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**A Special Issue on 'Digital Empowerment For
Inclusive Growth And Sustainable Development'**

**Centre for Social Research
& Development, Pune**

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Email: b.t.lawani@gmail.com & southasianjournal.india@gmail.com Cell No. 09370969607

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A Special Issue on

**Digital Empowerment For Inclusive
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Dr. B. T. Lawani
Editor-in-Chief

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**Ramesh B,
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**SOUTH ASIAN JOURNAL OF
PARTICIPATIVE DEVELOPMENT
CONTENTS**

Vol. : 18 - No. 2

July- December, 2018

Sr. No.	Particulars	Page No.
01	Digital Empowerment for Inclusive Growth & Sustainable Development - <i>B. T. Lawani</i>	10
02	E-Governance In India: Its Pluses And Flaws - <i>Arpuda Raju</i>	19
03	Digital Learning Tools And Resources For Libraries - <i>Arun Kumara T S, Shilpa B S</i>	25
04	An Analysis Of Information And Communication Technology (Ict) In Higher Education - <i>Huchhe Gowda, Chandrashekar T R</i>	32
05	Digital India-Major Initiatives And Their Impact: A Critical Analysis - <i>Harish N., Vilas M. Kadrolkar</i>	45
06	Information And Communication Technology Initiatives For Sustainable Rural Development - <i>Kiran Kumar P</i>	53
07	Role Of Social Work Rural Camp In Empowering Rural Poor: A Case Study Of Kumkumanahalli Village, Tumakuru Taluk, Karnataka - <i>Manjunathaiah D, Lokesha M U, Saravana K</i>	61
08	Level Of Competency In Using Digital Resources Among Postgraduate Students Of Medical Colleges - <i>Manjula, Padmamma S</i>	68
09	Women Empowerment Through Digital Literacy- <i>Nithyashree R, Shruthi C. K</i>	82
10	An Influence of Digitisation on Indian Economy - <i>N. S. Mugadur, Budihal Nikshep Basavaraj</i>	90
11	Digital Industrialisation And Sustainable Development : An Overview - <i>Fazalath Hussain. R, Santosh Kumar, Pradeep Bhat</i>	97
12	The Journey of SHG-Bank Linkage Programme: An Overview - <i>Raghavendra Rao, Ramesh Salian, Pradeep Poojary</i>	105
13	E-Governance: Overview Of Initiatives And Opportunities - <i>P. Paramashivaiah, M S Sanmathi</i>	118
14	Women Emowerment Though Digital Litrecy In India :Challenges And Opportunitie - <i>Rajanna G</i>	124
15	Best Practices Through Use Of Icts In Social Work Education - <i>Sachin B S, Rajashekar C, Ramesh B</i>	132
16	Digital Technology : Social Media As An Effective Tool To Reach New Customers - <i>Sujatha M, Lakshmirangaih K. N, Parashurama K. G</i>	142

Level of competency in using digital resources among postgraduate students of medical colleges

Manjula

Senior Librarian

BLDE (Deemed to be University)

Shri B M Patil Medical College, Hospital & Research Centre

Vijayapur

manjula_lib@rediffmail.com

Padmamma S

Professor

Department of Library & Information Science

Kuvempu University, Shankaraghatta

Abstract

The purpose of this study is to identify the level of competency in using the digital resources by postgraduate students of medical colleges. The study adopted survey method and questionnaire tool to collect data from the respondents. The study found that most of the respondents are highly competent in using the digital resources. Para clinical students have a very high level of competency compared to pre-clinical or clinical students. Average or below average level competency having postgraduates consists of 35% of respondents. Most of the students use the digital resources for full text of articles. Most of them needed training on search engine / search techniques and using online databases. The study identified postgraduates wanted support from the library staff when desired and hands-on training on use digital resources.

Key words: *Use of Digital Resources. Postgraduate Students. Medical Colleges. Level of Competency.*

Introduction

The transition from print to digital resources is affected to both the libraries and the library users, and this has been directly influenced on the use of library resources. As stated by Jamali and others, at the present state, digital resources are the most widely used resources in academics and research. The features like, easy to access, store, share, etc. are more influencing in using these resources. So users have become more virtual and anonymous (2005).

The emerging technologies have dynamically changed the way information is gathered, organized, accessed, stored and consumed. Digital resources are the need of the hour for

research and academic activities and help in faster access and retrieval of information in various disciplines. Looking at the present situation of information explosion, finding authentic information is very important and requires a high level of competency in using the digital resources. Hence the present study has been tested that the level of competency in using the digital resources by the postgraduate students of medical colleges.

Objectives of the study

The study is carried out to find out the level of competency in using the digital resources by postgraduate students of medical colleges. The objectives are:

- To know the experience of using the digital resources.
- To find out the level of competency in using the digital resources.
- To determine the relationship between demographic variables, viz, gender, domicile, category wise and the level of competency in using the digital resources.
- To know the areas in which training is required and the type of training required to enhance the level of competency.

Methodology

In order to empirically examine the level of competency in using a digital resource survey method is used in the study. A structured questionnaire was designed to collect the data from postgraduate students of medical colleges in Belgaum Division, Karnataka. There are nine medical colleges in Belgaum division and out of which seven colleges have the postgraduate students. Total number of questionnaires distributed are 490 and 422 (86%) respondents returned the filled in questionnaires to the investigator. The collected data has been organized and tabulated using SPSS 20.0 and presented in the light of framed objectives.

Analysis and Discussion

This section presents the analysis of the empirical data collected from 422 respondents from various medical colleges of Belgaum Division. The study is intended to know the level of competency in using digital resources by postgraduate students. The themes and topics that have arisen throughout the collection of data have been analyzed and tabulated in the form of tables and graphs using SPSS.

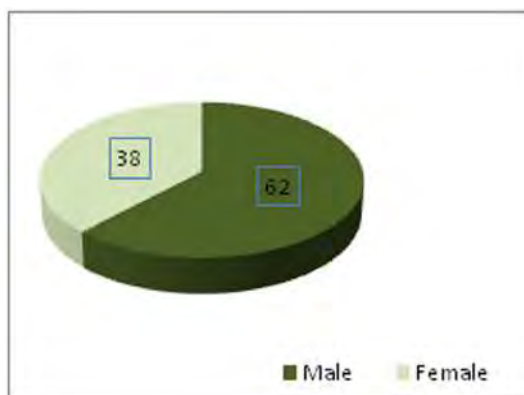
Demographic information

The demographic characteristics also sometimes influence on the use of digital resources. This study tried to find out the association between the level of competency in using the digital resources and demographic variables include age, gender, social background, etc. In this line, Diyaolu has conducted a study on influence of demographic factors on the use of digital library by the post graduate students in private universities: A case study of Babcock and Covenant University in Ogun State (2012).

Genderwise distribution of respondents

The gender study is one of the demographic characteristics, which may influence on the use of digital resources. Okiki (2011) examined the factors that influence on the use of digital information sources among postgraduate students of six universities in the South West Nigeria. The Okiki study shows that males are browsing or using digital resources for enjoyment, whereas females are using digital resources for work related purpose. The following figures shows the genderwise distribution of the study respondents.

Figure 1: Genderwise distribution of respondents



Out of the total respondents, the majority is male respondents (62%) as compared to female postgraduates.

Age wise distribution of respondents

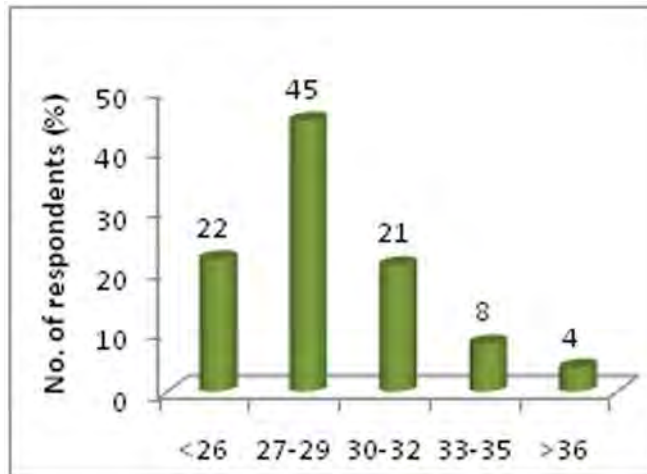
Age is one of the factors to examine the level of competency in using the digital resources. Tenopir in his study found that youngsters are more passionate to use the digital resources and they rely more on the information in digital form (2003). So age is a variable, which can be associated with the use of digital resources.

Table 1: Agewise distribution of respondents

Age Group	Frequency	Percent
<26	93	22
27-29	190	45
30-32	87	21
33-35	35	8
>36	17	4
Total	422	100

Mean±S.D = 28.7±2.8

Figure 2: Age wise distribution of respondents

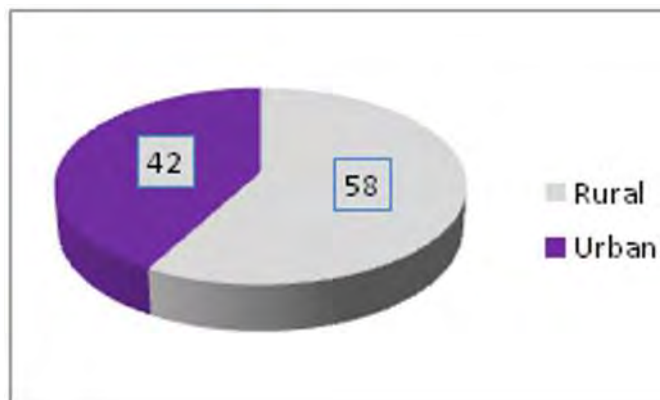


The study shows the maximum number of study subjects was in the age group of 27-29 (45%), followed by <26 age group (22%) and 30-32 age group (21%). The average age of subjects was found to be 28.7 years (SD = 2.8).

Social background of respondents

Several studies have been conducted on the implementation of e-learning technologies in rural areas, with the objectives to know the effect of socio-cultural settings with the use of digital resources. Teresa Correa and Isabel Pavez in their study, Digital inclusion in rural areas: A qualitative exploration of the challenges faced by people from isolated communities revealed that, in the ICT era, internet has reached majority of the population, and it has embedded in many human activities. Still some communities in the society are digitally barred and facing some challenges (2016). Hence this study is also collected the data on social background of the respondents.

Figure 3: Social background of of the respondents



The figure 3 shows the social background of the respondents. It is visible that, out of the total respondents, 58% of the postgraduates are from urban and 42% are from rural backgrounds.

Departments wise distribution of respondents

The respondents belong to the different departments of the medical colleges. The following table shows the department wise distribution of respondents.

Table 2: Department wise distribution of respondents

Department	Respondents (n=422)	%
Anatomy	15	4
Anesthesiology	39	9
Biochemistry	4	1
Chest Medicine	1	1
Community Medicine	29	7
Dentistry	14	3
Dermatology	18	4
ENT	6	1
Forensic Medicine	19	4
Medicine	25	6
Microbiology	53	13
Obstetrics & Gynecology	14	3
Ophthalmology	5	1
Orthopedics	12	3
Pathology	4	1
Pediatrics	38	9
Pharmacology	7	2
Physiology	19	4
Psychiatry	9	2
Radiology	34	8
Surgery	53	13
Urology	4	1
Total	422	100

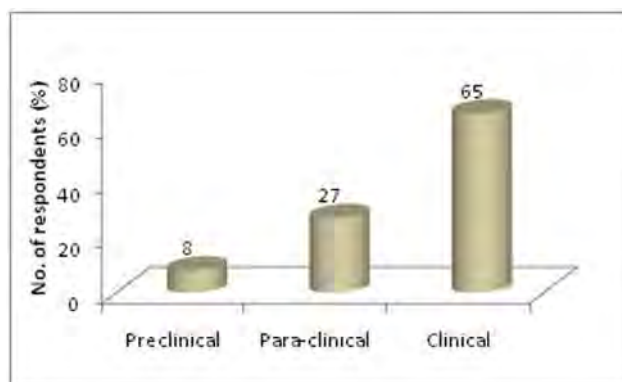
The majority of the respondents belongs to Surgery and Microbiology department (13%) responded to a great extent.

Category wise distribution of respondents

In the medical colleges, the departments are categorized into preclinical, para-clinical and clinical. The preclinical includes anatomy, physiology and biochemistry. The para-

clinical category includes microbiology, pathology, forensic medicine, pharmacology and community medicine departments. Further, clinical category includes remaining all the departments, i.e. general medicine, orthopedics, radiology, surgery, anesthesiology, obstetrics and gynecology, pediatrics, dermatology, ENT, ophthalmology. Following is the category wise distribution of respondents.

Figure 4: Categories wise distribution of respondents

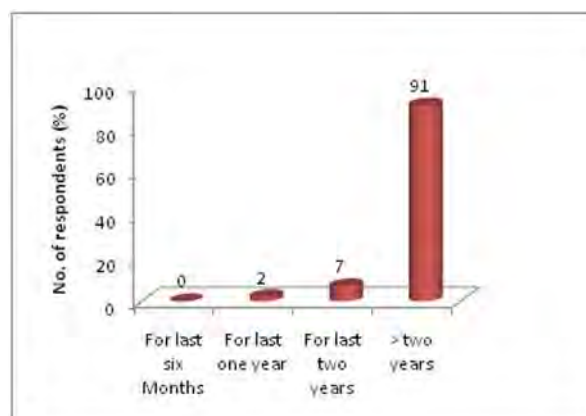


The above figure 4, shows that the 65% of respondents were from clinical department category, 27% are from para-clinical and 8% are from preclinical departments.

Experience of using digital resources

Experience of using digital resources is also one of the important factors to test the expertise in using the resources. High experience in using digital resources leads to higher knowledge about the digital resources and higher the level of competency in using the digital resources, it helps to manage the resources and to use it at the maximum extent. On this background, the study has attempted to ascertain the level of use of digital resources. The summary of data is presented in figure 5.

Figure 5: Experience of using digital resources



It was found that, almost all postgraduates were using the digital resources for more than two years, i.e.91%.

Category wise period of using digital resources

The following table 3 discloses that since how long postgraduates is using the digital resources.

Table 3: Category wise period of using digital resources

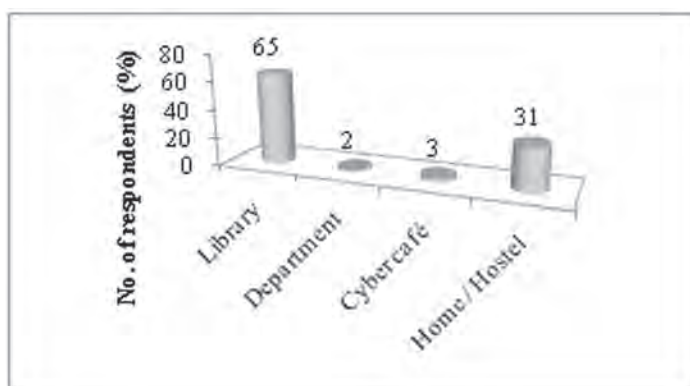
Period of using digital resources	Preclinical	Para clinical	Clinical	Total	P Value
For last 6 Months	0(0)	0(0)	0(0)	0(0)	0.011
For last one year	1(3)	0(0)	7(3)	8(2)	
For last two years	4(11)	1(1)	25(9)	30(7)	
<2 years	30(86)	114(99)	240(88)	384(91)	
Total	35(8)	115(27)	272(65)	422	

To compare the responses of pre-clinical, Para-clinical and clinical departments about how long they are using digital resources, the study was compared different categories of postgraduates, it was found that, para-clinical 114 (99%) students was using the digital resources for more than two years, followed by clinical students (88%) and the preclinical students (86%). For the last six months, no postgraduate is using the digital resources. A statistical significant difference was found between preclinical, para-clinical and clinical department postgraduates in the period of using digital resources (p=0.011).

Location of use of digital resources

The main advantage of digital resources is flexibility to access from different places. Open access resources and copyrighted resources accessible through user name and password can be accessed from any comfortable places. The IP based resources can be accessed through the campus network. The location of the use of digital resources helps to know comfort zones of users.

Figure 4: Location of use of digital resources

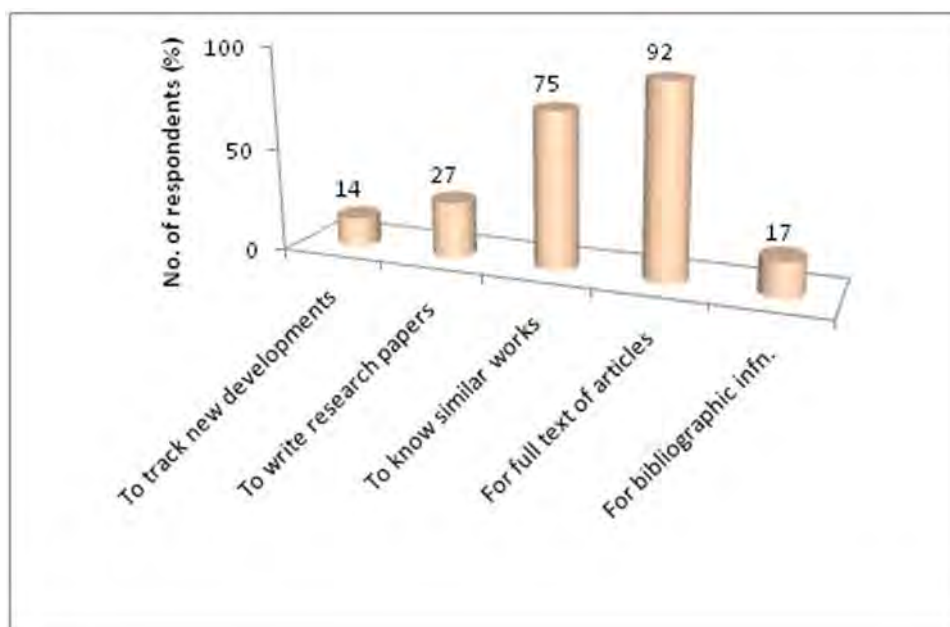


It can be observed from the figure 4 is that, most of the postgraduates 274 (65%) were accessed the digital resources from the library. Whereas, 31% of them were accessed the digital resources from the home / hostel.

The purpose of using digital resources

The purpose of use of digital resources differs from person to person. It shows, how much postgraduates relies on digital resources for achieving the academic endeavour. Hence, postgraduates are asked, the purpose of using digital resources. Collected data summerised in the following table.

Figure 6: Purpose of using digital resources



It is evident from the figure 6 most of the postgraduates were used digital resources to access the full text articles (92%), followed by to know similar work (75%) and the least of them (14%) were used to keep abreast of the latest developments in their areas of interest.

Mode of learning skills to use digital resources

The learning pattern of users is different from user to user, based on their background, requirement, situations, time constraints, opportunities, etc.,. Smart skills are required to find more relevant resources effectively. In view of this, the researcher has studied the postgraduates different mode of learning to use the digital resources. The following table shows the different mode of learning by postgraduates.

Table 5: Mode of learning skills

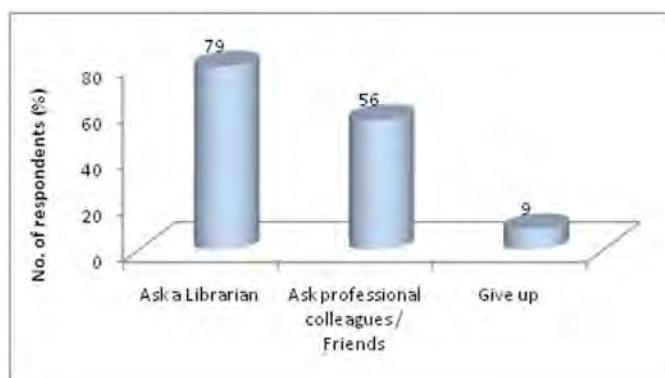
Mode of learning skills	Respondents (%)
Self-learning through trial and error method	376(89)
With the help of friends / colleagues	329(78)
By attending library training programs	156(37)
With the help of library staff	219(52)

Table 5 reveals that out of the 422 the respondents, 376 (89%) of the postgraduates learnt to use the digital resources by self learning through trial and error method. And 78% of them were learnt with the help of friends / colleagues, with the help of library staff (52%) and by attending the library training programme was by (37%) postgraduates.

Seeking help from others to find the required information

Many times, it is difficult to find the required information on the internet. Based on the comfort or knowledge or people in contact may also helpful in finding the required information. The figure 6 indicates, how the postgraduates seek help when the required information is not found.

Figure 6: Seeking help from others



Out of the respondents, the 79% of the postgraduates were asked the librarians, further 56% of them asked friends and some (9%) of them give up when they do not find the required information.

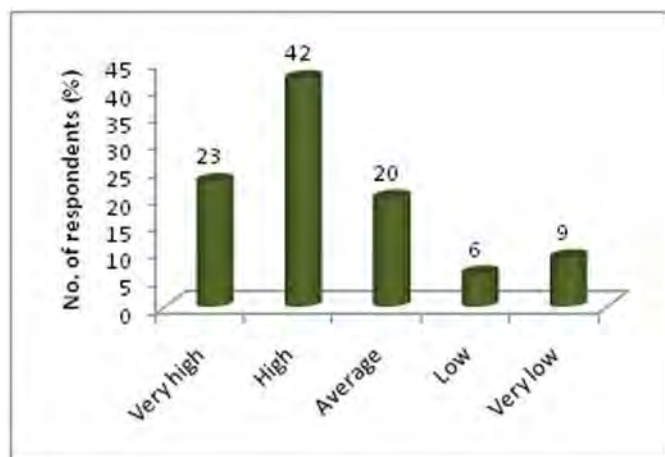
Level of competency in using digital resources

It is very important to know the level of competence of postgraduates in using the digital resources. The response collected on this ground will be helpful in providing the training or awareness programmes in using the digital resources and better information services to users and to boost the usage of digital resources.

Dare Samuel Adeleke and Evelyn Nkechi Emeahara study reveals that, “the low level of usage of electronic resources, especially full text database, among postgraduate

students in the University of Ibadan revealed that they need to be more competent in using communication technologies, including computers and associated skills such as desktop publishing, database management, programming, and web page design to navigate in an electronic environment. Significant relationship between information literacy skills and use of electronic information resources was established from result of the findings” (2016).

Figure 7: Level of competency



Among responded postgraduate students, 178 (42%) have a high level of competence. The 84 (20%) of them have average, followed by 63 (15%) have a low level of competence in using the digital resources.

Table 6: Category wise levels of competence in using the digital resources & services

Levels of competence	Preclinical (%)	Para clinical (%)	Clinical (%)	Total	P Value
Very high	11(31)	11(10)	75(28)	97(23)	<0.001
High	13(37)	66(57)	99(36)	178(42)	
Average	1(3)	21(18)	62(23)	84(20)	
Low	7(20)	5(4)	13(5)	25(6)	
Very low	3(9)	12(10)	23(8)	28(9)	
Total	35(8)	115(27)	272(65)	422	

The category wise comparison of level of competence in using the digital resources shows, 74% of clinical, 68% of preclinical and 67% of para-clinical postgraduates had a high level of competence in using digital resources. Whereas 29% of preclinical had a low level of competence compared to para-clinical and clinical department students (14% and 13% respectively). It was found significant difference statistically ($P < 0.0001$).

Table 7: Gender wise levels of competence in using the digital resources & services

Levels of competence	Male (%)	Female (%)	Total	P Value
Very high	61(23)	36(23)	97(23)	0.703*
High	104(40)	74(46)	178(42)	
Average	56(21)	28(18)	84(20)	
Low	17(7)	8(5)	25(6)	
Very low	24(9)	14(9)	38(9)	
Total	262(62)	160(38)	422	

* No Significant Difference

The table 7 depict that, gender wise level of competence. It was almost same in male and female postgraduates. Statistically also found no significant difference between them (P=0.703).

Table 8: Domicile wise levels of competence in using the digital resources & services

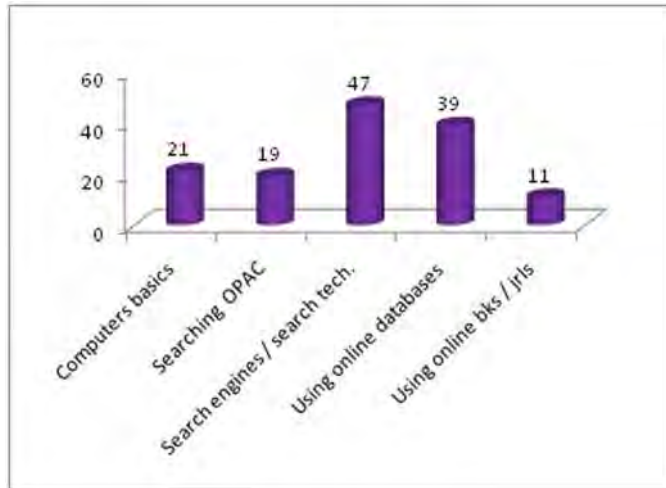
Level of competence	Urban (%)	Rural (%)	Total	P Value
Very high	65(27)	32(18)	97(23)	0.054
High	99(40)	79(45)	179(42)	
Average	51(21)	33(17)	84(20)	
Low	15(6)	10(6)	25(6)	
Very low	15(6)	23(13)	38(9)	
Total	245(58)	177(42)	422	

The table 8 shows that, domicile wise comparison of postgraduate students' level of competency. There was 27% of urban and 18% of rural students have a high level of competence. Whereas, 12% students from the urban and 19% rural background had a low level of competency in using the digital resources. Statistically significant difference was found between urban and rural (P=0.054).

Training required in the different fields

User's competence levels are different from person to person, some may not have even the knowledge about the computer basics, do not know how to carry out online searches / database searching, etc. Jaspal Kaur Bhatia Study findings reveals that, "majority of users in his study had limited access to computers, problem in using digital resources and they are willing to take training to learn about the internet and digital resources" (2011). Here is an effort made to know the areas in which postgraduates required the training.

Figure 8: Training required in the field

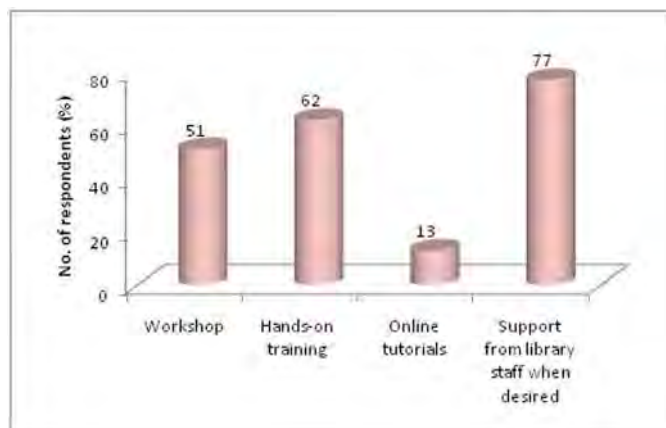


The figure 8 reveals that, out the 422 respondents, 198 (47%) of them wanted training on search engines / search techniques, whereas 165 (39%) were wanted training on using online databases. Further, some students were wanted training on computer basics (21%), searching OPAC (19%) and using online books / journals (11%).

Type of training required

The preference of training needed varies from user to user. The training may be needed in the form of workshops, hands-on training, distribution of handouts or tutorials or online guides, support of library staff when desired, etc. To know the postgraduates preferences, researcher framed the questions and collected the data. The following table 9 shows data summary about the responses of postgraduates on the type of training they required.

Figure 9: Type of training required



The results of enquiry about the preferences of the type of training needed by the postgraduate students shows, 325 (77%) of the students have expressed that, they needed the support of library staff whenever it is needed. Further, 262 (62%) of the students needed hands on training programs and 215 (51%) needed workshop.

Findings of the study

- The majority of the respondents were in between 27-29 years age, accounting for (45%), followed by <26 years (22%).
- The greater part of the respondents are from urban background accounting for 58% of postgraduates.
- The almost all the postgraduates are using digital resources for more than two years (91%).
- The greater part of the respondents are using digital resources from the library (65%).
- The main purpose of using the digital resources by postgraduate students is for full text articles and to know the similar works in their areas of interest.
- The majority of them have learnt to use the digital resources by self through trial and error methods.
- When they needed help from others to find the required information, they turned to ask the librarians.
- The majority of the respondents' level of competency in using the digital resources is high.

Suggestions given by postgraduate students

- Libraries should conduct more workshops / training programmes on awareness and use of digital resources.
- Library web pages should provide the information about the subscribed and open access resources related to medical field.
- Remote access to digital resources.
- Colleges should also participate in the consortium's other than the HELINET.

Conclusion

The 21st century developments in technology are leading the world. The ICT has supported for the enormous growth of information in a multidisciplinary way. The increase in the digital media influence on the large quantity of information generation. With this effect, the time gap between information generation and its utilization has reduced drastically; it is all because of influence of ICT.

This technological evolution also affected information users too. The present study highlighted on the level of competency on using the digital resources by the postgraduate students. High level of competency in using the digital resources is required to track the

latest developments in their field of interest. Awareness about the digital resources, search and using skills will help the postgraduates to use it at the optimal extent.

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