

Science Diplomacy of Iran in Eastern Europe: The Case of Medical Science of the University of Tehran

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Abstract

Foreign policy is implemented in the international environment with special and various tools; one of those tools with a prominent role is diplomacy. However, along with traditional diplomacy, with the emergence of new actors after the Cold War and the entry into the age of communication and technology, diplomacy took new forms. One type of diplomacy that has received more attention in recent years is science diplomacy. So far, scientific diplomacy in the world and especially in Iran has not been fully and sufficiently studied and the interest in this issue is more related to the development in recent years. Additionally, due to its less attractive scientific aspect in the world compared to many other countries, Iran should strengthen its international scientific cooperation networks. So, this article focuses on this issue and the main question is how the Islamic Republic of Iran performed in the application of science diplomacy in the field of medical sciences with Eastern Europe between 1991 and 2018. The hypothesis of this research is: The performance of the Islamic Republic of Iran in various

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dimensions of science diplomacy including memorandums of understanding and agreements, collaboration desks, international meetings and visits, summer schools, international seminars and congresses, visiting professors, and joint articles towards the Eastern European region from 1991 to 2018 has been increasing. The present study is applied research with the experimental scientific method and hypothesis- deductive research strategy and the review of these activities based on the indicators of science diplomacy shows that during the years 1991 to 2018, these activities have increased significantly in most of the proposed indicators.

Keywords: Iran, Eastern Europe, science diplomacy, Tehran University of Medical science

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Introduction

The actions that the government takes as the main player in the anarchic international arena and decisions that it makes should support the advancement of the national interests and the nation based on which the foreign policy of a country is defined and implemented. Foreign policy is implemented in the international environment with special and various tools; one of which with a prominent role is diplomacy. Diplomacy is the art of using negotiations in international relations and includes activities and ways other than the use of force and coercion employed by the government to secure its interests in its relations with other countries (Ruffini, 2015). Diplomacy has taken many forms throughout history. Traditional diplomacy is the oldest type of diplomacy in which the main actors are governments. However, along with traditional diplomacy, with the emergence of new actors after the Cold War and the entry into the age of communication and technology, diplomacy took new forms. One type of diplomacy that has received more attention in recent years is science diplomacy. Today, science diplomacy is a tool in foreign policy to advance a country's diplomatic agenda and an international effort to establish relations with countries with which other forms of diplomacy are no longer possible due to poor political relations (Montville, 1991).

Statement of the Problem

Today, many of the challenges facing the international community are related to science and technology, and no country alone can face them individually, so the globalization of science and the

modernization of diplomatic activities are essential. Addressing these issues and finding solutions to them, in addition to international cooperation, due to their nature requires the knowledge of scientists and researchers. For this reason, there is a need to define a new role for science in international policy makings and diplomacy. The term “scientific diplomacy” has appeared in the new millennium and interest in it has been seen in recent years. So far, scientific diplomacy in the world and especially in Iran has not been fully and sufficiently studied and the interest in this issue is more related to its developments in recent years. Additionally, due to its less attractive scientific aspect in the world compared to many other countries, Iran should strengthen its international scientific cooperation networks. Given the political constraints imposed on Iran in the form of sanctions, scientific diplomacy can influence the development of international cooperation by realizing national scientific capacities. Science can help gain credibility and create a positive image in the international arena. For this reason, in this study, we examined the science diplomacy of the Islamic Republic of Iran and the impact of universities in particular Tehran University of Medical Sciences on it. Academic exchange as an effective factor in science diplomacy is a tool for the promotion of culture and national identity that can also strengthen political and economic relations between governments, especially when other forms of dialogue are blocked (Iranian Diplomacy, 2013). Scientific exchanges provide an opportunity for the two governments to work together and benefit each other in non-sensitive areas.

On the other hand, of the various regions of the world, Eastern Europe can be important to the Islamic Republic of Iran for a number of reasons. According to the UN division in 2019, Eastern Europe includes 10 countries including Bulgaria, Czech Republic, Hungary, Moldova, Poland, Romania, Russian Federation, Belarus, Slovakia, and Ukraine (New World Encyclopedia, 2019). Given that many of these countries are not scientifically far from us, this will allow the possibility of scientific and academic

exchanges. Moreover, these countries are geographically part of Europe which is closer to Iran than other parts of Europe that makes them politically and security-wise important to Iran. Therefore, the need to study science diplomacy of Iran in this region and discovering ways to expand scientific cooperation with them is felt.

Finally, the focus of evaluating science diplomacy in this study is the activities of Tehran University of Medical Sciences in Eastern Europe.

Methodology of the Research

The present study is applied research with the experimental scientific method and hypothesis- deductive research strategy.

In order to conduct this research, first, it was necessary to do a thorough library study to provide an acceptable definition of science diplomacy and its various aspects. Then, based on the available documents, an overview of science diplomacy of the Islamic Republic of Iran is presented. Finally, science diplomacy in the field of medical sciences in the Eastern European region is studied. This is done by referring to the office of international affairs of Tehran University of Medical Sciences and obtaining information about the past and in-progress international activities of different colleges of the university as well as asking questions from some officials.

Conceptual Framework

When we talk about science diplomacy, as it is mentioned, we use a term that has not been used until the present century. But in fact, this phrase consists of two familiar words "science" and "diplomacy". Science is the purposeful organization of knowledge that is testable and can make predictions about the mechanism of the world (Nabavian, 2003). In today's world, the global perspective of science is changing, the weight of research and development in the global economy is increasing, more financial resources are being dedicated to science and the number of

articles published in reputed international journals has also significantly increased. Science production has been dramatically increased in Asia, especially China, compared to America and Europe (Ruffini, 2015). Many of the challenges facing the international community are related to science and technology, such as security or environmental concerns that could affect the future of mankind and which no single country can tackle. Therefore, the need for globalization of science and modernization of diplomatic activities is felt more than ever. Diplomacy, on the other hand, is a tool for foreign policy (Dehghani Firoozabadi, 2014). In international relations, diplomacy is the art of negotiating, building alliances, discussing treaties, and reaching agreements. Due to the developments in the international system, countries use activities and ways other than force and coercion to secure their interests in their relations with other countries and have turned more to dialogue and negotiation in international relations. The promotion of bilateral scientific relations is also clearly stated in the tasks of the diplomatic missions of the countries (United Nations, 1961). We are now looking at the relationship between science and diplomacy from three perspectives:

Diplomacy for Science: In 1985, Gorbachev and Reagan first met on the subject of disarmament. The Soviet Union offered its American counterpart to work together on a topic that Russian scientists had been researching for years: the scientific and technological possibility of nuclear fusion as an energy source (Ruffini, 2015). A few years later, the United States, the European Union, and Japan joined the Soviet Union / Russia to implement the program, creating the International Thermonuclear Experimental Reactor (ITER). Currently, 35 countries are working together to build the largest magnetic fusion device designed to create a carbon-free energy source in the same way that the sun and other stars create energy (ITER, 2019). The creation of the International Thermonuclear Experimental Reactor is a clear example of diplomacy for science and shows how diplomacy

supports science.

Science for Diplomacy: Barack Obama's speech in Cairo addressed another dimension of scientific diplomacy. Obama's speech on June 4, 2009, at the Cairo University Grand Hall, marked a major shift in US policy toward Arab-Muslim community (Habibolahi, Emam Jomezadeh, Masoodnia, 2018). One of the important points of this lecture was the development of scientific and technological cooperation with the Islamic world. When tensions between countries do not allow the use of traditional diplomacy, scientific ties can be used to re-establish relations. In such cases, science is used as a facilitator of diplomacy and is called science for diplomacy. Obama's goal was to emphasize the role of science in correcting the negative image of the United States after the Iraq war in this part of the world while pursuing the goal of national security in the long run.

Science in Diplomacy: In the third view, science in diplomacy is discussed. The way science can make diplomatic decisions. In September 2013, representatives of more than 116 countries and UN climate experts met at the Intergovernmental Panel on Climate Change (IPCC). Officials of different countries, along with scientists, prepared a 30-page report together for policymakers on the current climate situation, the origins of climate change irregularities, and its future outlook, entitled "Climate Change 2013 – The Physical Science Basis" (Alexander et al., 2013). The final report was submitted to politicians, reflecting the role of science in legitimate diplomatic decisions.

Among the three roles portrayed for the relationship between science and politics, the role of science in defending diplomacy (science for diplomacy) is more important than its other roles. The United States has also attached great importance to this function of scientific diplomacy and reflected it well in its foreign policy (Dehshiri, Taheri, 2016). Science can paint a positive image of a country in international arena and can also help increase its credibility. Today, science diplomacy is a tool in foreign policy to advance the diplomatic agenda of a country and an international

effort to establish relations with countries that are no longer possible due to poor political relations. Additionally, its other function is to be at the center of multilateral diplomacy to solve global problems. To wrap it up, the following definition for science diplomacy is presented:

“A country's science diplomacy refers to all actions in which the activities of researchers and diplomats mutually influence each other. These actions should directly serve the interests of the government, whether when diplomats facilitate communication between scientists around the world, or when international scientific communication improves political relations, or when scientists use their skills to help diplomats to become more knowledgeable in international negotiations. These interactions strengthen the country's role in the global arena and ultimately pursue their national and security interests.”

Indicators of Science Diplomacy: Based on research conducted by Mohseni Sohi regarding the effect of science diplomacy on increasing the soft power of the Islamic Republic of Iran, indicators of science diplomacy are as follows:

- Concluding and implementing scientific, educational, and technical contracts and memoranda
 - Attracting foreign students
 - Sending students abroad (scholarship)
 - Attracting foreign faculty members
 - Holding joint international conferences
 - Holding joint international courses and workshops
 - Active membership and participation in international scientific organizations and associations
 - Establishment of joint international universities
 - Sending scientific and cultural ambassadors
 - Sending scientific advisors
 - Joint research projects with international universities
 - Establishment of international scientific research and development centers
 - Establishment of virtual universities and international

distance education/learning

- Benefit from the financial support of international organizations

- Exchange and scientific and research interactions through virtual databases

- Academics' mastery of important foreign languages

- Sending faculty members to teach at other universities abroad as visiting professors

- Granting student facilities for visas, residency, work permits, etc.

- Awarding joint international scientific prizes

Later on, based on the research strategy as well as the indicators presented in this section, the research hypothesis will be evaluated (Mohseni Sohi, 2015).

I- Science, Technology and Diplomacy

Nowadays, science and technology have become international commodities and their production and distribution are of great importance to governments. Currently, the distribution of knowledge and science in different countries is variable, and this has become the main source of power that can be used to control other countries. The use of guided weapons with Global Positioning Systems (GPS), drones, satellites, etc. has led to the emergence of modern armies that are only available to some governments. Such technological developments have affected the security of many countries and have posed new challenges to them. That is why the production of science and technology today has become the priority of political leaders to prevent conflicts and emergence of crises, to maintain national security and the only way out of the threats of other governments. Therefore, many governments are trying to maintain their scientific superiority in various ways and monopolize many sciences and technologies by preventing the progress of other countries, some of these methods include Large investments for advancing in science and technology, maintaining scientific distance and increasing it with

other countries, and thus, secure the market and creating a permanent dependence along with colonization of resources and capital of other less developed countries, imposition of sanctions in various fields to prevent the transfer and access of technology to other countries and ultimately to create military conflicts to keep countries busy, resulting in backwardness of scientific progress and destruction of their infrastructure. (Saedi, 2017).

The Islamic Republic of Iran, in order to avoid scientific isolation and maintain territorial independence, must make scientific and technological progress at the international level. To this end, the Islamic Republic of Iran is required to use new scientific achievements in its diplomatic relations with other countries to create deterrence against foreign threats, both regionally and internationally. Science diplomacy has a prominent place in the foreign policy of the Islamic Republic. Although in its history of the last 150 years, Iran, unfortunately, fell behind the scientific advancement of the world, and when Western countries were rapidly acquiring knowledge, Iran was held back, in the years after the end of the Eight-Year War, especially in the last 20 years, it has been able to make a significant leap in the acquisition of science and technology. Statistics show that in 2013, Iran was able to rank as the fastest scientific growth in the world and hope to establish itself as the most advanced country in terms of science in Western Asia.

This is more pronounced in advanced technologies such as nuclear technology, biotechnology, nanotechnology, and the like, which are technologies with priority, and in all of them, Iran is among the top ten countries in the world (Ministry of Science, Research and Technology, 2019).

II- Scientific Potentials of Iran

Nuclear Technology: Acquiring nuclear technology, aside from providing security, has leveled up Iran's international and regional prestige. However, the main motivation for achieving this energy and uranium enrichment is its peaceful applications in various

industries such as electricity generation, mining, agriculture and food industries, its application in the medical sector and so on. And so, despite the restrictions imposed on Iran by the international community, access to and advancing peaceful nuclear technology has never been removed from Iran's agenda. (Porseman Daneshgahian, 2000).

Aerospace: Aerospace is another area in which the Islamic Republic of Iran has made significant progress. Iran's geographical location in the Middle East, which is under constant turmoil as well as unrest on some borders, has made aerospace development very important. (Arghavani Pirsalami & Pirankhoo, 2017). Therefore, in the comprehensive scientific map of the country, capability in the field of aerospace is one of the goals of the science and technology section (Comprehensive document on the development of the Iran's aerospace, 2012).

Nanotechnology: Advancement in nanotechnology has been on the agenda of the Islamic Republic of Iran since 1989 due to its importance and its role in various sciences. This technology has found its way to all scientific trends and is being developed all over the world. Iran also ranked fourth in the world in 2017 for publishing related articles and producing 40 percent of nanoscience. It has had the largest share of science production among Islamic countries. For exports, Iran has been able to offer its nanotechnology products in international markets. The use of nanotechnology in the health care system, medicine, and pharmacology, as well as defense and ammunition industries, are means of achieving deterrence, neutralizing foreign threats, and increasing Iran's competitiveness in the international system (Saniejlal & Hoseini Moghadam, 2020).

Science Production in Iran: Scientometrics is a field of study that measures and analyzes the scientific literature and is one of the most common methods of evaluating scientific activities. After the introduction of this concept in science, scientific articles were used as the most important indicator to measure and compare the amount of science production of

countries. Accordingly, there are two general indicators for measuring the production of science, one is the number of articles published in international journals and the other is its citations or in other words the effectiveness of the article, each of which is important in measuring scientific data (Mousavi, 2004). Taking to account these indicators and based on the statistical data extracted from the Scimago ranking system, when all fields of study among all countries are considered, the United States with 683003, China with 599386 and the United Kingdom with 211710 documents have obtained the first to third ranks in 2018, respectively. On the same list, Iran is ranked 16th in the world (Scimago journal and country rank, 2019). Iran with 60268 documents, 54915 citations, and also with H-Index of 292 is placed after Brazil and the Netherlands which are countries with high scientific productions. Aside from the Islamic Republic of Iran's place in this ranking, the pace of science production in comparison with other countries should also be considered. In recent years, the trend of science production in Iran is not comparable to many countries.; according to Science Matrix, the growth rate of science production in the Islamic Republic of Iran is 11 times the growth rate of science production in the world, and in some years, such as 2010, this rate has reached to 14 times, which is the fastest growth rate in science in the world (Moradi Moghaddam, 2018:18).

Studying the growth of science production in the Scimago ranking system since 1996 shows the same trend. For example, in 1996, Iran was ranked 53rd in the world in terms of science production, in 2010, Iran leveled up to 21st, and as mentioned, in 2018, it acquired sixteenth place. (Scimago journal and country rank, 2019) The pattern of this progress and its growth rate from 1996 to 2018 is shown in Figure 1.

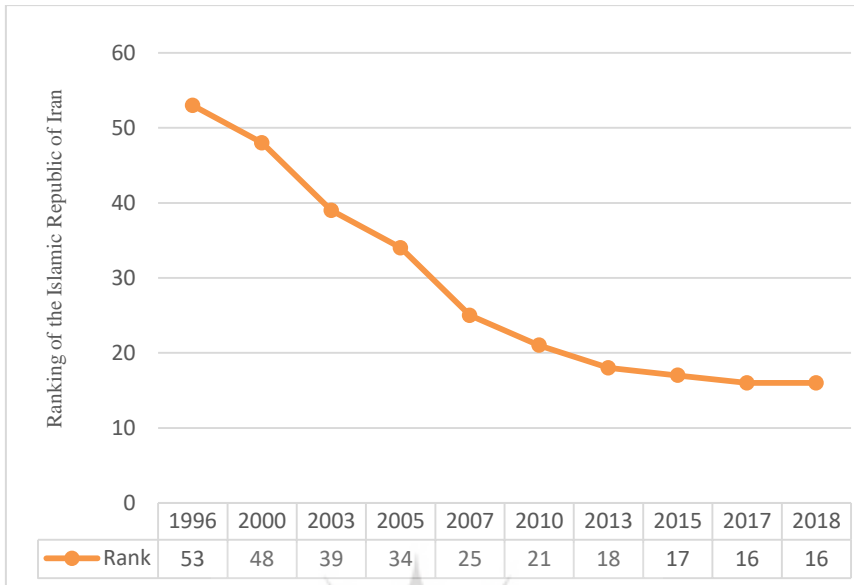


Figure 1. The Rank of the Islamic Republic of Iran in Terms of Science Production Based on the Saimago Ranking System

The decrease in the slope of the ranking of Iran's science production since 2010 compared to earlier years can be attributed to more intense competition among the countries at the top of the ranking list. Iran's ranking in various medical sciences is also noteworthy: for example, according to the same ranking system in 2018, Iran ranked eighth in the field of pharmacy, tenth in the field of dentistry, fifteenth in the field of nursing, and sixteenth in the field of medicine. Additionally, similar evaluations in the Middle East show interesting results. According to the SCR index from 1996 to 2018, in terms of the share of science production, considering all areas, Iran is in the second place in the Middle East with a slight difference with Turkey, which took the first place, and Israel is in the third place. However, in 2018, Iran ranked first in the Middle East in terms of the number of documents considering all areas, as well as in the field of medicine, in particular, followed by Turkey and Saudi Arabia in the second and third place, respectively. Details are as follows:

Table 1. Number and Rank of Iran's Medical Scientific Productions in the Middle East and the World from 1996 to 2018

Variable	Number	Rank in the Middle East	Rank in the World
Document	130198	2	23
Citable documents	121946	2	22
Citation	1049190	3	37
Self-Citation	352730	2	23
H-index	191	3	44

In the following, the scientific interactions between Iran and Eastern Europe will be dealt with; however, it is necessary to first mention the importance of this region to the Islamic Republic of Iran.

III- Geostrategic Importance of Eastern European Countries for Iran

Eastern European countries are geographically part of Europe that is closer to Iran compared to the rest of Europe, so they can be politically and security-wise important to the Islamic Republic of Iran.

This region, since the collapse of the Soviet Union, to some extent has come under the US influence, Moscow's long absence from the international arena has prompted the United States to use NATO as a tool to gain control of much of eastern Europe and move closer to Russia's borders (Haghshenas & Bavir, 2011). The United States also has plans to increase the presence of its troops in the region. This is especially true for Romania, Poland, and the Baltic states. The purpose of such activities is to demonstrate NATO's strength and presence in the region, to strengthen military and technical cooperation between allied countries, and, most importantly, to improve the quality of interaction between US forces and their Western and Eastern European allies. This all has made the region a major source of tension between Russia and the US government.

Given the geographical proximity of this region to Iran,

monitoring the issues of Eastern Europe and the Balkans is of great importance for the foreign policy of the Islamic Republic of Iran in terms of security.

An important part of science diplomacy is based on higher education and academic communications, therefore, in the next session; the scientific interactions between Iran and Eastern Europe are discussed.

IV- Scientific Interactions of Tehran University of Medical Sciences with Universities in Eastern Europe

Tehran University of Medical Sciences (TUMS), due to its mission for internationalization of higher education, started its international academic activities in various fields since 1988 and since then has become a leader among other medical universities in the country. This leadership has made TUMS the center of this research and its collaborations with Universities in Eastern Europe are thoroughly discussed. These collaborations are mostly in the form of international memorandums and agreements, leading houses, international meetings and visits, collaboration desks, international projects, International visiting professors, student leaves, participation in international conferences, admission of international students, summer schools, publishing of joint articles, etc (Office of vice chancellor for global strategies and international affairs, 2018). In this section, we will discuss the activities of Tehran University of Medical Sciences with top-ranking universities of medical sciences and international institutions in Eastern Europe.

Memorandums of Understandings and Contracts: A Memorandum of Understanding is an agreement between the parties that documents their common goals. It is usually less complex and detailed than a contract and is not legally binding. At Tehran University of Medical Sciences, these provisions are usually mentioned in the memoranda: joint educational programs, student exchange, exchange of faculty members, exchange of educational and scientific materials, exchange of information,

special projects, holding educational workshops, and faculty visits. Also, the budget, plans, effective date and end date, and representatives of the partnership are included in the memoranda and finally, it is signed by the parties. Tehran University of Medical Sciences currently has bilateral cooperation agreements with more than 40 universities in Europe, Africa, Asia, Australia, and the United States (Office of vice chancellor for global strategies and international affairs, 2021). The table below includes international universities and institutions in Eastern Europe that are cooperating with Tehran University of Medical Sciences:

Country	University or an International Institute	Schools, hospitals, and research centers of Tehran University of Medical Sciences	Year
Belarus	Belarusian Medical Academy of Post-Graduate Education	Tehran University of Medical Sciences	2009
	Institute of Bio-organic Chemistry of the National Academy of Sciences of Belarus	Endocrinology and Metabolism Research Institute	2009
	Belarusian National Research Center for Pediatric Oncology, Hematology and Immunology	Children's Medical Center and its research centers	2014
	Belarusian State Medical University	School of Medicine	2015
Bulgaria	Medical University of Plovdiv	School of Dentistry	2016
Hungary	Institute of Pathophysiology, Semmelweis University, Faculty of Medicine and Seroscience LTD	Immunology, Asthma, and Allergy Research Center	2012
	Semmelweis University	Tehran University of Medical Sciences	2018
	The Ministry of Foreign Affairs and Trade of Hungary	Tehran University of Medical Sciences	2016

Poland	The children's Memorial Health Institute, Warsaw	Children's Medical Center and its research centers	2012
	Faculty of biology and environmental protection, Nicolaus Copernicus University	School of Public Health	2014
Russia	Faculty of Internal medicine, Daghestan State Medical Academy	School of Medicine	2007
	Saint Petersburg University	Tehran University of Medical Sciences	2019
Slovakia	Comenius University, Faculty of Medicine	Schools of Medicine and Dentistry	2014
Ukraine	Kharkiv National Medical University	Tehran University of Medical Sciences	2016
	Kharkiv National Medical University	Children's Medical Center and USERN (Global Network for Education and Scientific Research)	2016

Collaboration Desks: The international office of Tehran University of Medical Sciences has launched collaboration desks to orient its educational and research activities with credible and reputed international universities and institutes. All the activities of Tehran University of Medical Sciences with foreign universities and educational centers are facilitated with the help of these collaboration desks and ultimately lead to better and more effective communication. For Eastern Europe, TUMS currently has two collaboration desks, one devoted to universities and higher education institutions in Hungary and the other for Universities in Russia and Caucasus. Each of these desks has one person in charge and an advisory board including experts familiar with that specific region. These individuals are faculty members or senior officers of international relations who regularly monitor events and activities related to selected universities in the target areas and discuss them with other members during regular

meetings held for this purpose. Memoranda of Understanding and other scientific activities that have been implemented with universities and institutes of these countries have been facilitated through these collaboration desks (Office of vice chancellor for global strategies and international affairs, 2019).

International Visits: Many of the MOUs have been discussed and concluded after international meetings and visits, and on the other hand, many different visits have been made as a result of the MOUs. In the case of Tehran University of Medical Sciences these visits have been paid to or from some countries in Eastern Europe including Hungary, Slovakia, Belarus, Russia, Poland, and Ukraine. Targeted centers were mostly Semmelweis University of Hungary, Comenius University of Slovakia, Belarusian State Medical University and Belarusian National Research Center for Pediatric Oncology, Hematology and Immunology of Belarus, Saint Petersburg University of Russia, Nicolaus Copernicus University of Poland, and Kharkiv National Medical University of Ukraine. Concluding MOUs, conducting joint projects as well as plans for establishing a branch of TUMS in Hungary and Russia were some of the notable results (Office of vice chancellor for global strategies and international affairs, 2017).

International university trips and visits aside from being an indicator of practicing science diplomacy are one of the effective ways to introduce the scientific potential of the university to the international community in order to start international cooperation. The international visits of Tehran University of Medical Sciences, which often lead to MOUs and subsequent academic activities, can be set and written as a model and used in other institutes.

Summer Schools: Summer schools are a good opportunity to recognize the university's capacity internationally for reasons such as the short duration of the course, easier admissions, and early graduation.

The initial idea of holding summer schools in Tehran

University of Medical Sciences was raised after conducting studies on similar international instances in the international affairs and development department of the International Office of the Vice Chancellor for international affairs. Since then, TUMS has held many summer schools, and some of them have been with Eastern European universities. The most interaction in this regard was between the school of Medicine and Dentistry with the Kharkiv University of Ukraine. For the first time, in July 2016, the School of Medicine, in collaboration with the Departments of Internal Medicine, Pediatrics, General Surgery, Obstetrics, and Urology, held a summer school for one month. The participants were 13 students from Ukraine, the Netherlands, and the United Kingdom. In July of the same year, the summer school of the School of Dentistry was held for the first time, following the visit of the President and Vice-Chancellor for international affairs of Kharkiv University, Ukraine, to schools of dentistry and medicine of TUMS and signing MOU. Participants studied general dentistry at Kharkiv University and during the summer school, they had the opportunity to attend periodontics, endodontics, oral and maxillofacial surgery, orthodontics, oral health, dentures, dental materials, and oral and maxillofacial pathology sections from the School of Dentistry. This cooperation led to a proposal from Ukrainians to hold a similar program at Kharkiv University as well as inviting faculty members to teach. These schools were held for the second and third time in the following years. (Office of vice chancellor for global strategies and international affairs, 2017).

International Congresses and Seminars: Holding international seminars and conferences is another activity of Tehran University of Medical Sciences in order to achieve the mission of internationalization of the university by demonstrating the capabilities and scientific progress of the country and also to use the capabilities of researchers and scientists of other countries. TUMS has held many different seminars including a conference on "Internationalization of Higher Education" with the main topic

of university exchanges. Out of 17 speakers of this conference three were from Bulgaria, Czech Republic, and Ukraine (Office of vice chancellor for global strategies and international affairs, 2017).

Holding the USERN Congress is another activity of Tehran University of Medical Sciences. USERN which is a global network of scientific education and research is aimed at implementing international, interdisciplinary science projects and creating a platform for better communication between young researchers and experienced scientists around the world. More than 60 scientific centers in Iran and around the world support the USERN Award which more than ten of them are from Hungary, Belarus, Ukraine, and Slovenia (Universal Scientific Education and Research Network-USERN, 2020). This congress has so far been held in Iran, Ukraine, Italy, and Hungary.

Visiting Professors: Collaboration with international visiting professors is one of the programs that the office of Vice Chancellor for International Affairs of TUMS has been pursuing since 2014. So far, it has led to the development of programs such as conducting joint research projects, publishing joint papers, conducting two supervisors' joint programs, and so on. Visiting professors of TUMS are from different countries and universities of the world, including Germany, Spain, England, America, etc., of which 3 professors from Eastern European universities cooperate with Tehran University of Medical Sciences. Two of these professors are from the University of Ljubljana from Slovenia and the other one is from the Medical University of Lublin from Poland (Office of vice chancellor for global strategies and international affairs, 2020).

Joint Publishing of International Articles: Among the international scientific achievements in building relationships, the joint publication of international articles is of paramount importance, . It shows the scientific cooperation of Iranian and foreign scientists as well as the capacities and capabilities of national researchers. The following is the number of international

articles of Tehran University of Medical Sciences with the cooperation of professors and researchers of Eastern European universities by 2019:

Table 2. Number of Published Articles of Tehran University of Medical Sciences in Collaboration with Researchers from Eastern European Universities from 1999 to 2019

Country	Co-Author Affiliations
Bulgaria	50
Czech Republic	62
Hungary	62
Poland	214
Russian Federation	189
Belarus	12
Slovakia	77
Ukraine	66
Romania	92
Moldavia	6

The data represented in the above table which is extracted from the scientometric database of Tehran University of Medical Sciences, (Scientometrics system of medical universities, 2019) shows that by 2019, 830 articles with affiliation of foreign faculty members from Eastern European universities have been published in credible foreign and national journals (indexed in the Scopus database) by Tehran University of Medical Sciences. This number is a significant number and indicates close scientific cooperation of TUMS with the scientific centers of this part of Europe.

Conclusion

Science diplomacy is a term that includes both aspects of the role of science in scientific cooperation as well as international cooperation. The study of scientific activities in international cooperation falls under the category of science for diplomacy. In such circumstances, science is used as a facilitator of diplomacy

by tying the interests of the two countries together. The present study shows that various scientific activities of Tehran University of Medical Sciences in different directions have created a suitable platform for securing the interests of Iran and the countries with which it interacts scientifically. These activities have established relations between Iran and some of Eastern European countries through scientific activities in a bottom-up manner, which given the conditions prevailing in the world today and the heavy sanctions against the Islamic Republic of Iran, was not possible in any other way. To evaluate the hypothesis based on hypothesis-deductive research strategy in previous section the activities of Tehran University of Medical Sciences with Eastern European universities were reviewed. The review of these activities based on the indicators of science diplomacy shows that during the years 1991 to 2018, these activities have increased significantly in most of the proposed indicators. These activities include but not limited to: concluding and implementing MOUs and agreements, attracting foreign students (in short-term courses and summer schools), having foreign faculty members as visiting professors, holding joint international conferences, active membership and participation in international scientific organizations and associations, initial activities to establish an international university branch in some Eastern European countries, joint research projects with international universities, granting student visa and residence, etc. Due to the increasing activities of TUMS in mentioned cases, the research hypothesis is confirmed.

However, it seems that despite the proper foundation that has been made, there is still a lot of potential that has not been yet realized. Many activities are still in their infancy, and achieving them could mark the beginning of a new chapter in Iran's relations with this region of Europe. Such as the opening of a branch of Tehran University of Medical Sciences which some of the initial talks have been done so far, or cooperation in various hospital departments that would serve the interests of the country. The field of patient recruitment is one of the less addressed issues that

is suggested to be considered among the priorities of the university agenda due to the high potential and specialization of the medical staff. Considering all the activities carried out in recent years, especially from 2010 onwards, it is clear that in this short period of time, the scientific activities of Tehran University of Medical Sciences have led to effective steps in the interaction between the Islamic Republic of Iran and Eastern European countries in medical sciences. If these activities continue, many steps can be taken on the already provided platform for international cooperation.



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