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## The Importance of Digitizing Old Medical Books and Modern Medical Ethics Books in the Field of Medicine

Nadinne Roman,<sup>1</sup> Elena Amaricăi,<sup>2</sup> Silviu Caloian<sup>3</sup>

<sup>1</sup> Faculty of Medicine, Transilvania University, Braşov,  
Romania, [nadinneroman@gmail.com](mailto:nadinneroman@gmail.com)

<sup>2</sup> Victor Babes University of Medicine and Pharmacy Timisoara ,  
Romania, [amaricai.elena@umft.ro](mailto:amaricai.elena@umft.ro)

<sup>3</sup> Faculty of Medicine, Transilvania University, Braşov,  
Romania, [silviu\\_90@yahoo.com](mailto:silviu_90@yahoo.com)

**Abstract:** Medical research has flourished over the last century, starting from empirical experiments on patients and now reaching genetic studies, neurorobotics, and telemedicine surgery. The importance of medical evolution with all its ethical and technological elements is a useful tool in the research area, offering resources as a comprehensible framework in this field. We have analysed the ease of access through 15 online digital libraries regarding old medical books and modern medical ethics books. Two digital libraries have a considerable amount of information and ease of access and might represent a useful instrument for academic research for a raised visibility.

**Keywords:** digitized; medical ethics books, old medical books

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# The Importance of Digitizing Old Medical Books and Modern Medical Ethics Books in the Field of Medicine

Nadinne Roman,<sup>1</sup> Elena Amaricăi,<sup>2</sup> Silviu Caloian<sup>1</sup>

<sup>1</sup> Faculty of Medicine, Transilvania University, Braşov, Romania

<sup>2</sup> Victor Babes University of Medicine and Pharmacy Timisoara, Romania

## Background

Medical technologies and research have flourished over the last century, starting from empirical experiments on patients in the early 1900s reaching now studies on genetics, neurobotics and remote surgery through telemedicine. It is important for the integrity of healthcare process that medical practitioners and especially researchers in this domain to achieve knowledge concerning the medical field evolution and bioethics development during the last century. One of the key elements for acquiring knowledge is access to information. The difficulties or the opportunities that medical staff and researchers encounter in gathering information is discussed and analysed in this paper.<sup>1</sup> Taking into account the accessibility of the information, we bring into discussion the usefulness and effectiveness of digital libraries. Does the academic world keep up with the new digital technology or the safest way to access books, especially old and rare, is by going to local or university libraries?<sup>2</sup> Given the technological advances in access to information and the new generation of students who use the virtual environment as a source of information, free digital libraries are a safe source of education without cost implications, so it is also important for teachers to be able to properly guide their students in the process of teaching.<sup>3</sup>

## Objectives

The primary objective of this paper is to analyse the ease of access to online digital libraries regarding the old medical books which can provide useful information about old medical techniques and the current medical ethics books which can provide helpful information in ethical challenges or dilemmas which can occur in medical practice. The secondary purpose is to accomplish a ranking of digital libraries for researchers, students, academic staff and regular people. In this study, we focus on medical books as well as on books and papers that provide information on bioethics and ethics of medical research. The analysis of digital

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<sup>1</sup> A. Repanovici, "Marketing Research about Attitudes, Difficulties and Interest of Academic Community about Institutional Repository" in *Proceedings Of The 3<sup>rd</sup> International Conference On Management, Marketing And Finances* (2009), 88-95.

<sup>2</sup> J.V. Lombardi, *Academic Libraries in a Digital Age*. D-Lib Magazine, 2000.

<sup>3</sup> L. Rogozea, F. Leasu, L. Cristea, L., G. Sechel, "Bioethics, technical and scientific progress in medicine-an educational point of view" in the *6<sup>th</sup> WSEAS/LASME International Conference on EDUCATIONAL TECHNOLOGIES* (Kantaoui, Sousse, Tunisia, 2010).

libraries wishes to provide useful data for academic researchers and patients who wish to access this type of information, considering that with the medical evolution, regular people are becoming more and more informed in the online environment.<sup>4</sup>

## Method

We have searched the online environment interrogating Google search engine. The criteria used for digital libraries analyse were: English language and free digital libraries. After selecting the main 15 databases we have performed a search based on keywords related to medical ethics and medical books. We have analysed the number of books and documents available in these 15 digital libraries and created a ranking based on this criterion. A SWOT analysis of the digital databases accessibility and search functions for accessing old medical and medical ethics books was accomplished.

## Results and discussions

### *Deficiencies*

From the analyse of 15 digital libraries, all of them contains medical books and medical ethics books, but many aspects concerning the quantity and the quality of books or papers, and also the ease of searching are important elements to discuss.

The search was made taking into account the number of books, manuscripts, articles and languages in which resources are found.

Another element in our study is the use of Boolean operators as search tools, both in the digital library and inside documents or books.

One of the items that was elementary during the comparison of digital libraries was the oldest manuscript or the oldest book that can be found in the library in the study context.

The majority of digital libraries have a poor search engine system, being difficult to search by topic or subject. The majority of digital library books use Boolean operators and afford online reading of books and papers. Although most of medical books are less related to medical ethics. Important sources of old medical ethics books and information are available through the digital libraries, from Aristotle's „Nicomachean Ethics” book from 350 BC, translated to English, to 2017 publications related to bioethics. The European Library gives the possibility to add the manuscript/book in Mendeley and Zotero, a very useful instrument that can be used by researchers.

Medical Heritage Library send the reader to <http://mhl.countway.harvard.edu> or <https://archive.org/details/medicalheritagelibrary>, in the Medical Heritage Collection. Even when we are searching into <http://mhl.countway.harvard.edu> page, the results are shown in archive.org. We were unable to establish the older book/manuscript.

Europeana Collections has some similarities with The European Library, when searching medical books, the oldest manuscript appears the same as <http://www.theeuropeanlibrary.org/tel4/>, although has a distinct link page.

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<sup>4</sup> L. Dima, A. Repanovici, D. Purcaru, L. Rogozea. “Informed Consent And E-Communication In Medicine” *Revista Romana De Bioetica* (2014): 37-46.

**Table 1. Digital libraries ranking for medical old books and medical books free content**

No.	Web address	Medical ethics book (from year)	Medical/medicine books (from year)
1.	<a href="http://www.theeuropeanlibrary.org/tel4/">http://www.theeuropeanlibrary.org/tel4/</a>	25,330 results from 76 collections, from 1600	28,702 results, from year 1196 (Arabic manuscript)
2.	<a href="http://www.medicalheritage.org/">http://www.medicalheritage.org/</a>	<a href="http://mhl.countway.harvard.edu">http://mhl.countway.harvard.edu</a> - 21159 text results	199425 results, from 50 databases and over 40 languages 14 dialects
3.	<a href="https://wellcomelibrary.org/">https://wellcomelibrary.org/</a>	3072 results, free and online texts, from 1700	30831, free online texts, from year 1700, 30746 eBooks
4.	<a href="http://www.archive.org">http://www.archive.org</a>	1379 results: scientific articles, books, publications from 1740 to 2017	22,196- texts-2 collections- from year 1479
5.	<a href="http://netlibrary.net">http://netlibrary.net</a>	42 results, from 1900	176,875 eBooks, from year 1100
6.	<a href="http://muse.jhu.edu">http://muse.jhu.edu</a>	648 results, collection dedicated to bioethics	4924 results
7.	<a href="https://www.europeana.eu">https://www.europeana.eu</a>	208 results – articles, books, sounds, video	982 results - texts, manuscripts, articles, from year 1196
8.	<a href="https://www.wdl.org/">https://www.wdl.org/</a>	12 results, 1 relevant	840 results, manuscripts, texts and books, from 500 AC, Arabic, Chinese, Latin
9.	<a href="http://nuremberg-law.harvard.edu">http://nuremberg-law.harvard.edu</a>	165 results, from 1936	150 results, from year 1919
10.	<a href="http://www.infomotions.com/alex/">http://www.infomotions.com/alex/</a>	21 results, including Aristotle's ethics, translated into English	114 results- not very relevant
11.	<a href="http://www.gutenberg.org">http://www.gutenberg.org</a>	14 results, from 1896 (7 relevant)	59 results from 1889 to 2000
12.	<a href="http://digilibraries.com">http://digilibraries.com</a>	8 results, from 1896 ((3 relevant)	41results, from-1880
13.	<a href="http://www.bartleby.com/">http://www.bartleby.com/</a>	4 results, from 1900	1- greys anatomy
14.	<a href="http://onlinebooks.library.upenn.edu/subjects.html">http://onlinebooks.library.upenn.edu/subjects.html</a>	5 books and 1 journal: British Medical Ethics	More journals than books, access only by browsing through pages, very useful medical journal
15.	<a href="http://www.ibiblio.org">www.ibiblio.org</a>	more like a search engine, links to other web pages	

*Availability*

On digilibraries.com, the search is difficult, and the majority of documents are not available online for reading or documenting, being necessary to download the file on the personal computer. Muse project and Netlibrary have the same inconvenience regarding the availability to inspect online the document.

The European Library has just an indexing of the titles and often sends it to the author/publication page which may require subscription or costs for viewing the document.

The most accessible digital library is archive.org, both in terms of the quantity and quality of documents, as well as the search facilities for keywords within manuscripts, books and texts. It is possible online documentation and the use of bookmarks by creating a user profile, but also downloading documents on personal computer.

### *Addressability*

Many academic people and researchers use free sources for their research, teaching classes or for study, because most of the Academic databases are expensive and not everyone have subscription.<sup>5</sup> Usually Google Scholar and PubMed in medical field are used as databases for research. But for historical aspects, digital libraries may be used with success!

Another important segment considering the addressability of online documentation is represented by students, which access the online environment for the individual study. As technology of information is evolving, the ease of access through digital libraries is facilitated by telephone applications and internet access through mobile phones, making this process accessible by open access without subscriptions or payment.<sup>6</sup>

The importance of the digitization of literary resources, especially regarding to the old medical book, as well as the texts and documents that denote the evolution of medical practitioners and medical ethics, is reflected in the teachers' opportunity to create a complete and complex framework regarding the student's perception of this field evolution and medical development.

At the same time, by open access to this kind of resources, the students, as well as other researchers in the field, have the possibility of documentation and later by discovering the history, they create the possibility to achieve their own judgment, especially in bioethical dilemmas and challenges.<sup>7</sup>

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<sup>5</sup> A. Repanovici, L. Rogozea, R. Miclaus. "Analysis Of The Impact Of History" in *Bulletin of the Transilvania University of Braşov*, 6(51) (2009): 173-176.

<sup>6</sup> L. Rogozea, F. Leasu, L. Cristea, G. Sechel G. "Bioethics, technical and scientific progress in medicine-an educational point of view" in the *6<sup>th</sup> WSEAS/LASME International Conference on EDUCATIONAL TECHNOLOGIES* (Kantaoui, Sousse, Tunisia, 2010).

<sup>7</sup> R. Miclăus, C. Nemet, V. Burtea, L. Rogozea, "History of balneology – a new way to teach using e-tools" in *Proceedings of the 7<sup>th</sup> WSEAS International Conference on Education Technology (EDUTE 11)* (Iasi, 2011), 155-158.

### SWOT analysis



The use of different ways of teaching ethics at the university, to heterogeneous groups of students, whose previous education is different and whose level of knowledge and base is also different, must be the result of multidisciplinary cooperation.<sup>8</sup>

### *Strengths and opportunities*

Teachers and students, who need academic articles, book chapters, or medical specific feature books have an increased opportunity in achieving knowledge given by the free online access to academic journals and medical literature books in healthcare study. Regarding the researchers and academic staff, they have an increased visibility arisen from the free online digital access to their papers and research. Increasing visibility in the academic community is an important element in professional academic development. And users of this type of electronic resources are growing.<sup>9</sup>

The emergence of numerous medical technologies and techniques used in modern medicine gave rise to new responsibilities of physicians and practitioners. Integrating morality, medical ethics, as well as public health policies, requires the creation of a comprehensive and complex framework for addressing ethical-medical contexts both from the perspective of the health service provider and from the perspective of the healthcare consumer.<sup>10</sup>

22 years ago, Adam et al. made predictions about digital libraries and predicted access to information that was inaccessible so far for decades, regarding old documents or rare books that will be available through digital libraries. Nowadays, access to such information has become easy through internet facilities and digital libraries.<sup>11</sup>

## **Conclusions**

The online environment stores a wealth of information, and access to information is easy, based on search engines. Filtering the information received from the online environment is very important, especially for the average user. In the context of this review, medical students, who increasingly use this tool for individual documentation, are given access to medical information through the availability of free virtual libraries representing a secure source of documentation.

Teachers or educators also benefit from the existence of digital libraries, with a variety of materials at no cost, which they can use in the educational process.

Research and visibility are facilitated and enhanced in the academic environment through digital libraries, facilitated by information technology.

In the online environment there are some digital libraries that provide abundant medical and bioethics literature that can be easily used by students, teachers or researchers. Threats that lie on digital libraries are the lack of staff and advanced technology for storing and

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<sup>8</sup> L. Rogozea, R. Miclaus, C. Nemet, A. Balescu, I. Moleavin. "Education, Ethics and E-Communication in Medicine" in *8<sup>th</sup> WSEAS International Conference on Multimedia, Internet and Video Technologies/8<sup>th</sup> WSEAS International Conference on Distance Learning and Web Engineering* (2008), 197-201.

<sup>9</sup> B.L. Folb, "Clinical and academic use of electronic and print books: the Health Sciences Library System e-book study at the University of Pittsburgh." *J Med Libr Assoc.* (2011): 218–228.

<sup>10</sup> J.M. Mann, "Medicine and Public Health, Ethics and Human Rights" *The Hasting Center Report* (1997): 6–13.

<sup>11</sup> N.R. Adam, M. Halem, S. Naqvi, "Promising research directions in Digital Libraries" in *Lecture Notes in Computer Science*, ed. Bhargava B.K., Yesha Y. Adam N.R. (Berlin, Heidelberg: Springer, 1995), 21-22.

scanning documents. These elements should be considered to enable the development of information technology in the virtual and academic environment.