

Global perspectives on trends in health higher education

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ABSTRACT

Today, changes in political and economic conditions, epidemiological and sociological developments, and the advancement of science and technology have necessitated the health and medical education systems to change. Therefore, we conducted a study entitled “Global perspectives on trends in higher education in healthcare,” to improve the quality of healthcare so that it can be used as a model for predicting future events related to medical education. This futures study applied the social, technological, economical, ecological, political, values (STEEPV) model to identify and analyze the trends that affect medical education at different levels. To collect and analyze the data, a scoping review of the articles published from the year 2000 was conducted on the World Health Organization (WHO), Web of Science, Scopus, PubMed/MEDLINE, EMBASE, Science Direct, Google Scholar, EBSCO, and Cochrane databases. The review process was performed in five stages: 1- Determining the research question, 2- Identifying relevant studies, 3- Selecting the studies, 4- Charting the data, and 5- Analyzing data. The preferred reporting item for systematic review and meta-analysis (PRISMA) statement was used in the selection and screening of articles. A total of 213 articles were included in the study for qualitative synthesis. A total of 154 trends were identified using the STEEPV model at seven levels of health behaviors and patients, diseases and health problems, healthcare system, medical education system, medical education institutions, medical curricula, and teaching and learning. Considering the results of this study, it is possible to formulate proper and efficient future scenarios for the higher health education system. Also, it will be helpful for medical education policymaking.

Keywords: Future, higher health education, medical education, trends

Introduction

Medical education is utilizing research findings related to medical science, education, learning, educational media, and communication sciences to facilitate and consolidate learning. Due to the nature of medical education disciplines,

the need for new teaching strategies and their application in the teaching–learning process seems necessary.^[1] The quality of medical services depends on medical education. And we should never forget the principal role of patients as the ultimate recipients of medical skills. The performance of the clinical staff depends on the quality of medical education.^[2]

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In 1984, an Association of American Medical Colleges (AAMC) published a report entitled “Physicians for the Twenty-First Century.” “They provided many insights into the medical education reforms, such as the value of integration, increasing the use of active learning methods, self-directed learning, improving

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communication skills, and increasing problem-solving activities.^[3] Subsequently, in 1993, a report released by academic medicine—the road to implementation (ACME-TRI) entitled *‘Educating Medical Students, Assessing Change in Medical Education - The Road to Implementation’* identified educational problems by surveying the medical school deans. They suggested ways to deal with these issues and presented an action plan.^[4] Also, in 1998, the World Federation for Medical Education (WFME) announced that the goal of medical education is *“the production of physicians improves people’s health.”*^[1]

Medical education has recently changed to a negative trend. These changes are widely visible in different parts of the world.^[5] Increasing concerns about the weaknesses of traditional medical education are a common topic that medical educators have expressed for decades. Convincing evidence, which is well documented in the reports of the British General Medical Council (1993), the World Federation of Medical Education (Walton, 1993), and the AAMC (1994, 1998; Anderson and Swanson, 1993), leads to the understanding of the necessity for significant reforms in the process of medical education.^[2] However, the development of the educational system in the age of information and communication technologies is one of the main challenges of educational policymakers.^[6]

Today, optimizing students and social learning is one of the most urgent issues facing higher education. Students need to learn more diverse learning to be effective citizens and meet life challenges. To do this, the institutions must transform to better prepare the students to live in a complex world.^[7] Due to the rapid development of technology and science, students are trained to become lifelong learners and critical thinkers. This type of training gives them the ability to adapt to the changing demands.^[8-11]

Throughout history, the medical education system has tried to find better ways to educate. In today’s society, due to political and economic conditions, epidemiology, the development of sociology, and the advancement in science and technology, health and medical education systems need to change medical education.^[1]

The educational process is expected to change a lot in the future, including increasing the use of innovative teaching techniques, recognizing the community’s needs, and considering the above-mentioned trends, potential changes in student admission, and evaluation methods.^[1] One of the methods that can help to predict the future changes in medical education is trends analysis. Trend analysis is one of the most common forecasting methods that focuses on observing and recording the past function and activity of a specific factor and generalizing it to the future and includes the analysis of quantitative and qualitative trends. This approach may be inconsistent with the aims and principles of future studies. However, this method (trends analysis) is widely used in futures studies. Using this method is more about recording and reflecting on the past behaviors in the future than understanding the reasons for the occurrence of that particular behavior.^[12]

In June 2017, a group of expert leaders from different geographical, environmental, and institutional perspectives were asked to identify at least three factors that they thought would affect the future of medical education. They requested to describe the next 10 years and explain how each of these contextual factors will influence. A total of 91 people had been contacted from 91 countries; 51 ideas were shared by them. The respondents identified more than 150 factors that may affect the future of medical education. These factors included curriculum development, globalization, the healthcare system, cultural and social factors.^[13]

Over the past 20 years, several studies have described the need for fundamental change and innovation in the structure and process of medical education. All of these studies indicate that development is happening very slowly. However, today it seems fair to say that preparing and grounding for change and quality improvement is a valuable step.^[14-19] The significant changes is essential, not only in physicians’ training programs but also in the overall approach to the profession.^[20] They argued that there should be a standardization of learning outcomes (competency-based assessment) and individualization of the learning process (planning to meet students’ learning needs). Also, clinical knowledge and skill need to be integrated at all levels and trained physicians need to develop their research and innovation. There is a need for an accurate, comprehensive, and up-to-date study of effective trends and drivers due to extensive and effective changes in various layers of medical education such as curriculum planning and institutions, which can pay attention to all aspects like political, economic, environmental, cultural, etc., and be considered as a suitable model for medical education. Therefore, we conducted a study entitled “Global Perspectives on Trends in Health Higher Education” (an analytical approach), considering the importance of health higher education in Iran and the world to improve the quality of healthcare, until we can propose a model for predicting future education-related events by analyzing the trends.

Materials and Methods

In this futures study research, the STEEPV model was used to identify and analyze the trends affecting medical education. The STEEPV model examines the trends in six areas: social, technological, economic, ecological, political, and value/culture, which is more comprehensive than either the other models of external environment analysis and has many derivatives. This model has many applications in futures studies and is used as a basic model.^[21] The scoping review proposed by Arksey and O’Malley was used to identify the trends and drives affecting medical education. The five-step process is presented below:

- Stage 1: Identifying the research question
- Stage 2: Identifying relevant studies
- Stage 3: Study selection
- Stage 4: Charting the data
- Stage 5: Collating, summarizing, and reporting the results

Stage 1. Identifying the research questions

This study used an exploratory review of the literature on the higher medical education system for identifying the research questions, which led to the formation of the current protocol domain.

Accordingly, seven related and intertwined areas in the health higher education system were considered as different influential levels of trends in this system [Figure 1], and the study was organized to answer the following questions accordingly:

- 1- What are the most important trends and drives related to patients and health behaviors?
- 2- What are the most important trends and drives related to diseases and health problems?
- 3- What are the most important trends and drives related to the healthcare system?
- 4- What are the most important trends and drives related to medical education system?
- 5- What are the most important trends and drives related to medical education institutions?
- 6- What are the most important trends and drives related to the medical curricula?
- 7- What are the most important trends and drives related to teaching–learning?

Stage 2. Identifying relevant studies

In the second stage, to select from a wide range of studies, the inclusion criteria were determined. The articles aimed at examining, explaining, or describing trends, driving forces, and influential factors were included. Other criteria such as type of publication (articles published in reputable journals and scientific databases related to the research topic), the period from 2001 to 2021 (20-year period due to the beginning and increase of technology growth in this period and its impact on higher education as well as changes in health needs), language (English and Persian), and type of articles (articles whose full text is available) were considered as the inclusion criteria. The initial keyword searches were conducted through the Google search engine and Google Scholar. The main search was performed after the initial exploratory research. In the main search, English articles were examined in databases such as WHO, Web of Science, Scopus, PubMed/MEDLINE, EMBASE, Science Direct, Google Scholar, EBSCO, and Cochrane, and Persian articles were checked on sites such as Irandoc, Magiran, SID, and Iranmedex.

The keywords used in these searches included Trends, Macro trends, Social trends, Economic trends, political trends, Technological trends, Education trends, Medical education trends, Future, Higher education, Tertiary education, University education. According to the instructions of each database, an appropriate strategy and the combination of key players was considered with “AND”, “OR” operators.

Stage 3: Study selection

The purpose of this phase of Arksey and O'Malley's framework was to select relevant articles for inclusion in the study. First, all

retrieved articles from various databases were aggregated in the Endnote X9 program, and duplicates were removed. Then, to identify the articles related to the research topic, the titles and abstracts of the remaining articles were reviewed by two members of the research team, and the unrelated items that did not meet the inclusion criteria set in the second stage of the protocol were excluded from the study. In the cases where there was ambiguity or hesitation among the reviewers regarding the omission of the unrelated articles, the final decision was made by a third party. The PRISMA diagram was used for selecting the related articles.

Stage 4: Charting the data

To ensure the reliability of the findings, the third researcher reviewed 20% of the articles, as a sample, according to the data extraction table and the framework used. A consensus was reached in a meeting with all members of the research team in case of ambiguity or disagreement between reviewers in data charting.^[21]

Stage 5: Collating, summarizing, and reporting the results

At this stage, qualitative analysis and thematic framework were used to collect and categorize the results. The results were presented in the form of tables and were reviewed by the research team in several meetings. Errors and ambiguities were resolved in categorizing or summarizing the findings. Finally, the report was prepared.

Result

From the 270 articles identified in the first stage, 30 duplicated studies were removed. Also, following the first screening stage, 30 articles were excluded from the study. In the next step, to obtain the related articles, 210 full-text articles were selected for qualitative evaluation. Additionally, 108 articles were identified through other sources. Finally, 213 articles were selected for review after removing 105 articles that did not comply with our inclusion criteria [Figure 1].

The literature review identified 154 trends in seven areas of higher medical education [Figure 2], including Patients and Health Behavior (12 trends), Diseases and Health Problems (6 trends), Healthcare System (27 trends), Medical Education System (31 trends), Medical Education Institutions (24 trends), Medical Curricula (30 trends), and Teaching and Learning (24 trends). Among these, 12 trends were related to Patients and Health. These related trends were identified in the social, technological, economic, environmental, political, and value/culture areas [Table 1].

Trends Related to Patients and Health Behaviors

It seems that a revolution has taken place in healthcare as a result of changes in medical science and society. These include changes in demographics and disease patterns, new technologies, changes in healthcare delivery, increased consumerism, empowerment,

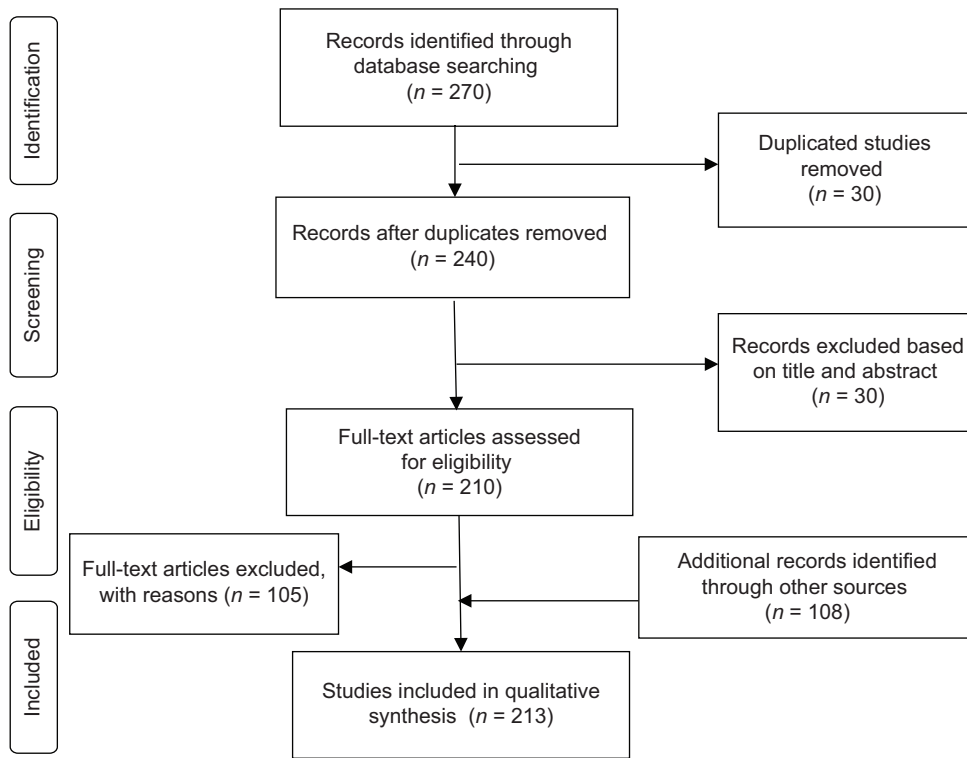


Figure 1: The PRISMA flow diagram for identification of eligible studies

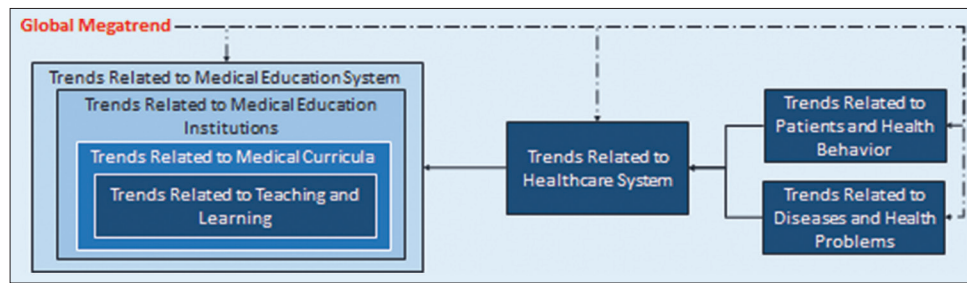


Figure 2: Conceptual model of different levels of effective trends in the health higher education system

and patient independence, focusing for effectiveness, efficiency, and changing professional roles. These are challenges that medical professionals face in the twenty-first century and continuing medical education (CME) must respond to them.^[1,22] In the Patients and Health Behavior level, 12 trends were identified in the social and technological areas: 10 trends associated with the social area and 2 trends in the technological area. The trends related to the patients and health behaviors are one of the trends which affect the healthcare system.^[5,23-42]

Trends Related to Diseases and Health Problems

In the past, infectious diseases and malnutrition have been the focus of macro-level health policies in various international communities, including the WHO. Today, the pattern of illness has changed, and the burden of mental disorders is enormous.^[1] Profound changes in lifestyle, communication, and movement of goods and people affect the spread and control of diseases

and health risks. The gap between domestic and international health problems has narrowed, where people and goods travel across continents. These are not just infectious diseases that are spreading with globalization. Changes in lifestyle and diet have also led to increased heart disease, diabetes, and cancer. In addition to the traditional focus on disease burden, considering the risks, we can provide a complete picture of healthcare needs, not only for now but also for the future.^[43] The diseases and health problems trends were only founded in the social area. A total of six related trends were obtained in the social area. Trends related to diseases and health problems, like patients and health behaviors trends, affect the healthcare system.^[23-33]

Trends Related to Healthcare System

The healthcare system is a knowledge-intensive process, and the performance of health workers is critical in performance-shaping in the healthcare system. Currently, the WHO is interested in studying the relationship between the training of human

Table 1: Trends related to different levels of health higher education in the social, technological, economic, ecological, political, and value/culture

Different levels of health higher education	STEEP area	Trends and drives
Patients and Health Behavior	Social	☑Engaged patients, ☑Enabled patients,☑Empowered patients,☑↑ Health Literacy,☑↑ Clinical Information in Patients, ☑The change in public expectations, ☑Increase in Long-term Conditions, ☑Self-care, ☑Self-management, ☑↑ Public Expectations, ☑Generation C (Connected)/ Engaged) Consumers,
	Technological	☑Equipped patients, ☑E-Patient
Diseases and Health Problems	Social	☑Chronic (Non-communicable) Diseases, ☑Changing Lifestyles, ☑New/Emerging Infectious Diseases, ☑Aging Population, ☑Changing the focus of illness, ☑Changing demographics
	Technological	☑Non-doctor-led healthcare, ☑Mobile Technologies, ☑Personalized Technologies, ☑Assistive Technologies, ☑Wireless Sensors
Healthcare System	Social	☑Whole workforce Approach, ☑More Regulated Healthcare System, ☑New Provider Roles, ☑Evidence-Based Medicine, ☑↑Medical Knowledge, ☑↓Knowledge Doubling Time, ☑Change in doctors working hours, ☑↑ Community as Treatment Setting, ☑Staffing Shortages, ☑Awareness of healthcare needs of societies, ☑Minimum Professional Standards, ☑↓ LOS in Hospitals, ☑Handheld Diagnostics, ☑↓ Doctors Working Hours, ☑Low Numbers of Doctors & Specialists, ☑Reliance on Outsourcing Care, ☑Extended and Expanded Professional Roles
	Ecological	☑Under-resourced Rural and Remote Areas
	Political	☑Tensions Between Public and Private Sector, ☑Shift to Generalization
	Value/culture	☑The Changing Focus of Patient Treatment, ☑Feminization of Medical Workforce
Medical Education System	Social	☑Commissioning Education, ☑Regulation and Licensing, ☑Accreditation, ☑Education for Capability, ☑Community Orientation in Medical Education (COME), ☑Best Evidence Medical Education, ☑Older & Wiser Students, ☑Program Accreditation, ☑Changing aim of Medical Education, ☑Ethnically diversity of students is growing, ☑attending multiple institutions in their pursuit of a degree
	Technological	☑Use of information technology in medical education,☑the virtual university approach, ☑widespread use of data analytics/Learning Analytics
	Economic	☑More attention to branding and marketing, ☑Credit transfer/Credit based system, ☑Money Woes (diminished ability to pay for a college education), ☑Penny Pinching (re-evaluating the price they are willing to pay for education.), ☑ justify their college investment (RoI)
	Political	☑Graduate Entry,☑Unity between Education and Practice, ☑integration of basic and postgraduate medical education, ☑International student flow increasing, ☑Continuing Professional Development (CPD), ☑Inter-disciplinarity, ☑National assessments, ☑the multi-professional concept of training, ☑International Best Practice, ☑Regulatory and Licensing Mechanisms, ☑Changing Strategies for Medical Education
Medical Education Institutions	Social	☑Professional Character Development, ☑ Student Support Systems, ☑ Comprehensive Student Development, ☑ Faculty promotion on the based on their performance as a teacher, ☑All faculty members are expected to have had training in teaching, ☑higher social responsibility of educational institutions, ☑Shared/Open Educational Resources, ☑ New Faculty Roles, ☑Development of cultural diversity, ☑An educational development unit supports the education initiatives, ☑staff with training in education support the education initiative, ☑SOTL, ☑Clarification of Faculties' Professional Roles, ☑Universities without a Wall, ☑Entrepreneurial (3 rd G) Universities, ☑ Innovative (4 th G) Universities
	Economic	☑clearer educational budgetary responsibility, ☑More Market Exposure (Privatization), ☑Programs are evaluated for their efficiency and cost-effectiveness
	Political	☑Increasing Stress on Faculty Development, ☑Internationalization of Medical Education, ☑Trained Supervisors, ☑ More Autonomy, ☑Commissioning education

Contd...

Table 1: Contd...

Different levels of health higher education	STEEPV area	Trends and drives
Medical Curricula	Social	<input checked="" type="checkbox"/> Common Training Standards, <input checked="" type="checkbox"/> Common Training Outcomes, <input checked="" type="checkbox"/> Common Training Competencies, <input checked="" type="checkbox"/> an emphasis on clinical skills, <input checked="" type="checkbox"/> an emphasis on communication skills, <input checked="" type="checkbox"/> Modularization of Programs, <input checked="" type="checkbox"/> Defined Curriculum, <input checked="" type="checkbox"/> Broadening of clinical training settings, <input checked="" type="checkbox"/> Valid assessment systems, <input checked="" type="checkbox"/> Shorter Internship, <input checked="" type="checkbox"/> Crowded Curricula, <input checked="" type="checkbox"/> Student centeredness, <input checked="" type="checkbox"/> Systematic Approach to Curricula, <input checked="" type="checkbox"/> Community Orientation, <input checked="" type="checkbox"/> More Open Source Curriculum Content, <input checked="" type="checkbox"/> Flexible, <input checked="" type="checkbox"/> agile curricula, <input checked="" type="checkbox"/> supplementary use of skills laboratories, <input checked="" type="checkbox"/> Personalized, tailored programs, <input checked="" type="checkbox"/> Problem-based Learning Curriculum, <input checked="" type="checkbox"/> Curriculum Integration, <input checked="" type="checkbox"/> Decreasing Stress on Factual Knowledge, <input checked="" type="checkbox"/> Professionalism, Core & Options, <input checked="" type="checkbox"/> adaptive curricular planning, <input checked="" type="checkbox"/> Student-activating instructional methods
	Technological	<input checked="" type="checkbox"/> Cloud-based big data,
	Political	<input checked="" type="checkbox"/> Integration of basic and clinical disciplines, <input checked="" type="checkbox"/> General Residency, <input checked="" type="checkbox"/> strengthening of educational leadership
	Value/culture	<input checked="" type="checkbox"/> Ethics in medical education
Teaching and Learning	Social	<input checked="" type="checkbox"/> Tutorship, <input checked="" type="checkbox"/> Interwoven themes and strands, <input checked="" type="checkbox"/> Workplace Assessment, <input checked="" type="checkbox"/> Clinical evaluation exercise (mini-CEX), <input checked="" type="checkbox"/> criterion-referenced assessment, <input checked="" type="checkbox"/> Self - Directed Learning, <input checked="" type="checkbox"/> Guided Discovery Learning, <input checked="" type="checkbox"/> Problem-based Learning,
	Technological	<input checked="" type="checkbox"/> Technology-supported “Near Patient” Learning, <input checked="" type="checkbox"/> Technology-supported “Patient Journey” Learning, <input checked="" type="checkbox"/> Microteaching, <input checked="" type="checkbox"/> Simulation-based Assessment, <input checked="" type="checkbox"/> Virtual Reality, <input checked="" type="checkbox"/> Technology-enabled assessment, <input checked="" type="checkbox"/> E-Portfolios; wikis and blogs; social networking; tablets/smartphones, <input checked="" type="checkbox"/> Augmented Reality, <input checked="" type="checkbox"/> gamification, <input checked="" type="checkbox"/> Mobile-based learning, <input checked="" type="checkbox"/> Rotating internship, <input checked="" type="checkbox"/> flipped classrooms, <input checked="" type="checkbox"/> Mobile learning, <input checked="" type="checkbox"/> MOOCs, <input checked="" type="checkbox"/> Wikis and blogs, <input checked="" type="checkbox"/> Social networking

resources and the quality of the health system. For example, accidentally overdosing on medicines can lead to more harm or even death. Poorly pronounced speech can be frustrating and cause more emotional or psychological torment to the patient than is intended. Therefore, medical educators need to ensure that medical students learn what, how, and when.^[43] There is a need for dramatic changes in various aspects to achieve a cost-efficiency system that provides quality care. Maintaining the status quo is not optional. When no prospects are considered in medical education, it leads to instability in promoting health and preventing diseases as well as training appropriate physicians.^[44] The healthcare system is the only level of health higher education that has trends and drives by five areas. A total of 27 related trends were found, of which 17 trends were related to the social sphere, five trends to the technological area, one trend to the ecological area, two trends to the political area, and two trends to value/culture area. The patients and health behaviors trends and diseases and health problems trends influenced the healthcare system’s trends.^[3,20,34-42,45-91]

Trends Related to the Medical Education System

The training process is expected to change a lot in the future, including increasing to use of innovative education methods, identifying a community’s needs, and considering the above trends. The potential changes in student admission and evaluation methods are other aspects that can greatly affect medical education. It seems that the role and performance of teachers should change in the near future. Knowledge is readily available to students today and this trend is likely to increase in the

future. Therefore, teachers will no longer be the main source of information for most students. Instead, they should seek to teach appropriate techniques. Sharing development experiences are of great importance to avoid unnecessary efforts in trying to reinvent the wheel.^[1] Medical educational systems have trends and drives in four areas. A total of 30 trends was found: 11 trends are in the social area, three trends are in the technological area, 5 trends are in the economic area, and 11 trends are in the political area. The trends related to the medical education system are influenced by trends related to patients and health behaviors, trends related to diseases and health problems, and trends related to the healthcare system. The medical education system also affects the trends of the three areas of medical education institutions, medical curriculum, and teaching and learning systems.^[8,92-131]

Trends Related to Medical Education Institutions

There is no doubt that changes in society have led to the creation of a new type of medical student. Recent studies have shown a significant increase in the social awareness of medical students. Changing the attitude of incoming students in medical schools has doubled the need to change medical education institutions to gain educational experiences related to the community needs.^[132] Medical education institutions have trends and are drives in three areas. A total of 24 trends were found: 15 trends related to the social area, 30 trends related to the economic area, and 5 trends related to the political area. The trends related to medical education institutions are a subset of the medical education system and the trends in the area of the medical curriculum, teaching–learning systems in its subset.^[2,7,9,132-160]

Trends Related to Medical Curricula

Recently, most medical schools, particularly in Southeast Asia, faced the problem of providing the right quality and quantity of educational experience. Because the curriculum could not support society's needs. When we focus on the future of colleges and universities, we find that it is unlikely to be a straight line from the past. Therefore, the twenty-first-century medical curriculum should equip tomorrow's physicians with enough knowledge, skills, and attitudes to be able to respond to the challenges of an increasingly globalized environment. Patients and the public need physicians who can provide public care in a wide range of specialties and different services.^[161] The medical curricula level has trends and drives in four areas. A total of 30 trends were found: 25 trends related to the social area, 10 trends in the technological area, 3 trends in the political area, and 1 trend related to the value/culture area. The medical curriculum trends are a subset of the medical education institutions and medical education system, and has trends related to the teaching–learning systems in its subset.^[10,12,152-154,161-195]

Trends Related to Teaching and Learning

Autonomous learning engages the learner as an active participant and encourages deep learning. Currently, the most general education courses are required teacher as a source of information that encourages students to learn superficially. Inclusive teaching is an active process when a student does “teaching–learning” through “deepening” or studying. This prepares the students to use learning related to their educational needs and learning method. They can learn quickly, according to their ability to learn a particular subject or skill. In addition, this approach forces the students to adapt to the knowledge, challenges, and problems that students will face in their professional lives in the future.^[196] The level of the teaching–learning program has trends and drives in two areas. A total of 23 related trends were found of which 8 trends were related to the social area and 16 trends were related to the technological area. This area is a subset of the medical education system and medical education institutions and medical curricula.^[10,155-160,170-172,176-182,184,186,187,189,197-209]

Discussion

Medical education is a mix of purposeful learning that requires a response to the structure of the higher medical education system. Implementing innovation in medical education can perhaps be considered as a paradigm shift in the health higher education system. This study aims to analyze trends of higher medical education in the world. The study results showed that 154 trends can be considered in seven higher education areas. It is important to note that most trends and drives are related to social and technological areas. Therefore, paying attention to these two areas can pave an important part in the medical education path. Trends related to the healthcare system are at the heart of this pattern. This trend is affected by trends related to patients and health behavior, trends related to diseases, and health problems. Also,

it influences other trends in other areas. The most frequent and important trends are related to the educational system. The system has three sub-categories of medical education institutions, medical curricula, and teaching and learning. The results of this study indicate that the medical curriculum needs to pay more attention to futuristic studies of medical education. According to the O'Brien study, the curriculum requires more attention to reflection, humanism, self-directed and adaptive learning, communication, teamwork (especially in professions), ethical decision-making, effective and efficient use of technology and leadership.^[44]

Given the rapid advances in knowledge, changing epidemiological trends, and easy access to information, it seems futile to predict that basic science and clinical science topics and practical skills will be most important in future clinical practice. The increase in medical institutions coincides with the growth in population in an area. The increase in medical schools will respond to the needs of community health centers. It can eliminate the shortage of doctors and minimize the dependence of the local population on doctors abroad.^[64] The benefits of increasing medical schools (public or private) are an access to advanced healthcare services and creating more job opportunities for people in all technical, administrative, or infrastructure fields.^[210] Simulation-based healthcare education has reached a level of progress in teaching and learning. This progress allows standardization not only for patients but also technical methods and even real-life clinical scenarios.^[13,160] In other words, it should be a method that has the best results for the faculty involved in education and is also suitable for the students.^[110]

Conclusion

The patterns of medical education development in the past decades may not be effective for the future, and there is a need for a comprehensive and codified study to identify and design new patterns. Providing an appropriate model of medical education is essential to help medical students. The proposed model in this study gives the best path for faculty members and students. This analysis helps to make appropriate and efficient future health higher education scenarios and policymaking. This model can provide a clear path in future higher medical education world trends for researchers, students, and physicians.

Ethical considerations

The article is based on some results of the doctoral dissertation in the field of medical education with Ethical Code: IR.SBMU.SME.RE.1400.016

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Conflicts of interest

There are no conflicts of interest.

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