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Information literacy needs of undergraduates at the College of Health Sciences, Delta State University, Abraka: a survey

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ABSTRACT

Background: Information literacy skills are essential to today's medical professionals for evidence-based medicine. The study determined Information Literacy (IL) skills and training needs of undergraduates at the College of Health Sciences, Delta State University, Abraka, Nigeria.

Methods: The study adopted the descriptive survey design and used purposive sampling technique to select a sample of 268 students. Data were collected using a questionnaire, which was adapted from the Information Literacy Test Manual. Frequency distribution, percentages and mean were used to analyse data and results were presented in pie charts, graphs, and tables.

Results: Undergraduates at the College of Health Sciences have a moderate level of IL skills. EBSCOHost, PubMed and MEDLINE are the electronic information resource mostly used by the students. The students agreed to the use of search engines and library catalogue to access information resources and seek information assistance from Google, YouTube, the library and their mobile devices. Training is needed to improve research, database searching and accessing of clinical information by students.

Conclusion: Undergraduates at College of Health Sciences, Delta State University have moderate IL skills. They are unable to use most information access tools and are unable to use several reputable databases and electronic resources, thus, they need more IL training to improve their skills.

Recommendation: Among others, the study recommends that the University, leadership of the library, College Management and academics in the college work together to ensure the inclusion of IL instruction into the College curriculum so that the student can have quality knowledge on IL skills rather than the one-off library orientation program given to them as new intakes.

Key Words: Information literacy skills, health sciences libraries. undergraduates, access tools, electronic information resources use.

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Introduction

Information literacy (IL) describes the knowledge and skills needed for survival in today's information-rich society. It is defined by Bazrafkan et al. (2017) as an intellectual ability needed to find, evaluate, and use information. Broadly, it combines the recognition of a need for information, locating the information, appraising the quality of the information, managing the information, and understanding ethical issues surrounding information use. IL also means the know-how required for employing Information and Communication Technologies (ICT) to retrieve and disseminate information (Andretta, 2005). First introduced in the United States at the beginning of the 1970s, the American Library Association explained that information literate individuals comprise people who have learned how to organize, find, and use information so that it benefits them and those around them (American Library Association, 1989).

Today, IL has permeated all fields of knowledge. In the medical and allied fields, the acquisition of IL skills is a sine qua non in medical education. In developed countries, IL skills needed for information retrieval and critical appraisal are mandatory for all categories of healthcare professionals. In addition, it has been recognized that medical students require competence and skills to navigate the abundant information-bearing resources that will be beneficial to their academic pursuit. Hence, the need for contemporary medical education standards that insist on the acquisition of instruction to be integrated into curriculum, at the undergraduate and graduate levels. Not just as a necessity for learning about evidence-based

medicine (EBM), but also as part of adhering to requirements set by medical education governing associations and accrediting bodies (Royal College of Physicians and Surgeons of Canada, 2005; Akpovire et al., 2019).

However, observations and a preliminary review of the literature indicate that most undergraduates in Nigeria still lack these essential skills (Baro et al., 2011; Bazrafkan et al., 2017). This study therefore aims to assess the IL skills of undergraduate students in the College of Health Sciences and identify their areas of skill need. This is to demonstrate the need for an all-encompassing IL training program that satisfies the IL needs of the undergraduates of the College of Health Sciences at Delta State University, Abraka, Nigeria.

Background of Study Area

The College of Health Sciences, Delta State University (DELSU-CHS), Abraka comprises of the Faculty of Basic Medical Sciences (BMS), the Faculty of Basic Clinical Sciences (BCS), and the Faculty of Clinical Sciences (CS). The six professional undergraduate and postgraduate pogrammes at the College have been approved by the major medical education accrediting bodies in Nigeria including the Medical and Dental Council of Nigeria (MCDN), the Nursing and Midwifery Council of Nigeria (NMCN), and the National Universities Commission (NUC).

At DELSU-CHS, the teaching of IL is part of the library user education interaction embedded in the general studies course given to all first-year students of the University. IL instruction is also provided as part of the College-based orientation given to first-year students. These sessions specifically focus on medical information resources at the College library and how students can use them. The latter, driven by the College's medical library, is involved with instructions on information resource awareness, reference resources, and library services. Also, at the Faculty of Basic Medical Sciences, students in their third year are introduced to literature search strategies and research writing techniques, to help them prepare their undergraduate research projects required for graduation.

Research Objectives

The study's aim was to determine the IL training needs of undergraduates at the College of Health Sciences, Delta State University, Abraka. The specific objectives are to:

1. assess the IL skills that undergraduates possess.
2. determine the information access tools that students use the most.
3. identify the electronic information resources that undergraduates use the most.
4. identify the areas where students seek information assistance; and
5. investigate the areas where students need IL instruction.

Literature Review

Bashorun et al. (2021) provided a report on IL activities organized to enable undergraduates to access and use e-resources in the Faculty of Clinical Sciences, University of Ilorin, Nigeria. Using a descriptive survey, 260 students were randomly selected from a population of 771 in the Faculty of Clinical Sciences. The study reported, among other findings, that the medical students acquired competencies in identifying and accessing e-resources. Although, the respondents demonstrated improved competences in information literacy over the period of their study, the authors believe that improving IL competencies should not be limited to only a few occasions.

Bazrafkan et al. (2017), investigated IL at Shiraz University of Medical Sciences in Iran. Using a descriptive-analytical approach and cross-sectional study, the data collected and analyzed showed low mean score of IL and its subgroups. Hence, the authors suggested an immediate review of the current educational plans. Similar research by Ullah and Ameen (2019), on the perception of medical librarians in Pakistan concerning the IL skills of medical students and instruction strategies revealed that the students IL skills were inadequate. Most of the librarians opined that students are to undergo a compulsory IL instruction

course designed in collaboration with faculty members.

Another study by Akpovire et al. (2019), found that medical students in Lagos State, Nigeria, used print newspapers, textbooks, and e-resources mostly. Their result also indicated a positive relationship between information literacy (IL) skills and medical students' use of information resources. The authors suggested that attention should be given to IL programmes to ensure students are equipped with essential information searching skills. Similar evaluative research on the strengths and weaknesses of IL instruction in the Faculties of Medicine and Dentistry at the University of Alberta, Canada, concluded that, although all undergraduate medical students received IL instruction, there was an urgent need to review the curriculum to remove repeated aspects. Most respondents in the study indicated interest in getting physical instructions in areas of advanced database searching (Storie & Campbell, 2012).

Similarly, Baro et al. (2011), reported that medical students at the Niger Delta University relied on textbooks, subject-based journals, the internet, colleagues, and the Nigerian National University Commission's virtual library for information. Their use of electronic resources was recorded as low because there were limited indications of the use of resources such as, MEDLINE, HINARI, the Cochrane Library, and EBSCOHost. Among other suggestions, the authors opined that medical librarians must collaborate with faculty members so that IL instruction can be integrated into the medical school curriculum.

Methodology

The study adopted the descriptive survey research design. The population consisted 2,675 undergraduate students from the three faculties at DELSU-CHS (Basic Medical Sciences, Basic Clinical Science and Clinical Sciences) in the 2021–2022 academic session (Faculty Office Records, 2023). The purposive sampling technique was used to select a sample of 300 undergraduate students for the study. Participants were drawn from 200 to 600 levels, in all the three faculties. The 100 level students were excluded because they were not yet familiar with using information resources. Data was collected using an Information Literacy Skills of Health Sciences Undergraduate Students' Questionnaire (ILSHSUSQ) adapted from the Information Literacy Test Manual (ILT, 2014). The questionnaire was divided into sections A and B. Section A elicited information on the biodata of the respondents while section B was broken down into six sub-sections on information literacy skills of students. The responses to the items on the questionnaire were structured based on a four-point scale: 'Strongly Agree (4), Agree (3), Disagree (2) and Strongly Disagree (1)'.

The questionnaire was distributed through the WhatsApp group platforms of selected classes. Recognising that the students would be unfamiliar with some of the questions, the researchers explained to them the items in the instrument that needed clarification. Two hundred and sixty-eight students responded to the questionnaire, resulting in a response rate of 89.3%. Data collected were analysed using descriptive statistics such as frequency distribution, percentage score, and mean, and the results are presented in tables.

Results

Table 1 presents the various aspects and overall IL skills of the students. Using a benchmark of 2.50 to compare the aggregate mean score of 2.58, the Table shows that the students have an overall moderate level of IL skills. For the component items, it shows that undergraduate at the College can identify information sources needed for literature search (3.09), determine their information needs (2.84), evaluate information sources (2.64), and access needed information using information access tools (2.51). Their skills are, however, below the expected levels regarding information usage (2.28) and knowledge of ethical issues surrounding information use (2.15).

Table 1: IL Skills of Undergraduates

Aspects Of Il Skills	*Mean*
Determining Information Need	2.84
Identifying Information Sources for Literature Search	3.09
Evaluating Information Sources	2.64
Access Information Using Information Access Tools	2.51
Using Information	2.28
Knowledge Of Ethical Issues	2.15
Information Literacy Level	2.58

Criterion Mean 2.50

Table 2 represents the access tools that students at the College of Health Sciences can use. Search engines (87%) and library catalogue (79%) are the most used access tools. Other access tools such as databases (39.5%), indexes (42.5%) and OPAC (29.1%) scored below the 50% benchmark, indicating that the respondents might not be knowledgeable in using them to access needed information, hence their low level of usage.

Table 2: Information Access Tools

	Agree		Disagree		Undecided	
	Freq.	%	Freq.	%	Freq.	%
Library Catalogue	211	79	45	17	11	4
Databases	106	39.5	97	36	64	24.5
Repositories	51	19	131	49	85	32
Indexes	114	42.5	67	25	86	32.5
Search Engines	233	87	19	7	15	6
Online Public Access Catalogue (OPAC)	78	29.1	125	46.6	64	24.3
Directories	65	24.2	154	57.4	48	18.4

Presented in Table 3, is the response from students about the most used electronic information resources. Responses ranged from awareness of electronic resources to the extent of usefulness of an electronic resource. It is seen that students indicated that EBSCOHost (40.7%) is essential to them. Next is PubMed (39.1%) and MEDLINE (38.0%). Most students responded negatively to having knowledge and use of most of the electronic resources listed.

Table 3: Undergraduates most used electronic information resources

	I don't know this resource		This is not a useful resource		I sometimes use this resource		Essential resource to me	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
EMBASE	158	59.0	17	6.3	29	11.0	64	24.0
CINAHL	178	66.4	15	5.5	29	11.0	46	17.1
Cochrane Library	193	72.0	19	7.0	45	17.0	11	4.0
EBSCOHost	91	34.0	17	6.3	51	19.0	109	40.7
MEDLINE	96	34.0	14	5.2	56	21.0	102	38.0
Psycinfo	152	57.0	21	8.0	36	13.4	59	21.6
PubMed	91	34.0	17	6.3	55	20.5	105	39.1
Scopus	115	34.0	24	9.0	29	11.0	100	37.0
Web of Science	172	64.0	15	5.5	22	8.2	59	22.3
Hinari	158	59.0	29	11.0	24	9.0	57	21.0
ResearchGate	104	39.0	29	11.0	37	14.0	98	36.0

Respondents were requested to indicate where they sought information assistance. As shown in Table 4, students mostly use Google (89.0%) to satisfy the information need. Next is YouTube 168 (62.6%). About (55.0%) visited the library, (51.4%) used their mobile devices, (45.0%) consulted their lecturers and (35.4%) consulted the librarian.

Table 4: Information needs Assistance

	Agree		Disagree	
	Freq.	%	Freq.	%
Physically visit College Library	148	55.0	120	45.0
Consult the College e-resources	112	42.0	156	58.0
DELSU virtual learning environment	96	36.0	172	64.0
Database from library website	60	2.2	208	92.0
Google	239	89.0	29	11.0
DELSU Facebook page	47	17.5	221	82.5
Youtube	168	62.6	100	37.4
Consult with the Librarian	95	35.4	173	64.6
Consult with lecturers	121	45.0	147	55.0
my mobile device	138	51.4	130	48.6

More than two thirds of the respondents were most interested in receiving training in research skills, such as, choosing a database and engaging in a basic search (66.3%), advanced searching skills (49.6%), and how to use mobile gadgets to access clinical information (57.4%) (Table 5). Less than half 41.0% were also interested in learning advanced search tips for search engines like Google, and (40.7%) wanted to be taught about accessing resources off-campus (e.g., home)

Table 5. Training topics of interest

	Agree		**Disagree**	
	Freq.	%	Freq.	%
Introductory research skills (e.g., how to decide which database to use, how to do a basic search).	171	64.0	97	36.0
Advanced database searching skills (e.g., Advanced Medline search, advanced Scopus search, advanced EMBASE search).	128	48.0	140	52.0
Point-of-Care Tools (e.g., DynaMed, First Consult, Clinical Evidence, PEPID.	71	26.4	197	73.6
Finding evidence for practice	102	38.0	166	62.0
How to do a systematic review search	116	43.2	152	57.0
Reference tracking (finding out how often particular articles have been cited).	96	36.0	172	63.0
Introduction to RefWorks reference manager software	69	26.0	199	74.0
Using mobile devices to access clinical or research information.	148	55.0	120	45.0
Accessing resources from off-campus (e.g., Home)	105	39.0	163	61.0
Searching for grey literature.	43	16.0	225	84.0
Advanced search tips for search engines like Google.	107	40.0	161	60.0
How to do a patent search.	97	36.0	171	64.0
Keeping up to date with the literature (e.g., receiving alerts.	100	37.0	168	63.0

Discussion

The study aimed to assess the IL skills of students in the College of Health Sciences, Delta State University, Nigeria, and identified gaps in their IL skills, with the intention of demonstrating the areas of need for a well-structured and encompassing IL instruction programme. The results are discussed based on the stated objectives.

Undergraduate Student's IL Skills

The undergraduate students in this study possess moderate IL skills. Although, they can identify information sources needed for literature search, determine information needs, evaluate information sources and access needed information using information access tools, the mean score is not significantly higher than the criterion mean. This is indicating that the students are still in need of more instructions to strengthen the IL skills they already possess. In addition, their skills in information use and its ethics are not as adequate as expected. The implication is that the students need IL instructions that will focus on information use and ethical issues surrounding information use, such as the meaning of ethics in research, plagiarism and its consequences, referencing and rules concerning the sharing of information.

The finding of this study agrees with an earlier report by Goel et al. (2012), from a Medical College in North India, where they found a need to instruct and encourage students to take better advantage of library resources. At Shiraz University of Medical Sciences, Bazrafkan et al. (2017), observed that medical students' IL was low hence the authors recommended a review of the educational plans so that IL can be included in the curriculum. However, this finding did not align with the result by Alakpodia, (2017), which established that undergraduate nursing students in South South, Nigeria had a high information literacy competency profile.

Information access tools for students

Information access tools enable library users to locate information from different sources. Findings in this study show that undergraduates use search engines and library catalogue. The students are knowledgeable in using other access tools such as databases, indexes and OPAC, directories and repositories to access needed information. In addition, the students seem unaware of most of the other tools listed or do not consider them useful. The results indicate that undergraduates need more instruction on information access tools, their uses and importance for information search activities.

The finding of this study corresponds with the report of Atanda and Ugwulebo (2017), that while 40% of undergraduate students at the College of Law in Osun State were aware of information access tools and were able to access the library catalogue using author access points, awareness programme contributed immensely to the use of these access tools and library resources. Similarly, this finding agrees with Effiong and Aagboke (2022), revealing a significant influence of information access tools on information resource utilization by medical students in South-South, Nigeria, hence, the need for libraries to create more awareness about the access tools. Similarly, Anunobi and Emezie (2020), discovered that very few of the postgraduate students at the Federal University of Technology Owerri were able to identify database subscriptions from the library as available sources of information for research, hence they were unable to use them as sources of information.

Electronic information resources used by undergraduates

To further understand respondents' skills in information search, they were requested to indicate the electronic information resources they used the most. EBSCOHost, Pubmed and MEDLINE were the most used. The majority, however, lacked knowledge of the use of some databases, while others, did not consider the resources useful to them. This implies that there is an IL knowledge gap. In the age of Evidence-Based Medicine, it is important that students understand and be familiar with information resources that are reputable and reliable. This result is in tandem with that of Storie and Campbell (2012) who observed that PubMed, MEDLINE and Google were essential resources for

medical students at the University of Alberta in Canada. It also agrees with that of Akpovire et al. (2019), that medical students at the University of Lagos, Nigeria mostly used e-journals, online databases like Medline and PUBMED, audio and e-books.

Information need Assistance of undergraduate students

From the results of this study, undergraduates at DELSU-CHS need to be instructed on where to get research assistance. They mostly turn to Google for information need assistance. YouTube is the next most consulted for assistance, while the library ranks third. Some students consult the library e-resources and others prefer to turn to their mobile devices. A study of medical students at Dalhousie University, Canada, showed that the students agreed to receiving formal instruction on information searches, however, this instruction did not include the use of more modern tools, such as Google, Wikipedia, or social media. This inadequacy in the IL instruction did not however, hamper the usage of these resources among the medical students, because they reported heavy use of these tools, alongside EBM summaries due to easy accessibility, understandability, and overall usefulness (O'Carroll et al., 2015). In a similar study, Hugar and Kannappanavar (2019), found that only 40 percent of medical and allied college students in Goa State relied on the college libraries for any information assistance.

Areas where IL instruction is needed by undergraduate students

Training is needed for research skills, such as choosing databases and engaging in a basic search. In addition, students need training in advanced search skills and how to use mobile gadgets to access clinical information. Some are keen on learning advanced search tips for search engines like Google, and others indicated a desire for knowledge on how to access resources from their private locations. This is in line with the report by Storie and Campbell (2012), that high number of their respondents wanted to receive training on advanced database searching. It also corroborated the report by Tachie-Donkor and Ezema, (2021), on undergraduate students' perceptions, attitudes, and information skills developed at the University of Cape Coast, Ghana that, there is a need for refresher training by the Information Literacy Skills Unit for students in the final year to achieve the objectives of the course in information literacy.

Conclusion

Although the undergraduates at the College of Health Sciences, Delta State University exhibited moderate IL skills, they still have more to learn of IL skills. The students need skills in using information access tools and more reputable databases and electronic resources. They also need to be familiar with where to get help in locating reliable information resources, training in research skills, knowledge of databases, carrying out basic search, advanced database searching skills and how to use mobile gadgets to access clinical information.

Recommendations

Medical professionals of the 21st Century need to be experienced in information search skills. The study therefore recommends the following:

1. The university management and College management should work together to ensure the inclusion of IL instruction in the curriculum so that students can be taught IL skills beyond the orientation program given to them as new intakes
2. It is necessary for the library management to instruct students on available information access tools, to enable them to find information from a variety of sources.
3. The medical library and the librarians should collaborate with teaching faculty in the College to promote awareness of e-resources and teach students the ways to use them in their academic activities.
4. It is important for medical libraries to be well known to students. This will make it easy for them to approach the library for research help when they need to seek assistance.
5. Librarians need to collaborate with teaching faculty to organize training that focuses on research skills, familiarity with common

databases, basic and advanced searching skills, and access to clinical or research information.

References

Alakpodia, O. N. (2017). Determinants of information literacy competencies of undergraduate nursing students in universities in South-South, Nigeria. [Unpublished doctoral thesis]. Delta State University.

Akpovire, E., Olawoyin, O., Adebayo, O., & Esse, U.C. (2019). Role of information literacy skills on use of information resources by medical students in Lagos State. Library Philosophy and Practice (e-journal). 2148. http://digitalcommons.unl.edu/libphilprac/2148

Atanda, L. A., & Ugwulebo, J.E. (2017). Awareness access and utilization of library catalogue by undergraduate of the college of law, Osun state University Osogbo, Osun State, Nigeria. International Journal of Library and Information Science, 9(11), 115 – 121.

American Library Association, (1989). Presidential Committee on information literacy. Final Report. https://alair.ala.org/handle/11213/766.

Andretta, S. (Eds.). (2005). Information Literacy: a practitioner's guide. Oxford: Chandos Publishing.

Anunobi, C. V., & Emezie, N. A., (2020). Information sources preference of post graduate students in Federal University of Technology Owerri, Nigeria. Library Philosophy and Practice (e-journal). https://digitalcommons.unl.edu/libphilprac/4060.

Baro, E.E., Endouware, B.C., & Ubogu, J.O. (2011). Information Literacy among medical students in the College of Health Sciences in Niger Delta University, Nigeria. Program, 45, 107-120. https://doi.org/10.1108/00330331111107439.

Bashorun, M. T., Bashorun, R.B., & Akinbowale, A. T., (2021). Evaluating information literacy competence in the use of electronic resources among medical students in University of Ilorin, Nigeria. University of Dar es Salaam Library Journal, 16(1), 131-148.

Bazrafkan, L., Hayat, A. A., Abbasi, K., Bazrafkan, A., Rohalamini, A., Fardid, M. (2017). Evaluation of information literacy status among medical students at Shiraz University of Medical Sciences. Journal of Advances in Medical Education, 5(1), 42-48.

Effiong, A., & Aagboke, A. (2022). Information access tools and utilization of information resources by medical students in federal universities in South–South, Nigeria. Library Philosophy and Practice (e-journal). 7192. https://digitalcommons.unl.edu/libphilprac/7192.

Goel, N. K., Sarpal, S. S., Galhotra, A., & Abhadeep. (2012). A study about library usage by undergraduate medical students in a medical college in north India. National Journal of Community Medicine, 3(1), 89-93.

Hugar, J. G., & kannappanavar, B. U. (2019). A study on information seeking behavior of the Medical and Allied College students in Goa State. Library Philosophy and Practice (e-journal). 2309. https://digitalcommons.unl.edu/libphilprac/2309.

O'Carroll, A., Westby, E., Dooley, J., & Gordon, K. E. (2015). Information-seeking behaviors of medical students: A cross-sectional web-based survey. JMIR Medical Education, 1(1). https://doi:10.2196/mededu.4267.

Royal College of Physicians and Surgeons of Canada, (2005). The Can MEDS 2005 Framework. http://rcpsc.medical.org/canmeds/.

Storie, D., & Campbell, S., (2012). Determining the information literacy needs of a medical and dental faculty. Journal of Canadian Health Library Association, 33, 48-59. https://journals.library.ualberta.ca/jchla/index.php/jchla/article/view/22580.

Tachie-Donkor, G., & Ezema, I. J., (2021, September 27-October 1). Information literacy instruction for lifelong learning among students in university of Cape Coast, Ghana. [Conference presentation]. National Conference of Academic and Research Libraries Conference 2021, Nsukka, Nigeria.

Ullah M., & Ameen K. (2019). Teaching information literacy skills to medical students: perceptions of health sciences librarians. Health Information and Library Journal, 36(4), 357-366. https://doi.org/10.1111/hir.12279