Information literacy among medical students in the College of Health Sciences in Niger Delta University, Nigeria

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Abstract
Purpose – The aim of this paper is to investigate whether undergraduate students in the College of Health Sciences in Niger Delta University are information literate, and to determine whether they are aware of and use different information resources including electronic ones, and to assess their ability to evaluate information before use.
Design/methodology/approach – Questionnaire and interview methods were used to collect data from the students.
Findings – The students mostly rely on textbooks, medical journals, the internet, colleagues, and the Nigerian National University Commission’s virtual library for information. They rarely use electronic resources such as MEDLINE, HINARI, the Cochrane Library, and EbscoHost. This could be because of a lack of awareness and skills necessary to search databases. Problems such as lack of time, the challenge of locating “good citable stuff”, inability to use effectively the medical library, and poor skills in information searching were mentioned. The study recommends that medical librarians and faculty should collaborate in integrating information literacy skills into the medical school curriculum.
Originality/value – This paper may help inform discussion about students’ competences for locating, selecting, evaluating and using information essential for lifelong learning.
Keywords Information literacy, Medical schools, Undergraduates, University libraries, Nigeria
Paper type Research paper

1. Introduction
As the world becomes increasingly globalised and technological information expands, a non-information literate medical student is likely to find the variety of information sources (print and electronic) and quantity of information overwhelming and threatening. Information literacy involves the knowledge and use of skills or competences that together make for effective and appropriate use of information. Information literacy is defined by the America Library Association (ALA, 2004) as “a set of abilities requiring individuals to recognise when information is needed and have the ability to locate, evaluate, and use effectively the needed information”. Doyle (1994) defined an information literate person as one who:
- recognises that accurate and complete information is the basis for intelligent decision making;
- recognises the need for information;
formulates questions based on information needs;
- identifies potential sources of information;
- accesses sources of information including computer-based and other technologies;
- evaluates information;
- organises information for practical application, integrates new formation into an existing body of knowledge; and
- uses information in critical thinking and problem solving.

Information literacy skills open the gateway of information to students and all information seekers and users across disciplines. It is a way of exposing users to the world of knowledge. It helps students know when information is required, how to locate, evaluate, organise, and effectively create, use, and communicate it. According to Rasaki (2008), who studied information literacy skills in three African universities, stated that “Information literacy skills is a way of nurturing and sustaining lifelong learning”. Writing on his experience at South African universities, Dulle (2004) reveals that “most universities in Africa practise mainly user education and library orientation, most of which lack the capacity to produce information users who exhibit adequate information literacy attributes”. Abell et al. (2005) defined information literacy as “knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner”.

2. The College of Health Sciences (CHSs) and the medical library in the Niger Delta University (NDU)
The College of Health Sciences in Niger Delta University in Bayelsa State, Nigeria houses four faculties:

(1) Basic medical sciences, including departments of Human Anatomy, Human Physiology, Medical Biochemistry, Pharmacology, Medical Microbiology and Parasitology, Anatomical Pathology, Chemical Pathology, Hematology and Immunology, and Medical Laboratory Sciences.

(2) Clinical sciences, including departments of Anesthesia, Dentistry, Internal medicine, Family Medicine, Obstetrics and Gynecology, Pediatrics, Community medicine, Psychiatry, Radiology, Ophthalmology (eye), Otolaragology (Ear, Nose and Throat), and General Surgery.

(3) Pharmacy, including departments of Pharmaceutics and Pharmaceutical Technology, Clinical Pharmacy and Pharmacy practices, Pharmaceutical and Medical Chemistry, Pharmacology Toxicology, Pharmaceutical Microbiology and Biotechnology, and Pharmacognosy and Herbal Medicine.

(4) Nursing, including departments of Medical and Surgical Nursing, Maternal and Child Nursing, Mental Health Nursing, and Community Health Nursing.

The NDU medical library is equipped with 15 computers with internet connectivity and five other computer systems in the offices connected to the internet. The students using the medical library have access to health sciences sites such as the Nigerian National Universities Commission (NUC) virtual library (www.nigerianvirtuallibrary.com), the
Information literacy among students

3. Literature review

3.1 Theoretical framework on information literacy

This study anchors on the Information Literacy Competency Standards for Higher Education formulated and reviewed by the Association of College and Research Libraries (ACRL):

- Standards one: the information literate student determines the nature and extent of the information needed.
- Standards two: the information literate student accesses the required information effectively and efficiently.
Standards three: the information literate student accesses the required information and its sources critically and incorporates selected information into his or her knowledge base and value system.

Standards four: the information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.

Standards five: the information literate student understands many of the economic, legal, and social issues surrounding the use of information and uses information ethically and legally (ACRL, 2000).

Thus, applying the information literacy standards involves student’s ability to identify information needs, to find, evaluate, use, and to accurately give credit for information used.

3.2 Information literacy among undergraduate students

Ultimately information literate people are those who have learned how to learn, they know how to learn because they know how information is organised, how to find information, and how to use information in such a way that others can learn from them. Ojedokun (2007) points out that:

“Developing lifelong learners is central to the mission of higher educational institutions like universities. By ensuring that individuals have the intellectual abilities of reasoning and critical thinking, and by helping them construct a framework for learning how to learn, colleges and universities provide the foundation for continued growth throughout their careers, as well as in their roles as informed citizens and members of communities.”

Lwehabura (2008a) recommended in his study in Tanzania that librarians and teaching staff should become role models and mentors to students in using Electronic Information Resources (EIRs), and that teaching staff adopt an active learning and student-centred approach in their teaching as well as strengthening information literacy programmes as intervention measures for improving students’ skills in using EIRs. Hartmann (2001) stated that all those who come into contact with students agree that lifelong learning skills, including information literacy skills, are essential. Embedding the skills into the curriculum is a strong way to develop them in students. They can be taught the skills in a variety of ways within the curriculum and have the skills constantly reinforced throughout their academic career. Similarly, Hiscock and Marriott (2003) also concluded in their study that “integrating lifelong learning skills into the curriculum is a powerful way of encouraging the students to develop these skills”. Selmatsela and Du Toit (2007) called for librarians teaching information literacy to have understanding, knowledge and skills regarding the dynamics involved in the teaching of information literacy skills, in order to make the programme a success. Lwehabura (2008b) in his study on information literacy delivery in Tanzanian universities concluded that because of a number of factors including “lack of clear IL policy, inadequate time, the teaching of IL as stand-alone programme on voluntary basis, and non-involvement of teaching staff, the current IL delivery approach is not effective for impacting adequate IL skills”. In the same manner, the findings of Somi and De Jager (2005) on the role of academic libraries in the enhancement of information literacy in South Africa showed that “while there is some evidence that the University
of Fort Hare Library in Ghana is engaging in information literacy activities, students still have difficulty in finding, critically evaluating and using information’.

3.3 Information needs of undergraduate students

Eskola (2005) studied the information literacy of medical students in Finland and found that “real information needs, such as finding information for a thesis, trigger development in information literacy” and suggested that, in addition to the information needs, the educational context, such as the introduction of problem-based learning, may influence the development of the student’s information literacy. Ajiboye and Tella (2006) asserted that “the predominant information required by undergraduate students is academic information”. This is confirmed in their study carried out in the University of Botswana to examine the information seeking behaviour of undergraduate students. The study revealed that academic information was rated the highest with 1,282 students (64.1 per cent), other required information by the students but which may not be as vital as academic information includes:

- information for personal development with 250 students (12.5 per cent);
- health information with 225 students (11.25 per cent);
- employment information with 186 students (9.3 per cent); and
- global information with 57 students (2.85 per cent).

Similarly, Kakai et al. (2004), in their findings on the reasons for undergraduates searching for information in Uganda, revealed that the main information demands that led undergraduate students into searching for information include:

- course works and assignments (86 per cent);
- preparation for examinations and tests (68 per cent);
- general reading to enhance lecture notes (55 per cent); and
- class group discussions (44 per cent).

Searching for information for seminars or preparation for workshops, or tutorial presentations had a lower rating.

3.4 Information sources undergraduate students use in the medical sciences

Eskola (2005) stated that medical students use printed sources (books, journals), electronic resources (databases, internet), media sources (TV, radio, newspapers) and people to gather information. The quality of sources of information available to the user is important because relevant sources are most likely to beget useful information. Information sources are efficient if they provide relevant, useful, specific accurate information that could help users solve their problems. Minchow et al. (1993) concluded that if information skills were incorporated at “teachable moments” in the five years of medical school, medical students would become sophisticated in managing their information needs and would be prepared to stay abreast of continuing changes in the growth of medical literature. A much later study by Haines et al. (2010) reported that interviewees regularly mentioned alerting services that they had set up for themselves to help them keep on top of developments in their medical fields. Three participants received tables of contents via e-mail, four set up their own subject-based alerts (two in My National Center for Biotechnology Information, one in the American Chemical
Society’s Alerts service, and one through a locally developed interface to assist in searching PubMed). In Dee and Stanley’s (2005) study, 85 per cent of nursing students use medical databases, the reason for the high use of databases as explained in that study was because nursing students had more recent training in the subscription databases from the academic health science librarians and because nursing students were assigned papers and projects for class that encouraged and required the nursing students to use the databases.

3.5 Information literacy skills of medical students

Medicine is, among many other sciences, an area in which the expansion of information is enormous and which is critically dependent on up-to-date information. Due to changes in medical education, interest in medical students’ information behaviour has grown during the last decade. The implementation of student-centered learning and teaching methods in the medical curriculum has also resulted in a growing body of literature that explores different aspects of information literacy and user education for libraries. One of the main concerns has been the question of the integration of skills in information literacy or information management instruction in the curriculum (e.g. Minchow, 1996).

Wildemuth et al. (1995) have conducted several studies on medical students’ information and search behaviour by studying the questions the students have asked of librarians and physicians. When first-year medical students sought information about clinical scenarios in toxicology, they asked questions of a physician concerning the explanation of symptoms of a case, what tests or methods could be used to distinguish between toxins, and how to treat the patient. Librarians were asked how to find the bibliographic references relevant to clinical cases. In another study, medical students’ personal knowledge, searching proficiency and database use in problem solving was investigated and the results indicated that there was little evidence of any relationship between personal domain knowledge and searching proficiency, i.e. search results, selection of search terms, and improvement in selection of search terms over the course of the search, and efficiency. These factors were found to be related to databases that assisted problem-solving performance. The changes being made in medical education in order to enhance the problem-solving skills of students and to help them learn to think like experts when solving clinical problems may also influence students’ information behaviour, and this may become more similar to the behaviour of practicing physicians.

Both the clinical nurses and the nursing students in Dee and Stanley’s (2005) study revealed in the interviews that they did not know that many advanced searching features existed, such as limiting searches by date or language, and they were not aware of subject headings or any kind of thesaurus for database searching. The participants in that study unanimously agreed during interviews that advanced training was essential in effectively using PubMed or MEDLINE.

4. Methodology

The study is a descriptive survey. The study covers undergraduate students in the CHSs at NDU, Bayelsa State, Nigeria. The total population of undergraduate students in the four faculties in the CHSs during the 2009/2010 academic session was 1,560 (Source: Faculty offices). The sample size of 156 was generated being 10 per cent of the
total population of 1,560 was used for the study. Questionnaire was used for the data collection for the study. The questionnaire was entitled “Information Literacy among Students in the College of Health Sciences Questionnaire (ILSCHSQ)”. Using a random sampling technique, the questionnaires were distributed to the students in their respective classrooms in the CHSs in the four faculties. A total of 135 returned and completed copies of the questionnaire were used for the analysis.

To supplement the data from the questionnaire, the researchers engaged 12 students randomly selected from the four faculties in the CHSs for an interview and the students’ responses were recorded and analysed.

5. Results
5.1 Demographic information of the respondents
The breakdown of 135 respondents by faculty within the CHSs was:

- basic medical sciences – 27 (20 per cent);
- clinical sciences – 33 (24.4 per cent);
- pharmacy – 43 (31.9 per cent); and
- nursing – 32 (23.7 per cent).

Among the 135 respondents, 61 (45.2 per cent) were male students and 74 (54.8 per cent) were female. Students in Nigeria are classed by “level” of course and the respondents covered all classes as follows:

- 100 Level – 25 (18.5 per cent);
- 200 Level – 34 (25.9 per cent);
- 300 Level – 38 (28.1 per cent);
- 400 Level – 28 (18.3 per cent); and
- 500 Level – 10 (7.4 per cent).

In Table I the predominant information required by the students in the CHSs is academic information (103 or 76.3 per cent). Other information required was given as: information for personal development (23 or 17 per cent); employment information (5 or 3.7 per cent); and sports up-date (4 or 3 per cent).

Table II shows that medical journals ranked first as the most consulted source by the students with 41 (or 30.4 per cent) choosing this. Next, was textbooks with 36 (26.7 per cent) and the internet was rated as the third with 23 (17 per cent). Other sources indicated are colleagues 15 (11.1 per cent) and the NUC Virtual library 14 (10.4 per cent).

<table>
<thead>
<tr>
<th>Required information</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information for personal development</td>
<td>23</td>
<td>17.0</td>
</tr>
<tr>
<td>Academic information</td>
<td>103</td>
<td>76.3</td>
</tr>
<tr>
<td>Employment information</td>
<td>5</td>
<td>3.7</td>
</tr>
<tr>
<td>Sport up-date</td>
<td>4</td>
<td>3.0</td>
</tr>
<tr>
<td>Total</td>
<td>135</td>
<td>100</td>
</tr>
</tbody>
</table>

>Note: n = 135

Table I. The predominant information required by the students in the CHSs.
Databases such as MEDLINE, HINARI, EbscoHost, e-books, and medical CD-ROMs are the least used or are never consulted by the students. Students may not be using these electronic resources as they might not be aware of them or they do not have the skills necessary to use such electronic resources.

5.2 Clinical problem-solving skills

Students were asked to select and rank the most common strategy through which they obtain practical medical knowledge. Out of the 135 respondents, 79 (58.5 per cent) indicated obtaining practical knowledge from hospital training while observing doctors as they treat patients, followed by clinical skills laboratory with 54 (40 per cent), and then field trips with two (1.5 per cent).

5.3 Critical judgment of information and sources before use

Students were asked three questions in this section to indicate whether they consider critical judgment of information and the sources before use. Of the 135 respondents, 57 (42.2 per cent) indicated that they critically judge the relevance of the sources before retrieving information from them. Also, 33 (24.4 per cent) indicated that they summarise only main ideas for use, and 45 (33.3 per cent) indicated that they pay attention to currency of information before use. These findings reveal that the students consider critical judgment of information and sources before use.

5.4 Problems encountered by students in the medical sciences when searching for information

Respondents were asked to indicate the problems they encounter in the process of searching for information from the medical library. 77 (57 per cent) indicated that they experience difficulty in using the medical library to locate information resources and 68 (50.4 per cent) indicated that they experience difficulty in accessing foreign medical journals through the internet. In total, 101 students (74.8 per cent) indicated that they are not aware of and do not use databases like MEDLINE and HINARI, the NUC virtual library, British Nursing Index, the Cochrane Library, and EbscoHost to retrieve information to meet their information needs. Further, 69 (51.1 per cent) indicated that they experience difficulty in locating good citable information materials from the internet.

<table>
<thead>
<tr>
<th>Sources of information</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbooks</td>
<td>36</td>
<td>26.7</td>
<td>2</td>
</tr>
<tr>
<td>Medical journals</td>
<td>41</td>
<td>30.4</td>
<td>1</td>
</tr>
<tr>
<td>Colleagues</td>
<td>15</td>
<td>11.1</td>
<td>4</td>
</tr>
<tr>
<td>NUC virtual library</td>
<td>14</td>
<td>10.4</td>
<td>5</td>
</tr>
<tr>
<td>MEDLINE</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>HINARI</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Cochrane Library</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Internet</td>
<td>26</td>
<td>19.3</td>
<td>3</td>
</tr>
<tr>
<td>E-books</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>British Nursing Index</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>EbscoHost</td>
<td>2</td>
<td>1.5</td>
<td>7</td>
</tr>
<tr>
<td>Medical CD-ROMs</td>
<td>1</td>
<td>0.7</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>135</td>
<td>100</td>
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</table>

Table II. Awareness and ranking of major sources used in obtaining information by the students in the CHSs
6. Discussion
In the present study, students’ information literacy was approached through examining their actual information needs, their awareness and use of information sources, their critical judgment of information, awareness and use of medical databases like MEDLINE and HINARI, and use of other electronic resources. The findings revealed that actual academic information needs such as: finding information for coursework or to complete assignments, writing their projects and keeping up-to-date in their field of study motivate them to searching for information. Interviews with some students in the CHSs in NDU confirmed that they search for information related to their academic work. One 200 Level male student in the faculty of Basic Medical Sciences explained:

[...] my reason for looking for information is to enable me complete my assignments, and to keep myself up-to-date in the area of medical sciences.

Another 500 Level female student in the faculty of Nursing stated:

[...] the reason why I search for information is to acquire more knowledge, and to know latest developments in nursing and also to gather materials to write my project.

This finding confirms the earlier study by Eskola (2005) that real information needs, such as finding information for a thesis, trigger developments in information literacy.

The findings on the major information sources the students in the CHSs consulted revealed that they use sources such as textbooks, medical journals, the internet, colleagues and the NUC virtual library. Others sources rarely or never consulted are: e-books, medical CD-ROMs, and databases such as MEDLINE and HINARI, the Cochrane Library, and EbscoHost. The inability to use electronic sources could be as a result of lack of the necessary skills to use them or lack of awareness. The awareness of different sources of information in different formats and the quality of sources of information available to the user are important because relevant sources are most likely to lead to retrieving useful information. Information sources are efficient if they provide relevant, useful specific and accurate information that could help medical students solve their problems. The Association of American Medical Colleges (AAMC) states that:

[...] to practise medicine in the twenty-first century, medical students ... must be given a strong grounding in the use of computer technology to manage information, support patient care decisions, select treatments, and develop their abilities as lifelong learners (AAMC, 1998).

Several studies have revealed that the internet is one of the most important sources of information. The internet is being used for medical education in diverse ways including teaching, diagnosis, and conduct of medical examinations (Jones et al., 1991; Mansor, 2002; Virtanen and Nieminen, 2002). In the present study, the medical students at NDU rated the internet as the third major source consulted for information. This finding is clearly at variance with Jones et al.’s (1991) findings, Mansor’s (2002) findings, as well as Virtanen and Nieminen (2002). Arora (2005) in his study in India recommended that medical and dental students need formal training in accessing the medical databases like PubMed and Indmed – a bibliographic database of Indian biomedical literature. The interviews with the students confirmed that they use sources like lecturers, colleagues, and the internet. On a sad note, not one of the students
interviewed mentioned using sources like MEDLINE, HINARI, medical CD-ROMs, the NUC virtual library, Cochrane Library, and EbscoHost. The students in the CHSs in NDU need the awareness of the availability of medical databases and the searching skills needed to utilise them. This finding is in agreement with Lwehabura (2008a) who stated that although students in Tanzanian universities have access to and use various EIRs both for academic and non-academic work they still lack adequate knowledge and skills in some aspects, including searching and evaluation.

On the strategy through which they acquire practical knowledge, the students frequently mentioned hospital training and clinical skills laboratory as the means through which they solve their clinical problems. The undergraduate students in the interviews mentioned their participation in group learning, with each group made up of 15 to 20 students undertaking a study visit guided by a member of the faculty as a tutor. These group-learning sessions are usually in the teaching hospitals and other health centres and laboratory sessions. Clinical skills are learned and practised in a special clinical skills laboratory, which is equipped with training facilities and physicians’ equipment. Problem-based learning (PBL), which has been applied specially in medical education, is a pedagogical method that is based on the modern conception of learning (Eskola, 2005). In PBL the real-life situations form a starting point for problem solving and the bases for learning. Evaluation methods form part of the learning process. Knowledge skills, attributes and the learning process as a whole are evaluated. Self-evaluation and feedback are included in the evaluation as explained by a student in the interview.

The overall analysis of critical judgment was made on the basis of the following: the relevance of sources to students; how students summarise the main ideas before use; and how they pay attention to currency of information. The findings revealed that the students evaluate information by considering its relevance, the main ideas covered, and they pay attention to the currency of the information before use. The interviews with the students also agreed with this as they critically judge information before use, paying attention to its relevance, its summary of main ideas, and currency of the information. This finding confirms Eskola’s (2005) findings on the area of critical judgment of information. She stated that students in the two categories (“rich use of sources” and “simple use of sources”) evaluate information and sources before use, and that they also pay attention to the age of the information before use.

Several studies on students’ information behaviour have revealed students having difficulties in using libraries (e.g. Wilson, 1994; Zondi, 1999). In the present study, the students indicated having problems in using the library. This could probably be due to their inability to use the library catalogue to locate materials, and their lack of awareness of some information resources in the library. It is the responsibility of the librarians at the medical library to educate students on how to use the information resources. The interviews with the students revealed that their information gathering efforts are restricted by lack of time and money, poor skills in information searching, and their inability to access foreign medical journals online. This could be as a result of lack of funds for the libraries to subscribe to foreign medical journals. In the words of a 300 Level male student in the Faculty of Clinical Sciences:

[... we don’t have access to foreign journals online on nursing and other areas of medicine to use, because our library don’t subscribe to them, other problems we face include time wastage in getting the information and slowness of the internet.}
Another problem students face in the process of searching for information is the challenge of locating “good citable stuff” especially when gleaning materials from public sites on the internet for research assignments. Studies by Minchow (1996), McGowan (1995), and Baro and Fyneman (2009) emphasise the importance of integration of information literacy skills and activities into existing courses. Verhey (1999) found lack of time to be a significant factor in searching for information for half of the nursing students. Dee and Stanley (2005) asserted that “nursing students had access to many high-quality health information resources but tended to use resources based on accessibility and awareness of the resources and its content”. Dee (2003) points out that “an increasing number of medical school libraries offer chat reference services to provide immediate, high quality information at the time and point of need to students, faculty, staff and health care professionals”.

Some of the students interviewed suggested ways to improve information literacy skills: librarians and faculty should collaborate to teach how to search the internet effectively, and teach them some websites that are useful to their medical profession. Others suggested that, librarians should teach them how to search effectively the medical databases provided, such as MEDLINE and HINARI. One 200 Level male student in the Faculty of Pharmacy explained:

I want to know more on how to retrieve materials from the medical databases such as MEDLINE and HINARI, also to know more about the NUC virtual library, the Cochrane Library, and EbscoHost.

Another 400 Level female student in the Basic Medical Sciences said:

I am computer literate, what I need is the advanced searching skills to enable me use these electronic resources they are talking about.

This may be why Barnard et al. (2005) stated that the implementation of an integrated curriculum promises advanced information skills, access, and use of available evidence to support clinical decision-making and a formation for lifetime learning. They argued that for information literacy to be enhanced, collaboration between teaching faculty and librarians must be fostered in meaningful ways.

7. Conclusion and recommendations
The findings from this study show that the information literacy level of students in the CHSs in NDU have not completely achieved the Information Literacy Competency Standards for Higher Education Formulated and reviewed by the ARCL standards committee. Collaboration among librarians in medical libraries and faculty members to develop information literacy programmes could enhance the ways the undergraduate students in the CHSs access and use information to meet their educational needs. The curriculum needs to include more ways on how to access this information conveniently within and outside the university settings. These curricular enhancements may take the form of enhanced courses – integrated instruction, or they may become a separate course on information literacy suggested by several studies (e.g. Baro and Fyneman, 2009; Middle States Commission on Higher Education, 2002). Several studies in information literacy have been conducted in educational contexts in order to acquire knowledge of the problems and issues crucial in planning and enhancing instructional
programmes in information literacy. Based on the findings, the following recommendations are made:

- In order to enhance the retention of the knowledge and skills in information literacy and lifelong learning, skills should be integrated and taught throughout the entire medical education.
- The medical libraries should, as a matter of urgency, organise group instructions on the use of the internet facilities provided in the libraries to search effectively for materials.
- Practical training on how to perform searches on MEDLINE and HINARI databases should be incorporated into the medical school curriculum. This will equip the students with the needed information retrieval skills. Also, it will give librarians who will direct students in such practical sessions an opportunity to assess deficiencies in the MEDLINE and HINARI database training.
- The medical libraries should also provide training on advanced searching skills to enable the students to use other electronic resources like the NUC virtual library, EbscoHost, British Nursing Index and so on.
- The medical librarians should lobby for funds to enable them to subscribe to foreign medical journals for users to have access to.

References


**Further reading**


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