National Information Systems

Turkish Medical Information System and Medical Librarianship[*]

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Abstract

In Turkey, medical information is supported at state level according to national policies. However, although the history of medical libraries in Turkey goes back to the 13th century in Anatolia, modern medical library applications adopted since the 1950s have not received much state support. In the past thirteen years a few medical libraries joined forces under ÜNAK (the Association of University and Research Librarians) to contribute to the organization and development of Turkish Medical Information through the establishment of a "Medical Working Group" in 2000.

Keywords: medical information, medical librarianship, ÜNAK Medical Group, Turkish medical librarianship

Introduction

According to 2009 data of the Higher Education Board of Turkey, the number of state universities in the country is 94. The number of universities functioning as part of a foundation is 45. There are 5 military institutions of higher education and one institution of higher education operating under the Department of Security (Police Academy). Within these universities, there is one military medical academy tied to a military institution of higher education and 10 private medical schools attached to Foundations. There are 57 medical schools functioning as part of the state universities. In total, Turkey has 68 medical schools and 5 additional medical schools in the process of formation (Fig. 1) (1).When examined from a perspective of the number of medical schools in the country, the importance of the many projects and improvements that are needed in the area of Medical Information becomes clear.

The beginning of medical education in Turkey goes back to the foundation of Istanbul University. Medical education thus began with the opening on March 14, 1827 of the schools Tıphane and Cerrahhane-i Amire (Fig. 2) (2).

With the university reform that was initiated in 1933, the country's first medical school was established under the title of Istanbul Faculty of

Medicine. In 1967, the Istanbul Faculty of Medicine was divided into two medical schools—Istanbul Medical School and Cerrahpaşa Medical School (Fig. 3) (3).
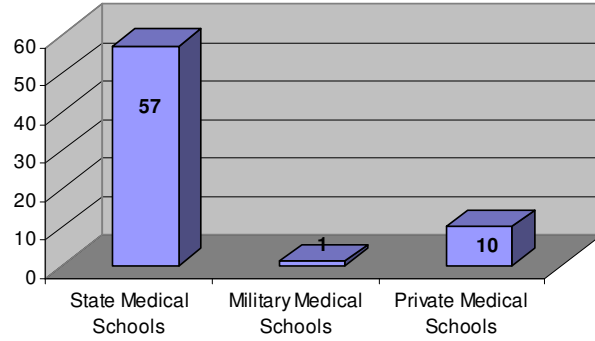

Fig. 1. Number of the medical schools

Fig. 2. First of building medical school lecture (Tıphane ve Cerrahhane-i Amire, Tulumbacıbaşı Hall, Painter Ahmet Yakupoğlu) Source: İnönü University of Medical Faculty web site.
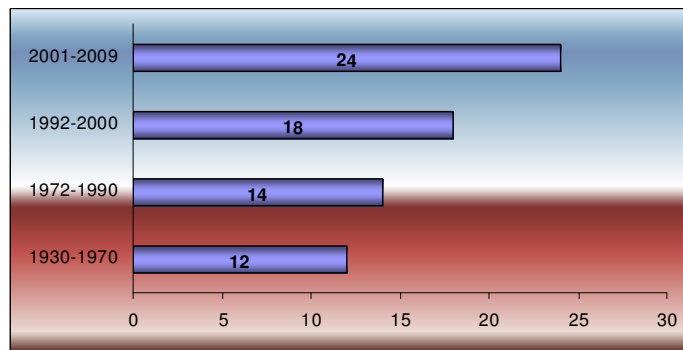

Fig. 3. Foundation dates of the medical schools.

Medical Information

Medical Information consists of medical knowledge. All knowledge in medicine and health encompass data related to patient records, laboratory testing, clinical information, clinical decision systems, training, research results and other health information. The nature of medical information is such that:

- It must be rapidly accessed and should answer the needs of patients with respect to their individual health problems.
- It should be current.
- It should be ensured that patients benefit from the latest advances in medicine and from new diagnostic and treatment methods.
- It should be meaningful and easily accessible (4).

The Medical Information Process

The medical information process starts with the application of a patient to a doctor at any hospital for a consultation on a particular health problem. As a researcher in the information process, the doctor researches diseases, the use and interaction of drugs, as well as diagnostic and treatment methods. Patient-physician rights cover the implementation of protective principles and decisions, the taking of measures to protect human health and formulating enforceable policies to prevent disease and provide access to medical information. This process also encompasses the exchange of information and interaction between the medical librarians who collect, compile and provide access to medical information and the health professionals who need that medical information (Fig. 4) (5).

The **principle of access to accurate and updated medical information**, which is the basis of medical library science, has maintained its validity for centuries and continues to do so even nowadays. In Turkey, an important place in the development of medical librarianship has UNAK (Turkish acronym for the "Association of University and Research Librarians") Medical Group's vision; health educators and professionals are provided information in an accurate, rapid and economic manner, at the same time it supports medical librarians and information specialists in updating their knowledge of new technologies and current information.

The mission of this Medical Group is to contribute to the development of medical knowledge in Turkey, to raise the standards of information to universal levels in medical and health sciences in Turkey, and to provide accurate and updated information to the medical and health sciences professionals.
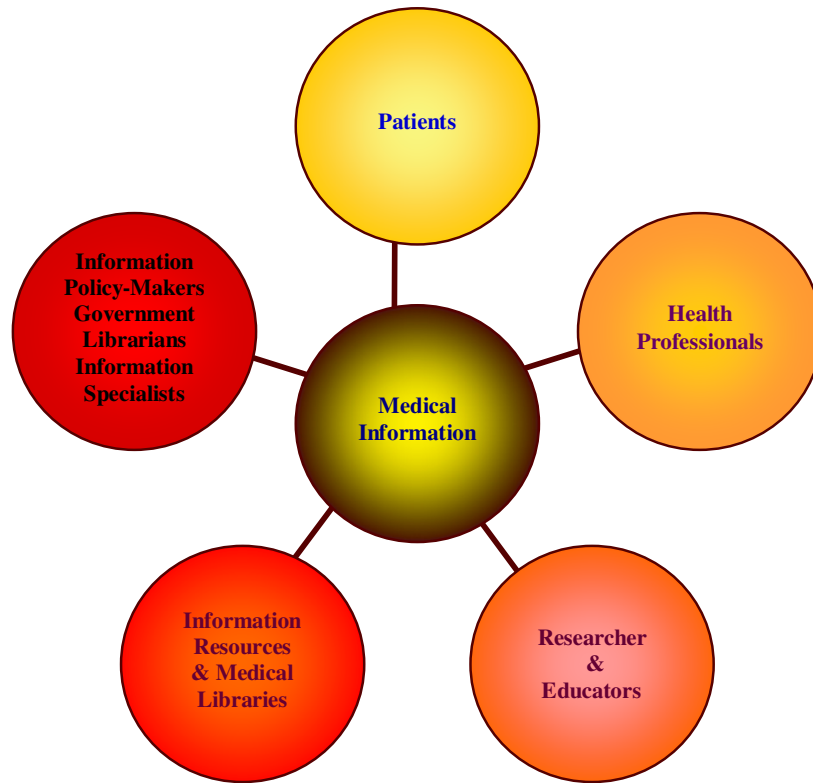
Fig. 4. Process of medical information.

The goals of the ÜNAK Medical Group, which will act as the locomotive force of medical knowledge and medical information science in Turkey are as follows:

- Using universal standards in the compilation of medical knowledge
- Ensuring rapid and economic access to information and documentation related to health
- Supporting librarians and information specialists in the fields of medicine and health by providing training and updating their knowledge of developing technologies
- Developing new approaches for protecting personal rights of librarians and information specialists
- Providing notification on developments in medical knowledge published in professional publications and on the Internet

- Designing projects geared towards the improvement of medical information
- Encouraging cooperative efforts by developing professional relations with librarians working in the fields of medicine and health around the world
- Acting as a leader in the establishment of a national health network
- Raising the standards of the medical information system to universally accepted levels and working towards integration with other countries
- Securing uniformity in medical terminology and contributing to the development of an index of medical concepts (thesaurus) (in Turkish and designed for Turkey)
- Creating differentiation and awareness in the area of medical information.

Medical Information Systems in Turkey

The rapidly growing body of knowledge and the continuously developing information technologies in the field of health sciences have made information services more easily accessible, more productive and more economic in our age. Working on the production of information, its presentation and access requires the cooperative efforts of people in various disciplines, including health professionals, computer experts and librarians. Turkey's National Development Plan and Programs include matters related to information in the field of science, research and development, technology, culture, health, and e-government applications. The most important aspects of information policies, "**compiling information"**, "**access to information"** and "**freedom to be informed"** have eliminated restrictions placed on the right to access information as an individual and as a society; and further steps are being taken to ensure that benefit is reaped from existing information. The advantages posed by access to information systems, above all, in education, health, e-government and other services not only facilitates social life, but also ensures that rapid, economic and effective state services are available to all.

It is inevitable that Turkey's libraries act in cooperation with health institutions in improving the development of available medical information and the processes of making medical information accessible. Various activities of the "Association of University and Research Librarians" (ÜNAK) and services provided by the university libraries as well as state health facilities and hospitals, are organized and administered within the

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framework of the "National Academic Network and Information Center" (ULAKBİM), for compiling the **Turkish Medical Index**. As the national information center, ULAKBİM uses electronic resources and communication networks to achieve rapid access to international information and documentation. At the same time, it has also been assigned the task of collecting and compiling the information produced on a national basis either by using its own resources or in cooperation with other organizations, and additionally to arrange this information according to international standards, bringing it to immediately accessible form over an electronic medium. Other effective elements contributing to the spread and progress of scientific knowledge are the periodicals published in the field of Health Sciences. This is possible by ensuing the developments and compiling the results of research in the field so that information can be made public to large audiences and shared with fellow researchers. To serve this objective, an index has been undertaken to cover the periodicals published in Turkish as well as the articles in other languages. This work was published and distributed over the period 1993-1997 and entitled the "**Turkish Medical Index**."

The **Turkish Medical Database** was created to prevent loss of resources and duplication, and to facilitate sharing of information internationally. Turkish Medical Database has been made available as a resource since 1996 on the ULAKBİM website. The Medical Database encompasses the periodicals published in Turkey in the area of Health Sciences (Medicine, Dentistry, Pharmacology, Nursing, etc.), containing original articles of research in Turkish and other languages (6). The objective of the database is to provide researchers in the health sciences with rapid and effective access to the national literature. Since 2000, summaries of Turkish and foreign language articles have started to be published on the website. Almost all the articles published in 2001, and all the articles published in 2002 and 2003 continue to be made available on the database, with their abstracts. Journals with their own websites are also provided with links to their web pages in order to provide researchers with access to the full texts of articles mentioned.

The **Turkish Medical Index** was developed in line with the following objectives (7):

- Assisting Turkish scientists in their work in the health sciences by providing them with information on the current national body of knowledge,
- Storing bibliographic data for research articles in the health sciences to ensure their transfer to future generations and studies,

- Controlling the store of bibliographic knowledge in the health sciences on a nation-wide scale,
- Preventing duplication in research, thus economizing on manpower and other resources,
- Contributing to the widespread use of bibliographic data by using this data in support of research,
- Increasing the quality of research and by so doing, contributing to the development of the competitive environment that high-quality research brings with it,
- In the same way, ensuring the quality publication of journals, contributing to the continuity of publications,
- Using the leadership established in medical database management in providing consulting services in this context,
- Contributing to the development of a scientific language, particularly in the medical fields and in this context, to create conceptual indices, subject heading listings and other products that relate to the databases,
- To carry the publications of Turkish researchers to an international platform.

The ÜNAK Medical Group makes a major supporting contribution to the Turkish Medical Index. The entry form for article entries in the Turkish Medical Index was taken from the form used by the National Library of Medicine. In recording information about articles, the keywords in the index have been collated from **Medical Subject Headings** (MESH) while Turkish keywords are compiled independently by specialists working in the ULAKBİM Medical Group (7).

The goals of the Turkish Medical Index have been set forth as follows (7; 8):

- To attain the same success in the quality of articles as has been achieved in their physical standards,
- To ensure access to all texts in all medical and health professions journals,
- To provide researchers with rapid access to any resource desired,
- To work for achieving unity in terminology in the health sciences,
- To increase the level of information available in Turkey in the process of globalization by increasing the number of Turkish resources in health sciences that are internationally accessible,
- To determine SCI (**Science Citation Index**) reference numbers for the journals included in the Turkish Medical Index,

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- To determine the Turkish resources referenced in the Turkish Medical Index and transferring these into the web medium,
- To ensure access to a widespread user audience with an effective promotional campaign,
- To ensure that ULAKBİM has access to all journals on an electronic medium,
- To promote the widespread use of e-journal publications in Turkey,
- To organize promotional and educational seminars for editors and users.

In line with these objectives, ÜNAK Medical Group collaborated with Koç University to organize the **"First National Medical Management and Technologies Symposium"** on September 19–20, 2002 for professionals and researchers working in the process of producing, managing and using medical information in the health sector. The topics discussed at this meeting that must be worked on in the future are given below:

- Rules of spelling and punctuation for journal editors;
- Courses to cover the most frequently encountered mistakes, and preparation of booklets in this context;
- Training to ensure that electronic resources in health sciences are used more productively;
- Promotion of medical research abroad;
- Working in cooperation with publishers;
- Ensuring the continuation of the Medical Group organized under ÜNAK, and
- Ensuring that the Medical Group to take a leadership position in the development of the Turkish Information System.

Another result of the meeting was the organization of the "Symposium on Periodicals in the Health Sciences," which was held in 2003 in Ankara (9).

As part of the efforts to improve the repository of medical information in Turkey, from 2003 onwards, a symposium began to be organized every year on "Publishing Periodicals in the Health Sciences." The objective of the Symposiums was to improve the quality of National Periodical Publications in the Health Sciences, raise scientific standards and promote the efforts initiated for the "Turkish Medical Index." After 2005,

the objective of supporting the work underway on the National Reference Index was added to the goals of the symposiums. The first of the Symposiums, "Publishing Periodicals in the Health Sciences–2003" was held on March 28, 2003 at TÜBİTAK's Feza Gürsey Hall with the participation of 350 publishing representatives. The second symposium, "Publishing Periodicals in the Health Sciences–2004" was held on May 28, 2004 on the occasion of the 10th anniversary of the founding of the Turkish Medical Index Board. The third national symposium was organized as a two-day event on April 8–9, 2005 under the title "Publishing Periodicals in the Health Sciences–2005" and enjoyed the attendance of 300 participants. The fourth symposium, entitled "Publishing Periodicals in the Health Sciences–2006" took place on November 17, 2006 with 275 participants. At the fifth national symposium, "Publishing of Periodicals in the Health Sciences–2005," participation was close to three hundred on October 19, 2007 and at this meeting, the early results of the "National Reference Index" efforts were announced to the participants (10). The sixth symposium, held on November 21–22, 2008 was organized this time, upon the recommendation of ULAKBİM management, to introduce their four separate databases. The first day of the symposium was held at Hacettepe University Congress Center under the title "National Academic Publishing-2008" and was the first occasion where all four databases were represented at the same meeting. The symposium continued under the title of "Publishing Periodicals in the Health Sciences–2008."

On November 20, 2009 "The 7th National Symposium on Health Sciences at the Periodical Publishing–2009" was organized. Furthermore, the Turkish Medical Data Base located in our national magazines, including **"TUBITAK ULAKBIM Databases Tracking System for Turkish Journals"** became active and it works electronically. This system of ULAKBIM Turkish Databases index the records into the system (11).

The mutual objective of the 2nd National Meeting of the ÜNAK Medical Group, held at Maltepe University, and the 3rd Meeting held at Başkent University, was *to bring together medical librarians who provide access services; information providers who ensure that information is conveyed on an electronic medium; journal editors, and health professionals in their status both as information providers; and information consumers, in an environment where ideas can be freely exchanged* (9).

The chronological development of the progress of improving Turkey's repository of medical information is as shown below (Table 1).

Development of medical information in Turkey

YEARS	DEVELOPMENT OF MEDİCAL INFORMATİON
1842	İstanbul Medicine Faculty
1974	Medical Documentation of Education
1994	Turkish Medical Index
1996	ULAKBİM (ULAKNET)
1999	ANKOS, OBES
2000	ÜNAK-OCLC Consortium
2002	I. National Medical Management and Technology Symposium September 19–20
2003	ADIM (Regional Efforts)
2003	SABESA (Health Documentation)
2003	II. National Medical Management and Technology Symposium September 25–27
2003	Publishing of Periodicals in the Health Sciences
2004	III. National Medical Management and Technology Symposium September 22–25
2007	1st Editors Workshop, 2 November
2007	TÜBİTAK ULAKBİM EKUAL
2008	2nd Health Editors Workshop, 11 April
2008	ANKOS & ULAKBİM E-Resources Consortium
2009	TÜBİTAK ULAKBİM Databases Tracking System for Turkish Journals
2009	VII. National Publishing of Periodicals in the Health Sciences November 20

The TÜBİTAK-ULAKBİM Turkish Medical Index Board, in cooperation with the Deanship of the Cerrahpaşa Medical School, organized an "Editors Workshop" on April 11, 2008 at Cerrahpaşa Medical School, Cem'i Demiroğlu Auditorium for all interested in Health Sciences publications. The workshop covered the topics of editorship, consultancy, codes of ethics in scientific publications, international indexes and the national reference index.

The speeches and presentations at the six symposiums were each collected in a booklet and distributed to the participants on the day of the symposium. The gatherings were organized with great enthusiasm and represented the intense cooperative efforts of the Turkish Medical Index and ULAKBİM teams. Besides the meetings that were organized by the ULAKBİM Turkish Medical Index Board, there were other gatherings in which the organization has been a contributing participant. These are:

- 2nd National Medical Information Management and Technologies Symposium, September 25–27, 2003, Ankara.

- Types of Research in Medicine, Code of Ethics and Principles of Creating a Product, October 23, 2004, Ankara
- Code of Ethics in Research and Publishing. April 21, 2006, Hacettepe, Ankara.
- UNAK-06 "Scientific Communication and Information Management," October 12–14, 2006, Ankara.
- Health Editors Workshop, April 11, 2008, Cerrahpaşa, Istanbul
- Turkish Journals in WOS Workshop, April 22, 2008, Ankara
- 1st Professional Publishing and 2nd Turkish Dentistry Information Symposium, May 1–2, 2008, Ankara.
- TÜBİTAK EKUAL Annual Meeting May 20–22, 2009, Antalya.
- National Publishing of Periodicals in the Health Sciences November 20, 2009, Ankara.

The following topics are matters on which to focus in order to achieve the development of a national medical information network in Turkey:

- Electronic information sources in the field of health,
- Electronic libraries and websites in the field of health,
- Medical and health libraries, information centers, hospital archives,
- Information networks and cooperative work,
- National medicine and health periodicals publishing,
- Editorship and ethics in health publications,
- Use of the Internet and information access systems in the field of health,
- National health information policies,
- Health information systems and information technologies in the EU membership process,
- Medical libraries.

Accelerating the launching and wide-spread use of Turkish Medical Libraries, Libraries of Clinical Medicine, hospital libraries and evidence-based dentistry in Turkey and creating new ideas on an electronic professional platform of discussion are the actions expected from the Medical Working Group of the University and Research Libraries Association (ÜNAK). The areas of priority in this context are the preparation of a manual on "Medical Information in Turkey," setting up standard headings for Turkish journal name abbreviations, and the organization of training sessions and seminars for medical professionals (10).

Conclusion

This group works as a locomotive for medical information and medical libraries in Turkey, its goal being to act as a bridge between health professionals, health science publishers and health educators. The Medical Working Group has thus contributed to the realization of many projects on a national scale. Among these projects, the organization of the "Medical Periodicals Symposium" and the "National Medical Library Meetings" can be mentioned. Influential in the formation of a "Health Editors Group," the initiative also helped to create projects such as "Health Editors Workshops," the Formation and Standards of Turkish Medical Topic Headings," "Turkish Journal Abbreviations," "Creating Discussion Lists at Medical and Health Sciences Libraries." With these achievements, the Medical Working Group can be recognized to have made a difference in the evolution of Medical Information in Turkey.

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