

The History and Evolution of the Integration of Medical Education into the Field of Healthcare Services (Healthcare Network) of the Islamic Republic of Iran

Seyed Alireza Marandi*

Professor of Pediatrics (Neonatology), The Academy of Medical Sciences of I.R of Iran, Tehran, Iran

Received: 2024 August 30

Revised: 2024 September 30

Accepted: 2024 October 19

Published online: 2024 December 07

***Corresponding author:**

President of the Iranian Academy of Medical Sciences, Tehran, Iran.

Email: alirezamarandi_md@yahoo.com

Citation:

Marandi SA. The History and Evolution of the Integration of Medical Education into the Field of Healthcare Services (Healthcare Network) of the Islamic Republic of Iran. Strides Dev Med Educ. 2024 December; 21(Suppl): 51-56. doi:10.22062/sdme.2024.200453.1458

Abstract

Background: In Iran, the shortage of medical workforce in the population has caused the health of people to be exposed to many risks in different parts of the country, especially in deprived areas. Therefore, in 1983, the plan for "Integrating Education and Research in Health Care and Services" was presented by the Supreme Council of the Cultural Revolution and approved in 1985 after some amendments.

Objectives: This article reviews the history and evolution of the "Integration of Education and Research in Health Care and Services" project.

Methods: The library study method (reviewing reliable sources in domestic and international publications, using the study keywords), recording the author's personal experiences, and content analysis were used.

Results: All quantitative indicators (such as the number of educational centers and student admission capacities) qualitative indicators (such as the level of accountability and social commitment of academics and the health culture of the community) and general health indicators in the country were improved.

Conclusion: Integrating education and research in health care and services is a revolutionary and beneficial achievement in the country and an inspiring experience for all health systems in the world. If generalized and deepened, it can become the most prominent contemporary healthcare experience in the world.

Keywords: Integration; Medical Education; Higher Health Education; Social Accountability; Islamic Republic of Iran; Health; Health Care Network; Health System

Background

With the increase in population and changes in its pattern, the World Health Organization (WHO) has emphasized the transformation and change of the medical education program (1). The initial idea of integrating medical schools and the health system was formed in developing countries, and the first successful experiences in this regard were reported in countries such as Egypt, Sudan and several African countries (2). In Iran, the shortage of medical workforce in the population has caused the health of people to be exposed to many risks in different parts of the country, especially in deprived areas. Increasing the admission and training of medical workforce was beyond the responsibility of the Ministry of Higher Education due to the lack of necessary facilities and educational conditions. The

above reasons led experts to consider the only solution to be "integrating education and research into health care and services" and the formation of a new ministry that would be responsible for both systems. Therefore, in 1983, the plan for "Integrating Education and Research in Health Care and Services" was presented by the Supreme Council of the Cultural Revolution and approved in 1985 after some amendments (3).

The role of health in the development and progress of societies is more important than ever, and one of the most important criteria for assessing the level of development of countries is their health status (4). In our country, special attention has always been paid to health in the country's macro policies and programs (5). The "integration plan" is not limited to the country's borders and has also attracted the attention of reputable and important medical education associations around

the world. In some countries in the region, such as Saudi Arabia, following the example of Iran, colleges affiliated with the Ministry of Health were formed (6, 7).

Unfortunately, due to insufficient familiarity and limited awareness of the merits and benefits of this merger, including the country's self-sufficiency in health workforce, improving the quality and community-oriented nature of medical education, accountability and justice in health, and improving health indicators in the country, voices of opposition are occasionally heard, for unrelated and sometimes false reasons. Of course, it is a matter of joy that the Supreme Leader has reminded the authorities of the importance of maintaining this "integration plan" over the past few decades and has emphasized and strengthened this important issue by including this important matter in Section 8 of the General Health Policies (8).

Medical Education after the Revolution to the Formation of the Ministry of Health and Medical Education

"After the Islamic Revolution of Iran in 1978, two major changes occurred in the country's health system: one was the formation of the Ministry of Health and Medical Education and the other was the establishment of the country's health care network. The Ministry of Health and Medical Education is responsible for all aspects of policy-making, planning, leadership, supervision, monitoring, and evaluation of health services, and at the same time, it is responsible for training and educating the health workforce in a community system that provides health services, and this constitutes the country's health structure" (9).

The Cultural Revolution Headquarters, which was established by order of Imam Khomeini in 1970, was responsible for reviewing and compiling university programs (9). "In the medical branch of the headquarters, which is responsible for Dr. Azizi, several university professors such as Dr. Seyed Alireza Marandi, Dr. Mohammad Razia Kalantar-Motamedi, Dr. Hedayat A... Eliasi and health experts such as Dr. Pilehvari, Dr. Shadpour and Dr. Vakil, as well as representatives of medical students such as Dr. Marzieh Dastjerdi and Dr. Hossein Ali Jelve Moghadam, Dr. Abolhasani and student Shahid Tavakoli were present. The medical branch of the Cultural Revolution Headquarters called for the opinions of all professors and experts and received more than 200 articles ranging from one page to detailed comments, and all of them were reviewed in the meetings of the medical branch and in the presence

of invited professors and experts, and ... where possible, in the presence of the author of the plan (9).

A review of the medical branch of the headquarters was carried out during the years 1359 to 1361, and in the academic year 1363 to 1364, two important measures were taken:

1. Increasing the admission of medical students through the Dean of the Faculty of Medicine of Shahid Beheshti University (Dr. Azizi), so that for the first time 637 students were admitted for the first year. This was the beginning for increasing the number of students in other faculties of the medical department and adapting the education situation to a larger number of students.

2. The bill to establish the "Ministry of Health, Treatment, and Medical Education" was submitted to the Islamic Consultative Assembly once again through the government delegation with the agreement of the two Ministers of Health and Higher Education, Dr. Seyed Alireza Marandi and Dr. Iraj Fazel, and was approved by an overwhelming majority after months of discussion and exchange of opinions. In approving this bill, a large part of the country's planning and responsible medical force and the medical representatives of the Islamic Consultative Assembly made great efforts.

Finally, in 1364, the set of faculties and higher education institutions of the medical department and The Ministry of Health established a new organization called the Ministry of Health, Treatment and Medical Education. From the beginning of the establishment of this ministry, the goals were designed in such a way that each province would have a medical university that would be responsible for all educational, research, health, and medical affairs of the relevant province, and as a result of the combination of science, knowledge, and dynamism of universities with the experience and follow-up of the health and medical system, the country's medical system would create a coherent system in all related matters (from the village to the provincial center) (10). Table 1 shows the historical course of higher medical education in the last 1.5 centuries (9).

The establishment of this ministry was able to improve the country's medical situation in terms of quantity and quality (9). This was done in various stages:

1. Faculties and universities of medical sciences were established in 1986 and it was decided that eventually, a university of medical sciences would be established in each province, whose director would be responsible for all matters related to health, treatment, education, and medical research, and that services would gradually be

integrated into it. Universities would become more active in health and medical affairs, and the hospital and outpatient facilities of the former Ministry of Health would be used to train the medical team. At this stage, the management of regional health and treatment organizations in Tehran and the provinces of the country was not integrated into the management of universities and practically operated separately. Although the managing director of the regional organization was like the president of the university, the use of human resources and facilities of each system, as well as the participation of each system in policy-making, planning, implementation and evaluation of the other system, was limited (9).

2. The complete integration of the universities of medical sciences and regional health and treatment organizations in Tehran and the provinces was carried out in 1993. In this way, the vice president of health of the University of Medical Sciences was responsible for all health affairs of the province, and the vice presidents of support, education, student affairs, and research of the universities were able to carry out significant activities in their respective affairs throughout the province, using all human resources, technical facilities, and welfare to advance the set goals (9).

Table 1. Historical history of higher medical education in the last 150 years: from the establishment of Dar al-Fonun to the formation of the Ministry of Health, Treatment and Medical Education (1228 to 1364 AH)

Row	Institution or ministry	Year of establishment
1	Dar Al-Fonun	1849
2	Ministry of Science	1853
3	Ministry of Education, Endowments and Specialized Industries	1909
4	Ministry of Culture	1940
5	Ministry of Education	1964
6	Ministry of Science and Higher Education	1967
7	Ministry of Culture and Higher Education	1978
8	Ministry of Health, Treatment and Medical Education	1985

In this way, education and research in the country's health and treatment networks took on a new form, and the relationship between the universities and the network in all aspects of service, treatment, education, and research became stronger. The "integration plan" led to the formation of the Ministry of Health,

Treatment, and Medical Education and the establishment of universities of medical sciences and health and treatment services in all provinces of the country. It is undoubtedly one of the most important achievements of the sacred system of the Islamic Republic of Iran (11).

Some areas of the integration plan:

The system of providing health care and services

Before the Islamic Revolution, there was no coherent system for providing health care and services to society. In the field of providing inpatient medical services, there were a few acceptable hospitals in Tehran and some large cities.

Addressing the issues of prevention, hygiene, health promotion, addressing social factors affecting health, and most importantly, justice in health, did not exist, and after the revolution, it was fully implemented through the expansion and modernization of the country's healthcare network.

Shortage of doctors

One of the influential factors was the shortage of doctors, which caused this need to be met by employing non-Iranian doctors with low qualifications. The shortage of specialized human resources in the country had caused patients to be sent to other countries to receive some medical services. Before the 1970s, we sent 11,000 patients abroad annually, and each cost an average of \$10,000, but currently, we have more than 95,000 general practitioners, more than 49,000 specialist physicians, and more than 8,000 fellowship and subspecialist physicians in the country.

Inadequate health and prevention

The provision of health care and health promotion services was not noticeable, and preventive measures were very minimal. The situation of women in society before the revolution was much worse than that of men. Due to the lack of heartfelt belief in health and prevention, the limited funds in this area were spent on building hospitals and purchasing equipment requested by the owners of the trust votes.

The change in Western attitudes from super specialization and intensive care to primary healthcare

Perhaps if doctors and officials had not graduated from medical schools under the supervision of the Ministry of Science, they would have been more familiar with the real health needs of society with a more comprehensive view. As a result, they would have been aware of the consequences of expanding to all aspects of health and also addressing social factors affecting health,

preventing non-communicable diseases, and most importantly, justice in health (12).

Outline of developments from the establishment of the ministry to the beginning of the Seventh National Development Plan

University Development Council (1985)

Establishment of the country's healthcare network (1985)

Growth and expansion of educational discipline (increase in medical schools and human resource training, increase in hospitals and educational beds, establishment of educational fields in healthcare networks) (from 1985 to the present) Improving the country's health indicators (increasing life expectancy, reducing mortality, developing health care, increasing access, preventing and controlling non-communicable diseases) (from 1985 to the present)

Increasing the number and diversity of educational fields in proportion to the society and improving the quantity and quality of medical education (specialized and subspecialized courses, master's and PhD courses, increasing the number of students in medical fields, increasing the number of university ranks, improving the professor-student ratio, increasing the number of universities and medical schools, eliminating the need to send patients abroad, increasing the production of drugs and biological materials in the country, increasing research centers and expanding applied research, creating a network of medical education development centers) (from 1985 to the present)

Major planning and policymaking to provide, maintain, and promote equitable and accountable health with special emphasis on the dimension of Islamic spiritual health (from 1985 to the present) (to date)

Self-sufficiency in manufacturing various vaccines (from 1985 to date)

Establishment of medical schools and universities (1986)

Law on promoting breastfeeding and supporting mothers during breastfeeding (1993)

Complete integration of medical universities and regional health and treatment organizations in Tehran and the provinces (1993)

Approval of the National Universal Health Insurance Law (1994)

Razi Research Festival (30 editions have been held since 1995 to 2024)

Establishment of the Supreme Health Council of the country (1983)

Food Safety and Health Council of Iran University of Medical Sciences and Health Services (1986)

Shahid Motahari Educational Festival (1988, 17th edition held since 2008)

Family doctor and referral system in urban areas (1992)

Establishment of the Epidemiology Research Center for Non-Communicable Diseases (2012)

Establishment of the Iranian-Islamic Traditional Medicine Office at the Ministry of Health, Treatment and Medical Education (2013)

Launching the National Population Cancer Registry Program (2014)

Establishment of the Research Center for Fetal Developmental Disorders (2015)

National Center for Strategic Research in Medical Education (2016)

Development and approval of the National Document on Comprehensive Development and Growth in Early Childhood (2016)

Approval of the Health Culture Promotion Program (Approved at the 707th Session of the General Culture Council on 9/5/1397)

The First Health Science and Technology Park in Isfahan (2018)

Iran's National Document on Rare Diseases (2019)

Achieving the first rank in drug production in the region (2019)

Fourth rank in recombinant drug production in Asia (2019)

Management and containment of the COVID-19 crisis and vaccine production (2019-2020)

Implementation of the Daroyar Plan (1401)

Implementation of nursing tariff (1401)

Improvement of indicators

The total preventive and health measures resulted in the mortality of children under 5 years of age decreasing from 135 cases per thousand live births to 16 cases in 2019, while severe and even moderate malnutrition cases practically disappeared, and mild cases also showed a significant decrease. To reduce mortality and improve the health of pregnant mothers, measures such as their monthly care and timely administration of dual tetanus and diphtheria vaccines by health experts, as well as extensive training of local midwives, especially in observing hygiene principles, were taken, which resulted in the maternal mortality rate decreasing from 255 per 100,000 live births at that time to 25 per 100,000 live births in 2019. At the same time, infant mortality also decreased from 90 per thousand live births in villages and 104 per thousand live births in cities to 13 per

thousand live births. As a result of all these measures, the life expectancy of women, which was 55 years at the beginning of the Islamic Revolution, increased to 79 years in 2019, and the life expectancy of men increased from 56 years to 76 years in 2019 (12).

Discussion

The integration of health and education has led to a move towards community-centered medical sciences, which was born of the Islamic Revolution and has improved health indicators in the country (13). The main goal of integrating medical education into the health system was to provide a comprehensive approach and better education for more and more applicants for medical sciences and to create diversity and balance between the ranks of service providers (14). The main message of integrating medical education into the health system has been to be responsive to the needs of society and to train the quantitative and qualitative human resources (15). The experience of the Islamic Republic of Iran shows that the “integration plan” has not only made the country self-sufficient in terms of health and human resources, but also is the most appropriate, sustainable, and economical means of achieving community health in society (16).

With the “integration plan,” the growth of education and research expanded throughout the country, especially in deprived areas, and great strides were made towards educational justice. The history of higher medical education in Iran, from Dar al-Fonun to the establishment of the Ministry of Health and Medical Education, lasted 136 years (9). During this period, medical education has undergone enormous quantitative and qualitative changes. Indicators of responsiveness to the needs and expectations of society show remarkable progress in the field of health in the past forty years (17). Although no one can claim that integration is the only solution or that it can solve all the country’s health problems alone, it is certainly the most economical and realistic solution available. Of course, effective monitoring and evaluation must be an integral and continuous part of the system (18).

Conclusion

Integrating education and research in health care and services is a revolutionary and beneficial achievement in the country and an inspiring experience for all health systems in the world. If generalized and deepened, it can become the most prominent contemporary healthcare experience in the world.

Supplementary Material(s): is available here [To read supplementary materials, please refer to the journal website and open [PDF/HTML](#)].

Acknowledgements: None.

Conflict of interests: There is no conflict of interest.

Ethical approval: None.

Funding/Support: None.

References

1. Board of Directors of Iranian Association of Medical Education. The Study of the status of integration of medical education with system services in Iran and World. IN: Scientific association of medical education, Analysis of scientific documentation and administrative integration of medical education and care system. 1st ed. Tehran: Third millennium culture 2003; 157-63. [In Persian]
2. Board of Directors of Iranian Association of Medical Education. Organizing relationship of medicine with health organization. The relationship of medicine and health systems. IN: Scientific association of medical education. Analysis of scientific documentation and administrative integration of medical education and care system. 1st ed. Tehran: 3rd millennium culture; 2003: 152-3. [In Persian]
3. Board of Directors of Iranian Association of Medical Education. Scientific association of medical education. Fields of integration in the international community and the integration history in Iran, Analysis of scientific documentation and administrative integration of medical education and care system. 1st ed. Tehran: Third millennium culture 2003; 1-6. [In Persian]
4. Raqib A. Approaches and basic considerations of the issue of health and treatment in the Islamic Republic of Iran, Ishraq Institute of Science and Politics. [cited 2022 Jan 22]. Available from: URL: <https://iranthinktanks.com/basic-approaches-and-considerations-of-health-issues-in-the-islamic-republic-of-iran/> [In Persian]
5. Karagozlu M. Integration of sustainable development education in national education policies. Political & Economic Ettelaat. 2005; 209: 114-9. [In Persian]
6. Marandi A, Azizi F, Larijani B, Jamshidi H. Health in the Islamic Republic of Iran. Tehran, Iran: UNICEF and WHO; 1998.
7. Mirmoqtadai Z, Rokh Afrooz D, Salarianzadeh MH. An overview of the challenges of integrating medical education with the service delivery system in Iran from the perspective of human capital. Health Management (Health System). 2015; 2(6): 7-15. [In Persian]
8. Marandi A. The Health Landscape of the Islamic Republic of Iran. Medical Journal of Islamic World Academy of Sciences. 2016; 24(2): 56-64. doi: [10.5505/ias.2016.59320](https://doi.org/10.5505/ias.2016.59320).
9. Azizi F, Marandi SA. Achievements In health and medical education now 40 years after the Islamic Revolution: Strategies for integrating medical education into the health system. Iran J Cult Health Promot. 2018; 2(4): 449-461. [In Persian]
10. Marandi A. The integration of medical education and health care system in the Islamic Republic of Iran: A historical overview. Journal of Medical Education. 2001; 1(1): 8-10.
11. Azizi F. Challenges and perspectives of medical education in Iran. Research in Medicine. 2015; 39 (1): 1-3. [In Persian]

12. Marandi A. Integrating medical education and health services: The Iranian experience. *Med Educ.* 1996 Jan; 30(1): 4-8. doi: [10.1111/j.1365-2923.1996.tb00709.x](https://doi.org/10.1111/j.1365-2923.1996.tb00709.x). [PMID: 8736181]
13. World Health Organization. Integration of medical education and health services: the experience of the Islamic Republic of Iran. Iran: Regional Office for the Eastern Mediterranean; 2006.
14. Karimi A. Criticism of the subject: integration of medical science education with the Ministry of Science, Research and Technology. *Medicine and Spiritual Cultivation.* 2002; 11(1): 110-9. [In Persian]
15. Azizi F. Medical Education in the Islamic Republic of Iran: Three Decades of Success. *Iran J Public Health.* 2009; 38(Suppl 1):19-26.
16. Daryazadeh S, Yamani N, Molabashi R, Adibi P. A Review on Narrative Medicine: An Innovative Approach in Medical Education. *Iran J Med Educ.* 2019; 19: 316-24. [In Persian]
17. Gilavand A, Mehralizadeh Y, Hosseinpour M, Torabipour A. A Review on Pathology of the Integration of Medical Education System with Health Services at Iran's Ministry of Health and Medical Education. *Future of Medical Education Journal.* 2018; 8(3): 47-56. doi: [10.22038/fmej.2018.33896.1218](https://doi.org/10.22038/fmej.2018.33896.1218).
18. Statement of the General Assembly of the Academy of Medical Sciences of the Islamic Republic of Iran. Important Achievement of Health System after Islamic Revolution in Iran. *Iran J Cult Health Promot* 2023; 6(4): 583-6.