Orginal Article

Analysis of the Policy of Integrating Medical Education into the Service Delivery System from the Perspective of External Stakeholders

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Abstract

Background: Following the shortage of medical staff and lack of facilities, the integration policy was implemented in 1984 in Iran, and the Ministry of Health, Treatment, and Medical Education was formed. This policy, like any other policy, has many strengths and weaknesses in the medical and non-medical fields. However, despite the significance, scope, and depth of this policy, a limited number of studies have addressed the policy, and most of the studies in this field have investigated and reported the consequences of the implementation of the integration policy and the extent to which its goals have been realized in Iran. Thus, to fill this research gap, the present study aimed to analyze the perspective of external stakeholders, mainly officials and non-medical faculty members, about the policy of integrating medical education into the service delivery system.

Methods: In this qualitative study, 9 experts from non-medical universities were interviewed. Overall, after interviewing 6 faculty members, the collected data reached the saturation point and no new information was obtained. However, three more interviews were conducted to ensure the credibility of the data. The data were collected through semi-structured interviews via two group video conference sessions and several individual sessions using telephone calls. Each group interview lasted 120 to 150 minutes and each interview lasted 20 to 30 minutes. The interviews were recorded and transcribed word by word for analysis.

Results: The analysis of the collected data revealed four subcategories including (1) fragmentation of higher education, (2) wastage of resources, (3) ineffective execution of national higher education policies in the healthcare sector, and (4) disruption of the convergence of sciences. Each subcategory consisted of several primary codes.

Conclusion: The findings highlighted the need to analyze external stakeholders' attitudes toward the policy of integrating medical education and explore its advantages and disadvantages at a macro level. The data also revealed significant damages made to science and technology and the need for a well-defined roadmap to preserve policy achievements and minimize the significant damages incurred due to the disintegration of medical education from other disciplines.

Keywords: Integration of medical education, Service delivery system, External stakeholders

Introduction

After the victory of the Islamic Revolution of Iran and the outbreak of the imposed war, the Iranian healthcare system faced problems such as a severe shortage of human resources and the quantitative and qualitative heterogeneity of the programs of medical faculties (1). Moreover, an increase in the admission and training of medical staff was beyond the capacity of the Ministry of Higher Education due to the lack of facilities and educational requirements. Therefore, relevant authorities believed that the only solution to these problems was the integration of medical education with healthcare services and the formation of a new ministry in charge of both systems (2). Thus, after the execution of the integration policy in 1984, the "Ministry of Health, Treatment, and Medical Education" was formed to improve the quality and quantity of the healthcare workforce. Accordingly, this integration was the biggest policy of the Ministry of

Health in the healthcare sector after the revolution, which was implemented through two phases in 1985 and 1993, respectively. After the implementation of this policy, medical education and research were separated from the Ministry of Science and transferred to the newly formed Ministry of Health and Medical Education. It is also worth mentioning that the integration policy plan has not been implemented globally, but some countries in the region, such as Saudi Arabia, followed the same policy to provide healthcare services (3).

Nevertheless, the integration policy, like any other policy, has its strengths and weaknesses. One of the strengths of the integration policy in the field of medicine is the development of a specialized workforce that has occurred following an increase in the capacity of universities. Moreover, the integration has been effective in making faculty members adopt a more holistic perspective and creating an interactive environment between researchers and decision-makers. The creation of a university in remote areas and the recruitment of faculty members motivated specialists to be recruited and employed in these areas (4). Another strength of this policy in non-medical domains is that integration has been effective in improving the utilization of knowledge. Besides, entrusting a single authority in charge of healthcare services made medical universities help the executive branch in using the generated knowledge. Moreover, the integration policy led to the further use of specialized staff (4).

Despite the benefits from the execution of the integration policy, it is still facing some problems and challenges. Accordingly, full integration has not yet happened at all education, healthcare, and management levels. Furthermore, even though the deputy levels in the two education and service provision sections are integrated, the environmental divisions still operate separately and many processes in these areas are formulated and implemented without regard to each other (5-7).

Despite the significance, scope, and depth of the integration policy, a limited number of studies have addressed this policy, and most of the studies in this field have investigated and reported the consequences of the implementation of the policy and the extent to which its goals have been realized in Iran. As an example, two important reports have addressed the policy. The first report, released in 1997, examined the impact of the dissolution of regional organizations and the merger of their duties into universities of medical sciences over a period of four years (8). Another report was published in 2005 by a panel of experts commissioned by the World Health Organization (9). A study conducted in 2018 combined the findings from the studies that addressed the consequences of the integration policy and presented a description of the existing knowledge in this field. This systemic review study analyzed 24 studies (15 studies published in English and 9 studies published in Persian) on the integration policy (10). After the analysis of the existing situation, a detailed review of the published documents and articles can specify the degree to which the goals of the integration policy have been realized. Such data can quickly provide an accurate picture of the status quo. Although some studies have addressed the effects of the integration policy, no study has yet examined the policy and its outcomes from the perspective of external stakeholders. To this end, the present study sought to analyze the attitudes of external stakeholders including relevant authorities in the field and non-medical faculty members.

Methods

This qualitative study was conducted in 2023. Following the objectives of the study, the participants were selected from non-medical faculty members and external stakeholders with different disciplines and specialties in the Ministry of Science. In this way, experts were selected from 9 non-medical sciences universities. Overall, after interviewing 6 faculty members, the collected data reached the saturation point and no new information was obtained. However, three more interviews were conducted to ensure the credibility of the data. The data were collected through semi-structured interviews via two group video conference sessions and several individual sessions using telephone calls. Before conducting the interviews, the files and fact sheets related to the integration of medical education were provided to the participants. Moreover, they received some brief instructions about the previous studies in this field and their findings. Each interview began with a general question: "As a citizen, do you think the integration policy has been effective in improving the welfare of the Iranian community?" Other questions asked in the interviews were: "As an external stakeholder, how effective did you find the integration policy?", "If you had full authority, how would you formulate the policy?" "Do you have any recommendations?" Each group interview lasted 120 to 150 minutes and each individual interview lasted 20 to 30 minutes. The interviews were recorded and transcribed word by word for analysis.

The collected data were analyzed using Graneheim and Lundman's qualitative content analysis approach (11). To do so, the full text of the interviews was transcribed word by word and read several times by the researcher and other members of the research team. Afterward, the meaning units including significant statements and phrases were condensed and coded based on their original meaning. The extracted codes were evaluated and their similarities and differences were identified. Then, similar codes were merged or placed into a single subcategory. Finally, the subcategories and their underlying themes were identified.

The criteria proposed by Guba and Lincoln were used to

ensure the trustworthiness of the data (12). Accordingly, the credibility of the data was ensured through the researchers' prolonged engagement with the data and allocating sufficient time to collect and analyze the data. Moreover, a comprehensive description of the participants was presented and the participants were selected with maximum variation to enhance the transferability of the findings. In addition, to ensure the dependability of the findings, several experts in qualitative research reviewed the data collection and analysis procedure and confirmed the extracted subcategories and themes. Finally, to improve the confirmability of the findings, the interview transcripts were reviewed and confirmed by several participants.

Results

The data in this study were collected through interviews with 9 faculty members at non-medical universities affiliated with the Ministry of Science, Research, and Technology. Four participants held top management positions in the country's higher education system in the past. For instance, one interviewee was the former vice president for education of the Ministry of Science, Research, and Technology, who specialized in integration, and other participants also had high managerial positions. Moreover, the attitudes of at least 10 subject-matter experts from the Ministry of Science were reviewed by studying the text of their statements or lectures on integration. Finally, the analysis of the collected data revealed four problems with the integration policy including (a) fragmentation of higher education, (b) wastage of resources, (c) ineffective execution of national higher education policies in the healthcare sector, and (d) disruption of the convergence of sciences (Table 1):

a. Fragmentation of higher education

Although the integration policy had some constructive aspects, it also had some destructive effects, which are considered unwanted consequences. Overall, higher education is a unified system and should not be split into several separate parts. Moreover, higher education policies and programs should not be fragmented:

"*In fact, institutional separability means integration and totality. The problem that occurred when implementing the integration policy was that the policy was considered to mean the policy of separation, not in the sense of institutional separability*".

"*Some silly arguments to discuss if this part belongs to the Ministry of Health or the Ministry of Science have gradually widened the gap between the two ministries*".

b. Wastage of resources

In general, there is currently a change in the demographic composition of applicants for different fields in the country, right or wrong. Technical and humanities faculties have expanded a lot, but the number of students applying for them has dropped drastically, and many of these spaces and facilities remain unused, while there is a severe limitation of resources in the Ministry of Health. Accordingly, the cooperation of the two ministries can be effective.

Moreover, many students from the Ministry of Science are willing to continue their education in the Ministry of Health due to the better job opportunities in medical sciences. Thus, many seats remain empty in the universities affiliated with the Ministry of Science, leading to the wastage of resources:

"*There has been an increase in the number of offices and administrative and bureaucratic procedures without really changing the service delivery process*".

"*In Ardabil, the University of Medical Sciences and Moghadas Ardabili University are located next to each other, but they don't know each other and each one is looking for their canteens, sports ground, and independent dormitory, which leads to the wastage of expenses*".

c. Ineffective execution of national higher education policies in the healthcare sector

The higher health education system in Iran has a unique structure due to its integration into the service delivery system, which has faced challenges in previous years (13). In addition to these challenges, the rapid scientific developments, the speed of changes in the health system and the community needs, the change in the country's demographic structure, and the emergence of new and advanced technologies have made the challenges faced by medical education more complicated (14). In other words, general policies in higher education are not executed consistently. Moreover, medical education management has differences from the presentation model of other disciplines, which leads to problems in the scientific roles produced in the country. Another problem is the difference in the payments made to the staff working at the Ministry of Science and the Ministry of Health and Medical Education, which can create other challenges.

"*One of the problems we had was increasing payments. The employees in the Ministry of Science received much lower payments than those working in the Ministry of Health*".

"*After the execution of the integration policy, the system becomes larger and more complex, some organizational positions are omitted, and some staff lose their organizational positions and face a conflict of interest to maintain their positions*".

"*As a member of the Ministry of Science, when I see that the officials at the Ministry of Health value their faculty members and increase their salaries and payments, I also try to do things in the Ministry of Science to serve the interest of the staff working in the ministry*".

Table 1. The weaknesses of the policy of integrating medical education into the healthcare system

Themes	Subcategories
Implementation of disintegration policy instead of separation policy Full organizational independence of the two ministries without creating effective and efficient communication bridges Relative inefficiency in monitoring the policymaking and functions of the two ministries Lack of structured and continuous participation of all stakeholders in policymaking and execution Unbalanced growth of higher education infrastructures in medical and non-medical sciences due to the financial resources and parallel work.	Fragmentation of higher education
An increase in the number of offices and administrative procedures, without really changing the quality of service delivery The tendency of students of the Ministry of Science to continue their studies in the Ministry of Health, due to better job opportunities	Wastage of resources
Conflict of interests within the two ministries in the adoption of higher education policies The difference in the payments made to the staff in the Ministry of Science and the Ministry of Health, Treatment, and Medical Education Disruption of policymaking in the Ministry of Health, Treatment, and Medical Education Creating unreasonable competition between the two ministries Non-recognition of the dignity of conditional policy in the Ministry of Health in the field of science Failure of the Ministry of Health, Treatment, and Medical Education to comply with the upstream regulations	Ineffective execution of national higher education policies in the healthcare sector
Lack of dialogue between different faculties The creation of organizational barriers in the two ministries The destruction of the channels of scientific communication between the two ministries Exclusivism of groups and disciplines Lack of necessary incentives for interdisciplinary scientific cooperation Enactment of restrictive laws and regulations The predominance of routine procedures and especially the provision of healthcare services over scientific activities in the Ministry of Health, Treatment, and Medical Education	Disruption of the convergence of sciences

d. Disruption of the convergence of sciences

Science is an integrated process and for its rapid and balanced growth, different scientific disciplines must interact and cooperate. Nevertheless, the gap created after the enactment of the integration policy is an obstacle to the convergence of sciences and has destroyed the channels of scientific communication in the two ministries:

"*We should create an inverted slope so that specialists from the administration field come to the education system. In fact, we should respect education*".

"*In the Ministry of Science, some disciplines such as humanities, engineering, and basic sciences do not have an effective dialogue with each other. The same problem exists in the Ministry of Health, that is, the Faculty of Nursing does not communicate well with the Faculty of Medicine, Health and Pharmacy*".

In the second phase of the study, the participants were provided with three solutions to overcome the challenges associated with the integration policy and were asked to choose the most effective solution: (a) The execution of the current policy and maintenance of the existing situation, (b) returning to the pre-integration phase and reintegrating medical education in the Ministry of Science, Research and Technology, and (c) re-defining/ reforming the integration policy, maintaining existing achievements, and trying to reduce the negative effects of the policy. Almost all the participants agreed on the third solution and suggested that the conditions of the country do not allow adopting the second solution and returning to the pre-integration situation is not practical. Moreover, the second solution requires substantial costs and disrupts the provision of healthcare services in the short and medium term.

However, the participants stated different opinions about the execution of the third solution. It is difficult to analyze and present executive solutions until the coordination in policymaking, management, and execution in the field of education, research, and technology in the two ministries becomes more efficient, the related procedures become more transparent, and at the same time, the health benefits of the integration policy are preserved. The participants also suggested that procedural interactions should be much more frequent between the two ministries. Besides, the ministries should coordinate policy, planning, management, and execution procedures in the short and medium terms. Furthermore, the reconnection of medical education to other disciplines through organizational and structural changes should be the second priority.

Discussion

Evidence in policy-making is fundamentally different from clinical decision-making, and usually, such evidence is not obtained in a short period through "controlled studies". Besides, many factors may distort the findings. Accordingly, it is not possible to compare the effect of integration based on a single study. In addition, the data required to make such a comparison are not available. In the present study, which is perhaps the first of its kind, external stakeholders were surveyed about the integration of medical education using in-depth interviews.

The participants stated that one of the consequences of the integration policy is the fragmentation of higher education. They also reported that we should welcome institutional separability instead of institutional disintegration, but we need to refine institutional separability which means integration and totality. It means that when institutions are separated, their connections expand. However, one problem with the integration policy was that the policy was considered to

mean the policy of disintegration and not in the sense of institutional separability. For this reason, the separation of medical faculties has harmed the university as a whole. Disintegration means that every institution acts according to its existential requirements. The participants also stated that education should be the focus of actions, not research or services. Accordingly, perhaps the most important challenge of integration is the concentration of specialized human resources from knowledge production to service provision and executive services, as reported in a significant number of studies (15-21).

The participants also stated that the adoption of the integration led to the wastage of resources. For example, in a province, a university of medical sciences and a university of non-medical sciences are located next to each other but they are unaware of each other, and each one is looking for its canteen, sports field, and independent dormitory, leading to the wastage of resources and money. We have shortages at universities of medical sciences, which are unused facilities in the Ministry of Science, which can be optimally used through effective negotiations. The participants also reported that technical and humanities faculties have expanded significantly, but the number of students applying for them has dropped drastically, and many of these spaces and facilities remain unused, while there is a severe shortage of resources in the Ministry of Health. Similarly, Amiresmaili et al reported that the low skill of students in treating patients or using hospital equipment, pavilion costs, improper use of consumer goods, and the cost of purchasing educational equipment are factors that increase the costs imposed on the health system (18).

Another weakness of the integration policy was the ineffective execution of higher education national policies in the healthcare sector. After the execution of the integration policy, the system becomes larger and more complex, some organizational positions are omitted, and some staff lose their organizational positions and face a conflict of interest to maintain their positions, leading to problems such as loss of expertise, adjustment of policies, excessive decentralization, and an increase in the number decision-making centers. The participants also highlighted the differences in the payments made to the staff and faculty members working in the Ministry of Science and the Ministry of Health. Some participants reported that they received lower salaries from the Ministry of Science compared to the staff working in the Ministry of Health. The bill for salary adjustment and increase has not yet been passed by the Islamic Consultative Assembly and faculty members at the Ministry of Science believe that they are treated discriminatively. For example, a professor who is working in the faculty of literature and someone who works clinically in a hospital receive different payments.

Moreover, full-time geographical doctors working in the Ministry of Health receive office deprivation allowance, while such benefits are not paid to the medical staff working in the Ministry of Science. These issues create some challenges for relevant authorities. The participants also suggested that it would be more effective if the two ministries worked in parallel, competed in providing services, used each other's facilities, and interacted with each other in hardware facilities.

Another disadvantage of the integration policy was the disruption of the convergence of sciences as reported by the participants. The convergence of sciences does not make sense in Iran at the moment. Whether the separation of the Ministry of Science and the Ministry of Health has disrupted the convergence or not is doubtful. Although the integration policy affected scientific convergence, it is not reasonable to attribute all problems to this policy, because the faculties of humanities, engineering, and basic sciences do not interact effectively in the Ministry of Science. The same problem exists in the Ministry of Health, that is, the Faculty of Nursing does not communicate properly with the Faculty of Medicine, Health, and Pharmacy. Thus, the separation of the two ministries is not the root cause of all problems. Finally, the participants suggested that to improve the quality of convergence and use capabilities of different disciplines, we should turn to using software facilities. Indeed, we should turn to physiological integration rather than anatomical integration, and try to fix problems resulting in such disintegration. Concerning the convergence of sciences, there is evidence that shows that medical students who have more backgrounds in humanities are less exposed to burnout during their studies and naturally perform better under difficult situations (22).

Concerning the solutions to the problems caused by the integration policy, almost all participants rejected the idea of returning to the pre-integration phase and reintegrating medical education in the Ministry of Science, Research, and Technology. They believed that the conditions of the country do not allow returning to the pre-integration situation. Furthermore, returning to the pre-integration situation requires substantial costs and disrupts the provision of healthcare services in the short and medium term, leading to terrible social chaos. Thus, it is not a practical solution. Accordingly, the participants selected a third solution; re-defining/reforming the integration policy, maintaining existing achievements, and trying to reduce and minimize the negative effects of the policy. They also highlighted that the required changes should be made step by step and based on a comprehensive needs assessment to specify which departments need integration. The participants also reported that some facilities such as public spaces, dormitories, sports halls, and restaurants can be integrated as returning to the pre-integration phase is neither ideal nor practical.

Conclusion

The findings highlighted the need for analyzing external stakeholders' attitudes toward the integration policy of medical education and exploring its advantages and disadvantages at a macro level. The data also revealed significant damages made to science and technology and the need for a well-defined roadmap to preserve policy achievements and minimize the significant damages made due to the disintegration of medical education from other disciplines.

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Competing Interests
This article has not been published and is not under consideration for publication elsewhere. There are no conflicts of interest for the authors of this article.

Ethical Approval
All interviews were recorded with the participants' knowledge and consent. The recorded files and transcripts of the interviews were only available to the research subjects.

References
1. 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.
2. Shackebaei D, Karami Matin B, Amolaee K, Rezaie M, Abdolmaleki P, Reshadat S, et al. Achieving the goals of integration of medical education and health service delivery systems from the viewpoint of the faculty members of Kermanshah University of Medical Sciences. Sci j Kurdistan Univ Med Sci. 2011;16(1):81-91. [Persian].
3. Rifkin S. Review of the Process of Findings of Healthcare Utilization Study for Developing a Model for Community Participation in the Iranian Context. WHO Consultant;. 2005.
4. Nedjat S, Yazdizadeh B, Gholami J, Ashorkhani M, Nedjat S, Maleki K, et al. Effect of Ministry of Health and Medical Education structure on application of medical research. Hakim Res J. 2008;11(3):1-10. [Persian].
5. Colin T. Intersectoral Collaboration in the IR Iran. WHO Consultant; 2005.
6. Collins C. Rapid Organizational Review of the Iranian Health System. WHO Consultant; 2005.
7. World Health Organization. Framework on integrated, people-centred health services. Geneva: World Health Organization. 2016;2019.
8. Nadim A, Shadpour K, Holakouei K, Naghavi M, Nikpour B, Alai M. Opinion survey on joining of health care organizations with university of medical sciences. Hakim Res J. 1999;2(2):67-74. [Persian].
9. WHO EMRO. Assignment Report on Integration of medical education and delivery of health services in the Islamic Republic of Iran. WHO EMRO; 2006.
10. Noori Hekmat S, Haghdoost AA, Dehnavieh R, Ghorbani Nia R. The consequences of integration of the medical education and the health services system of Iran: a systematic review and meta-synthesis of literature. Iran J Epidemiol. 2019;14(0):12-26. [Persian].
11. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. Nurse Educ Today. 2004;24(2):105-12. doi: 10.1016/j.nedt.2003.10.001.
12. Guba EG. Criteria for assessing the trustworthiness of naturalistic inquiries. Educ Technol Res Dev. 1981;29(2):75-91. doi: 10.1007/bf02766777.
13. Biglar M, Bastani P, Vatankhah S. The challenges of stewardship in medical education system: a qualitative approach. Payavard Salamat. 2013;7(4):299-311. [Persian].
14. Smith RD. Strategic Planning for Public Relations. Routledge; 2020.
15. Noori Hekmat S, Tourani S, Haghdoost A, Ebrahimipour H, Mehrolhassani M, Dehnavieh R. Beneficial and adverse effects of the integration of medical education and health service in IR. Iran; a Delphi exercise. J Med Sci (Faisalabad). 2014;14(1):21-8. doi: 10.3923/jms.2014.21.28.
16. Majdzadeh R, Nedjat S, Denis JL, Yazdizadeh B, Gholami J. 'Linking research to action' in Iran: two decades after integration of the health ministry and the medical universities. Public Health. 2010;124(7):404-11. doi: 10.1016/j.puhe.2010.03.026.
17. Pezeshkian M, Karimi A, Akbari ME, Einollahi B, Hosseini J, Hosseini F. Integration of medical education and health care: the experience of Iran. J Med Educ. 2003;3(1):e105019. doi: 10.22037/jme.v3i1.874.
18. Amiresmaili MR, Negahdari S, Khosravirad Z, Tohidi M, Khosravi S. Management of teaching hospitals; opportunities and threats. Stride Dev Med Educ. 2016;13(4):337-48.
19. Majdzadeh R, Nedjat S, Gholami J, Nedjat S, Maleki K, Qorbani M, et al. Research collaboration in Tehran University of Medical Sciences: two decades after integration. Health Res Policy Syst. 2009;7:8. doi: 10.1186/1478-4505-7-8.
20. Kitson A, Harvey G, McCormack B. Enabling the implementation of evidence based practice: a conceptual framework. Qual Health Care. 1998;7(3):149-58. doi: 10.1136/qshc.7.3.149.
21. Tourani S, Haghdoost AA, Maleki MR, Ravaghi H, Dehnavieh R, Noori Hekmat S. The backgrounds, consequences, and future of the integration of Medical Education and Health Service Delivery System. HealthMed. 2011;5(6):1847-56.
22. Sukhanova E. S24-03 The role of arts and humanities in undergraduate medical curricula. Eur Psychiatry. 2009;24:S135. doi: 10.1016/s0924-9338(09)70368-2.