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## Availability and Accessibility of Information Resources In University Libraries For Students' Academic Use: A Case Study Of Pharmaceutical Science Students Of The University Of Jos

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# **AVAILABILITY AND ACCESSIBILITY OF INFORMATION RESOURCES IN UNIVERSITY LIBRARIES FOR STUDENTS' ACADEMIC USE: A CASE STUDY OF PHARMACEUTICAL SCIENCE STUDENTS OF THE UNIVERSITY OF JOS**

**By**

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## **Abstract**

The purpose for the establishment of every university library is to provide information resources, make them available and accessible while ensuring the information resources meet the information needs of the users. This study became necessary considering the poor performance of university students and low reading habit nowadays. This study aimed at finding out the availability and accessibility of information resources for Pharmaceutical science students of the University of Jos. The study adopted survey as the research design, 549 undergraduate students of Pharmaceutical science constituted the population and from which 55 samples were drawn to represent the population. Questionnaire (closed ended) was the instrument for data collection and a pilot study was conducted to ensure its reliability before it was finally administered. The data collected was analysed using simple descriptive statistics, viz: frequency distribution, percentages and mean. The findings revealed that most of the information resources are available while some of them are moderately accessible. It was also discovered based on the findings that almost all the information resources listed in the library were considered useful by the respondents. It was therefore recommended that the library should sustain the available and accessible information resources, and more information resources should be acquired and be given accessibility to the students because of their usefulness to the students.

**Keywords: Availability , Accessibility, information Resources, University Libraries, Use Undergraduate Pharmacy students.**

## **Introduction**

A collection of information resources like books in a room without orderly organization (arrangement) to comfort retrieval does not make a library. A library therefore is a repository of various forms of recorded information which may be in print formats such as books, periodicals, references materials, manuscripts, magazines, theses, gazettes etc., or non-print formats such as microforms, films, magnetic tapes, slides, video tapes and data stored in electronic media like discs, CD-ROM (Clifford & Olurotim, 2014).

Before a library could be declared to be active, it must meet the information, research, recreational and educational needs of the users. A library is an organization saddled with the responsibility of acquiring, organizing, storing, retrieving and disseminating information resources to users. Therefore, is a collection of information materials and the place where the materials are kept for consultation.

The need for information resources' availability and accessibility in academic (University) libraries is a necessary service that cannot be overlooked. Academic library fosters information literacy and provides resources to students, researchers and staff of their respective universities or institutions of higher learning. This is why librarians and information professionals in academic libraries must create a balance between specific research and information needs and a usable collection of information resources to meet the needs of the institutions and that of their users, while taking into considerations the subject specifics in the institution.

The availability and accessibility of information resources are indispensable factors in acquiring knowledge, learning and research; hence every University library regardless of size should have adequate information resources available for its users for reading, learning and research, as it is inevitable for institutions of higher learning to succeed without libraries. Availability of information resources and services do not automatically translate or assure information accessibility (Aguolu&Aguolu, 2002; Nnadozie&Nnadozie, 2008). Librarians therefore should note that information resources availability in the library alone cannot fulfil the objectives of the library without the resources' accessibility.

Accessibility in the present context depicts the speed at which an information output in any format is obtained by Pharmaceutical students in University of Jos library, Nigeria. University libraries support universities in discharging their responsibilities by acquiring all the relevant information resources necessary for sustaining the teaching, learning, research and the academic activities of their universities. Information resources may be available in the library and even find an identified bibliography as relevant to one's need, but user may not be able to use it or lay hands on them or even identified citations in indexes, but may not have access to the services containing the relevant articles. Information resources and system might be available, i.e. the information centres have acquired them but inaccessible to those who need them for various reasons (Uncatalogued, mis-catalogued, mis-shelved etc.). The more accessible information sources are, the more likely they are to be used. Users tend to use information sources that require the least effort to access. Therefore, good information resources should be received and retrieved to meet the desired need of educating Pharmaceutical students (Undergraduates).

Education is the act or process which imparts or acquires general knowledge, develops the powers of reasoning and judgment, and trains the individual for mature life. It is the result produced by instruction, training or study (Shumaker, 2003). Pharmacy students' today face challenges to ensure access and rational use of efficacious, quality information that would strengthen and harmonise their education and training. Education and training is essential for

the development of Pharmacists that would serve our society. Libraries are pivotal in supporting and achieving the mission of quality Pharmacists.

### **Statement of the Problem**

The more accessible information resources are, the more likely they are to be used. Users tend to use information resources that require the least effort to access. And even when the information resources are available and accessible, they should be able to meet and satisfy the information needs of the users for which they are being acquired for. The task at hand is for the academic librarians to always ensure availability and accessibility of needed information resources which will eventually lead to academic use. Resources availability and accessibility are central to academic use of academic library. These three variables work hand in hand; hence they cannot be treated in isolation. Preliminary observations by the researchers indicate poor reading habit, copying of assignments, depending on others during test and examinations and so on among undergraduate students are some of the factors that prompt the researchers to investigate whether the information resources are available, accessible and are meeting the information needs of the undergraduate students for their academic activities. This study is therefore expected to find out whether the information resources are available, accessible and are meeting the needs of pharmaceutical science students of University of Jos, for their academic use, with the view to restricting copying of assignments, depending on others during test and examination and to improve their reading habits.

### **Research Questions**

1. What are the types of information resources found in University of Jos library for pharmaceutical science students' academic use?
2. What are the available information resources for pharmaceutical science students of University of Jos?
3. To what extent do pharmaceutical science students of University of Jos access information resources in the library?
4. To what degree of usefulness are the information resources available and accessible for pharmaceutical science students of University of Jos?

### **Literature Review**

#### **Availability of Information Resources and Pharmaceutical Science Students**

Availability of information resources have to do with their presence and adequacy in the library for use by users. It is necessary that as long as any standard academic library is concerned to provide information resources to its users in large quantity. Abdulsalami (2013) remarks that availability requires workable performance measure to back it up even if the ultimate benefit to the individual user and to the community is difficult to assess. The access to library resources of a library is also a factor of availability, for without the physical presence of a document a user cannot access anything. This therefore, reveals that the effective use of any library is best measured in terms of access and demand of its resources and services.

Nwachukwu, Abdulsalami, and Lucky (2014) opined that information resource availability in any library can explain the need for it and why such library is important. In other words, the absence of relevant and up to-date materials will undermine the existence of any academic library. Furthermore, they described information resources availability as the existence of books, serials and journals publications, electronic source documents (non-print e.g. audio-visual) in the library. In an effort to ensure availability, the library should provide adequate, current and relevant information resources that cut across all users' discipline. This will support and help realise the goals of the parent institution.

A study by Unobe (2015) on availability and utilization of on-line information sources and services in federal universities' medical Libraries in north west geo-political zone of Nigeria discovered that, both the library staff and medical students agreed that OPAC (33:59.9%), search engines (35:61.4%) and online institutional repositories (46:80.7%) were available in the libraries. Other sources of consensus agreement by the two groups were e-journal/conference proceedings (41:71.9%), e-books (45:78.9%), e-databases (45:78.9%) and e-encyclopedia (40:70.1%) along with dictionaries. On-line information resources and services were available in the medical libraries studied although the library staff rated online databases, electronic resources consortium and LAN databases low. The users (medical students) on their part also rated low email electronic alert and selective dissemination of information.

Okiki (2013) studied the availability of information resources for research output among some Nigerian federal institutions. It was discovered that the CD-ROM databases resources were less available when compared to other information resources in the study, such as journals, textbooks, website, search engines, ejournals, and eBooks. The result also revealed that CD-ROM database was more available to most respondents from Ahmadu Bello University (ABU) Zaria, than from those in other universities. However, the result from UNIJOS indicated low Availability since the university had the lowest number of respondents indicating availability of CD-ROM databases when needed. There were positive responses across the universities on availability of eBooks, with respondents from UNIBEN having the highest percentage of (97.2%), UNILAG having highest percentage of ejournals (94.8%), followed by ABU with (92.5%), while UNIJOS had the lowest percentage (77.4).

Al-Saidi, Haridass, Nouri, Hassali, Allayla and Helweh (2018) studied the knowledge of drug information resources among students of college of pharmacy and nursing, university of

Nizwa in Oman. The results of the study show that most of the respondents have strongly agreed that the up-to-date drug information is necessary for practicing the profession of pharmacy or nursing. The respondents of the study were not sure about the availability of Drug information resources within University of Nizwa campus. The study results showed that 40% of the total sample acquired the knowledge about drug information resources through their instructors or teachers and 19% through the librarian on their course of stay at the University. The responses by the participants of the study showed that 34% used network access within the campus provided by the University of Nizwa, and 25% used the university library as location of search for drug information while 24% of the respondents accessed the drug information at home directly or through the University of Nizwa's website. The majority of the participants (37%) used tertiary resources for searching drug information. The study shows the high dependence of pharmacy students on ONF and BNF (13%) comparing to nursing students (1%) that may be due to the availability of ONF and BNF with pharmacy students.

### **Accessibility of Information Resources and Pharmaceutical Science Students**

Access to information resources is essential to any successful academic pursuits in universities. For the academic libraries to complete their functions, the available information resources must be accessible. Abdulsalami (2013), in his opinion noted that the term access is used by different people in relation to quite bits and pieces of the whole, as in "subject access, open access and knowledge access system". However, each refers to one or more aspects of providing means of access to information or in a fuller sense, to knowledge and understanding. All of the provision and use of library services is concerned with access to knowledge. He further identified natural and artificial barriers to free access to information. The libraries poor reputation was attributed to lack of accessibility to information sources. Moon, Hossain, Kang and Shin (2012) in discussing the role of access to information in research, opined that access to relevant information is necessary for academic staff to take efficient decision in his/her research. Aina (2012) in his discourse argued that access to information is critical in research in Africa. MacColl (2010) noted that new generation students required Libraries to procure print and electronic resources, providing access to the resources through well designed library website and technical support, and by providing access to a physical space in the library for intellectual and interactive work.

Hanrahan and Cole (2014) studied the preferences of drug information resources among pharmacy students and faculty at the Wingate University School of Pharmacy. The results of the survey showed that the use of drug information resources is similar between pharmacy students and faculty, with both groups preferring electronic access to drug information. Laptop and desktop computers were the most preferred platform by both groups, compared with smartphone and tablets. Sixty-five percent of all respondents preferred to access textbooks electronically rather than by using the physical resource library. More faculty respondents agreed or strongly agreed that they preferred to access print version of textbooks that they frequently used compared to the way students access them. Hence the preference percentage that stood at 47% and 40% respectively. The findings has also revealed that on reading preferences, most students preferred to read electronic textbooks directly from the

electronic devices (60%, 153/253), while faculty preferred to print out the selection and read to from paper (57%, 17/30).

### **Usefulness of Information Resources to Pharmaceutical Science Students**

Another very vital aspect of this study is how the available and accessible information resources useful for the academic activities of the university students. To some scholars, traditional library resources are no longer seen as primary providers of information (Research Information Network & Consortium of Research Libraries in British Isles, 2007); as such some library users perceived library as something that is consulted at the end or at best in the middle of information search (Sharifabadi, 2006). This has serious implications for university libraries that acquire information resources (print and electronic) to provide services for their users.

Studies have been conducted on the usefulness of information resources in the libraries to undergraduate students and pharmaceutical science students. The use of print resources was well established in it's over 500 years of dominance as medium of communication. The initial scepticism about electronic information resources and its value for academics has gradually shifted to how to blend print information resources in digital age (Mohammed, 2015). The exploitation of these information sources was aimed at ensuring that academic libraries provide relevant, timely and current information to support academic activities. Dickson (2006) reported that the availability of computers and electronic resources were among the reasons for undergraduate students' usage of academic libraries and this recorded 58% of responses each.

Oyewusi and Oyeboade (2009) studied the accessibility and use of library resources by undergraduate students of Ladoke Akintola University of Technology (LAUTECH) Ogbomoso, Nigeria. The researchers drew a random sample of 600 students and 479 copies of the questionnaire were completed and returned while 393 were found useful for analysis. The findings showed that 297(75.6%) has revealed that they got their information from books and journals while 79(20.1%) searched information from the internet. On the frequency of library use and the internet, 148(37%), 102(26%), 124(31.6%), and 43(10.94%) went to the internet monthly, twice monthly, weekly and daily respectively while those that use the library daily was 204(51.7%). This showed that library was highly used by undergraduate students for their academics. Malarvizhi and Sarangapani (2016) have carried out a study with an aim to first evaluate the usage of electronic information resources by the faculty members of Karunya University, Coimbatore. The purpose of the study is to fulfil the academic needs of the faculty members and it covers the usage of electronic resources namely Internet, E-Journals, online resources, CD ROM and online resources. A well-structured questionnaire was distributed among faculty members to collect the necessary data. It described the problems faced by faculty while using the electronic resources and find out the level of satisfaction about the electronic information sources and services. The survey was conducted by means of a structured questionnaire circulated among one hundred and fifty faculty members working in various departments and schools of Karunya University. Out of

150 questionnaires distributed, 135 were received back. Also, among which ten questionnaires were not taken.

Hailemeskel, Drame, Pansiri and Choi (2016) surveyed on the preferences and utilization of drug information resources by pharmacy students. The survey addressed questions related to resource preferences, information searching frequency, searching ability, information types and beliefs about credibility of retrieved information. Participants appeared to favor online search engines and databases, especially Google. Participants that searched most frequently and spent least searching time were most likely to have a bachelor's degree. The purpose of the study was to determine preferences for commonly used drug information resources amongst 4th-year pharmacy students. The eventual goal is to use the data gathered from the investigation to modify the drug information course which is currently offered to first year students. The survey had a response rate of 48%. Despite the availability of numerous well-referenced drug information resources, about 80% of participants identified Google or other search engines as their preferred choice, followed by subscription-based databases (43%). Print textbooks and journals were the least utilized resources (17%). These results may reflect the generational leanings and preferences of millennial, who strongly favor the rapid nature of the internet. Textbooks in electronic format were selected by some participants, suggesting that text is still widely used, but that the electronic format is preferred over print. The study by Al-Saidi et al (2018) on the knowledge of drug information resources among students of college of pharmacy and nursing shows that the reasons for the respondents' search and use drug information resources include: study purpose, curiosity about the medicine and examination. These reasons made up the majority of the respondents' perception, which is about 51%. On the contrary, only 11% of the respondents said that it is habitual and about 2% said that it is embedded in their coursework. The study results show that most of the respondents prefer to refer to a book to collect background and factual information about the medicine. This is about 25% and 29% representing and nursing respectively. Magazines, journals, blogs, and forums are seldom preferred by the respondents (21%).

## **Methods**

This study adopted survey research design. The population of this study comprised the entire undergraduate students of pharmaceutical science (549) and from which the samples were drawn. The sampling technique suggested by Curry (1984) as cited by Yount (2006) who proposed the sample size popularly referred to as 'rule of thumb'. Based on the above rule, 549 falls between the range of 101-1000 from which 10% of the entire undergraduate students of pharmaceutical students were derived.  $549/100 \times 10 = 5.49 \times 10 = 54.9$  It's approximately 55. Questionnaire was used as the instrument for collecting data because it allows uniform question to be asked and to examine the different views of the respondents. Content validity and reliability test were conducted. The items of the instrument were analyzed using the Cronbach's Alpha formula for reliability using the Statistical Package for

the Social Sciences (SPSS) version 23. The reliability coefficient shows that sections D of the questionnaire yielded a reliability coefficient of 0.75. The reliability coefficient of 0.83 was obtained after test for items in sections E. This shows that the instrument tested was reliable which was subsequently used, since the values gotten fall within the accepted range. The Researchers administered the questionnaires and descriptive statistics for presentation and analysis of data and result were presented in tables, using frequency distribution, percentages and mean for coherence and explicit interpretation.

## Results

### Demographic Information of Respondents

Table 1: Age group of respondents

Age	Frequency	Percentage
16-20	7	12.7
21-25	38	69.1
26-30	10	18.2
Total	55	100

The output in table 1 above indicate that majority of the respondents that participated in this research are between the age bracket of (21-25) representing 69.1%. Other age brackets that participated in the study are (16-20) and (26-30) representing 12.7% and 18.2% respectively.

Table 2: Students level in the University of Jos, faculty of Pharmaceutical science

Level	Frequency	Percentage
100	10	18.2
200	12	21.8
300	12	21.8
400	12	21.8
500	9	16.4
Total	55	100

The output in table 2 above indicates that almost equal number of students was selected from each level for the purpose of this research. In 100 level, 10 students represent 18.2% of the respondents, 12 students each from 200level, 300level and 400level representing 21.8% each in these three levels constituted the respondents and 9 students representing 16.4% were respondents from 500level.

Table 3: Gender of Respondents

Gender	Frequency	Percentage
Male	33	60
Female	22	40
Total	55	100

It is interesting to notice that a larger portion of the respondents (60%) who participated in this research were male students and 40 percent represent their female counterpart. This shows that more male respondents participated in the study than the female.

### Research Questions

**Research Question 1:** What are the types of information resources found in University of Jos library for Pharmaceutical science students academic use? Table 4 below shows the types of information resources found in the University of Jos library for pharmaceutical science students' academic use.

Table 4: Types of information resources found in University of Jos library.

Information resources	Yes	No
Books	55(100%)	-
Journals	54(98.2%)	1(1.8%)
Online databases	53(96.4%)	2(3.6%)
E-Journals	48(87.3%)	7(12.7%)
E-Books	52(94.5%)	3(5.5%)
Internet	53(96.4%)	2(3.6%)
Computers	51(92.7%)	4(7.3%)
Theses and dissertations	42(76.4%)	13(23.6%)

Conference proceedings	34(61.8%)	21(38.2%)
Technical reports and manuals	41(74.5%)	14(25.5%)
Abstracts and indexes	35(63.6%)	20(36.4%)
Newspapers and magazines	46(83.6%)	9(16.4%)
Government publications	36(65.5%)	19(34.5%)
Monographs/standard	29(52.7%)	26(47.3%)
Workshop reports	38(69.1%)	17(30.9%)
Directories and handbooks	46(83.6%)	9(16.4%)
Encyclopedia	47(85.5%)	8(14.5%)
CD-ROM database	30(54.5%)	25(45.5%)
Audio-visual	32(58.2%)	23(41.8%)

From the above table, all the respondents 55(100%) indicated books as one of the information resources found in the library. Other information resources that were highly indicated by the respondents are: journals 54(98.2%), online databases and internet 53(96.4%), e-books 52(94.5%), computers 51(92.7%), e-journals 48(87.3%), encyclopaedia 47(85.5%), directories and handbooks and newspapers and magazines 46(83.6%). Some of the information resources indicated low as revealed in the table by the respondents though identified by more than half of the respondents are: monographs and standards 29(52.7%), CD-ROM databases 30(54.5%), audio-visual 32(58.2%), conference proceedings 34(61.8%) and abstracts and indexes 35(63.6%).

**Research Question 2:** What are the available information resources for Pharmaceutical science students of University of Jos? Table 5 below present the availability of information resources for pharmaceutical science students of university of Jos.

Table 5: Availability of information resources.

Information resources	Yes	No
Books	54(98.2%)	1(1.8%)
Journals	52(94.5%)	3(5.5%)
Online databases	48(87.3%)	7(12.7%)
E-Journals	48(87.3%)	7(12.7%)

E-Books	47(85.5%)	8(14.5%)
Internet	51(92.7%)	4(7.3%)
Computers	52(94.5%)	3(5.5%)
Theses and dissertations	35(63.6%)	20(36.4%)
Conference proceedings	23(41.8%)	32(58.2%)
Technical reports and manuals	33(60%)	22(40%)
Abstracts and indexes	30(54.5%)	25(45.5%)
Newspapers and magazines	39(70.9%)	16(29.1%)
Government publications	26(47.3%)	29(52.7%)
Monographs/standard	26(47.3%)	29(52.7%)
Workshop reports	33(60%)	22(40%)
Directories and handbooks	41(74.5%)	14(25.5%)
Encyclopedia	44(80%)	11(20%)
CD-ROM database	22(40%)	33(60%)
Audio-visual	23(41.8%)	32(58.2%)

A large portion of respondents that participated in this research indicate that the above information resources are available with the exception of few which includes Conference proceedings 23(41.8%), Government, publication 26(47.3%), Monographs/standard 26(47.3%) CD-ROM database 22(40%) and audio-visual 23(41.8%). While those who were identified as available by the respondents are: books 54(98.2%), journals and computers having equal responses 52(94.5%), internet 51(92.7%), online databases and e-journal having equal responses 48(87.3%), e-books 47(85.5%), directories and handbooks 41(74.5%), newspapers and magazines 39(70.9%).

**Research Question 3:** To what extent do Pharmaceutical science students of University of Jos access information resources in the Library? Table 6 below has indicated the extent of how pharmaceutical science students of University of Jos access information resources in the library.

Table 6: Extent of accessing information resources

Information resources	Mean	Rank
Books	3.8	1

Journals	3.4	2
Online databases	3.1	4
E-Journals	3.1	4
E-Books	3.1	4
Internet	3.3	3
Computers	3.1	4
Theses and dissertations	2.4	10
Conference proceedings	2.2	17
Technical reports and manuals	2.3	14
Abstracts and indexes	2.4	10
Newspapers and magazines	2.4	10
Government publications	2.3	14
Monographs/standard	2.3	14
Workshop reports	2.4	10
Directories and handbooks	2.7	9
Encyclopedia	2.9	8
CD-ROM database	2.2	17
Audio-visual	2.1	19

The descriptive result in table 6 above indicates the mean of each item that made the scale and the highest mean scores are as follows: Books (3.8), Journals (3.4), Internet (3.3), Online databases, E-Journals, E-books and computers have equal mean of (3.1), Encyclopedia (2.9) and Directories and handbooks (2.7). On the other hand, information resources with the mean less than scale mean are: Audio-visual (2.1) which is the last item in ranking, followed by conference proceedings (2.2), Technical reports, Government Publications and Monographs and standards with the mean (2.3), Theses and dissertations, Abstracts and indexes, Newspapers and Magazines and Workshop reports also have mean (2.4) less than the scale mean. It is clear that the Pharmaceutical science students access information resources moderately in the library. This is because most of the items have a mean less than the scales mean (2.5).

**Research Question 4:** To what degree of usefulness are the information resources available and accessible for Pharmaceutical science students of University of Jos? Table 7 present the

degree of usefulness of information resources available and accessible for pharmaceutical science students of University of Jos.

Table 7: Degree of usefulness of information resources.

Information resources	Mean	Rank
Books	3.9	1
Journals	3.8	2
Online databases	3.6	6
E-Journals	3.6	6
E-Books	3.7	4
Internet	3.8	2
Computers	3.7	4
Theses and dissertations	3.1	10
Conference proceedings	2.8	15
Technical reports and manuals	2.9	13
Abstracts and indexes	2.8	15
Newspapers and magazines	2.7	18
Government publications	2.7	18
Monographs/standard	3.0	11
Workshop reports	3.0	11
Directories and handbooks	3.2	9
Encyclopedia	3.4	8
CD-ROM database	2.9	13
Audio-visual	2.8	15

The output in table 7 above revealed the mean of each item that made up the scale, and the highest mean scores are as follows: Books (3.9), Journals and Internet (3.8), E-books and computers (3.7), Online databases and E-journal (3.6), Encyclopaedia (3.4), Directories and handbooks (3.2), Thesis and dissertations (3.1), Monographs and standards and Workshop reports (3.0), Technical reports and CD-ROM database (2.9), Conference proceedings,

Abstracts and Indexes and Audio-visual (2.8) and Newspapers and Magazines and Government Publications (2.7). However, in general all the information resources have a mean item score more than the scale mean of 2.5 indicating that the information resources are highly useful to the students of Pharmaceutical sciences of the University of Jos since the mean for each item is greater than the scale mean of 2.5.

## **Discussion**

The age group shows that most of the respondents for this study fall between 21-25 years representing 69.1% of the respondents. This is seemingly the age bracket where most Nigerian students graduate and go for National Youth Service Corp (NYSC). The distribution of the students in the various levels seems to be same. This is probably because of the admission policy of the pharmaceutical science faculty. On gender, there are more male students than the female students; this could be due to the interest in the course, i.e. the male students having more interest than that of their female counterparts.

Concerning the types of information resources found in University of Jos library for pharmaceutical science students' academic use, (100%) agreed that books are the most types of information resources found in the library, followed by journals (98.2%). This is similar to the findings of Dickson (2006) in a survey of the types of information resources by undergraduate students which shows that most students find needed books and periodicals. It is however in contrast with the study by Biradar, Kumar and Mahesh (2009) on undergraduate students' use of information resources, which shows only (43.56%) indicating books, (27.72%) indicating periodicals and encyclopaedia (40.59%). There is an overwhelming number, (96.4%) which indicated that online databases and internet are found in the library, (94.5%) indicated e-books, (92.7%) indicated computers and (87.3%) indicated e-journals. This is quite true because the library has provided various types of online databases and e-resources for its students including pharmacy and biomedical sciences. This is in disagreement with the study by Ani (2010) on internet access and use by undergraduate students in three Nigerian universities, which discovered lack of internet connectivity, non-stable internet services which made the students to patronize private and commercial cyber cafes within and outside the campuses. Other information resources listed are being found in the library since more than half of the respondents agreed they constitute the types of information resources in the University of Jos library.

In relation to availability of information resources for pharmaceutical science students of the University of Jos, (98.2%) of the respondents suggest the availability of books, followed by journals and computers (94.5%), and internet (92.7%). This support the findings of Odunlade (2017) who established that print resources such as books were the most available information resources in Nigerian polytechnics. However, Odunlade's findings and the findings of this study are in contrast with the study by Al-Saidi et al (2018) on the knowledge of drug information resources among students of college of pharmacy and nursing, university of Nizwa in Oman. This latter shows that, the respondents of the study were not sure of the

availability of drug information resources within the university of Nizwa campus. It is important to note that, other information resources such as online databases and e-journals (87.3%), e-books (85.5%) and encyclopaedia (80%) have been identified to be reasonably available as attested by the respondents with the exception of CD-ROM database (40%). This corresponds with the findings of Okiki (2013) on availability of information resources for research output among some Nigerian federal institutions that reveal the respondents from university of Jos indicating low availability of CD-ROM databases, and this is discovered to be true of the respondents in the study from the University of Jos faculty of Pharmaceutical sciences. Furthermore, the findings has also indicated that most information resources are reasonably available for the pharmaceutical science students of the University of Jos.

Access to information resources is critical for successful academic pursuit by the pharmaceutical science students. The extent of access to information resources by the pharmaceutical science students was ranked based on their means, and the scale mean is 2.5. The most accessible information resources according to the results were books ( $x=3.8$ ), journals ( $x=3.4$ ), internet ( $x=3.3$ ), online databases, e-journals, e-books and computers have equal mean ( $x=3.1$ ), encyclopaedia ( $x=2.9$ ), directories and handbooks ( $x=2.7$ ). The finding is similar to the findings of the study by Oyewusi and Oyeboade (2009) on accessibility and use of library resources by undergraduate students of LAUTECH which shows that (75.6%) is the percentage of the access information from books and journals. This finding is in contrast with the findings of Al-Farsi, Al Rahbi and Chitme (2014) on information resources available at community pharmacies in Oman, which shows that information resources accessible by less than half of the respondents include online databases, internet as well as some paper-based resources such as books and journals. While those whose means fall below the scale mean comprise: theses and dissertations, abstracts and indexes, newspapers and magazines and workshop reports with equal mean ( $x=2.4$ ), technical reports and manuals, government publications and monographs/standards have equal mean ( $x=2.3$ ), conference proceedings and CD-ROM database have equal mean ( $x=2.2$ ) and audio-visual ( $x=2.1$ ). Based on the above findings, the extent of accessibility of information resources is moderate, since most of the resources have mean less than the scale mean.

The usefulness of the information resources to pharmaceutical science students is pertinent if they are to successfully complete their programme in the university. Using the mean statistics, it was discovered that the most useful information resources are: books ( $x=3.9$ ), followed by journals and internet having equal mean ( $x=3.8$ ), e-books and computers with equal mean ( $x=3.7$ ), online databases and e-journals with equal mean ( $x=3.6$ ). The information resources with the least mean score but however greater than the scale mean ( $x=2.5$ ) are newspapers and magazines and government publications. The findings disagree with the findings of the study by Al-Saidi et al (2018) on the knowledge of drug information resources among students of pharmacy and Nursing which shows that some respondents preferred to use books for information 25% and 29% respectively; while magazines, journals, constitute 21%. Similarly, it is in contrast with the survey by Hailemeskel, Drame, Pansiri and Choi (2016) on the preferences and utilization of drug information resources by pharmacy students shows the most utilized resources are Google 80%, followed by subscription-based

databases (43%), while print textbooks and journals were the least utilized resources (17%). The result above has shown that all the information resources listed are considered useful for the academic purposes of the pharmaceutical science students. This is because all the items got means greater than the scale mean.

## **Conclusion**

Based on the data collected and analyzed, it was clear that most information resources as identified in the study were found in the university library, since more than half of the respondents were ticking "yes" as an option found in the library. It was also clear that books, journals, internet, computers, e-journals, e-books, online databases were the major available information resources in the University of Jos library as identified by the respondents, while audio-visual, government publications, monographs and standards were being identified as not available by the majority of the respondents.

The findings has shown some of the highly accessible information resources to be books, journals, intern, online databases, e-books, e-journals, while some of the moderately accessible information resources were audio-visual, CD-ROM databases, conference proceedings. It was concluded that most of the information resources were moderately accessible. On the usefulness of the information resources, it was concluded that all the information resources listed were useful because each item had a mean score greater than the scale mean. The endpoint is that the students have no reason(s) whatsoever to giraffe during test or examination.

## **Recommendation**

Arising from the findings and conclusion of this study, the following recommendations were made:

There should be continuous, deliberate and massive information literacy for the students in the faculty by their subject Librarian. This will be surely communicated to the person responsible.

The researchers recommends that the library management of the University of Jos should make more effort in sustaining the available and accessible information resources in the library for pharmaceutical science students' academic use.

The management of the university of Jos library should try and make the information resources identified low (monographs/standard, CD-ROM databases, audio-visual, conference proceedings) by some respondents, to be more available, by acquiring more copies and volumes, since some of the respondents said they were available while others said they were not. This could be as a result of insufficient quantity of information resources.

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