accessible journals at their respective institutions. This state of affairs is probably a result of inadequate campaigns to make users informed on the available information resources at their institutions. Lwehabura (2008) and Wandahl (2009) also cite the abundance of the available online resources to be a source of confusion on part of users. Well designed and targeted [relevant content to specific user groups] awareness creation campaigns are recommended in the existing literature to reduce confusion and make information users well informed on information resources suitable to their information requirements (Harle, 2010; Islam, Alam and Sultana, 2011).

Instead of relying on traditional promotion campaigns, many studies have also recommended the use of Web 2.0 tools in order to increasing the awareness on the available library resources to promote usage of online information resources (Curran, Murray, and Christian, 2007; Godwin, 2007; Chua and Goh, 2010; Harinarayana and Raju, 2010; Luo, 2010; Tripathi and Kumar, 2010). Studies evaluating the extent of adoption of Web 2.0 application and impact on usage of online information resources in developing countries need attention in future research.

Users' Interest on Usage of Search Engines

Several studies have documented users' preference of searching online scholarly content through search engines such as Google at the expense of other authoritative scholarly databases (Asemi, 2005; Griffiths and Brophy, 2005; Markland, 2005; Lwehabura, 2008; Nazim, 2008; Harle, 2010; Islam, Alam and Sultana, 2011; Sadeghi - Ghyassi et al., 2013). For example, according to Harle (2010), researchers in Africa and elsewhere have a tendency of consulting search engines especially Google in their information search endeavours. This view is supported by Lwehabura (2008) who established that 82% of 545 respondents acknowledged depending on Google search engine to address their scholarly information needs. Under such circumstances, users are liable to missing the high quality resources provided through scholarly databases subscribed by their respective institutions (Markland, 2005).

To partly address the problem of over dependence on search engines by online information searchers at the expense of subscribed information resources made available through specific databases [such as Emerald], discovery tools are increasingly being recommended (Aymonin et al., 2011; Caplan, 2012; Clarke et al., 2006; Cmor and Li, 2012; Abdala and Taruhn, 2007; Fagan et al., 2012; Markland, 2005; Pradhan et al., 2011; Yang and Wagner, 2010). Fagan and Mandernach (2012) defines discovery tools as web software that searches information resources from various online sources through a unified index and subsequently presenting search results in a single interface. Most of such tools are designed like the Google-style of making it possible for users to search information from a single point instead of visiting different scholarly databases individually (Caplan, 2012; Cmor and Li, 2012; Fagan et al., 2012). Discovery tools are also commended for their minimal authentication requirements [identification and passwords] since at most the user is required to have a single identity and password to access all registered information resources in the tool in question (Cmor and Li, 2012; Frame, 2004; Wandahl, 2009). Examples of the currently available discovery tools include: EBSCO Discovery Service, Ex Libris Primo, LibHub, OCLC WorldCat Local, and Serials Solutions Summon (Aymonin et al., 2011; Fagan et al., 2012). Fagan et al. (2012) acknowledged increased usage of online scholarly content by researchers as a result of usage of discovery tools in information search. It should be noted however that the documented evidence reveals there are few studies that have been devoted in performance evaluation of the discovery tools especially in developing countries.

Low Levels of Information Literacy Skills

The aspect of information literacy is not a new concept in libraries but its importance is increasing due the changing information landscape. Information literacy (IL) is perceived as an individuals' ability to recognise the need for information, locate, search and retrieve such information as well as conform to its ethical use (Gyamfi, 2005; Tilvawala, Myers and Andrade., 2009). A shift from print sources to online information resources has posed challenges on the part of users in terms of finding and eventual use of scholarly literature. According to Gyamfi (2005), "the information explosion, coupled with changes in technology, constitutes a barrier to information acquisition for people who cannot use the available tools to locate, retrieve, organise and use information."

The existing evidence acknowledge the inadequacy of information literacy skills among researchers from developing countries as the main factor leading to low exploitation of online information resources (Lwehabura, 2008; Tilvawala, Myers and Andrade, 2009; Harle, 2010; Wema and Manda, 2011; Gakibayo, Ikoja-Odongo and Okello-Obura., 2013; Oyedapo and Ojo, 2013; Sadeghi-Ghyassi et al., 2013). Some authors like van Dijk, (2006) and Tilvawala, Myers and Andrade (2009) believe that the current digital divide between developed and developing nations is shifting to usage skills rather than ownership of the technology. It is thus important to close such a gap through adequate investment in information literacy training along with acquisition of ICT facilities and online information resources. This is probably the reason why Tilvawala, Myers and Andrade (2009) consider investments in ICT facilities and other resources as wastage of effort without solving a core problem of low information literacy. It is on this understanding that several scholars consider it important for higher learning and research institutions to invest in information literacy training catering for students and research staff in order to improve usage of the available online information

resources (Gyamfi, 2005; Hinson and Amidu, 2006;Watts and Ibegbulam, 2006 Tella;, 2007; Nazim, 2008; Lwehabura, 2008; Gakibayo, Ikoja-Odongo and Okello-Obura., 2013; Oyedapo and Ojo, 2013; Sadeghi-Ghyassi et al., 2013;). Despite some institutions taking up the recommended measures, there is a general global problem of intended beneficiaries to rarely attend such information literacy training due to a variety reasons including tight schedules or just reluctance (Appleton, 2005; Georgina and Olson, 2008; Harle, 2010; Pierce, 2009).

A study by Harle (2010) for example revealed that only 22% among 240 researchers who were involved in his survey acknowledged to have benefited from information literacy trainings. Despite reluctance by some potential beneficiaries, studies indicate that rarely do information literacy trainees get dissatisfied at the end such trainings (Dulle and Lwehabura, 2004; Appleton, 2005; Wema and Manda, 2011). This implies that participation reluctance to information literacy training by most individuals is due to ignorance on the importance of such trainings and it is thus necessary to device mechanisms to ensure sufficiency attendance. As such, a number of studies suggests inclusion of information literacy training in institutional curricula for students (Badke, 2005; Barnard, Nash, and O'Brien, 2005; Arp et al, 2006; Lwehabura and Stilwell, 2008; Tarrant, Dodgson, and Law, 2008; Hart and Davids, 2010). Other recommended means cited for widening participation in information literacy training include: faculty outreach sessions, creation of path finders, provision of friendly WebPages, librarians and faculty collaborations, and use of Web 2.0 tools (Galvin, 2005; Stevens, 2007; Floyd, Colvin, and Bodur, 2008; Mounce, 2010;). Studies evaluating the impact of these approaches in developing countries' environment may be of practical adoption for institutions wishing to improve their information literacy delivery mechanisms.

Research Gaps

The following are some of the evident research gaps as deduced from a synthesis of the reviewed literature:

- The extent to which developing countries researchers are affected by the current online resources' licenses needs a further investigation. Although it is theoretically beyond reasonable doubt that the scholarly community from developing countries suffer from the current "big deals" which do not take seriously the aspect of perpetual access, it might be interesting to establish the extent to which scholars are affected with such arrangements.
- There is also a gap in literature with respect of how researchers in developing countries are taking advantage of new ICTs' developments including smart phones to cope with problems related to their institutional Internet connectivity for effective exploitation of online information resources.
- The other area which is not adequately researched is on the extent to which emerging technologies [Web 2.0 inclusive] are being exploited in developing countries in marketing of the available online information resources. Investigating the impact of such technologies where they have been used in developing countries and sharing lessons may impact on others who have not tried to implement similar strategies.
- Moreover, the aspect of less participation of academic and research staff in information literacy training programmes needs further investigation in order to come up with appropriate strategies. Researching and documenting stories about changes in attitudes of faculty who happen to benefit from information training programmes can be of use in attracting individuals who have not yet made decisions to participate in future similar trainings.
- Furthermore, there is a need for more studies on adoption and usability of discovery tools in developing countries. There is scanty information on how such tools are being employed in developing countries and how they are contributing in accessibility and usage of online information resources. It is equally important for more evaluation studies to assess precision and recall ratio of discovery tools in comparison to searching individual databases.

Conclusions and Recommendations

Developments in ICTs have revolutionised the scholarly publishing industry, just as it has been true for other sectors in both developed and developing world. As a result of various ongoing initiatives including PERI, R4L and open access, developing countries' researchers are comparable to those from the developed world in terms of opportunities of having access to a state of art scholarly content. This study aggregated various independent studies about factors affecting effective exploitation of online information resources in developing countries. It is evident from this study that developing countries' researchers are still disadvantaged in having access to the readily available literature due to a variety of constraints including unstable power supply, inadequate internet connectivity and inadequate information literacy skills.

Reviewed studies provide a variety of solutions towards improving the usage of online information resources in developing countries. Many studies emphasise on improving the existing ICTs and supportive infrastructure for effective exploitation of the available online information resources in developing countries. Unfortunately, the potential of discovery tools in facilitating access and usage of online information resources in developing countries have received little attention. It is thus recommended along with strategies to strengthen information literacy among students and academics that developing countries' research institutions should also consider investing in discovery tools. Since subscription to discovery tools is another cost venture for individual institutions, it is important for universities and research institutions to consider utilising their country library consortia to jointly acquire licences of such discovery tools. This is expected to reduce expenses that would have been incurred by individual institutions. Equally important is the marketing of the acquired discovery tools to intended users so that they are known and utilised effectively. This will reduce isolated efforts of marketing individual information resources and probably contribute to higher usage of the available online information resources in developing countries.

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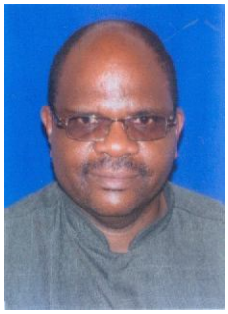

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Documentation and Use of Indigenous Knowledge by Practitioners of Alternative Healthcare in Oyo State, Nigeria

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Abstract

This paper examines the role of alternative health practitioners in primary healthcare delivery in Oyo State. It is aimed at determining the documentation and use of indigenous knowledge in primary healthcare by practitioners of alternative healthcare given the dearth of scholarly works in this area in library and information studies. The descriptive survey research design and stratified random sampling techniques were used for the study. The study reveals that practitioners of alternative healthcare use indigenous knowledge in the provision of primary healthcare in treating various health challenges including maternal healthcare and HIV/AIDS, documenting their indigenous knowledge through the forms of writing in books, audio recording, video taping, drawing, photographing and story telling. Adequate documentation of indigenous knowledge in various formats that can make it accessible for use in managing diseases has significant implications for facilitating alternative healthcare's access to the different therapeutic uses of the indigenous knowledge in their healthcare delivery efforts in Oyo State. It is recommended that further studies can be carried out on the storage and retrieval of indigenous knowledge, as well as dissemination and transfer of indigenous knowledge by practitioners of alternative health in primary healthcare.

Keywords: Indigenous knowledge, documentation, primary healthcare, alternative health practitioners, Nigeria

Introduction

Indigenous knowledge (IK) has been described as a way of knowing, seeing, thinking and doing things by the people in a community over time such that it becomes a part of them and is being orally transmitted from one generation to another. It encompasses the skills, experiences and insights of the people which are applied to maintaining or improving their livelihood (Wahab, 2010). IK is embedded in community practices, institutions, relationships and rituals. Essentially, it acts as a tacit knowledge that is not easily codifiable.

Mutula (2002) opines that indigenous knowledge is passed on largely by oral methods. Furthermore, Mabawonku (2002) sees indigenous knowledge "as the basis for local decision-making in agriculture, healthcare, food preparation, education, natural resource management and a host of other socio-cultural activities in rural communities" . To Sam (2005), " indigenous knowledge is 'traditional' or 'local' knowledge embedded in the community and is unique to a given culture, location or society.'' Similarly, Ogunniyi (2013) regards indigenous knowledge systems (IKSs) as a conglomeration of thought systems or worldviews that have evolved

among various local communities over a considerable length of time. As such, one can conclude that it is the product of human interactions with nature and represented in various forms: verbal, graphic or written, thus emphasising the notion that indigenous knowledge is what people hold to be true.

The fact is that IK has input in societal development. Attesting to this, the World Development Report (1997) reveals that in the emerging global knowledge economy, a country's ability to build and mobilise knowledge capital is as essential for a sustainable development as the availability of physical and financial capital. Communities in many parts of the world, including Nigeria, have been known for their indigenous and self-reliant strategies in food production, provision of functionally efficient and appropriate shelter, efficient planning and management of settlements and ill-health, and the protection of the forest and its fragile ecosystem, long before their exposure to European influence (Wahab, 2010). There is growing interest in and appreciation of indigenous knowledge (IK) in Nigeria as it is part of everyday life; thus, it is usually regarded as a problem-solving mechanism for rural communities. An example of this is "omugwo"in Igbo culture, in which during the first four weeks after birth, the mother and the child are secluded and the mother relieved of duties, and are cared for by the grandmother of the newborn. The new mother is fed a stimulating hot soup made of dried fish, meat, yams, a lot of pepper and a special herbal seasoning called "udah", which helps the uterus to contract and helps in expelling blood clots (World Bank, 1998).

Notably, the holistic conception of health by the World Health Organisation (2002) led to the development of the Primary Health Care (PHC) approach to solving healthcare problems in the world, including the Third World (Nigerian Health Review, 2006). Herbal medicine is a good example of indigenous knowledge which has affected the lives of people around the globe (World Development Report, 1998). Of course, herbal medicinal knowledge, which is associated with traditional medicine, has evolved from indigenous knowledge. In developing countries like Nigeria, studies have shown that over 70% of the populace still depends on traditional medicine (NHR, 2006). The assertion agrees with several previous studies such as those of WHO (2002-2003; 2011), NDHS (2003), Jain, (2008), Cruz and Ramos (2006), Omo (2008), Sackey (2008), Chiota (2010) and Odukoya (2012).

Alternative health practitioners play a major role in healthcare in many countries (Andersen and Newman, 2003). They are often part of a local community, culture and tradition, and are mostly herbalists, diviners, bone-setters, surgeons, traditional birth attendants (TBAs), traditional healers, faith healers, spiritualists, mid-wives, and traditional psychiatrists.

Today, many indigenous knowledge systems (IKS) face a grave risk of going into the extinction because of their dependence on oral transmission rather than proper documentation. Also, the richness of indigenous knowledge which is mainly based on oral traditions has not been fully exploited to the advantage of all the people. This is due, among other things, to failure to document it properly, and this has resulted in failure to locate and utilise it. Efforts to properly document IK would revolutionise healthcare system at the local level for the betterment of existing and future generations. Thus, there is an urgent need for strategies for documenting this knowledge within the context of evolving scholarship. This study, therefore, hopes to plug in this hole by:

1. identifyingng out the demographic variables of the practitioners of alternative healthcare in primary healthcare;
2. examining the use of indigenous knowledge for primary healthcare by practitioners of alternative healthcare;
3. ascertaining the forms of documentation of indigenous knowledge in primary healthcare by practitioners of alternative healthcare; and
4. examining the major constraints to documentation and use of indigenous knowledge by alternative health practitioners in primary healthcare in Oyo State, Nigeria.

Review of Related Literature

Existing studies on indigenous knowledge (IK) documentation have shown that there should be intensive research on documentation of IK to ensure that such knowledge is not lost and information professionals should be responsible for the management of IK using modern information technology and techniques (Mabawonku 2002; Makara 2002; Ngulube 2002; Kaniki and Mphahlele

2002; Raserooka 2002; Magara 2002; Chisenga 2002; Omole 2005; and Nnadozie, 2013). The National Agency for Food, Drug Administration and Control (NAFDAC) urged herbal medicine practitioners to document procedures and ingredients to encourage generational knowledge transfer and safe health for upcoming generations (Daily Times NG, 2014). Although evidence exists in research reports on the use of indigenous knowledge in primary healthcare by WHO (2002-2003; 2011), NDHS (2003), Jain (2004), Cruz and Ramos (2006), Omo (2008), Sackey (2008), Chiota (2010) and Odukoya (2012) to the effect that about 80 - 85 per cent of the people in the developing world depend on and use traditional medicine for their primary healthcare needs. However, there is the need to carry out valid research on the documentation of IK in the provision of primary healthcare by practitioners of alternative healthcare.

Ghatapanadi, Johnson and Rajasab (2011) have also analysed the documentation of folk knowledge on medicinal plants of Gulbarga district, Karnataka. In Karnataka, the researchers conducted ethnobotanical studies on medicinal plants in different districts and they found that traditional knowledge on the use of plants as medicine was well documented, but the extensive reports on medicinal plants are limited. According to Owiny, Mehta and Maretzki (2014), indigenous knowledge was commonly preserved through oral means and demonstration rather than documentation. However, with the help of librarians (custodians of information), IK can now be easily preserved in different formats. Ngulube (2002) points out that storage of IK is not limited to text documents or electronic formats. He states that various media, including cassette tapes, films, storytelling, songs, gene banks etc., could be used depending on the type of information.

Despite the impressive accretion of research work conducted on indigenous knowledge within the past few decades in Nigeria, there has been little or no research findings on the documentation and use of indigenous knowledge in primary healthcare by the practitioners of alternative healthcare. It is therefore expected that besides the recommendation that will be put forward, this study will contribute immensely to the body of the existing knowledge of IK, especially in the library and primary healthcare. It is against this backdrop that this study sets out to investigate the documentation and use of indigenous knowledge by practitioners of alternative healthcare in the provision of primary healthcare in Oyo State, Nigeria.

Methodology

This study adopted a descriptive survey research design. The total population of alternative healthcare practitioners in Oyo State, Nigeria, was 27,000 (Chairman, AHPOS). The State has three senatorial districts, namely Oyo North, Oyo Central and Oyo South. Alternative health practitioners spread across the three senatorial districts of Oyo State, which consist of thirty-three local government areas. To have a definite sample size of alternative healthcare practitioners in Oyo State, the Taro Yamane's (1967) sample size formula was used to determine sample size of 400 respondents from the total population of the study. Stratified sampling technique was used to select twenty (20) local government areas from the 33 local government areas in the state. Purposive sampling technique was then used to select twenty (20) respondents each from the selected local government areas (i.e. equal allocation).

The data collected was through the use of a structured questionnaire designed for the purpose. Four hundred copies of the questionnaire (400) were administered, and all the four hundred (400) copies distributed were recovered in useable condition. This hundred percent (100%) return rate was made possible by the direct involvement of the researchers and the trained research assistants, who were directed to ensure 100% collection by initiating several visits, if need be. The returned copies of the questionnaire were analysed and interpreted, using simple percentages and frequencies in a systematic way.

Analysis and Discussion of Results

The study showed that many of the respondents were old people. In fact, 100 (25.0%) were between ages 41 and 50 years, and not one of them was less than 20 years.dge. It is understandable why there was a comparatively low number of young participants in the study, given the fact that young people are attracted to city lifestyle and readily settle there at the earliest opportunity (Nnadozie, 2013). The elderly have different sub-forms and levels of knowledge

compared with the young. However, this kind of knowledge held by the gatekeepers becomes endangered as reported by Raserooka (2002), Magara (2002), and Makara (2002). The result of the present study in this regard corroborates those of previous studies, and it confirms the fact that unless interventions that facilitate preservation for long term access are guaranteed, indigenous knowledge will go into the extinction.

Table 1: Profile of the Respondents

	VARIABLES	FREQUENCY	PERCENTAGE %
Age	21-30 years	35	8.8
	31-40 years	82	20.5
	41-50years	100	25.0
	51-60 years	97	24.2
	Above 60 years	86	21.5
Gender	MALE	308	77.0
	FEMALE	92	23.0
Years of experience	5-14 years	105	26.3
	15-24 years	141	35.3
	25-34 years	109	27.3
	Above 35 years	45	11.3
Highest quest education qualification	Primary Education	90	22.5
	Secondary Education	109	27.3
	Tertiary education	19	4.8
	Others	1	.3
	No formal education	181	45.3
Occupation	Herbalists	282	70.5
	Midwives	29	7.3
	Bone-setters	13	3.3
	Birth attendants	20	5.0
	Spiritualists	41	10.3
	Traditional psychiatrists	15	3.8
Religion	Islam	156	39.0
	Christian	74	18.5
	Traditional	169	42.3
	Others	1	.3
	Islam	156	39.0
Area of specialisation	Bone-setting	19	4.8
	Maternal health	41	10.3
	Child care	20	5.0
	Family planning	4	1.0
	General health	316	79.0

N=400

Although there are both male and female alternative healthcare practitioners, the result of this study showed that there were more male alternative healthcare practitioners than females in our sample. The study supports the submission of Kafaru (1998) (cited in Olatokun, 2010) who maintains that some norms that are accepted and observed within the traditional medical practice hinder women (especially those of child bearing age) from active participation in the practice. This explains the dominance of the male gender in the practice.

With regard to the number of years of experience as alternative healthcare practitioners, majority of the respondents are very experienced in the profession. Indigenous knowledge has been described as unique to a given community, culture or society because it is borne out of experience carefully built over a long period of testing and experimentation (Das Gupta and Saha, 2009).

Also, some of the alternative health practitioners had formal education. The low level of formal education explains why many of them still hold on to the profession. This result inadvertently underscores the assertion that while indigenous knowledge is largely in the hands of decrepit old people, the youth who should learn and acquire this knowledge from the elders to guarantee their survival are migrating to urban centres where they acquire alien values and ways of life (Langill, 1999). This study, therefore, confirms the findings of an earlier study by Kaniki and Mphahlele (2002) who observed that education has also made indigenous knowledge to be largely undocumented, making "bibliographic" control in traditional sense almost impossible. The point is that education is important in the proper documentation of indigenous knowledge.

The study also revealed that there are more traditional worshippers as compared to other forms of religion in alternative healthcare practice. The study has also shown that the alternative health practitioners are into all forms of health practices.

Table 2 shows the forms of documentation of indigenous knowledge by alternative health practitioners in primary healthcare. Documentation by writing (Mean =2.42) was ranked highest by the mean score rating. This result could be attributed to the fact that 54.9% of them had formal education. This was followed by storytelling (Mean =2.12), while digitising was the least (Mean =1.07) form of documentation. However, the study has shown that IK is still expressed and passed on orally. The study buttresses the submission of Nnadozie (2013) who noted that IK is disseminated and passed on from generation to generation by words of mouth based on what human memory can remember, and this rather poses a grave danger to the survival of IK. This lack of documentation of the IK by alternative healthcare practitioners in the provision of primary healthcare could lead to further loss of IK.

Table 2: Forms of Documentation of Indigenous Knowledge by Alternative Health Practitioners in Primary Healthcare

S\N	Form	Not Used (N %)	Fairly Used (N %)	Always Used (N %)	MEAN	S.D
1	Writing	98 (24.5%)	37 (9.3%)	265 (66.3%)	2.42	.86
2	Story telling	127 (31.8%)	100 (25.0%)	173 (43.3%)	2.12	.86
3	Gene banks	241 (60.3%)	46 (11.5%)	113 (28.3%)	1.68	.89
4	Recording audio	272 (68.0%)	69 (17.3%)	59 (14.8%)	1.47	.74
5	Video taping	293 (73.3%)	55 (13.8%)	52 (13.0%)	1.40	.71
6	Drawing	301 (75.3%)	72 (18.0%)	27 (6.8%)	1.31	.59
7	Photographing	338 (84.5%)	46 (11.5%)	16 (4.0%)	1.20	.49
8	Compact disc	359 (89.8%)	25 (6.3%)	16 (4.0%)	1.14	.45
9	Database	372 (93.0%)	23 (5.8%)	5 (1.3%)	1.08	.32
10	Digitizing	384 (96.0%)	6 (1.5%)	10 (2.5%)	1.07	.33

N=400

Table 3: Use of Indigenous Knowledge in Primary Healthcare

S\N	Health Challenges/ Diseases/ Illness	Never Used N (%)	Fairly Used N (%)	Used N (%)	Always Used N (%)	MEAN	S.D
1	Pile	85(21.3)	22(5.5)	137(34.3)	156(39.0)	2.91	1.14
2	Maternal health	74(18.5)	22(5.5)	187(46.8)	117(29.3)	2.87	1.04
3	Fever	83(20.8)	20(5.0)	189(47.3)	108(27.0)	2.80	1.06
4	Menstrual disorder	93(23.3)	38(9.5)	138(34.5)	131(32.8)	2.77	1.14
5	Skull disease	102(25.5)	18(4.5)	149(37.3)	131(32.8)	2.77	1.16
6	Headache	83(20.8)	30(7.5)	191(47.8)	96(24.0)	2.75	1.04
7	Stomach pain	86(21.5)	42(10.5)	182(45.5)	90(22.5)	2.69	1.05
8	Jaundice	82(20.5)	64(16.0)	152(38.0)	102(25.5)	2.69	1.07
9	STD(s)	96(24.0)	40(10.0)	159(39.8)	105(26.3)	2.68	1.11
10	Weak erection	96(24.0)	43(10.8)	153(38.3)	108(27.0)	2.68	1.11
11	Rheumatism	111(27.8)	28(7.0)	146(36.5)	115(28.8)	2.66	1.16
12	Skin disease	98(24.5)	39(9.8)	169(42.3)	94(23.5)	2.65	1.09
13	Snake bite	105(26.3)	46(11.5)	141(35.3)	108(27.0)	2.63	1.14
14	Low sperm count	103(25.8)	48(12.0)	142(35.5)	107(26.8)	2.63	1.13
15	Yellow sperm	102(25.5)	54(13.5)	132(33.0)	112(28.0)	2.63	1.14
16	Diabetes	101(25.3)	49(12.3)	177(44.3)	73(18.3)	2.55	1.06
17	Epilepsy	120(30.0)	49(12.3)	120(30.0)	111(27.8)	2.55	1.19
18	Mental illness	124(31.0)	43(10.8)	129(32.3)	104(26.0)	2.53	1.18
19	Asthma	105(26.3)	73(18.3)	147(36.8)	75(18.8)	2.48	1.07
20	Tuberculosis	104(26.0)	76(19.0)	143(35.8)	77(19.3)	2.48	1.08
21	Rheumatism	94(23.5)	83(20.8)	177(44.3)	46(11.5)	2.44	.97
22	Fibroid	116(29.0)	71(17.8)	158(39.5)	55(13.8)	2.38	1.05
23	Stroke	118(29.5)	93(23.3)	119(29.8)	70(17.5)	2.35	1.08
24	Hypertension	108(27.0)	92(23.0)	155(38.8)	45(11.3)	2.34	1.00
25	Unwanted pregnancy	140(35.0)	98(24.5)	115(28.8)	47(11.8)	2.17	1.04
26	Dislocation	171(42.8)	67(16.8)	118(29.5)	44(11.0)	2.09	1.08
27	Child care	185(46.3)	15(3.8)	197(49.3)	3(.8)	2.04	.99
28	Broken bones	181(45.3)	77(19.3)	93(23.3)	49(12.3	2.03	1.09
29	Convulsion	174(43.5}	88(22.0)	134(33.5)	4(1.0)	1.92	.90
30	HIV/AIDS)	219(54.8)	88(22.0)	74(18.5)	19	1.73	.92

N=400

Table 3 shows what use to which indigenous knowledge is put by the respondents in primary healthcare. Pile (Mean =2.91) ranked highest by the mean score rating, followed by maternal health and lastly by HIV/AIDS) (Mean =1.73). The study has shown that indigenous knowledge is used in treating various health challenges in primary healthcare. This finding corroborates the opinion of World Health Organisation (2002) which claimed that up to 80% of the world's population depend on and use traditional medicine for its primary health needs. The assertion agrees with several previous studies such as those of WHO (2002-2003; 2011), NDHS (2003), Jain,(2008) Cruz and Ramos (2006), Sackey (2008), Omo (2008) and Odukoya (2012), who maintain that about 80– 85 percent of the people in the developing world depend on traditional medicine for their primary healthcare needs. The result of this study also provides evidence that IK continues to play an important role in the healthcare system among rural communities.

Conclusion

The study concludes that documentation of indigenous knowledge by practitioners of alternative health in primary healthcare in Oyo State, Nigeria is poor. This is because the documentation of indigenous knowledge among alternative health practitioners in the provision of primary healthcare is fraught with several challenges. The study maintains that the practitioners use IK in primary healthcare for various health needs of the people. Thus, one can conclude that traditional medicine is of contemporary relevance, and it can help rural communities to achieve self-reliance in their primary healthcare needs.

The challenges faced by alternative health practitioners include the need to adequately document indigenous knowledge in various formats that can make it accessible for use. However, in a society predominantly dependent on oral information, there is a need to focus on the documentation of IK. The study contends that adequate documentation of indigenous knowledge in various formats that can make it accessible for use in managing diseases has significant implications for facilitating alternative healthcare's access to the different therapeutic uses of the indigenous knowledge in their healthcare delivery efforts in Oyo State.

Recommendations

The study recommends that: librarians should collaborate with practitioners of alternative healthcare to carry out systematic documentation of indigenous knowledge used in the provision of primary healthcare. It is also suggested that librarians should be proactive in the documentation of indigenous knowledge in primary healthcare bearing in mind their training and skills. Government and corporate organisations should collaborate with libraries by providing fund and basic equipment for the documentation of indigenous knowledge in primary healthcare. Efforts should be made to document IK in primary healthcare and make it available in appropriate formats. Alternative health practitioners should be trained by librarians on how best to document all indigenous knowledge practices used in the provision of primary healthcare. Government should come up with policies and action plan for the protection and development of IK. Future studies should be carried out on the storage and retrieval of indigenous knowledge, as well as dissemination and transfer of indigenous knowledge by alternative health practitioners in primary healthcare.

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Health Records Retention and Disposal in Nigerian Hospitals: Survey of Policies, Practices and Procedures

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Abstract

This study examines health records management in Nigerian hospitals with the objective to determining the existence of health record retention and disposal policies and practice and the effect on health records management in Nigeria. A descriptive research design was adopted, and data were collected using a questionnaire administered on the heads of departments of health information in each of the hospitals through direct contacts and emails. A total of twenty hospitals were surveyed across the country out of which eighteen responded. Respondents answered questions on health record management, retention and disposal policies, and these include the responsibility of health information professionals in policy administration, retention periods and its determining factors, as well as other information on disposal and destruction practices. The study reveals that there is no national policy on maintenance, retention, disposal and practice of patients' health records in Nigerian hospital, resulting to poor management of patients' health records retention and disposal in hospitals.

Keywords: Retention, Disposal, Health Records, Health Information, Medical Records, Patient Health Records, Health Records Management, Health Records Dormancy.

Introduction

Health care is an information intensive industry in which accurate, reliable and timely information constitutes a critical resource for the planning and monitoring of service provisions at all levels of health care delivery be it primary, secondary or tertiary level.

Health information like other records are like organisms which are born, live some life spans and become dormant at some age forming what is widely referred to as the "records life cycle.". In patient care, this cycle begins when a patient's record is initiated and ends when such record becomes dormant. A patient health record can be assumed to be dormant when such records have not been accessed for any purpose in ten years. Effective patient records management is one element of information governance, that can be described as a set of multi-disciplinary structures, policies, procedures, processes and controls implemented to manage information at an enterprise level, supporting an organisation's immediate and future regulatory, legal, risk, environmental and operational requirements.

Health record management is a specialised field of records management. It is a good practice for every healthcare organisation to have a records management policy in place to suit her operating environment. Patient health information serves as corporate memory to care providers necessary for efficient and effective health care and research. Failure to retain necessary patient information and to be able to produce that information on demand can subject a healthcare organisation to litigation and some rather harsh penalties. As such, it is important for hospitals to develop a comprehensive data retention and disposal plan as part of its record management policy.

A patient's health record serves many diverse

purposes in the daily operations of a healthcare organisation. For instance, the health records assist care providers to: review previous and current care-related activities and to communicate with one another; examine the cause and nature of the patient's illness; have a credible basis to plan, execute and document the patient's course of treatment and monitor responses which help in making correct prognosis; provide a credible source of health information for statistical, research, administrative and educational purposes; provide a reliable and statutory source of evidence in legal proceedings; and establish a credible basis for the health care billing process and generation of financial reports.

Health information management (HIM) professionals are expected to play important roles as experts, in the creation, maintenance, retention and disposal of health records. This they guided by rules, regulations or schedules developed by each hospital management to guide the maintenance, retention and disposal of health records. However, these rules, regulations or schedules must be guided by established national policy on health records management. National policies are general in nature serving as guide for hospital's management in developing their rules, regulations and schedules for patient's health records' retention and disposal. The rules, regulations and schedules are determined by both internal and external factors such as status of limitation, nature and operational functions of each hospital, environmental factors such as type of health care, level of research, storage facilities and space available, and level of information and communication technology available to the hospital. These require the availability of a patient's health record for varying periods of time. Despite the importance of record retention and the availability of health record documentation, no research has been done to evaluate the status of health record retention and disposal practices in Nigerian hospitals. This study was designed to assess record retention and disposal practices in Nigerian hospitals.

According to the Ipswich Hospital records management policy (2012), records management refers to:

> *a systematic and planned approach to the management of records within the organisation, from the moment the need for a record to be created is identified, through its creation and maintenance to its ultimate disposal ensures that the organisation has ready access to reliable information. An organisation needs to maintain that information in a manner that effectively serves its own business needs, those of Government and of the citizen, and to dispose of the information efficiently when it is no longer required.*

It is in this context that Tavakoli and Jahanbakhsh (2013) opined that medical records must be maintained by a facility to support patient care; meet legal and regulatory requirements; achieve accreditation; allow research, education, and reimbursement; and support facility administration.

In Nigeria today, health institutions still operate the paper-based medical record system. The nearest to what can be described as computer-based medical record system is the "acclaimed" hybrid medical record system where one or two operations are computerised. This was established in two separate studies by Oweghoro (2012, 2013) where it was found that only 10% of the teaching hospitals are partially computerised while 90% still operate paper-based system of health record in South West Nigeria.

Observation has shown in Nigeria that lack of file space and volumes of information are just a couple of issues that create labour-intensive maintenance processes for retrieval of health records necessitating a record retention schedule. Historically, health record maintenance processes include various methods such as scanning to optical disk, use of microfilm or microfiche, and off-site storage of records. None of these is practised, resulting to records overload in most hospitals. Even with the evolution of new technologies and media storage techniques many hospitals do not have the capability to go backward and scan records to free up storage space. Consequently, health records continue to grow at uncontrollable rate creating the need for a clearly defined retention plan.

In their study, Davis and Melissa (2002) found that the duration of record retention differs for the various types of records kept (e.g, laboratory data, radiology reports and films, fetal monitor strips, birth certificates, master patient indexes) and for different

facilities (e.g. physicians' offices, hospitals). Tavakoli and Jahanbakhsh (2013) opined that it is important to know how long a health care facility must keep medical records. The length of time a record is kept by a facility is the record retention schedule. Even though health care professionals are frequently asked the question about how long to keep patients records unfortunately there is no universal answer to the question.

Tavakoli and Jahanbakhsh (2013) quoting Susan and Susan (2001) believed that "several factors need to be considered deciding about medical records retention time, including the number of inactive records, the rate of readmission of patients, financial estimation of space, staff and equipment, accessible and usable space, the status of limitation, research and education, especially in teaching hospitals, types of records (mental health records, heart diseases records, emergency records.), types of health care facilities (long-term facilities, short-term facilities, general or specialized hospitals." All these put together make the health record unique in retention and disposal management.

NHS (2011) stated that the destruction of records is an irreversible act, but the physical space required makes the retention of all records an impractical option. It is therefore essential that all records be reviewed to ensure that those records, which are required for medical, business or other legal purposes, are not inadvertently destroyed. This has become necessary in the management of patients' health records since it has been proved that a record declared inactive could become active in near future.

Methodology

The research was conducted as a cross-sectional descriptive study design with heads of health information management departments in teaching and specialist hospitals as target respondents. The choice of teaching and specialist hospitals for the study was informed by observations that levels of health records management at the general and health centres are either non-existent or at best very low in Nigeria hospitals. Data was collected using a self-designed questionnaire that aimed at finding out if there is a national policy on patients' health records management; or rules and regulations in the hospitals that guide the maintenance, retention, disposal practices on patients' health records in Nigerian hospital and effectiveness of such practice. Heath records management experts' viewpoints were obtained using the Delphi technique. While statistical analysis of data collected through the questionnaire was done with the aid of SPSS software to produce frequency tables.

Results

The survey was carried out in government teaching hospitals in the six geo-political zones in Nigeria. All the hospitals were involved in teaching; the specialist hospitals are mono-healthcare institutions while the federal medical centres also assume a teaching hospital status. A total of twenty (20) copies of the questionnaire were administered through direct contact and e-mail; and of these, eighteen (18) responded, eleven of which were teaching hospitals, five specialist hospital and two federal medical centres representing a response rate of 90%.

Policies on Health Records Management in Nigeria

Health records as a source of information on healthcare are a basic resource which plays a vital role in the management of patient care. Properly managed records will significantly contribute to efficiency in healthcare. Policy on health records management lays a suitable institutional framework that will support effective management of patient records and therefore seeks to facilitate standardisation in the application of procedures and practices in the management of records effectiveness of service delivery.

Hospitals in Nigeria, especially the government-owned institutions, still maintain their patient records in paper form, with 15 (83.3%), of the 18 hospitals operating paper-based health records. On whether they were aware of policies on retention and disposal of health records in Nigeria, 10 (55.6%) indicated that they were aware of policies on retention of health records in Nigeria.

When asked to indicate areas covered by these policies, 9 (50.0%) indicated maintenance, 4 (22.2%) said creation; 3 (16.7%) indicated retention; and 2 (11.1%) destruction.

Policy or Procedure on Retention and Disposal/Destruction of Health Records in Hospital

Respondents were requested to indicate if their hospitals had policies or procedure on retention and disposal of health records and the area covered by such policy or procedures. Table 1 shows the majority of the respondents eleven claimed that they had retention and disposal policies on periods records were active; six said it is on the medium records were kept and five indicated that their policy was on period record/information is retained, mode of retention, method of disposal, type of records and information to retain. Only four of the respondents said they documented record destructions.

Respondents were of the opinion, table 2, that the Hospital Management, Federal Ministry of Health and the Health Records Officers Registration Board of Nigeria (HRORBN) should be responsible for

Table 1: Policy/Procedure on Retention and Disposal of Health Records in Hospitals (N=18)

S/N	Variables	Covered N %	Not Covered
1.	Period for which record/information should be regarded as active	11 61.1	7
2.	Period record/information is retained	5 27.8	13
3.	Mode of retention of records and information	5 27.8	13
4.	Type of records and information to retain	5 27.8	13
5.	Mode of destruction of records	5 27.8	13
6.	Medium in which the records will be kept (e.g., paper, microfilm, electronic, etc.).	6 33.3	12
7.	Person to be responsible for deciding what to keep and destroy	4 22.2	14
8.	method of disposal (e.g., shredding or incinerating)	5 27.8	-
9.	documentation of the destruction of health records	4 22.2	-

Documentation of Policies/Procedures on Retention and Disposal/Destruction of Health Records in Hospitals

Where there are policies and procedures on retention and disposal/destruction of health records in hospital,s the study sought to know who made such policies and if such policies are documented. Nine respondents claimed that policies were made by the respective hospital management boards of the hospitals. Only 6 respondents indicated that these policies and procedures were documented, while two respondents indicated such policies/procedures were made by heads of departments.

Responsibility for making Polices

The policy of each health care institution is an important factor that needs to be considered in retaining and disposing the records. American Health Information Management Association (AHIMA) had standards in line with State Law Data Protection Act as a matter of professional practice, establishing the retention standards of 10 years after the most recent encounter (adult health records); and age of majority plus statute of limitations in case of minor health records. Views of respondents were therefore sought on who should have the responsibility of making policies and procedures on retention and disposal/destruction of health records in hospitals.

making policies on retention and disposal of health records.

Table 2: Opinion on who should make Polices on Retention and Disposal of Health Records.

SN	Variables	SA	AG	DA	SD
1.	Federal Ministry of Health	6	1	0	1
2.	State Ministry of Health	1	4	0	2
3.	Local Government Council	0	1	2	3
4.	Hospital Management	2	9	0	2
5.	HRORBN	5	1	1	1
6.	HIMAN	2	1	1	3
7.	Head of Department	0	1	3	2

Purging for Inactive Health Records from the File and Purging Intervals

Respondents were asked to indicate if shelves holding health records were purged for inactive records to create space for new records. Respondents claimed that they purge files for inactive patient records; however, and only 7 (38.9%) did this between 10-15 years, and another 7 respondents said though they purge for inactive records, but have no specific period for doing this purging inactive records while 3 (16.7%) said they do so annually.

Medium of Retaining Health Records before Disposal /Destruction by Hospital

Respondents were asked the medium on which health records were retained before disposal. Majority, 12 (66.7%), indicated that they retained their records in paper form before records were disposed and destroyed 1(5.60) respondent each indicated that they retain records in images, optical disc, CD-ROM and microfilm and microfiche.

Period of Patients' Health Record Retention

Retention policies in health institution should clearly state what records should be kept for what periods and how they should be disposed off. According to Stanger and Olson (2007), written retention policies should state the length of time the records will be kept. On retention period of health records before destruction, table 3 shows that respondents indicated varying periods over which records were retained before destruction; 8 respondents claimed there are no specific period of retention; and while 6 indicated between 11-15 years of retention (see table 3).

Table 3: Years of Retention of Health Records before Destruction

Year	N	%
No specific period	8	44.40
0 – 5	-	0.00
6 – 10	2	11.10
11 – 15	6	33.30
16 – 20	1	5.60
21 – 25	1	5.60
Total	**18**	**100**

Factors that Determine Retention Period

When requested to state factors that determined period of retention, from table 4, it could be seen that 16 (88.9%) respondents indicated filing space as the major factor; 10 respondents indicated the size (volume) of records; while 8 indicated that retention depended on how often the patients' records were accessed.

Table 4: Factors that Determine Retention Period of Health Records in Respondents' Hospitals

SN	Variables	SA	AG	DA	SD
1.	File space	11	5	-	-
2.	Period of research	-	3	5	2
3.	Status of limitation	4	3	2	1
4.	How often the records are accessed	5	3	3	
5.	The cost total retention requirement	2	2	5	1
6.	The size of the record	2	8		1
7.	off-site storage	-	2	7	1
8.	Activities or functions that require routine access to the record (e.g., quality reviews, release of information)	-	8	2	
9.	Discharge date	-	4	5	1

Respondents were asked to indicate the minimum recommended period of certain specified records were kept before they were disposed or destroyed. From table 5, it can be seen that majority of the respondents 10 (55.6%) indicated that records of disease and operative index, register of births and deaths and master-patient index are kept permanently. However, 7 (38.9%) indicated that there are no minimum period specified records to be kept before disposal/destruction.

Table 5: Recommended Minimum Period Keeping Records before Disposal/Destruction

S/N	Variables	None	5 years	10years	Age of maturity	Permanently
1.	GOPD records	7	2	6	1	2
2.	Accident and Emergency records	7	2	6	1	2
3.	Patient health records (adults) Out-patients	7	3	5	1	2
4.	Patient health records (adults) In-patients	7	0	7	1	3
5.	Patient health records (minors)	7	0	0	3	8
6.	Diagnostic images (such as x-ray film)	7	1	3	1	6
7.	Disease and Operative index	7	0	0	0	11
8.	Master patient index	7	1	0	0	10
9.	Physician index	7	0	0	1	10
10.	Register of births	7	0	0	0	11
11.	Register of deaths	7	0	1	0	10
12.	Register of surgical procedures	7	1	0	1	9
13.	Radiology reports	8	2	1	0	7
14.	Admission and Discharge Registers	7	0	1	1	9
15.	Other (specify)	10	1	1	0	6

Method Adopted for Destroying inactive Health Records

When asked what methods hospitals used in the destruction of inactive health records, majority of the respondents 11 or (61.11%) claimed to adopt burning; 8 (44.4%) indicated paper pulping, paper pulverizing or throw the records into garbage dump.

Discussion of Findings

The study examined the retention, disposal and destruction practices of patients' health records in Nigerian teaching hospitals, and the policies and procedures guiding such practices. The paper-based patient health record practice is still a common place. No teaching hospital operates a fully computerised health information management system and the thought of electronic health records practice in the near future might be a mirage. What is regarded as electronic medical records could only be taken as partial computerization of a few sections of the department. This collaborated Oweghoro's findings that 90% hospitals in the South West Nigeria still operate paper-based system of medical record.

The federal and state governments or their agencies, the ministries of heath, do not have established policies and procedures that guide the management of health record practices in hospitals. Policies and procedures for retention, disposal and destruction of health records are made for hospitals by their respective management boards. Few of the hospitals have their policies made by the heads of the health information management department. The result of this is that there is no standard guideline on policy and procedure for the retention, disposal and destruction of patient health record practices in the country. This absence of a standard health Information management practice had led to the hospitals operating varying approaches to health records management practice, resulting to no standard policies and procedures for the retention, disposal and destruction of patient health record in Nigeria. This practice is not in line with Ameican Health Information Management association (AHIMA's) recommendation that there be standards and state law as a matter of professional practice, established retention standards. Added to this is Stanger and Olson (2007) findings that hospitals and other health care providers establish written records retention and destruction policy to ensure that records are maintained for the appropriate time.

The hospitals surveyed retain patient health records in paper form and has no specific period for which patient health records are retained. Retention is mostly guided by filing space; and the disposal of patient health records is mainly a function of access while destruction is done mainly through burning patient health records. No hospital claimed to maintain patient health records permanently in their original format or retain them in some medium before disposal or destruction. Only one hospital claimed to put her records on micro-film. The hospitals do not have retention period for specific health records before they are disposed, exception to this is the patient index card. This finding is not in line with World Health Organisation policy of 2002, revised and updated in 2006 on policy that when developing a retention policy, it is important to remember that medical records should be kept by the hospital as long as required under the statute of limitations (retention for legal requirements) or the country's record retention regulation

Conclusion

The study examined policies, practices and procedures for the retention, disposal and destruction of patients' health records in hospitals in Nigerian. Findings show that the level of health records management in Nigerian hospitals is generally low compared to modern day practices in the developed countries. Patient records are still maintained in paper form. There are no policy or standard guidelines on retention, disposal and destruction of health records in Nigeria hospitals; this can be attributed to the fact that neither the state nor the federal government had put one in place. Majority of the hospitals do not have guidelines on retention, disposal and destruction of health records. Few hospitals adopt their own strategy in managing their health records; the result is that patient health records are not properly managed. Consequently, there is no standardised approach to retention, disposal and destruction of patients' health records in Nigerian hospitals.

One would expect that the Federal Ministry of Health, through the Health Records Officers Registration Board of Nigeria, the regulatory agency for health records management, would formulate policies and procedures for the retention, disposal and destruction of patients' health records in the country.

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