Review Article

Explanation of the Optimal Structure for the University Education System in Realizing the Concept of Responsive Medical Education: A Narrative Review Study

Shahram Shayan[1], Atefeh Heidari[2*]

[1]Cardiovascular Research Center, Rajaie Cardiovascular Institute, Tehran, Iran
[2]Medical Education Research Center, Medical Education Studies and Development Center, Isfahan University of Medical Sciences, Isfahan, Iran

Received: 2025 March 04
Revised: 2025 October 26
Accepted: 2026 January 25
Published online: 2026 January 27

***Corresponding author:**
Department of Medical Education, Center for Studies and Development of Medical Education, Isfahan, Iran.
Email: atefehheidari2000@gmail.com

Citation:
Shayan S, Heidari A. Explanation of the Optimal Structure for the University Education System in Realizing the Concept of Responsive Medical Education: A Narrative Review Study. Strides Dev Med Educ. 2026 January; 23(1):e1542. doi:10.22062/sdme.2026.200980.1542

Abstract

Background: Medical universities are tasked with addressing societal needs and improving health outcomes effectively. They must provide education that trains skilled graduates capable of responding to public health challenges in alignment with contemporary requirements. The World Health Organization has underscored the importance of this approach. However, studies show that despite significant efforts, medical education in many universities has not sufficiently met societal demands. Addressing this issue requires fundamental changes to the educational system, effective collaboration with related sectors, such as hospitals and outpatient centers, and a comprehensive revision of curricula to achieve responsive medical education.

Objectives: This article aims to outline the optimal structure for university educational systems to achieve responsive medical education, focusing on strategies that help universities meet real societal needs.

Methods: This study is a narrative review. Persian and English articles were retrieved using keywords such as "medical education," "responsive medical education," and "university educational system" from databases, including PubMed, Google Scholar, Scopus, and SID. Ultimately, 55 studies were selected for inclusion based on predefined inclusion and exclusion criteria.

Results: Based on the literature review, the necessity, benefits, challenges in implementation, and effective strategies for achieving responsive medical education were highlighted. These strategies were categorized into three groups according to the roles that universities and faculties play in advancing responsive medical education: The role of university leadership, the role of the faculty, and the role of students.

Conclusion: To implement responsive medical education, a group of individuals must first form with a deep belief in its necessity. Then, a team of experts should define a shared vision and communicate it within the organization to encourage participation in its realization. Empowerment courses and achieving small victories are highly beneficial in this process. This approach is expected to lead to an optimal state in medical education. However, the achievements must be institutionalized within the university's educational culture to ensure sustainability.

Keywords: Medical Education; Social Accountability; Community Health

Background

The university is a social institution that contributes to the comprehensive growth and development of society by training specialized human resources. In fact, the primary mission of a university is to respond to and help solve fundamental societal issues. The purpose of establishing medical universities is to train the necessary and efficient human resources in fields related to medicine, which contributes to improving public health (1). The history of responsive medical education dates back to the time of Hippocrates, and its importance has been emphasized ever since (2).

Copyright © 2026, Strides in Development of Medical Education is Published by Kerman University of Medical Science. This is an openaccess article distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (http://creativecommons.org/licenses/by-nc/4.0/) which permits copy and redistribute the material just in noncommercial usages, provided the original work is properly cited.

The World Health Organization defines social accountability as guiding educational, research, and service activities to address health concerns and needs in society (3). The health needs and priorities of a community vary over time, influenced by lifestyle, disease prevalence, perceptions of health, diagnostic and treatment costs, and more (1).

Responsive medical education should actively address the social and cultural needs of local communities. This approach can improve educational and health outcomes, enabling students to effectively confront real-world health challenges (4). Social accountability is measured by various criteria; the World Health Organization suggests four criteria: Justice, quality, effectiveness, and appropriateness (5). Additionally, Jalilian et al. proposed two more criteria: Professional ethics and community participation, making six criteria for social accountability (6).

Despite the emphasis on its necessity, studies show a significant gap between student education and meeting societal health needs, often accompanied by dissatisfaction in the educational process (7). A study examining the status of responsive education in clinical groups at Jahrom University of Medical Sciences in 2022 found that the scores for responsive education were not satisfactory (8). Another study in 2016 at Tabriz University of Medical Sciences revealed differences among educational groups, influenced by factors such as communication between educational group managers and the center for medical education development (9).

Akbari et al. categorized the challenges of responsive medical education into four classes: Flawed and non-community-oriented education, managerial issues, resource shortages, inadequate commitment from instructors, and student apathy (10). Henen noted that student education in society is insufficient for addressing community needs and problems; instead, it should focus on providing health services and research, requiring collaboration among policymakers, practitioners, health specialists, community members, educational institutions, and universities (11, 12).

Despite extensive research on social accountability, a unified framework delineating the implementation of social accountability programs and the categorization of stakeholder roles remains absent. This study seeks to address this gap by proposing an optimal structure for university educational systems, aiming to operationalize the principles of responsive medical education. The framework offers clear, actionable strategies for educational managers and policymakers to enhance accountability and responsiveness in medical training.

Objectives

This article aims to outline the optimal structure for university educational systems to achieve responsive medical education, focusing on strategies that help universities meet genuine societal needs.

Methods

The present study is a narrative review conducted with a systematic search approach to minimize selection bias. A comprehensive and in-depth search was performed in both English and Persian scientific databases, including PubMed, Scopus, Google Scholar, and SID, using the following Boolean search string: ("Medical education" OR "medical school") AND ("social accountability" OR "responsive education") AND ("structure" OR "model" OR "framework").

Inclusion criteria were:

1. Relevance to the research objective of defining an optimal structure for responsive medical education.
2. Focus on medical sciences.
3. Availability of full-text articles.
4. Publication in English or Persian.

Exclusion criteria included studies unrelated to the research topic, conference abstracts without full text, and duplicates. The search covered studies published up to July 20, 2024.

After the initial search, more than 120 records were identified. Following screening of titles and abstracts, and a full-text review by two independent researchers based on the inclusion/exclusion criteria, 55 studies were ultimately selected for data extraction.

Data extraction and synthesis involved systematically collecting relevant information from each study, including study type, key findings, and proposed strategies. A thematic analysis approach was applied to categorize the extracted data into three main groups of strategies for implementing responsive medical education at the university level. A PRISMA-style flow diagram was used to illustrate the study selection process (records identified, screened, assessed for eligibility, and included).

Results

Necessity of Responsive Medical Education

The literature review revealed that social accountability is considered a primary mission of universities. This has been emphasized as one of the

visions of the Islamic Republic of Iran for the horizon of 1404, highlighting the importance of addressing societal needs (13). Additionally, European countries have linked the future of their healthcare systems to societal needs (14).

Efforts to establish a socially responsive structure not only address community problems but also positively impact universities by fostering growth and development. This approach holds universities accountable for the care provided by graduates and the outcomes of research studies (15, 16).

Advancements in responsive education will significantly influence the development of third-generation universities. These universities succeed in identifying and addressing societal needs while integrating entrepreneurship into all activities (17, 18).

Benefits of Responsive Medical Education

The implementation of responsive medical education will ultimately lead to healthcare services provided by universities that meet four key indicators: Improvement and enhancement of quality, equity and fairness, relevance to community needs, and cost-effectiveness (19). Additionally, students will not only learn about various diseases and treatment methods but also gain awareness of the associated social issues (20). This approach also fosters critical thinking and reflection among students throughout their learning journey (21).

Challenges in the Way of Implementation

One of the main challenges in responsive medical education is the lack of coordination between educational content and societal needs. Many educational programs in various medical fields are traditionally designed based on scientific and theoretical requirements, which may not adequately address practical and social needs (22). Therefore, there is a need for an integrated and evidence-based approach to design and implement medical education programs. This approach should include continuous assessment of societal needs and alignment of educational content with these needs (23).

A study by Akbari et al., which aimed to explore faculty members' perceptions of challenges in responsive medical education, found that these challenges include managerial issues, resource shortages, flawed and non-community-oriented education, student apathy, and inadequate faculty commitment (10). Additionally, faculties often prioritize their own interests over societal priorities when defining their missions (10). Furthermore, the educational system interacts minimally with the healthcare system in addressing societal issues, resulting in reduced service delivery to the community (7).

Other operational challenges include managerial deficiencies, inadequate commitment among faculty members, lack of student motivation, and resource scarcity (24). Moreover, there are diverse interpretations of responsive medical education among administrators, faculty members, and program stakeholders (25).

Studies have shown that physicians often lack the necessary knowledge, attitudes, and skills for social responsiveness, which affects their confidence and anxiety, in addition to having negative social impacts (26). A study revealed that 54.3% of family physicians experienced a significant gap between theoretical education and practical expectations during their internship (27). Therefore, it is crucial that student education equips them with both professional skills and the ability to address challenges and problems (28). While educating students to solve community problems is vital and requires a supportive community environment, it should not compromise patient care and safety (29).

In summary, responsive medical education, as a novel approach, requires attention to existing challenges and opportunities in medical education. Given rapid technological and social changes, it is essential that medical education programs be updated and move towards innovative, evidence-based approaches (30).

Strategies for Achieving Responsive Medical Education

Various studies have shown that due to numerous advancements in medical sciences and changes in disease prevalence over time, the knowledge acquired by medical students is often sufficient only for a short period after graduation (16, 31). Therefore, comprehensive and practical planning is necessary, involving national policymakers, health experts, and stakeholder representatives to identify all educational, research, and service priorities in the health sector. In addition to setting national priorities, this planning can be tailored by individual faculties to address regional needs (1).

Several strategies for achieving responsive medical education have been identified in the literature review. These strategies range from curriculum changes to fostering student interaction with clinical environments. For example, studies suggest that most curricula need

revision due to a mismatch between theoretical education and clinical practice (32). A responsive educational program creates a bridge between scientific theories and their practical applications. It identifies the needs of learners and society, thereby aligning education with workforce demands. Such learning experiences enable students to apply their knowledge in real-world scenarios, transforming them into competent and creative professionals (33). Additionally, integrating community-based education into medical programs enhances students' practical and communication skills, preparing them for real-world challenges (34).

To advance social accountability in universities, alignment between defined goals and operational outcomes is crucial (35). Moreover, educational leaders play a pivotal role in achieving these goals. However, the current healthcare system faces a significant shortage of competent leaders in management roles, posing a serious obstacle to progress. Identifying and nurturing leaders capable of implementing responsive medical education and effectively engaging with society is essential (36).

In this research, based on the findings in the literature review, the strategies to achieve responsive medical education have been divided into three different categories based on the roles and duties of universities and colleges, professors, and students as the main stakeholders in advancing this important principle. These findings can be seen in Table 1.

Discussion

As mentioned, responsive medical education is an important approach that emphasizes responding to social needs and promoting health. This approach not only addresses social problems but also contributes to the growth and development of universities and the improvement of the quality of health services. However, the implementation of this approach faces challenges such as a lack of coordination between educational content and social needs, lack of resources, and other barriers. To succeed in implementing responsive medical education, an integrated and evidence-based approach is required, where societal needs are continuously assessed and educational content is aligned with these needs (22, 23).

In summary, implementing responsive medical education requires collaboration from all components of the educational system, including universities, professors, and students. By executing these strategies, it is possible to train physicians who can respond to societal needs and play an effective role in promoting public health. Our review proposes an innovative stakeholder-based framework that delineates distinct responsibilities for leaders, faculty members, and students, providing a clearer roadmap for implementation. This study has several limitations, including incomplete access to databases, potential selection bias in the narrative review, and focus on specific languages and sources (English and Persian). Future research could empirically evaluate the effectiveness of the proposed three-tiered framework for leaders, faculty members, and students, and develop validated tools to assess the impact of these strategies on health and educational outcomes.

As mentioned, the primary mission of universities is to respond to societal needs, although in some texts, it is considered one of the four main missions (49). Responsiveness should be evident not only in educational activities but also in research and the provision of health services (11). Despite recognizing the importance of this issue based on existing documents and evidence, and despite efforts in this direction, we have not yet reached the desired state in medical education, and many challenges remain in achieving responsive medical education.

Traditional medical education is often based on the transfer of knowledge from teacher to student and focuses on scientific content. This approach has often failed to meet the real needs of society and health systems. For example, a study found that many medical graduates lack the practical and communication skills necessary for interacting with patients and providing responsive health services (50). This highlights the need for a shift in educational approaches and a focus on evidence-based and community-driven education.

Among the activities undertaken to advance this issue is the establishment of responsive education committees or units in medical sciences universities, which are responsible for organizing responsive education programs within universities (51).

Although universities function differently in promoting responsive education, studies have shown that this difference is also pronounced within educational groups, occurring for various reasons, including evaluation methods, understanding and interest in responsive education, determining criteria for it, and the relationship between department heads and medical education development centers (9).

Table 1. Strategies for achieving Responsive Education

	Stakeholder Role
The roles and responsibilities of managers and officials of universities and colleges	Revision of goals, content, teaching method and planning in education in order to meet the needs of the society (10).
	Allocation of necessary research budgets in the field of statistics of the real needs of the society (1).
	Estimating the necessary infrastructure to access appropriate educational environments such as hospitals and clinic (37).
	Providing suitable conditions for the integration of different courses in appropriate educational environments such as classrooms, hospitals, etc (38, 39).
	Placement of social epidemiology course in the list of courses for medical students (10, 40).
	Providing suitable conditions for the development of the necessary abilities of volunteers to serve in rural and impoverished areas and their correct selection (1).
	Increasing motivation among faculty members to help improve responsive medical education (10).
	Cooperation of different units of the university, including health vice-chancellor, support, educational groups and university president's area (24).
	Considering students' needs for future careers (41).
	Estimating the necessary infrastructures for interdisciplinary education to promote collaborative learning (42, 43).
	Integration in the curriculum (38).
	Paying attention to social accountability criteria to determine the mission in the strategic plan of the university (9).
	Anticipating effective strategies to increase interaction between the healthcare system and educational groups (9).
	Encouraging educational experts and faculty members to conduct research (9).
	Efforts to effectively advance the continuous education program of graduates and faculty members based on the needs of the day (9).
	Using all facilities and human resources in educational groups to solve the challenges of the society (9).
	Holding social medical education courses in universities (44).
	Holding mentoring courses for faculty members to develop teaching and research skills (15).
	Early exposure and contact of the student with the work environment and the patient's bedside to understand the environment closely (10).
	Considering students' opinions and feedback (10).
The role and responsibilities of university faculty members	Using the methods of and rogogy (a theory based on adult characteristics) and hetagogy to create lifelong and comprehensive learning in the direction of social changes (13).
	Using new and student-oriented teaching methods (such as learning in small groups, problem-based learning, etc) (31).
	Using new evaluation methods such as logbook, portfolio, objective structured clinical evaluation (OSCE) (13).
	Creating diverse theoretical and practical experiences for students in order to develop their knowledge and skills (20).
	Using the integration approach and interdisciplinary courses in medical education (31).
	Increasing students' motivation to participate in group work (31).
	Teaching clinical reasoning to students (45).
	Empowering students to make decisions based on evidence (46).
	The attention of faculty members to the issue of research in education, innovative projects in education and educational research (13).
	Becoming aware of the needs and priorities in the society (47).
	Reducing the volume of course materials in order to increase students' motivation (10).
	Creating a sense of need for learning among faculty members (10).
The role of students	Establishing a close relationship between the student and the hospital environment and even the patients' families (20).
	Participation with motivation to identify and solve health problems (20).
	Maintaining your relationship with the university and educational environment (48).
	Conducting research in the field of health system (48).

There are various criteria for determining progress in responsive educational programs, including predicting societal needs, collaboration with the health system, training and providing human resources to play roles in society, outcome-based education, institutional governance, standards, quality improvement, mandatory mechanisms for accreditation, global principles, and local needs and community roles (52).

Resistance to change is always present in organizations, and these changes bring challenges. In a study by Taramsari et al., the Kotter model was proposed to address this issue (53). Based on this model, a responsive medical education model was suggested, which includes eight stages. Initially, in the preparation stage, a sense of need must be created among officials and stakeholders. Then, a team should be designated to execute the plan and take responsibility for it. These individuals must choose a clear vision and goal, which should be communicated effectively to officials and stakeholders. Responsive education courses should be held for these individuals to acquire the necessary capabilities and understand their roles in advancing this issue. There is a need to set smaller goals and achieve early successes to increase motivation. In the seventh stage, these achievements must be consolidated and, finally, institutionalized (54).

Conclusion

Effective implementation of responsive medical education requires a committed team that believes in its necessity, a shared vision communicated across the university, and targeted empowerment programs to achieve gradual successes. This study proposes an optimal three-tiered framework that defines the roles of the university and faculties, professors, and students in advancing responsive medical education. By consolidating these strategies into practice, universities can train physicians who effectively respond to societal needs and contribute to public health. While access to all databases was limited, this framework provides a foundation for policymakers, curriculum designers, and university leaders to guide future developments. Further studies are encouraged to test and expand this framework, ensuring its applicability across diverse educational contexts.

Acknowledgements: We would like to express our gratitude to all those who contributed to this study. Special thanks are given to the professors of Isfahan University of Medical Sciences for their invaluable support.

Conflict of interests: There is no conflict of interest.

Ethical approval: Since the study is a narrative review, no code of ethics has been received.

Funding/Support: There is no funding/support for this study.

References

1. Rezaeian M. An overview of the various dimensions of responsive medical schools in front of society. Journal of Rafsanjan University of Medical Sciences. 2011;11(2):159-72. [In Persian]
2. Woollard RF. Caring for a common future: medical schools' social accountability. Med Educ. 2006;40(4):301-13. doi: 10.1111/j.1365-2929.2006.02416.x. [PMID: 16573665]
3. Boelen C, Heck JE. Defining and measuring the social accountability of medical schools. Geneva: World Health Organization; 1995.
4. Raja VP, Shivasakthy M, Lavakumar S, Lenin D. Community based medical education in medical curriculum. Int J Community Med Public Health. 2022;9(12):4762. doi: 10.18203/2394-6040.ijcmph20223242.
5. Leinster S. Evaluation and assessment of social accountability in medical schools. Med Teach. 2011;33(8):673-6. doi: 10.3109/0142159X.2011.590253. PMID: 21774656
6. Jalilian Hamed H, Amini A, Alizadeh M. Developing Social Accountability Indicators at Medical Schools. Research and Development in Medical Education 2015; 4 (1): 71-76. doi: 10.15171/rdme.2015.011.
7. Lameie A. Integration between Educational system and service delivery: accountable education. (dissertation). Orumieh: Orumieh University of Medical Science; 2010:14-21. [In Persian]
8. Jahromi MS, Taheri L, Haghbeen M, Chegin M, Fatahi N, Abiri S. Examining the state of responsive education in the clinical education groups of Jahrom University of Medical Sciences. Education & Ethics in Nursing. 2023;12(1):5-11. doi: 10.22034/ethic.2023.704685. [In Persian]
9. Pourabbas A, Amini A, Asghari Jafarabadi M. The status of accountable education in clinical education departments of Tabriz University of Medical Sciences. Research in Medical Education. 2020;12(2):71-82. doi: 10.29252/rme.12.2.71.
10. Akbari-Farmad S, Ahmady S, Hoseini MA. Exploring Faculty Member's Perceptions about Socially Accountable Medical Education Challenges: A Qualitative Content Analysis. Strides in Development of Medical Education. 2016;13(1):1-9. [In Persian]
11. Hennen B. Demonstrating social accountability in medical education. CMAJ. 1997;156(3):365-7. PMID: 9033418 PMCID: PMC1226958
12. Rourke J. Social accountability in theory and practice. Ann Fam Med. 2006;4 Suppl 1(Suppl 1):S45-8; discussion S58-60. doi: 10.1370/afm.559. PMID: 17003163 PMCID: PMC1578672
13. Tatari F, Hosseini SA, Borji A. Investigation the role of faculty members in accountable medical education. Teb Va Tazkieh. 2018: 147-56. [In Persian]
14. Khanpoor H, Amerzadeh M, Alizadeh A, Khosravizadeh O, Rafiei S. Developing a responsive model to societal needs in medical education. BMC Med Educ. 2024;24(1):370. doi: 10.1186/s12909-024-05355-9. PMID: 38575947 PMCID: PMC10996077

15. Golpaigani N, Zameni F, Saeedabasi RU. The Universities Generation-Fourth the On Based 1 Region of Universities Approach. Teb va Tazkiye Journal. 2021;29(2): 117-27. [In Persian]
16. Karimi M. Socially accountable medical education. The Journal of Medical Education and Development. 2013;8(1): 74-6. [In Perain]
17. Bahoo-Toroodi T, Yousefi-Saidabadi R, Saffarian Hamedani S. The Role of Leading Professors and Responsive Teaching on Development of Third Generation University and Presenting a Model in Mazandaran University of Medical Sciences. J Mazandaran Univ Med Sci. 2020; 30 (188): 116-24. [In Persian]
18. Enayati T, Aulipour A. Suggest a model for the academic humanities spin off incubators, move to the fourth generation university. Roshd-e-Fanavari. 2014;3(39):1. [In Persian]
19. Boelen C. A new paradigm for medical schools a century after Flexner's report. Bull World Health Organ. 2002;80(7):592-3. PMID: 12163925 PMCID: PMC2567557
20. Strasser R, Lanphear J. The Northern Ontario School of Medicine: responding to the needs of the people and communities of Northern Ontario. Educ Health (Abingdon). 2008;21(3):212. doi: 10.4103/1357-6283.101547. PMID: 19967640
21. Keshmiri F, Asgari P, Bahramnezhad F. Opportunity to reflection: The missing link in clinical education. The Journal of Medical Education and Development. 2018;13(3):252-9. [In Persian]
22. Rogers DA, Boehler ML, Roberts NK, Johnson V. Using the hidden curriculum to teach professionalism during the surgery clerkship. J Surg Educ. 2012; 69(3): 423-7. doi: 10.1016/j.jsurg.2011.09.008. PMID: 22483148
23. Yazdani S, Akbarilakeh M. The model of value-based curriculum for medicine and surgery education in Iran. Journal of Minimally Invasive Surgical Sciences. 2017; 6(3): 10-5812. doi: 10.5812/minsurgery.14053.
24. Dehghani MR, Azizi F, Haghdoost A, Nakhaee N, Khazaeli P, Ravangard Z. Situation Analysis of Social Accountability Medical Education in University of Medical Sciences and Innovative Point of View of Clinical Faculty Members towards its Promotion Using Strengths Weaknesses Opportunities and Threats (SWOT) Analysis Model. Strides in Development of Medical Education. 2014;10(4):403-12. [In Persian]
25. Alirezaei S, Arji G. Identifying the Situation of Accountable Medical Science Education and Providing Implementation Solutions in Zanjan University of Medical Sciences from the Point of View of Experts in the Field of Education. Journal of Medical Education and Development. 2023; 17(4): 263-272. [In Persian]
26. Zohoorparvandeh V. Evaluation of requirements of social accountability in the curriculum of general practitioners based on structural equation models. Journal of Medical Education. 2019 Mar 10;11(32):69-84. [In Persian]
27. Karimi M, Mirzaei M, Rahim Z. Educational needs of family physicians in Yazd province. The Journal of Medical Education and Development. 2012 Feb 10;6(1):39-46. [In Persian]
28. Boelen C, Pearson D, Kaufman A, Rourke J, Woollard R, Marsh DC, et al. Producing a socially accountable medical school: AMEE Guide No. 109. Med Teach. 2016;38(11): 1078-1091. doi: 10.1080/0142159X.2016.1219029. PMID: 27608933
29. Philibert I, Blouin D. Responsiveness to societal needs in postgraduate medical education: the role of accreditation. BMC Med Educ. 2020; 20(Suppl 1): 309. doi: 10.1186/s12909-020-02125-1. PMID: 32981520 PMCID: PMC7520978
30. Veale P, Busche K, Touchie C, Coderre S, McLaughlin K. Choosing our own pathway to competency-based undergraduate medical education. Acad Med. 2019; 94(1): 25-30. doi: 10.1097/ACM.0000000000002410. PMID: 30113362
31. Yazdani S, Hosseini, Homayoni zand R. Reform in general medical degree curriculum. Tehran: Educational development center, Shahid Beheshti University of Medical Sciences; 2008. [In Persian]
32. Samouei R, Heidari K, Saghaeiannejad S, Karami S, Aghdak P. Evaluating the responsiveness of higher education system in relation to social determinants of health. J Educ Health Promot. 2020;9:291. doi: 10.4103/jehp.jehp_80_20. PMID: 33282996 PMCID: PMC7709764
33. Fomunyam KG. Curriculum theorizing and individualism: An exploration of the curriculum's relation to the social, personal and political dimensions of schooling. Mevlana International Journal of Education (MIJE). 2014;4(2):122-31.
34. Ahmed TS, Rashid TJ, Huda S, Sultana N, Billah AM. Perception of Medical Students on Current Medical Education in Bangladesh. Bangladesh Journal of Medical Education. 2022;13(2):13-25.
35. Boelen C, Dharamsi S, Gibbs T. The social accountability of medical schools and its indicators. Educ Health (Abingdon). 2012; 25(3):180-94. doi: 10.4103/1357-6283.109785. PMID: 23823638
36. Middleton R, Montgomery A, Murray S, Peters S, Halcomb E. Exploring leadership in health professionals following an industry-based leadership program: A cross-sectional survey. J Adv Nurs. 2023;79(12):4747-4755. doi: 10.1111/jan.15738. PMID: 37326228
37. Boelen C. Building a socially accountable health professions school: towards unity for health. Educ Health (Abingdon). 2004; 17(2):223-31. doi: 10.1080/13576280410001711049. PMID: 15763765
38. Entezari A, Momtazmanesh N, Khojasteh A, EYN EB. Toward social accountability of medical education in Iran. Iran J Public Health. 2009; 38(Supple 1): 27-8.
39. Strasser RP, Lanphear JH, McCready WG, Topps MH, Hunt DD, Matte MC. Canada's new medical school: the Northern Ontario School of Medicine: social accountability through distributed community engaged learning. Acad Med. 2009; 84(10):1459-64. doi: 10.1097/ACM.0b013e3181b6c5d7. PMID: 19881443
40. Baslaugh S. Encyclopedia of Epidemiology. California: SAGE Publications, Inc; 2008.
41. Teichler U. Mass higher education and the need for new responses. Tertiary Education and Management. 2001;7(1):3-7. doi: 10.1080/13583883.2001.9967035.
42. Bridges D, Davidson RA, Soule Odegard P, Maki IV, Tomkowiak J. Interprofessional collaboration: three best practice models of interprofessional education. Med Educ Online. 2011: 16. doi: 10.3402/meo.v16i0.6035. PMID: 21519399 PMCID: PMC3081249
43. Ghanbari Firuzabadi M, Heydari S, Akhondzadeh B, Mirzaei M. Convergence of sciences for social accountability in education: An experience. Journal of Medical Education and Development. 2022;17(3):236-8. doi: 10.18502/jmed.v17i3.11300.
44. Zandi Ghashghaee K, Hoseini M, Maddah B. Survey of effective Factors in the implementation of community based medical education in the universities affiliated to the Ministry of Health and Medical Education. Armaghane-danesh. 1998;6(4):43. [In Persian]
45. Soltani-Arabshahi S, Monajemi A, Kuhpayehzadeh J, Gholami T, Khajavi M. Evaluation of clinical reasoning of interns and residents of Iran University of Medical Sciences. Razi Journal of Medical Sciences. 2013;22(132):18-25. [In Persian]
46. Karimian Z, Kojouri J, Sagheb MM. A review of evidenced-based medical education at universities in and outside Iran. Interdisciplinary Journal of Virtual Learning in Medical Sciences. 2015;6(1):64-75. [In Persian]

47. Akbari Lakeh, M., Karimi Moonaghi, H., Makarem, A. Medical Faculty Members' Teaching Competencies and Factors Affecting It. Future of Medical Education Journal. 2012; 2(3): 7-10. doi: 10.22038/fmej.2012.342.
48. Mohammadi A, Manafi F, Shoghi Shafagh Aria F, Mojtahedzadeh R. Factors Affecting Social Accountability and Community Based Medical Education in Medical Universities: Iran's Educational Development Authorities View Point. Payavard. 2023; 17(4): 336-48. [In Persian]
49. Moezzi M, Shirani M, Majidi F, Saberzadeh M. Design and implementation of communitybased and responsive educational program: Experience report of Shahrekord University of Medical Sciences Center for the Study and Development of Medical Education. Iranian Journal of Medical Education. 2017;17: 120-4. [In Persian]
50. Wijnen-Meijer M, Van den Broek S, Koens F, Ten Cate O. Vertical integration in medical education: the broader perspective. BMC Med Educ. 2020; 20(1): 509. doi: 10.1186/s12909-020-02433-6. PMID: 33317495 PMCID: PMC7737281
51. Medical Education Studies and Development Center. Introduction of responsive training unit. Isfahan: Isfahan University of Medical Sciences; 2020. [In Persian]
52. Amini A, Alizadeh M. Developing social accountability indicators at medical schools. Research and Development in Medical Education. 2014;4(1):71-6. doi: 10.15171/rdme.2015.011.
53. Rahbar Taramsari M, Heidarzadeh A, Khoshrang H, Mohseni F, Dadgaran I, Taheri M, et al. Development the field of accountable education: along the way from the comprehensive health service center to the social accountable medical education center: The need for change. Research in Medical Education. 2022;13(4):76-9. [In Persian]
54. Kotter JP. Leading change. Boston, US: Harvard Business Press; 2012. doi: 10.15358/9783800646159.