

Social Responsibility and Accountability: The Outcome of Integrating Health, Treatment, and Medical Education

Seyed Hasan Emami-Razavi^{1*}, Mohammad Hossein Heidarzadeh², Alireza Moshfegh³

¹Professor of Surgery, Iranian Academy of Medical Sciences, Tehran, Iran

²Medical Student, Center for Youth and Elites Iranian Academy of Medical Sciences, Tehran, Iran

³Medical Student, Tehran University of Medical Sciences, Tehran, Iran

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***Corresponding author:**

Iranian Academy of Medical Sciences,
Tehran, Iran.

Email: emamiraz@tums.ac.ir

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Abstract

Background: Following several challenges occurred in the country's health system in the 1980s, including a severe shortage of specialized human resources and inadequate access to high-quality healthcare services in many regions of the country, the medical education and healthcare service delivery systems were integrated, resulting in the establishment of the Ministry of Health, Treatment, and Medical Education. One of the primary goals and features of this integrated system is accountability to the community health needs. Given that no coherent study has been found regarding the level of social accountability within the integrated health system in Iran.

Objectives: The current research was conducted aiming to measure the level of accountability of the Iranian health system.

Methods: This study sought to evaluate the level of accountability of Iranian integrated health system to societal needs. Following a literature review and holding the expert panel, a questionnaire was developed to measure the level of accountability of Iranian health system across four domains: Generalities, education, healthcare service delivery, and research. The questionnaire was distributed among the target population (faculty members, health system managers, healthcare service providers, and medical students selected in the Health System Management Olympiad of the Ministry of Health), and 11 responses were received. Subsequently, the responses were analyzed using the Kruskal-Wallis and Mann-Whitney U tests.

Results: The findings obtained from participants' responses to the questionnaire revealed that the accountability of the Iranian health system to the community health needs was assessed to be at a moderate level. Furthermore, no significant difference was observed in accountability among the four mentioned domains.

Conclusion: Indicators related to the quantitative development of human resource education and service delivery were associated with a reasonable level of success. However, it did not achieve significant success in the areas of improving the quality of medical education, promoting evidence-based decision-making, and making the educational programs community-oriented. According to the results, Iranian integrated educational system has not performed successfully in training non-specialized skills, such as communication, health education for other medical staff members and patients, critical thinking, and healthcare team leadership, as well as the teaching medical students to pay attention to the cost-effectiveness of treatment interventions and prescriptions. Similarly, in the field of medical research, the overall performance was not satisfactory, with the lowest scores had been related to the utilization of research findings in policy-making and improving the cost-effectiveness of services through research results.

Keywords: Integration; Accountability; Medical Education

Background

Before the Revolution in Iran, due to the country's historical backwardness in health higher education, the

number of healthcare professionals was insufficient to meet the people's healthcare needs. Consequently, to meet these needs, a considerable number of foreign

physicians were employed in medical centers, which, in addition to reducing the quality of services provided, also culminated in numerous cultural problems. Moreover, medical students were trained in specialized hospitals affiliated with the Ministry of Science, which had no connection to the Ministry of Health or society. As a result, the education of students lacked aspects of community orientation, to the extent that some graduates were even incapable of providing primary healthcare services (1).

Following the Islamic Revolution and the establishment of the Cultural Revolution Headquarters in 1980, the responsibility for reviewing and assessing the status of medical science training was assigned to the Medical Division of the Cultural Revolution Headquarters. After a two-year review conducted by experts and specialists, the members of this division concluded that medical education in the country faced numerous and profound challenges. Medical education programs varied significantly and were inconsistent across different medical schools. Some schools lacked adequate faculty members and curricula. A severe shortage of human resources was evident in most regions of the country, to the extent that in some areas, there was only one physician for every 18,000 citizens. Ultimately, due to the existing capacities and facilities, there was no clear prospect for improving the situation and significantly increasing the number of physicians (2).

In order to resolve the aforementioned challenges, the Medical Division of the Cultural Revolution Headquarters proposed the integration of medical schools with the Ministry of Health (at that time). Subsequently, numerous expert meetings were held with the participation of representatives from the Ministry of Health, the Ministry of Science, Parliament members, and medical education specialists. The primary objectives of this plan, as stated, were to utilize all of the country's healthcare facilities to expand medical education and better accountability of the community health needs through making medical education community-oriented. Ultimately, after extensive expert reviews, this plan was approved by the Cultural Revolution Headquarters, the Cabinet, and the Islamic Consultative Assembly, and the Ministry of Health, Treatment, and Medical Education was thus established in 1985.

Experts' viewpoints on the implications of the integration policy are diverse and sometimes contradictory. Some experts argue that the integration

of education into the healthcare service delivery system, along with the establishment of the Ministry of Health, Treatment, and Medical Education, has significantly increased student admission capacity in the field of medicine due to the expansion of educational facilities and opportunities. Moreover, educating medical students in real healthcare settings has promoted the social accountability of medical education and empowered students to satisfy societal needs.

On the other hand, despite the positive outcomes and changes that have followed the implementation of integration and the establishment of the Ministry of Health in the areas of education, research, and healthcare service delivery in the country, some challenges and shortcomings remain unresolved. Some experts in this field believe that what has been performed is merely structural integration, and that functional integration and complete unity at all levels have not yet occurred. Moreover, some experts argue that the increased responsibilities of universities of medical sciences, along with their obligation to manage non-educational affairs, have culminated in a deviation from the educational mission and, consequently, a weakening of their social accountability of education in these institutions.

Given the existence of diverse and sometimes contradictory viewpoints among experts regarding the results and consequences of integrating education into the healthcare service delivery system, as well as the emergence of numerous crises and challenges in the country's health system in recent years, such as the coronavirus disease 2019 (COVID-19) pandemic which has partially revealed the weaknesses and strengths of Iranian health system, and considering the lack of a coherent study on the level of accountability of the country's health system to the community healthcare needs, the present study was designed and implemented. The current research aimed to examine the views of experts in the field of health, treatment, and medical education in the country regarding the issue of integration in order to obtain a clear picture of the country's medical education system's level of accountability to societal needs, as well as the current status of integration and its positive and negative consequences.

Objectives

The current research aimed to examine the views of experts in the field of health, treatment, and medical education in the country regarding the issue of

integration in order to obtain a clear picture of the country's medical education system's level of accountability to societal needs, as well as the current status of integration and its positive and negative consequences.

Methods

This research aimed to assess the level of social accountability of the integrated education and healthcare service delivery system in Iran across three domains: Education, research, and service delivery. Following a literature review on the integration of education and service delivery in the Iranian health system and holding two expert panel meetings at the Youth and Elite Club of the Academy of Medical Sciences of Iran, the study questionnaire's items were designed. In the mentioned questionnaire, respondents' activity categories were initially asked to (3 faculty members, 1 healthcare provider, 3 healthcare executives, and 4 medical students; some participants fell into multiple categories, but the one in which they were most active was chosen) (Table 1). Subsequently, 45 items were formulated, divided into four domains: Generalities (16 items), accountability in education (15 items), accountability in service delivery (10 items), and accountability in research (4 items). Participants responded using a Likert scale ("very low, low, moderate, high, and very high).

The questionnaire was distributed to a purposefully selected sample population consisting of students who had won medals in the Health System Management Olympiad, faculty members of universities of medical sciences, health management researchers, and experts experienced in the health system, and 11 responses were collected from these four target groups.

The scores of each question were finally analyzed using SPSS software. Additionally, the mean scores for each of the education, research, and service delivery sections were calculated.

In the data analysis process, the mean scores for each domain were initially calculated as a percentage of the maximum possible score (55 points) and compared. Subsequently, the Kruskal-Wallis nonparametric test was used to examine the significance of the differences in social accountability among the three domains. Furthermore, the Mann-Whitney U nonparametric test was employed to pairwise compare each domain in terms of the significance of the differences in the level of social accountability among these domains. A significance level of $P < 0.05$ was considered.

Results

The mean score obtained in the generalities section was 30.250 ± 5.568 , which, considering the maximum score of 55, was reported as 55%. The highest score (41 points and 74.55%) belonged to "an adequate number of universities of medical sciences in the country to meet the community health needs," and the lowest score (21 points and 38.18%) belonged to "Accountability to all community health needs, including mental and spiritual health" (Table 2).

The mean score obtained in the accountability in education section was 24.533 ± 5.501 (44.61%) (Table 3). The highest score obtained in this section (40 points, 72.73%) belonged to the item "The effectiveness of training and education of intermediate-level personnel, such as nursing assistants, pharmacy assistants, and dental assistants, in accountability to health needs."

Table 3. Mean scores for each domain

Domain	Points (Mean (SD))	Percentage of Maximum Points = 55
Generalities	30.250 (5.568)	55
Accountability in education	24.533 (5.501)	44.61
Accountability in service delivery	25.800 (4.289)	46.91
Accountability in research	21.250 (3.500)	38.64

SD: Standard Deviation

The lowest score in this domain (18 points, 32.73%) belonged to the item "The adequacy of medical-educational centers, as well as educational departments and clinics, to meet the common health needs in each region" (Table 2).

The mean score obtained in the accountability of service delivery section was reported as 25.800 ± 4.289 (46.91%) (Table 3). The highest score in this section (31 points, 56.36%) belonged to the item "Accountability of the integrated health, treatment, and medical education system in health crises, such as the COVID-19 pandemic or natural disasters." The lowest score in this domain (16 points, 29.09%) belonged to the item "The adequacy of the current payment system in improving social accountability" (Table 2).

The mean score obtained in the accountability of research section was 21.250 ± 3.500 (38.64%) (Table 3). The highest score in this section (25 points, 45.46%) was attributed to the item "Appropriateness of research priorities in universities of medical sciences in each

region with the needs of that region, aiming to improve the quality of services delivered.” The lowest score in this domain (17 points, 30.91%) belonged to the item “Utilization of findings of research conducted in universities of medical sciences in health decision-making and policymaking” (Table 2).

A Kruskal-Wallis test was used to assess the significance of the differences in social accountability among these three domains, demonstrating no significant differences in the integrated system’s level of accountability ($P = 0.125$). Furthermore, a pairwise comparison of the three domains using the Mann-Whitney U test revealed no significant differences in the integrated system’s level of accountability among the domains (Table 4).

Table 4. P-value in pairwise comparisons of domains using the Mann-Whitney U test

Domain	P-Value
Education	With service delivery: 0.216 With research: 0.262
Service delivery	With research: 0.054
Research	

Overall, based on the responses obtained from the investigated population, the integrated system’s social accountability in the three domains of “education, research, and service delivery” was evaluated to be at a ‘moderate’ level. Additionally, no significant difference was observed in the integrated system’s level of social accountability among these three domains.

Discussion

The current research primarily aimed to assess the accountability status of Iranian integrated Health, Treatment, and Medical Education System. Findings revealed that, according to experts and authorities in this field, the accountability of the country’s health system is to some extent acceptable and has been largely successful in achieving its therapeutic, health, and educational goals.

Based on the findings from experts’ perspectives, the integrated health system has been highly successful in “establishing an appropriate number of universities of medical sciences to meet the community health needs,” “cultivating a sufficient number of specialized human resources in various medical fields,” and “training intermediate-level personnel, such as nursing assistants, pharmacy assistants, and dental assistants.”

However, according to the participating experts, the integrated health system has performed poorly in areas such as “utilizing the findings of research conducted in

universities of medical sciences in decision-making and policy-making,” “the payment system status in improving social accountability,” and “paying attention to the cost-effectiveness of services in prescribing in the curricula of medical sciences disciplines.”

Universities and schools of medical sciences were established with the philosophy of accountability to the community health needs. Therefore, the whole planning and policy-making in this field, as well as the evaluation of the performance of these educational institutions, should be geared toward fulfilling accountability to the community health needs. In fact, accountability is an integral part of the foundational principles and development of universities of medical sciences. Since this accountability is realized through the pathway of healthcare service delivery, it is shaped and given meaning within a unified whole of interaction between the school, the community, and the service delivery system (3).

The necessary actions to satisfy societal needs are defined at three levels: Social responsibility, responsiveness, and accountability. Social responsibility involves identifying community needs, prioritizing them, and designing plans to address them. If the health system goes beyond this level and takes proactive measures to meet these needs, the second level, or responsiveness, is achieved. By continuing on this path and evaluating the outcomes of interventions implemented by policymakers, the third and most complete level, social accountability, is also realized (4).

One of the strategies to achieve this goal is through community-oriented medicine and community-based education. Accountable medical education is indeed a type of education that considers regional and national healthcare needs and seeks to cultivate physicians capable of accountability and satisfaction of people’s health needs. The ultimate goal of establishing universities and schools of medical sciences has been accountability to the community real needs. In order to achieve this goal, medical education must focus on solving the fundamental problems of society in terms of content and function (1). A prerequisite for realizing this goal is to change and design educational programs so that they can train a workforce equipped with effective skills in various fields:

- a) A clinician who possesses the necessary specialized knowledge and skills.
- b) An educator who promotes a healthy lifestyle through education to the public and healthcare workers.

c) A resource manager who makes the best and most appropriate use of the available diagnostic, therapeutic, and healthcare facilities in the country and plays a valuable role in prevention, health promotion, rehabilitation, social work, intersectoral collaboration, and community participation (3).

The healthcare system must be accountable for the quality of services delivered by healthcare providers, as well as by universities and faculties, through the enhancement of knowledge, attitudes, skills, and abilities of the cultivated providers. Conversely, separating the field of medical education from the field of healthcare service delivery culminates in minimizing this accountability at both levels. In other words, the health system will not be accountable for the quality of services delivered by the institutions it has not trained, and medical schools will deliver their graduates to an independent and separate system, without being accountable for their subsequent performance.

The experience of integrating the medical education system into the healthcare service delivery system in Iran, despite the presence of numerous health system researchers and experts and the creation of a suitable platform for providing practical, community-oriented, and targeted education, and forging a link between education and implementation, can serve as a good model at both the national and international levels. The development of applied health research, the expansion of social medical education, crisis management in emergencies, the model of ongoing medical education for the medical community, the model of public health education, the development of specialized training, the educational management model, and the cancer registration model in Iran are among the successful examples that can be utilized at various levels. However, to make universities more responsive to the needs of the health system, more measures and strategies need to be considered, and the academic sector, with a deeper understanding of societal needs, must insist on implementing revised educational programs while continuously reviewing curricula.

The present study findings are consistent with findings of several previous studies (5-7).

Nouri-Hekmat et al. examined the objectives, outcomes, barriers, and future of the integration policy and reported the greatest success of the integration policy in the area of healthcare service delivery. They stated that increasing the capacity of supplying health human resources and the rapid increase in the number of educational centers were among the greatest

achievements of this policy, which is also mentioned in the World Health Organization (WHO) report (5) and aligns with the findings of the present study.

The results of Baqeri Lankarani et al.'s study to evaluate the consequences of the integration law and the establishment of the Ministry of Health, Treatment, and Medical Education demonstrated that "developing trained human resources, improving medical knowledge, increasing knowledge and skills in the health sector, and elevating the quality and quantity of health services" were the three main consequences of integration. The primary goal of the policy of integrating the medical education system into the service delivery system was to increase the human resources and make the country independent of the activities of foreign physicians. The remarkable increase in the capacity for admitting medical students after the approval of the integration policy and the subsequent increase in the number of educational centers, both made the country's health system independent of non-Iranian physicians and culminated in the growth of human resources in other specialized fields of medical sciences, such as dentistry and paramedical sciences (6).

In addition, according to the results of Shakibaei et al.'s study investigating the perspectives of faculty members at Kermanshah University of Medical Sciences regarding the extent to which the objectives of the integrated system were achieved, the achievement of integration goals, as perceived by faculty members, was 52.37%. Moreover, from their viewpoints, the highest level of success of the integration policy was achieved in the area of healthcare services and indicators, while the lowest was attributed to research activities and facilities and social achievements of the integration plan (7).

Conclusion

The findings of this study revealed that indicators related to the quantitative development of the human resources in education and service delivery, which were among the main objectives of the integration policy, were accompanied by a considerable success, and integration in this area has been able to meet the country's needs. However, in the field of enhancing the quality of medical education, promoting evidence-based decision-making, and making educational programs community-oriented, the integration policy has not achieved significant success. According to the results, Iranian integrated educational system has not performed successfully in training non-specialized skills, such as communication, health education for

other medical staff members and patients, critical thinking, and healthcare team leadership, as well as the teaching medical students to pay attention to the cost-effectiveness of treatment interventions and prescriptions. Similarly, in the field of medical research, the overall performance was not satisfactory, with the lowest scores had been related to the utilization of research findings in policy-making and improving the cost-effectiveness of services through research results.

Based on the findings of this research and other studies, it is recommended that further investigations be conducted into the reasons for the relatively poor performance of the integrated system in achieving its qualitative educational and research objectives.

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

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Table 1. Participants' categories and their respective backgrounds

Row	Occupational Category	Faculty Member's Rank and Department	Executive Category and Background
1	University faculty members	Professor at Tehran University of Medical Sciences	
2	Healthcare service provider		Private clinic director PhD in Healthcare Service Management with university teaching experience as a contract instructor
3	Executive and managerial positions in the health system		Over 31 years of experience in public sector Over 25 years of experience in management of the health system and health insurance
4	Executive and managerial positions in the health system		Research expert and researcher at University of Health and Ministry of Health Executive vice-president of a private research service institution
5	University faculty member		
6	University faculty member Healthcare service provider Executive and managerial positions in the health system	Head of the Pediatric Department, Tehran University of Medical Sciences	President of Tehran University of Medical Sciences
7	Medical science student		
8	Medical science student		
9	Medical science student		

10	Medical science student		Head of the Olympiad Committee, Tehran University of Medical Sciences Head of the Medical Unit, Research Center, Tehran University of Medical Sciences
11	Executive and managerial positions in the health system		10 years, including Parliamentary Research Center

Table 2. Questionnaire items and their corresponding scores

Domain	Item	Point (Out of 55)
Generalities	1. Equitable distribution of specialized human resources to meet the healthcare needs of different regions of the country.	26
	2. Independence of universities of medical sciences in each province in management for appropriate accountability to the specific needs of that province.	32
	3. Creating greater responsibility for public health through the involvement of faculty members and students in service delivery.	32
	4. Creating greater responsibility for national health through the involvement of faculty members in executive positions and health system management.	27
	5. Effective performance of the integrated system in cultivating a sufficient number of specialized human resources in various medical fields.	37
	6. An adequate number of universities of medical sciences in the country to meet the community health needs.	41
	7. An appropriate gender ratio to meet the healthcare needs of both men and women in society.	39
	8. A balance between the authorities of universities of medical sciences in the country and their responsibilities, control, facilities, and capacities.	30
	9. Ensuring that the multiple responsibilities of universities of medical sciences, including service delivery, do not hinder their educational and research missions.	28
	10. Providing appropriate conditions and incentives for faculty members to be more involved in educational institutions than in the private sector.	25
	11. Complete structural integration being the best system for linking universities and service delivery in achieving social responsiveness.	29
	12. The effectiveness of the integrated system in reducing the costs of healthcare services for the community.	25
	13. Addressing all community health needs, including mental and spiritual health, in the integrated system.	21
	14. Paying attention to the various aspects of the presence of learners in the healthcare field in the integrated system.	27
	15. Reducing the workload of faculty members and students by employing contract specialists in teaching hospitals and setting a specific ceiling for the number of shifts and the visited patients.	29
	16. Increasing the accountability of the integrated system by integrating education and service delivery for other healthcare personnel, such as nurses.	36
Education	1. Alignment of medical education programs at the national level with the healthcare needs of the country.	23
	2. Alignment of medical education programs at the provincial level with the healthcare needs of each province.	19
	3. Training of local healthcare personnel for each province for employment and addressing the healthcare needs in the same province.	21
	4. The adequacy of medical-educational centers, as well as educational departments and clinics, to meet the common health needs in each region.	18
	5. The existence of appropriate collaboration and communication between the medical education referral system and the utilization of the healthcare network's capacity for medical education.	24
	6. Ensuring that increased workload for students in providing services does not hinder their overall education and study.	26

	7. Implementing necessary mechanisms and oversight to prevent academic exploitation of students, such as imposing excessive and non-educational service activities.	22
	8. Incorporating training essential skills for community interaction, such as communication skills, critical thinking, and public health education, into medical education.	19
	9. Addressing health and epidemiological issues in the curricula of medical sciences programs.	26
	10. Focusing on “cost-effectiveness of services in prescription” in the curricula of medical sciences programs.	21
	11. Effective performance of universities of medical sciences in identifying, planning for, and serving disadvantaged and minority groups.	25
	12. The ability of the medical education system to cultivate graduates equipped with adequate knowledge and clinical competence.	30
	13. Designing appropriate measures for the continuing education of graduates.	27
	14. The effectiveness of training and educating intermediate-level personnel, such as nursing assistants, pharmacy assistants, and dental assistants, in accountability to health needs.	40
	15. Improving the quality of education and accountability in education by categorizing faculty members into educational, research, medical, and administrative roles, and developing promotion guidelines for faculty members in each category.	27
Service delivery	1. Adequate performance of universities of medical sciences in providing healthcare services in accordance with the needs of the target population.	26
	2. Adequate performance of universities of medical sciences in providing preventive healthcare services commensurate with the needs of the target population.	25
	3. Adequate performance of universities of medical sciences in forecasting the healthcare needs of the target population and providing the necessary resources.	28
	4. Adequate performance of universities of medical sciences in providing high-quality healthcare services in accordance with clinical guidelines and the latest scientific advancements.	26
	5. Adequate performance of universities of medical sciences in providing high-quality preventive healthcare services to the target population.	28
	6. The importance attached by universities of medical sciences to the service cost-effectiveness in healthcare service delivery.	22
	7. Adequate performance of universities of medical sciences in providing healthcare services to disadvantaged, at-risk, and minority groups.	30
	8. Accountability of the integrated health, treatment, and medical education system in health crises, such as the COVID-19 pandemic or natural disasters.	31
	9. Existence of appropriate interaction between universities of medical sciences and resident physicians in providing suitable working conditions for these physicians.	26
	10. The adequacy of the current payment system in improving social accountability.	16
Research	1. Appropriateness of research priorities in universities of medical sciences in each region with the needs of that region, aiming to improve the quality of services delivered.	25
	2. Utilization of findings of research conducted in universities of medical sciences in health decision-making and policymaking.	17
	3. Improving resource efficiency and cost-effectiveness of services through research conducted in universities of medical sciences.	20
	4. Enhancing the quality of services provided to underserved, at-risk, and minority populations through research conducted in universities of medical sciences.	23