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FACTORS INFLUENCING THE USE OF INTERNET RESOURCES BY PRE-CLINICAL MEDICAL STUDENTS IN SELECTED UNIVERSITIES IN EDO AND ANAMBRA STATES, NIGERIA

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ABSTRACT

There has been paucity of current reading materials in print for pre-clinical medial students due mainly to high cost of procurement. To savage and remedy the situation, institutions are subscribing to Internet resources. Even at this, there is a gnawing perceived low use of Internet resources among the students in the selected universities, hence, this study is undertaken to explore the factors influencing the use of Internet resources by pre-clinical medical students in universities in selected States in Nigeria. The study population comprised the pre-clinical medical students in the selected states. Total enumeration of the population was adopted. Data were collected using questionnaire, out of the 949 copies administered, 704 were found usable given a response rate of 74.2%. Data were analysed using frequency count, mean and standard deviation. The study revealed that majority of the students ($\overline{X}$ = 3.0) used Medline, Online reference materials and E-mail. Other Internet resources that were significantly used were HINARI ($\overline{X}$ =2.7), Pubmed and e-journals ($\overline{X}$ = 2.6). Most of the students use Internet resources for academic purposes ($\overline{X}$ = 3.0), while only a few ($\overline{X}$ = 2.1), used Internet resources for entertainment purposes, they use Internet resources in cybercafé ($\overline{X}$ = 3.0), and at home/hostel ($\overline{X}$ = 2.7). The constraints mentioned include low speed of connection, electricity failure, lack of awareness and language of the contents. The study, therefore, recommended among others that use of Internet resources should be included as a formal course in medical education programme of the students.

Key words: *Internet resources, use, Pre-clinical students, Medical students, Nigeria*

Introduction

Efficient use of information is of paramount importance in medical education. Medical professionals seek quality medical information, which consists of a collection of facts and theories that can be integrated and synthesized to care for patients, conduct research and educate health professionals (Dee, 1992). The introduction of Internet has provided the possibility of immediate access to the most recent and reliable results of clinical research in everyday medical practice. Internet facilitates the sharing of resources/information among academics as well as students, its use in educational environment has enabled easy access to many resources and information sharing has widely increased. Kastin and Waxler (1998) assert that the development of the Internet as a vehicle for world-wide communication and the emergence of the World Wide Web (WWW) have made instantaneous access to much of the entire body of medical education an excited one. Internet serves as a powerful tool used for searching, retrieving and disseminating information, and as such, has become one of the most important means of communication for students most especially the medical students; its impact in education particularly in the 21st century is tremendous.

The Internet which is an integral part of the information and communication technology (ICT) is becoming an indispensable tool for quality teaching, learning and research in any academic setting. Internet impact on education according to Scholastic (2003), has been massive, thereby engendering such terms like e-teaching, e-learning, virtual learning, and e-training all developed around application of Internet in the field of education. The Internet is unique and the uniqueness, as expressed by Stein (1998), is that most Internet resources for teaching and learning are not available

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in any library as there is no printed library version of the original materials. Internet resources are regarded as being available in a more useful format that can be accessed more easily.

Jadoon, Zahid, Mansoorulhaq, Ullah, Jadoon, Raza, Hussain, Yaqoob, Shahzad (2011) described the Internet and its resources as an important learning tool in medical education by providing access to latest evidence anytime and anywhere. It is especially useful for students from developing countries, helping them to keep abreast of ever-expanding knowledge, bridging the gap resulting from scarcity of resources. Geissbuhler and Boyer (2006) also noted that as a collaborative work tool, the use of the Internet is now essential for biomedical research and for the development of health systems. Apart from creating easy availability of information resources that support education, the Internet as a digital object, is a tool that has enriched the learning experience by giving new forms of access to information.

According to Tavollacci (2008), Internet medical sites contain up-to-date clinical, laboratory, radiographic, treatment, prophylaxis and outcome data of disease, create an environment for medical students to study at their own pace and enable them to be self-directed and lifelong learners. Availability of medical full-text articles and other databases have a major impact on the selection of information resources among students. Students can review cases reports and can have the opportunity to learn about different views on controversial topics (Hattab, 2010). By using the academic-related resources from the Internet, students will be able to complement the information found with the resources from medical libraries. As the Internet has many potentials and functions most especially in medical education, it is interesting to note the factors that influence its use by pre-clinical medical students.

Review of Related Literature

According to Montgomery and Sparks (2000), print journal usage in academic libraries has decreased significantly since the introduction of online journals. De Groote and Dorsch (2003), reported that majority of those surveyed (93%) personally searched the online databases. The data showed that 53% of the users searched MEDLINE, at least, once a week and other databases showed much lower usage. The survey also queried users on the use of the full-text journal collections, 47% of faculty, students, and residents used Journals@Ovid, at least once a week, compared to 13% who never used it. The findings in the study confirmed that a large percentage of users in an academic health sciences environment prefer online resources to print. In examining the effect of journal format on the research process, Sathe, Grady and Giuse (2002) found that fellows, medical students, and residents preferred online journals.

Guiot, Klein, Peltier, McAneney and Lehmann (2011), observed that the introduction of a webpage with administrative and educational materials for the paediatric clerkship was useful to majority of third year medical students. Furthermore, they revealed that majority of the medical students found the webpage useful, relevant, accessible, and easy to navigate and perceived that it helped improve their knowledge and students utilized various websites to search for medical information. White, Albritton and Rindt (2001), created "Medical Education on the Web" (MEOW) to maintain communication with off –campus students; five of seven core clerkships posted content to provide consistent information within the core clinical clerkship. Scarpace (2006), presented research regarding the utility of a website for pharmacy students at the American Association of Colleges of Pharmacy meeting, they demonstrated that web-based resources improved communication among the clinical team, provided resources to enhance student knowledge and promote independent study.

In the study carried out by Maroof, Parashar and Bansal (2012) on how medical students were using the computer and Internet they found out that the main use of the Internet was for communication (58.5%) and entertainment. Study by Kumar (2012) on application of ICT by medical students in Chandigarh, India showed that 65.95% of the students use the Internet for scanning the available literature, while 63.82% use it for the purposes of sending and receiving e-mail. 34.04% use it for online chatting with their friends. Okoro and Okoro (2009), in their study on the influence of gender and status on use of medical information among Nigerian doctors, showed that the most common reason why 90% of the male consult medical literature was to prepare for examination followed by care development (86%), and updating of knowledge (85.4%), while their female

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counterparts seek information to update their knowledge (92%) followed by examination preparation (89%) and career development (86%).

Subhaprada and Kalyani (2017), in their study revealed that, males were more addicted to internet than females. It was also found that severity of internet addiction is inversely proportional to academic performance. Similarly, in the study by Chathoth, Kodavanji, Arunkumar, and Pai (2013), the most common purpose for Internet use was found to be social networking (97.8%), followed closely by e-mailing (87.8%). Jadoon et al. (2011) evaluated Internet access and utilization by medical students in Lahore, Pakistan; and reported that about two third of the students (61.0%) use Internet for both academic and professional activities.

Adomi, Egbaivwie and Ogugua (2011) in their study of the use of Internet by medical practitioners in private hospitals, Warri, Delta state, Nigeria revealed that highest majority of medical practitioners used the Net daily. According to Dorup (2004), however, about 71.7% of new medical students had access to a computer at home, while Sharma, Verma, Sawhney, Arora and Kapoor (2006) in their study on trend of Internet use among medical students reported that majority of medical students used computers/Internet in cybercafé, followed by home and college. A study conducted by Butali, Adeyemo, Akinshipo and Fashina (2011), to investigate the use of information technology among dental students, dental nursing students and resident doctors in training at the Faculty of Dental Surgery University of Lagos reported that, all participants have access to the computers, 2.5% within the University and 31% at home and Internet cafés and about 50% have the basic skills required. The findings of Ching, Awang, Ramachandran, Lim, Sulaiman, Foo, Yee, and Hoo, (2017), revealed that majority of the medical students have internet access at home.

Despite the availability of Internet resources in medical education, Igbeka and Atinmo (2001) ascertained that certain objectives and characteristics of the sources themselves can be used to explain the use and non-use of the sources, namely: the subject content of the sources, the structural linguistic format in which the information is presented as some information sources may be used more than others because of the brevity with which they provide accurate information. Poor quality of the network remains an impediment to rapid development of the use of Internet resources (Akpan-Obong, 2007; OpenNet Initiative, 2009). Others are power outrages, low bandwidth, and inadequate infrastructure.

Preclinical Medical Students and Internet Resources

According to Mony, George and Chacko (2004), two important points pertinent to medical education have been emphasized. First, the biomedical knowledge base, which is expanding rapidly and cannot therefore, be taught in its entirety in medical schools; and second, self-directed learning that needs to be taught to acquire life-long learning skills. These two factors had propelled medical students toward the use of Internet resources. It is highly imperative that pre-clinical medical students are able to fully utilize the available resources on the Internet so that they can evaluate the large quantity of medical literature available and be able to find requisite information quickly for their academic advancement. Consequently, Internet has a number of applications in the field of medicine. It provides instant access to relevant up to-date information at the point of care, making it easier for health care providers to practice evidence-based medicine and students to have practical knowledge in treatments and care.

Internet resources encapsulate the various resources available via the Internet. Internet resources, as pointed out by Adomi (2008), fall into two categories, namely: Websites and Databases. In another classification by Airweb (2011), listservs, newsgroups, e-Mail discussion groups, electronic publications, library access catalogs/literature searches, online learning and professional development/associations, were listed as Internet resources. According to Tsakonas and Papatheodorou (2006), Internet resources can be classified into: electronic mail (e-mail), file transfer, remote login, telnet, the news, searching tools; gopher-veronica-archive, WAIS (Wide Area Information System), Hypertext utility, WWW (World Wide Web). Electronic resources are resources provided in electronic form and these include resources available on the Internet such as e-journals, e-print, e-books etc. The use of bulletin boards and e-forums to get information is getting popular among students (Gitanjali, 2005).

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The health information resources on the Internet include evidence-based medicine resources. Evidence-based medicine (EBM) involves the explicit, conscientious and judicious consideration of the best available evidence in making health care decisions and this affects pre-clinicians in making appropriate medical specialty (Sackett, 2005). EBM provides a powerful tool for better patient care and students learning. EBM resources on the Internet include, the Cochrane library, Clinical Evidence, PubMed clinical Queries, ACP journal club, Best evidence and DynaMed. Other Internet resources in medical education are digital databases such as MEDLINE via PubMed, Scopus, Web of Knowledge, EMBASE, African Index Medicus A(IM), as well as websites of academic and health institutions, digital repositories, e-journals, e-books and email (McKibbon, 2007). He further reiterated that many of these resources and systems that provide accurate and reliable health care information for medical doctors and medical literatures for medical students have been brought about by the increase pace of health care research.

The use of websites and web pages as sources of data in the sense of objects of analysis is now acknowledged as a valuable additional, Online reference and consumer health information, online journals as well as e-book have also become more accessible on the Internet, thereby allowing the pre-clinical medical students to be up-to-date in a previously unthinkable manner regarding the speed and efficiency of accessing and obtaining information ((Bryman, 2004; Cuenca & Tnaka, 2005). According to Tannery, Foust, Gregg, Hartman, Kuller, Iworona, and Tulsky (2002), web-based resources can provide curriculum support to students for whom access to the library is difficult and time consuming. According to Nigeria Library Associations Newsletter (1999) books and professional journals have become expensive and inaccessible such that many libraries are unable to provide the vital support to research and learning.

Statement of the Problem

Preliminary investigation carried out by the researcher shows that most medical libraries have inadequate current information resources in print to leverage standard medical education. To redress the situation of lack of adequate up-to-date information resources in libraries, students are turning to Internet resources to augment the available resources in the library. Even at this, respondents are not highly committed to using Internet resources to enhance their endeavours hence their perceived low use of Internet resources. The study therefore, investigates the factors influencing the Internet usage among medical students in Edo and Anambra States.

Objectives of the Study

This study explored the factors influencing the use of Internet resources by pre-clinical medical students in universities in Edo and Anambra states. Specifically, it sets out to:

i. find out the types of Internet resources that are used by the pre-clinical medical students in selected states in Nigeria;
ii. determine the purpose for which pre-clinical medical students use Internet resources in universities in selected states in Nigeria;
iii. ascertain where the pre-clinical medical students access Internet resources; and
iv. find out the constraints to the use of Internet resources by pre-clinical medical students

Research Questions

The following questions were answered in this study:

i. What are the types of Internet resources used by pre-clinical medical students in universities in selected states in Nigeria?
ii. For which purpose(s) do the pre-clinical medical students use Internet resources?
iii. Where do the pre-clinical medical students use Internet resources?
iv. What are the constraints of the pre-clinical medical students in their use of Internet resources?

Methodology

In this study, a questionnaire was used to gather data on the use of the Internet resources by pre-clinical medical students in selected universities in Nigeria. The population for this study consists

MBJLIS – Middlebelt Journal of Library and Information Science, Vol. 15, 2017
ISSN: 1596 - 1595
Journal homepage: https://www.mbjlisonline.org/

of all 100-300 level pre-clinical medical students in the purposively selected universities in Edo and Anambra States. Total enumeration method was adopted to cover all the 949 students in the selected universities. The content validity of the questionnaire was obtained through review of similar questionnaire; in addition, face validity was carried out by three experts in test and measurement discipline. Reliability of the instrument was tested using split-half method which yielded a positive reliability co-efficient of 0.77 which was considered adequate for the study.

Copies of the questionnaires were distributed to all the students that where available during a time-tabled lecture slot and retrieved after the students had finished filling them. The data generated were presented and analyzed using the Statistical Package for Social Sciences (SPSS) Version 15.0. Descriptive statistics in form of frequency counts, percentages and means were used to analysis research questions while frequency counts and percentages were used in analyzing data for demographic information. The criterion mean was set at 2. The study population comprised the entire pre-clinical medical students in the Federal and State universities in the selected states as depicted in Table 1.

Table 1: Study Population

Institutions	**Population of pre-clinical medical students**		**Total**
University of Benin, Benin	100 level	50	186
	200 level	68	
	300 level	68	
Ambrose Alli University, Ekpoma	100 level	50	181
	200 level	75	
	300 level	56	
Anambra State University, Uli	100 level	90	281
	200 level	100	
	300 level	91	
Nnamdi Azikwe University, Awka	100 level	100	301
	200 level	101	
	300 level	100	
Total			949

Sources: Students' Records from the Faculties and Departmental Offices

Data Analysis and Findings

Table 2 shows the pattern of distribution of copies of the questionnaire among respondents in the various universities. Also contained in the Table 1 are the overall rate of return and the corresponding institutional based rates of return for study to continue.

MBJLIS – Middlebelt Journal of Library and Information Science, Vol. 15, 2017
ISSN: 1596 - 1595
Journal homepage: https://www.mbjlisonline.org/

Table 2: Response Rate of the Administered Questionnaire

Universities	Copies/Number of Questionnaire Administered	Copies/Number Returned	Rates of Return (%)
Ambrose Alli University, Ekpoma (AAU)	181	156	86.2
University of Benin, Benin City (UNIBEN)	186	164	88.2
Nnamdi Azikwe University, Akwa (UNIZIK)	301	200	66.5
Anambra State University, Uli (ASU)	281	184	65.5
Total	**949**	**704**	**74.2**

Demographic Data of the Respondents

This section contains analysis and presentation of results regarding gender, marital status and age of the respondents.

Table 3: Demographic Characteristics of the Respondents

Individual variables	Frequency	Percentage (%)
Gender distribution		
Male	489	69.5
Female	215	30.5
Marital status		
Married	37	5.3
Single	667	94.7
Age		
18-22	255	36.2
23-27	283	40.2
28-32	106	15.1
33-37	60	8.5
Level		
100	228	32.4
200	240	34.1
300	236	33.5

Internet resources are those electronic or digital-based information resources that are in this study considered to be of high utilitarian value to the responding pre-clinical medical students. Table 4 clearly shows the range of such available Internet resources and their degree of use by the respondents.

Table 4: Types of Internet Resources used by the Respondents

Internet resources	Agree		Disagree		Undecided		Mean	SD
	Freq	%	Freq	%	Freq	%	($\overline{X}$)	
Email	704	100	-	-	-	-	3.0	0.00
Discussion groups/forum	160	22.7	491	69.7	53	7.5	2.2	0.53
MEDLINE	704	100	-	-	-	-	3.0	0.00
PubMed	505	71.7	150	21.3	49	7.0	2.6	0.61
African Index Medicus (AIM)	216	30.7	488	69.3	-	-	2.3	0.46
Gene-tox	145	20.6	559	79.4	-	-	2.2	0.40
BIOSIS	217	30.8	487	69.2	-	-	2.3	0.46
Science Direct Onsite	184	26.1	520	73.9	-	-	2.3	0.44
Africa's Health Network	34	4.8	670	95.2	-	-	2.0	0.21

MBJLIS – Middlebelt Journal of Library and Information Science, Vol. 15, 2017
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AJOL	124	17.6	571	81.1	9	1.3	2.2	0.40
DOAJ	125	17.8	550	78.1	29	4.1	2.1	0.45
HINARI	476	67.6	228	32.4	-	-	2.7	0.47
E-journals (Electronic journals)	456	64.8	201	28.5	47	6.7	2.6	0.61
E-books (Electronic books)	130	18.5	266	37.8	308	43.7	1.7	0.75
Online reference materials	704	100	-	-	-	-	3.0	0.00
Continuing Medical Education (CME) website	-	-	691	98.2	13	1.8	1.9	0.13
International Health Organisations' websites e.g. WHO and UNICEF	90	12.8	548	77.8	66	9.4	2.0	0.46

Out of the numerous medical sciences related Internet resources listed in Table 4, all the pre-clinical medical students use e-mail ($\overline{X}$ = 3.0), MEDLINE ($\overline{X}$ = 3.0), and online reference materials ($\overline{X}$ = 3.0). With the mean value of $\overline{X}$ = 3.0, it becomes clear that pre-clinical medical students' agreed that they use the Internet resources significantly in meeting their information needs. This result is in line with the findings of Allen (2001) and Dorup (2004) that e-mail is the most frequently used application on the Internet by medical students. The entire students (100%) using Medline could be due to the fact that Medline contains information relevant to the information needs of students in the field of medicine in addition to it being one of the oldest known dedicated databases in the profession. This finding is line with the findings of De Groote and Dorsch (2003) that medical students use Medline more than any other medical databases. Include HINARI (2.7), PubMed (2.6) and E-journals with $\overline{X}$ =2.6. Science Direct Onsite (2.3), Gen-Tox (2.2), discussion groups/forum (2.2), Africa Index Medicus (AIM) (2.3), BIOSIS (2.3), AJOL (2.2) and DOAJ (2.1).

Also not used were websites of International Health Organizations (2.0), Africa's Health Network (2.0), Continuing Medical Education (CME) website (1.9) and E-books (1.7) are not used at all**.** The likely reason for the non significant use of these resources by the respondents could be due to lack of awareness or knowledge about the resources. This corroborates the finding of Danesh, Shervineh, Hilda, Akbar and Peter (2007). The observed pattern and/or variations in the purpose(s) for which the respondents use Internet resources could be explained by their personal and academic differing objectives notwithstanding the shared characteristics in being pre-clinical medical students and interns in the same academic discipline. Table 1 depicts the purpose(s) for which the respondents use Internet resources in the selected universities.

Table 5: The Purposes for Respondents' Use of Internet Resources

Purposes	**Agree**		**Disagree**		**Undecided**		**Mean**	**SD**
	Freq	**%**	**Freq**	**%**	**Freq**	**%**	($\overline{X}$)	
Research	704	100	-	-	-	-	3.0	0.00
Communication/Online Chatting	704	100	-	-	-	-	3.0	0.00
Support learning activities	704	100	-	-	-	-	3.0	0.00
Preparing term papers and for seminars	704	100	-	-	-	-	3.0	0.00
Preparation for examination	704	100	-	-	-	-	3.0	0.00
Updating personal knowledge in recent advances in medicine	704	100	-	-	-	-	3.0	0.00
Entertainment	89	12.6	615	87.4	-	-	2.1	0.33
Practical	77	10.9	627	89.1	-	-	2.1	0.31
General awareness	554	78.7	150	21.3	-	-	2.8	0.41

Table 5 shows that every pre-clinical medical student use Internet resources for research ($\overline{X}$ =3.0), communication/online chatting ($\overline{X}$ =3.0), support learning activities ($\overline{X}$ =3.0), preparing term papers and seminars ($\overline{X}$ =3.0), preparation for examination ($\overline{X}$ =3.0) and updating personal

MBJLIS – Middlebelt Journal of Library and Information Science, Vol. 15, 2017
ISSN: 1596 - 1595
Journal homepage: https://www.mbjlisonline.org/

knowledge in recent advances in medicine ($\overline{X}$ =3.0). This finding is in congruence with the finding of Peterson, et al (2004) that pre-clinical medical students use Internet resources as primary source of information in their academic pursuit**.** There were observed variations in the reported students' use of Internet resources for general awareness (2.8), entertainment (2.1) and for practical (2.1) as Table 5 had shown.

Going by the interpretation of result using mean values, gaining general awareness using Internet resources is of significant value to the pre-clinical medical students, while the use of Internet resources for the purposes of entertainment and practical were found not to be significant. These findings did not agree with those reported in the work of Tadasad, Maheswarapp and Alur (2003) that Internet use is confined to general or recreational purposes, and that its potential in supporting curricular requirements has not been realized by students. Human needs often dictate the direction of technological development hence the observed flexibility in actual and perceived places Internet resources could be accessed for use. To this end, Table 6 shows where pre-clinical medical students use Internet resources.

Table 6: Places the Respondents' Access Internet Resources

Locations	Agree		Disagree		Undecided		Mean	SD
	Freq	%	Freq	%	Freq	%	($\overline{X}$)	
Library	249	35.4	455	64.6	-	-	2.4	0.48
At Home/hostel	477	67.8	227	32.2	-	-	2.7	0.47
Departmental computer laboratory	-	-	704	100	-	-	2.0	0.00
Cyber café	704	100	-	-	-	-	3.0	0.00
Institutional-based ICT/e-learning centre	291	41.3	413	58.7	-	-	2.4	0.48

It is clear from Table 6 that the respondents chose cyber café to access and use Internet resources ($\overline{X}$ =3.0, SD=0.00). This finding corroborates by Sharma, Verma, Sawhney, Arora, and Kapoor (2006) that majority of medical students use Internet in cyber café. The use of Internet at home/hostel by the respondents was also found to be significant ranking second behind cyber café with $\overline{X}$ =2.7. Pre-clinical medical students' access and use of Internet resources at home/hostel could be supported by the finding of Unnikrishnan, et al (2008) that majority of medical students use Internet at home/hostel. This choice of location is closely followed by their use of Internet in institutional-based ICT/e-learning centre and library ($\overline{X}$ =2.4, SD=0.48). None however, use Departmental Computer Laboratory because none of the medical schools had exclusive Internet fitted computer laboratories. Experiences in using Internet resources by the respondents vary along unique characteristics to serve as constraints (See Table 7).

Table 7: Constraints Experienced in using Internet Resources

Constraints	Agree		Disagree		Undecided		Mean	SD
	Freq	%	Freq	%	Freq	%	($\overline{X}$)	
Non-availability of Internet connection in my school	180	25.6	524	74.4	-	-	2.3	0.44
Low speed of connection	704	100	-	-	-	-	3.0	0.00
Low computer and Internet use skills	516	73.3	188	26.7	-	-	2.7	0.44
Inadequate searching skills	435	61.8	269	38.2	-	-	2.6	0.49
Electricity failure	704	100	-	-	-	-	3.0	0.00
Lack of time sometimes hinders my use of Internet	527	74.9	136	19.3	41	5.8	2.7	0.58
Language of the content of Internet resources	704	100	-	-	-	-	3.0	0.00

MBJLIS – Middlebelt Journal of Library and Information Science, Vol. 15, 2017
ISSN: 1596 - 1595
Journal homepage: https://www.mbjlisonline.org/

Inaccessibility of Internet resources in some websites	688	97.7	-	-	16	2.3	2.9	0.29
Low quality and inaccuracy of some information retrieved	164	23.3	540	76.7	-	-	2.0	0.42
Not being able to find requisite information	446	63.4	258	36.6	-	-	2.6	0.48
Slow rate of downloading of documents	704	100	-	-	-	-	3.0	0.00
Lack of formal training in Internet use	340	48.3	320	45.5	44	6.2	2.4	0.61
High cost of accessing Internet	342	48.6	362	51.4	-	-	2.5	0.50
Lack of personal computers/Laptop	227	32.2	477	67.8	-	-	2.3	0.47
My marital status affect my use of Internet	-	-	704	100	-	-	2.0	0.00
Ergonomic factors	174	24.7	530	75.3	-	-	2.2	0.43
Lack of awareness often limit my use of some Internet resources	688	97.7	16	2.3	-	-	2.9	0.15

As Table 8 has shown, the foremost among the significant factors limiting the respondents use of Internet resources include low speed of connection ($\overline{X}$ = 3.0, SD=0.00), electricity failure ($\overline{X}$ = 3.0, SD=0.00), language of the content of Internet resources ($\overline{X}$ = 3.0, SD=0.00), and slow rate of downloading of documents ($\overline{X}$ = 3.0, SD=0.00). This finding is supported by the work of Gituma, Masika, Muchangi, Nyagah, Otieno, Irimu, and English (2009) which reported lack of time, slow Internet speed, and cost as the main hindrances to the use of Internet resources. They further reported that out of 132 students providing responses in their study, 112 (85%) indicated that one or more of these made accessing research information problematic.

Next among the major constraints retarding students' use of Internet resources include; lack of awareness of some Internet resources ($\overline{X}$ =2.9, SD=0.15), inaccessibility of Internet resources in some websites ($\overline{X}$ =2.9, SD=0.29), low computer and Internet use skills ($\overline{X}$ = 2.7, SD= 0.44) and lack of time ($\overline{X}$ = 2.7, SD=0.58). This is in line with the findings of Danesh, Shervineh, hildah, Akbar and Peter (2007) when they reported and listed perceived barriers to information resources use among medical students to include time, access, cost and knowledge of the resource. Low quality and inaccuracy of some information retrieved ($\overline{X}$ = 2.0, SD= 0.00), and marital status ($\overline{X}$ = 2.0, SD= 0.00) had no effect on pre-clinical medical students' use of Internet resources.

Conclusion

The study investigated factors that influence the use of Internet resources by pre-clinical medical students in Anambra and Edo States against the background of perceive low use of Internet resources among pre-clinical medical students in the selected universities despite limited up-to-date medical resources in the medical libraries. For learning and research in today's academic world, the Internet has brought lots of information resources that fully support the acquisition of knowledge. Despite the benefit of internet resources to medical education, the use of the resources in the libraries is still very low.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Use of Internet resources should be included as a formal course in medical education programme of the students as this will increase the awareness level of pre-clinical

medical students about the nature, usefulness and efficacy of available Internet resources in enriching their learning processes.

2. There is need for medical librarians to assist and encourage the pre-clinical medical students in developing both technical and social digital literacy skills within the current educational context.
3. University authorities should ensure that standard computer laboratories that are connected to the internet are established in medical schools in order to encourage use of Internet in the school.

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