Search of Online Data Base and Information Retrieval: One Year Experience in Work of the Library of Clinical Centre University in Sarajevo

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Professional paper
SUMMARY
Information retrieval data base and exploring recent and relevant information is a complex process in researching number of relevant and recent information, available electronic data base and resources that allow contemporary flow of Informational-Communicational technology. Internet and web technology allow flow of general and specific information, different researches, bibliographic, citation and facts in online data-base, mostly aimed in giving the concrete answer directed to librarian-informaticians. The main goal is to give complete insight in most recent data available (through concise and fragmented use of online data), accented on researching and seeking relevant information for a number of different professional- scientific information needs. Users are at the same time consumers of scientific-professional informations as well as creators of innovative knowledge facts, informations. Other, not less important aim is to analyze one year retrieval information in Clinical Centre University’s Library, in order to gain variety of possibilities offered by professional-scientific service of Clinical Centre, addressed to satisfy needs for knowledge, through using data base, services and through internet electronic publications. According to obtained indicators such as: researching on-line data delivering full texts from major electronic publications (e-magazines with high impact factors and e-books) in data using communicational technology such as Internet, e-mail, CD ROM, etc (all in order of respecting free time for beneficiary’s) The huge number of users request for informations Library service complete effectively At the same time librarians could be educated data users for data using, for which, library is subscribed for: using informational potentials in working environment, as well as in home environment. Conclusion: For efficient information retrieval is highly important knowing the researching system and obtaining information, the possibilities of data base using, understanding users needs–demands and finding the research strategy, and follow-up user’s satisfaction. Completing the extra and add researches on users request is also an obligation, in case relevant informations are not reached, as well as educating users for self use of data base. Keywords: Information retrieval, data base, online data base, user’s requests, researching, informational technology

1. INTRODUCTION
Finding adequate, relevant and recent information on the user request includes search of numerous, available and accessible electronic resources that provide modern information and communication technology (ICT). Library and information practice of search sources of information, especially the database is called information retrieval (IR). This is actually an interdisciplinary field that studies search of documents in order to find information (a document) or metadata (about document), and search the database and the whole web (i). This area is affected by many changes and innovations in information-communication systems and digital environment, and the methods of information retrieval very rapidly changing (1,2). The need for efficient information retrieval, which dates back long before the Internet explosion of information dur-
The appearance of search engine on the Web has intensified the work to find adequate IR method for large collections of documents or information in the form of text, images, audio and video formats. Today, exactly, the system of IR provides efficient access and retrieval of large amounts of a variety of electronic databases and finding relevant information.

**Relevance** is defined as part of the information obtained by searching a collection of librarian, online catalogs, bibliographic and other databases, which, according to user's judgment match what the user wanted to obtain from search (ODLIS) (3). Relevance depends on the subjective perception of person that is searching about how a document matches the user's needs for information expressed in the user request.

For a successful search is necessary to overcome the basic search techniques, basic tools and know their significance, and to learn and know which way to evaluate online information. Lifetime of many web pages is short, so it can happen that the site listed and quoted in the paper no longer exist (4).

Hypertext links operate on the principle of a URL (Uniform Resource Locator), a unique Internet address. Moreover, it is necessary to have knowledge about portals, web sites, web pages, blogs, browsers, etc. (4).

To be satisfied with the results we need to know how to choose search tool, which consists of: search engine (subject directories—for example-GOOGLE http://www.google.com, Yahoo—http://www.yahoo.com/ , Academic Info, AltaVita), search (keywords), metasearch, invisible (deep) web (“deep web” or “invisible web”) (1,4).

Text information retrieval is a complex process, and the use of natural language is vague, non-specific, imprecise and ambiguous is aggravating in the process of IR. Language problems can be solved by reducing the root word or using a thesaurus. Classification, indexes, controlled thesaurus, natural language, etc. are examples of different languages for database search and retrieval (Query Language) (1,4).

With the choice of language is necessary to formulate a search strategy which results aimed to find enough (response—recall) relevant (precision) documents, based on the evaluation of (1,2,5). List of key words adapted by MeSH medical thesaurus is helping us to search the most relevant sources on the Web, whether to use the classic Web browser or on-line medical database, using the operator AND, OR and NOT (1,6,7). Therefore, good search require two conditions: to select the appropriate database and make a good search strategy (8).

Search of databases sometimes include active users in search strategy, because the user will the assess the relevance of data obtained during the search (9).

New to find relevant information on the Internet are portals. Portals are a kind of classification scheme with data on important internet addresses for particular scientific and technical areas, or individual-specific issues in electronic resources. Researchers need to be in contact with such information, by logging the addresses from which it offers to send the latest information from the required field on their e-mail address (8). However, these aids will not completely satisfy the information needs of users and reduce the demands addressed to the librarians.

**THE DATABASE** is defined as a set of digitized data on one subject, and consists of uniform records, which are regularly updated, updated and organized for quick and easy access and retrieval of relevant information. In other words, online databases are organized data set, in which each unit is described in the same way a few items. Because of its systematic organization, visibility and high relevance to the processed data, online databases are an essential source of reliable information. Publications that are offered and processed through the database are usually selected as the best among many. Each database handles papers from journals, proceedings, abstracts and other publications, in popular terms “indexing” specific publications (10,11).

Databases can contain text, numbers and graphics, the library is usually encountered bibliographic database, referral/citation database, database with full/complete text, or with stored electronic journals and electronic books database managed by a software system (database management system—DBMS) (1,11).

According to the structure, the database can be relational, hierarchical and network. SQL (Structured Query Language-SQL), the language used in the query, and is accepted as standard for the database (1,11). Each database consists of records that contain certain fields that have a fixed name and variable content (e.g. author field). Certain fields are common to all databases: author, title and journal. Fields that contains the network address of the document in some database is called Electronic location, in others the URL (1,11).

There are three conditions needed to search the database:

- the base URL (Universal Resources Locator)—The address on the Internet where there is a database;
- know about the way of inquiry;
- know the access code (password) (1,11,12).

The database is used for different purposes:

- **Bibliographic databases**—to gain insight into the scientific area,
- **Citation database**—to gain insight into the scientific area and monitoring the reflections of a particular scientist or author within the scientific field.
• **Full text database** - to find works of certain authors or journals. The easiest way to access a complete text of the paper is over the link Full text, Full or tText Available or View at Publisher (11).

The most important online databases for the field of biomedicine, which created the National Library of Medicine’s MEDLINE. MEDLINE (MEDLar on Line) is one of the largest, most comprehensive, as well as the oldest of bibliographic/citation biomedical database by National Library of Medicine (Bethesda-National Library of Medicine–NLM, USA). Regularly deals with 5246 scientific and professional journals that make up the first-class source of biomedical information. So database contains bibliographic citations and abstract from over 5200 biomedical journals from the United States and over 70 other countries, and full-text of over 1300 magazines (electronic magazines). For more than 100 years NLM creates and provides comprehensive medical information sources, and bibliographic data are available since 1950 (over 15,000 million references). Records—summaries in most cases with links to full text is in free form of free access, or institution subscribe. Service includes the following sources: MEDLINE / PubMed, OLDMEDLINE (includes references from the 1958 to 1965) LOCATORplus (over 800,000 bibliographic descriptions of books, audiovisual materials and journals), DIRLINE (information on health services, a variety of sources and research projects) MedlinePlus (health information intended for the public), AIDS Meetings, Health Services Research Meetings, Space Life Sciences Meetings and HSRProj. Access service is free and free no matter from which part of the world, and regardless of what the development of health care and research in this part of the world is (6,7,8,10,11,12). It is a powerful Web resource that is the jewel of biomedical research. It can be searched through two NLM’s Web-site services: PubMed and NLM Gateway (7).

PubMed (www.Pubmed.gov) is the Internet service through which we can access the Search citations in MEDLINE and OldMEDLINE-in, as well as articles that are related with the selected. PubMed provides some useful links on the site Homepage: Mesh database, Journals database—a database of journals, Single Citation Matcher and Bath Citation Matcher to verify one or more citations, Clinical Queries search the clinical categories (diagnosis, therapy, prognosis) and Special Queries to search by multiple categories. Allows users to using only one query simultaneously search various databases and medical library resources they possess (MEDLINE / PubMed http://www.ncbi.nlm.nih.gov/PubMed)

**NLM Gateway** (http://gateway.nlm.nih.gov/gw/Cmd) is a service through which NLM provides results of MEDLINE and other NLM databases and database searches in the category of bibliographic resources: MEDLINE, MEDLINE plus, NLM Catalog, TOXLINE Special, Bookself, DART, Meeting Abstracts. Easy to use and of-

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**Figure 1.** Start web page of the MEDLINE database (http://www.ncbi.nlm.nih.gov/sites/entrez)

**Figure 2.** PubMed Limits (http://www.ncbi.nlm.nih.gov/pubmed/lLimits)
fers a simultaneous search of multiple databases with a different type of medical literature, free and easy to use (7,8,13). MedlinePlus (http://medlineplus.gov) is reserved for users of medical services (patients).

Search strategy for MEDLINE:
- Thesaurus-search, Text word-search
- Defining keywords
- MeSH terms: For example, Lymphoma, Non-Hodgkin
- Text words: Keywords that is not included in the MeSH thesaurus
- Boolean operators: AND, OR, NOT, and select the Limit

CURRENT CONTENTS (CC)–bibliographic database, covering all areas of science. Since 1993 until now held by the Thomas Scientific (previously ISI, Philadelphia). Characterized by a high criterion of selection of journals, coverage of all areas of science, the frequency of updates, summary of the author, the author addresses, names and addresses of publishers, the ability to view the content of each issue (volume) of journals from all fields of science, and add keywords that improves search. Through its 7 sections covering all fields of science with more than 7500 journals, and for biomedicine there are two major sections:

Current Contents/Clinical Medicine (CLINO)–covers more than 1429 leading international journals and a number of books on clinical medicine.

Current Contents/Life Sciences (LIFE)–contains bibliographic information from 1407 leading international journals and a number of books on bio-science, including areas such as biochemistry, biophysics, pharmacology, physiology and toxicology. On-line data available since 1993 (11,14).

Evidence Based Medicine Reviews (EBMR)–Maintained by Ovid Technologies and the American College of Physicians & Cochrane Collaboration, since 1991 to date, this database is complete (full) text, primarily intended for doctors and researchers with a comprehensive insight into the clinical research. Two main sources of content are:
- The Cochrane Database of Systemic Reviews (issued by Cochrane Collaboration, an international organization that deals with the application of principles of medical evidence and views of important clinical issue).
  - Best Evidence database, which contains:
    - The ACP Journal Club,
    - Journal Evidence-Based Medicine (affiliated publication of the ACP and the British Medical Journal Group) (11,15,16).

Evidence-based medicine means deliberate and methodical approach to medical decision-making process, in which high-quality medical evidence occupies a central place.

Psycinfo–bibliographic database, maintained by the American Psychological Association (APA). Covers about 2000 journals in more than 25 languages.

SCOPUS–Citation/bibliography, multi-disciplinary database, includes works from 15,000 journals, 535 journals in open access, over 200 million quality web sources and 12.7 million of patents. It is maintained by Elsevier, since 1966 (Citation part since 1996) till today.

It covers:
- Chemistry, Physics and Engineering–4500 journals,
- Biomedicine–5900 magazines (100% Medline and EMBASE 100%)
- Biology, agronomy and ecology–2500 Journals
- General Science–50 magazines.


Bibliographic database for all areas of science with more than 20 million papers from over 9000 journals. In addition to the usual bibliographic information, including references/quotes that to users:
- Provide access to information about works by the author quoted (Cited References);
- Allows you to view authors who have studied a certain type of research for a longer period (Related References).

Web of Science Citation Data–base combines citation databases that produce the Institute for Scientific Information (ISI)–Thomson:
- Science Citation Index SCIE
- Social Science Citation Index (SSCI)
- Arts & Humanities Citation Index (AHCI) (11,15,16)

Journal Citation Reports–maintained by the Thomson Scientific, since 2005 until today.

Unique database for the evalu-
ation of scientific journals, which provides an objective determination of the importance of journals within the scientific field, using the citations of papers published, and determining the impact factor, a factor that influences the individual journals. Combines information about the 6100 journals (11,17)

**EBSCO Publishing** (http://www.ebsco.com) (18)

EBSCO Information Services is the world’s largest service, the leader in securing access to the print and electronic journals, books and research databases (e-journal, e-book and e-journal package and print subscriptions, e-resource management tools, full-text and secondary databases”). EBSCO is a synonym for “e” industry, as well as “e” agent. EBSCO includes 31 regional offices, localized in 23 countries around the world and serves many subscribers—information and library services. In its seventh decade of existence and activity, EBSCOhost offers many of its own databases with full texts, and many other popular databases from leading information publisher. EBSCO maintains contacts with over 79000 publishers.

**EBSCO DATABASES**

Among the EBSCOhost databases available are:
- Academic Search Complete
- Business Source Complete
- MasterFILE Premier
- Newspaper Source
- Regional Business News
- Health Source: Nursing/Academic Edition
- MEDLINE
- ERIC
- Health Source—Consumer Edition
- Library Information Science & Technology Abstracts
- Green FILE
- Academic Search Premiere
- Business Search Premiere
- Research Starters–Sociology

**Academic Search Complete** is the most valuable and most comprehensive multi-disciplinary academic database of whole texts. Includes full text of more than 7100 journals, including more than 6100 peer-reviewed journals. With full text in the database are indexes and abstracts from more than 11,200 journals and nearly 11,700 other publications (such as monographs, reports, conference materials, etc.). Offers important sources of information specific to this massive collection, and texts are available in pdf format, while the cited references are available in some 1300 journals. Producer: EBSCO Publishing

**Figure 4.** Start webpage for search of Academic Search Premier database (http://web.ebscohost.com/ehost/search?vid)

**HINARI**

HINARI base—The Health InterWork Access to Research Initiative established in 2002 with about 1500 medical journals from 6 major publishers. Offers free access, or a very good price for a large number of biomedical journals and magazines related to social sciences in developing countries. Today, content enriched

**Figure 5.** HINARI – Initial page (http://extranet.who.int/hinari/en/journals.php)

**Figure 6.** Staring page of the Free medical journals (http://www.freemedicaljournals.com/)
with new programs involvement of over 150 publishers, with a significantly larger number of magazines—more than 6200 offer many useful information. Developed within the Health Inter Network. The advantage of the subscription is that is given to non-profit institutions: universities, colleges, research institutions, medical and health colleges, and students (19). Proved to be very efficient in finding complete articles after search of the MEDLINE database.

FreeMedical Journals (http://www.freemedicaljournals.com)—Directory of journals with free, complete articles in the field of medicine, covering many languages. It contains 1481 journals, a search can be done via the search box or via the link for the category of magazines (7,20).

BioMed Central is an independent publishing company that provides direct free access to peer-reviewed scientific work on biomedical research. Manufacturer: BioMed Central, publications are free and constantly from the moment of publishing are available on-line. BioMed Central covers about 170 journals in the field of biomedical research.

Core Biomedical Collection (CBC). Manufacturer: Ovid Technologies, Inc. Ovid Core. Includes works published in 15 journals in the field of biomedicine, offers a very advanced search capabilities. Within hypertext view the document provided high quality navigation and references citations in the reference list of links to the bibliographic records in the database Medline, or the full text in other databases (11,21).

USER REQUESTS in the field of biomedicine are different and multidisciplinary, refer to the numerous research and diagnostic-therapeutic-preventive problems of basic and clinical medicine. The answer to precise, but also a complex request means educated and trained librarians-informatics.

To librarian-quality computer technician performed a search, it is necessary to establish an adequate search strategy, which supplies that the search request must:  
• specify and differentiate,  
• narrowed or expanded, in consultation with the user,  
• specify keywords, descriptors,  
• select database/s,  
• specify Boolean operators,  
• specify limits, choose the right tools (9,16,22).

2. GOAL
The goal of the article is to through the fragmentary and concise description of the many on-line database, given complete access to the latest available database, point out importance of search and retrieval of relevant information and resources for the many and various scientific and professional user needs.

Second, no less important goal is to analyze the one-year search in the Library of the University Clinical Center in Sarajevo, to obtain comprehensive insight into the opportunities offered by the Library and Information Services of the Clinical Center by satisfying user needs for knowledge, through access databases, services and electronic publications via the Internet.

3. MATERIAL AND METHODS
The research was conducted in the Library of the Clinical Center of the University in Sarajevo for the period January 1st 2009 until December 31st 2009.

In addition to descriptive-analytical method that we applied in the introductory part of article, with many citing the relevant information sources and the author of the database system and database searches and information retrieval, the survey used in the analysis and statistical analysis of the chart depicting certain parameters:

• user structure (doctors of science, masters, university professors—teachers—specialist doctors, residents, students of biomedical faculties, medics and others)
• commonly used online databases to search which is carried out: a) a librarian-computer scientist and b) by a user—self search (MEDLINE, EBSCO database, HINARI and created their own, of internally available online bibliographical database “Bibliography of works in the University Clinical Center Sarajevo”)
• types of requests and the number of results for individual types.

4. RESULTS
Research results were obtained by analyzing:
• User requests (forms filled with the elements: the user, table 1.

<table>
<thead>
<tr>
<th>USERS STRUCTURE</th>
<th>DATABASE</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PubMed/ MEDLINE</td>
<td>EBSCO base (Academic)</td>
</tr>
<tr>
<td>Dr.sci. (prof., doc. higher assistant)</td>
<td>201</td>
<td>133</td>
</tr>
<tr>
<td>Mr. Sci. higher assistant, assistant</td>
<td>55</td>
<td>48</td>
</tr>
<tr>
<td>Dr.med. specialists, residents</td>
<td>196</td>
<td>196</td>
</tr>
<tr>
<td>**Students (Medicine, Stomatology, Pharmacy, Faculty of health studies)</td>
<td>144</td>
<td>144</td>
</tr>
<tr>
<td>Associates – graduated nurses, nurses</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>TOTAL</td>
<td>612</td>
<td>533</td>
</tr>
</tbody>
</table>

Table 1. Structure of users and database in search of requests done by librarian-informatics; * In some groups we have repeated search, or additional, which are expressed here as a new search, and education of users in using the database. ** Students—making graduate articles in clinical medicine, while simultaneously search all databases and education in the use of databases. *** EBSCO database (Academic Search Premier and Academic Search Complete, Health Sources) are often searched simultaneously with MEDLINE, as well as HINARI, whereas the reverse combination is not always gone together.
information and resources in the search and retrieval of relevant data. The importance of system for that end, we can see that the basic object-


In Table 1, 2 and Chart 1 are given the outline of users and databases in a search carried out by the librarian-computer scientist.

At the same time carried out an intensive education of users in searching databases and the possibilities offered by the Library.

Full texts are sent by e-mail, copying to a CD-ROM, or printed and confirmed the relevance of the answer to a user by direct vote–contact, phone or e-mail.

Full texts are sent by e-mail, copying to a CD-ROM, or printed and confirmed the relevance of the answer to a user by direct vote–contact, phone or e-mail.

5. DISCUSSION

Analyzing the presented content, we can see that the basic objective of the study was:

a) that by the fragmentary and concise description of the many on-line database, provides comprehensive insight into the latest available on-line database, point out the importance of system for search and retrieval of relevant information and resources in the digital Internet environment for medical users, and highlighted the importance of education;

b) the second, no less important aim is to illustrate/analyze a one-year search on-line database in the Library of the University Clinical Center in Sarajevo in order to get a complete insight into the possibilities of library and information services of the Clinical Center in meeting the information needs. For the successful implementation of the results

Table 2. Number and percent of search within each individual database done by librarian

<table>
<thead>
<tr>
<th>DATABASE</th>
<th>MEDLINE</th>
<th>MEDLINE+EBSCO</th>
<th>EBSCO</th>
<th>EBSCO+MEDLINE</th>
<th>HINARI</th>
<th>HINARI+MEDLINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>612</td>
<td>612+533</td>
<td>533</td>
<td>533+211</td>
<td>39</td>
<td>39+85</td>
</tr>
<tr>
<td>Percent</td>
<td>48.7%</td>
<td>91.2%</td>
<td>42.6%</td>
<td>59.2%</td>
<td>3.1%</td>
<td>9%</td>
</tr>
</tbody>
</table>

Table 3. Structure of users and databases in search for requests done by user – self search; * Number and percentage of results within each base in search we did not performed, because our users have no such information delivered; ** Bibliography of articles by CCUS users cannot search on their own, because it is not available online, but only internally–librarians.
is necessary to set the appropriate search strategy, with the relevant specification problems, and choosing a good database (1-15). Data refer only to those customers for whom search is carried out in the library, whether search is carried out by librarian or the user.

However, a large number of users get a password of the Library of Clinical Center for individual databases, and search out the Library, which in this study were not included. "Bibliography of works by CCUS" a database created by the Library of CCUS relevant bibliographical program provides useful information about authors and medical problems that were investigated and about which wrote the authors of the Clinical Center (operator-base is a librarian and computer technician for now making internally searches).

The obtained data tell us about the biggest use of PubMedLINE, then EBSCO database, and HINARI as aggregate base used much less, giving the users password to use features of HINARI outside the Library. Digital and virtual libraries allow delivery of real-appropriate information at the right time and to the right person, making it easier to make medical decisions, participating in the system of knowledge management (24). In the segment which specifies the essential elements of the process of information retrieval, and highlights the importance of education. Medical librarians must continually educate themselves through the subsystems—schools, associations and professional membership, to answer the challenges in the online environment-searching and information retrieval, to modernize the knowledge, achieve the level of experts and meet the new demands of their profession, which is discussed several authors (25, 26). Continuous education will allow them to successfully, if necessary, educate users. Users of the information are not only doctors, students, but sometimes patients who directly ask for information about their disease. And this is reflected skill and trained medical librarians in the use of the Internet and the Web site to meet and these kinds of requests (25, 26, 27, 28).

In our study, we see that librarians perform intensive education of users, especially students in the group biomedical faculties, and that the number of higher education in 2009 compared to 2008 (23, 29).

As the amount of medical information doubles every 5 years, today is the researchers, doctors and practitioners a major challenge to stay up to date and step with progress in medicine. To provide the best possible health care and the use of new diagnostic-therapeutic and preventive procedures and methods, should have access to sources of medical information that could help when making clinical decisions in diagnosis and treatment, and preparation of clinical algorithms. Doctors must themselves know the new organization and development of digital knowledge and management system in biomedical science and medical informatics, and the opportunities and education of medical librarians in the context of digitalization, computerization and overall ITC Technology (30, 31). Users of information are also creators, or creators of new knowledge—information and support in searching and information retrieval which is double pay.

Specifically, users are the biggest consumers and creators of scientific and technical information their newly increased publication “Information Corps”.

Increasing number of requests addressed to librarians-experts, but at the same time search performed by users, either in the library, either in the workplace, or home environment.

Performed statistical analysis and processing of user requests for database search and retrieval are performed by librarians/IT professional at the Library of the Clinical Center of Sarajevo and search done by users. On the basis of evidence obtained shows that a large number of user requests for information librarian-effectively solve computer scientist searching the available database and providing a comprehensive (full) articles from numerous publications, electronic (e-journals with high impact factor, and e-books) using ICT, and e-mail, saving valuable time us-

<table>
<thead>
<tr>
<th>TYPE OF REQUEST</th>
<th>No. OF REQUESTS</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search by librarian</td>
<td>Repeated No. and %</td>
<td>Self search</td>
</tr>
<tr>
<td>Doctoral thesis *</td>
<td>28</td>
<td>2 (0.71%)</td>
</tr>
<tr>
<td>Master thesis *</td>
<td>50</td>
<td>3 (0.60%)</td>
</tr>
<tr>
<td>Graduation article *</td>
<td>65</td>
<td>1 (0.01%)</td>
</tr>
<tr>
<td>Seminary article</td>
<td>45</td>
<td>0 (0 %)</td>
</tr>
<tr>
<td>Journal article</td>
<td>114</td>
<td>5 (0.42%)</td>
</tr>
<tr>
<td>Article for congress, symposia, scientific meeting</td>
<td>25</td>
<td>2 (0.08%)</td>
</tr>
<tr>
<td>Clinical practice</td>
<td>48</td>
<td>2 (0.04%)</td>
</tr>
<tr>
<td>Teaching</td>
<td>10</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Residency*</td>
<td>25</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Education* of users</td>
<td>233</td>
<td>8 (0.03%)</td>
</tr>
<tr>
<td>Election to title (bibliography)</td>
<td>64</td>
<td>2 (0.03%)</td>
</tr>
<tr>
<td>Writing a book *</td>
<td>28</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Postgraduate education</td>
<td>12</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>747</td>
<td>25 (3%)</td>
</tr>
</tbody>
</table>

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Specifically, users are the biggest consumers and creators of scientific and technical information their newly increased publication “Information Corps”.

Increasing number of requests addressed to librarians-experts, but at the same time search performed by users, either in the library, either in the workplace, or home environment.

Performed statistical analysis and processing of user requests for database search and retrieval are performed by librarians/IT professional at the Library of the Clinical Center of Sarajevo and search done by users. On the basis of evidence obtained shows that a large number of user requests for information librarian-effectively solve computer scientist searching the available database and providing a comprehensive (full) articles from numerous publications, electronic (e-journals with high impact factor, and e-books) using ICT, and e-mail, saving valuable time us-
ers (32). We analyzed: MEDLINE, EBSCO Publishing (Academic Search Premier, Academic Search Complete and Health Sources) and the HINARI database. At the same time was monitored, and user education are performed by librarians, to enable consumers to use more resources and information base on which the library subscribed.

Analyzing the type of requests we see that the education of users to illustrate certain problems with the formulation of search strategies, leading, followed by a press article, the choice of profession, clinical practice, etc.

Broader emphasis on the role of the Library CCUS in searching, finding and dissemination of information, confirms the very significant, but qualitatively new role for librarians and libraries in the digital environment (33).

6. CONCLUSIONS

To efficiently search it is necessary to have knowledge of the system of search and retrieval of information, available databases and the possibility of their use, properly defining requirements and setting up search strategies, and monitoring customer satisfaction with the executed search, in other words:

A good search requires two conditions: to select the appropriate database and make a good search strategy.

It is essential to have further, and repeated searches on request if not received relevant information, as well as education for users as efficiently as an independent search.

PubMed MEDLINE is a powerful source of medical information for librarians, and users–doctors and students, and the additional benefit is that the free access and relatively simple use.

Use of all available databases, search engines and websites, and get acquainted with their capabilities and capacities, that response was comprehensive, relevant and complete.

It’s important to educate librarians-experts to apply new information and communication technology and the digital environment.

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