

Original Research



A comparative study of community medicine and public health curriculum at medical schools in Iran and North America

Tahereh Changiz¹, Mahasti Alizadeh^{2,3*}

¹Department of Medical Education, Medical Education Research Center, Isfahan University of Medical Sciences, Isfahan, Iran

²Department of Medical Education, Virtual School of Medical Education and Management, Shahid Beheshti University of Medical Sciences, Tehran, Iran

³Social Determinants of Health Research Center, Health Management and Safety Promotion Research Institute, Tabriz University of Medical Sciences, Tabriz, Iran

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Abstract

Background: Community medicine and public health are the core subjects in medical education. One of the main competencies of general physicians in the national curriculum is having knowledge and skills in health promotion and disease prevention in the health system. Any curriculum revision in community medicine departments needs to incorporate the evidence and use pioneer countries' experiences in this issue. This study aims to compare community medicine and public health courses in medical schools between Iran and selected universities in North America.

Methods: The elements of a community medicine curriculum for medical students were compared in a descriptive-comparative study using the Bereday model. These elements included objectives and competencies, educational strategies, teaching and learning methods, assessment, and educational fields in a community medicine curriculum in Iran and in selected universities in North America. A literature search was conducted in CINAHL, SCOPUS, MEDLINE, Web of Science, EBSCO, and on university websites.

Results: Essential aspects of community-based strategies among community medicine and public health curriculum of general medicine in universities in Canada and the United States included a longitudinal approach, training in urban and rural primary care centers, teaching by family physicians and health center staff, a spiral curriculum, focus on social determinants of health, taking of social and cultural histories and social prescriptions, learning teamwork, and using LIC (Longitudinal Integrated Curriculum).

Conclusion: The objective of community medicine and public health curriculum in selected North American universities was to prepare general practitioners who work in Level 2 and 3 hospitals and to improve their skills to provide high-quality services to the community. Some of the successful points in the selected universities that could be replicated in Iranian faculties of medicine included using integration strategy, a spiral curriculum, and an LIC approach.

Introduction

Community-based medical education (CBME) is defined as the provision of medical education in social contexts and areas. In the community-based medical context, students are educated in an environment outside educational subspecialty hospitals. Community-based education is provided in most universities globally at the first level of health care, including public clinics, family medicine clinics, urban and rural health centers, patients' homes, schools, and factories. Subjects and topics in the CBME context include epidemiology, preventive medicine,

general health principles, community development, social health effects, social health components, health systems, and the health care team.¹ In Iran, these education programs are currently provided in community medicine departments, and general health and prevention programs are provided in the form of courses in basic sciences and at the preclinical, clerkship, and internship stages.

Eight main competencies are expected of general medicine doctoral graduates: clinical skills, communication skills, patient care (diagnosis, treatment, rehabilitation), health promotion and disease prevention

*Corresponding author: Mahasti Alizadeh, Email: alizadeh.mahasti@gmail.com

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in the health system and the role of the physician, personal development and continuous learning, professional commitment, medical ethics and law, and decision-making skills including reasoning and problem solving.²

Although all of these capabilities are primarily included in the curricula of all departments and wards of a medical school, health promotion and disease prevention in the health system and the physicians' role have the most direct connection to the community medicine departments whose curricula covers most of these capabilities.

After the approval and announcement of the competencies for general medicine graduates, during several meetings in the General Medicine Secretariat with various stakeholders of the general medicine program in August 2015 by the High Council for Medical Science Planning, the general medicine curriculum was approved and promulgated to universities. This curriculum includes about ten theoretical units of basic and preclinical courses with the general title of community medicine and health sciences courses, seven units of internship and clerkship in community and family medicine, two units of community medicine, and up to four units of family medicine internship.³

Many comparative studies in medical education have been conducted around teaching the basics and applications of community medicine and prevention in various universities, but only a small number of comparative studies have been conducted in community medicine and public health in general medicine.

Peik et al. published a comparative study of universities in Canada, France, Italy, Japan, the United Kingdom, and the United States on preventive medicine and public health education in 2017.⁴ There were many similarities among the various universities in these two disciplines; the differences tended to be in educational strategies, stakeholders, and costs. However, this comparative study was conducted around a specialized training program in preventive medicine and public health

In 2018, Hays presented a review study on integrating health promotion and disease prevention into medical education. In this study, he reviewed and criticized health promotion and disease prevention in educational programs with an emphasis on educational standards in different countries.⁵

Comparative studies in medical education have also been conducted in Iran. A descriptive comparative study by Ghaffari et al was conducted on the general medicine curriculum in Iran compared with several medical schools around the world, in which Ludwigsan indexes in universities in Australia, America, Europe, Asia and Africa were compared and studied.⁶

Another comparative study was conducted by Sajadi et al around nursing education in Iran and Japan using the Brady model.⁷ A comparative study using the Bereday model was conducted by Karimi Monaghi on master's degree curricula in Iran and other countries. Researchers

compared the mission, vision, values, beliefs, educational strategies, and other components of the program among the universities of Dundee, Calgary, and Maastricht, and they concluded that the current program in Iran is comprehensive and complete. They suggested reviewing the goals, educational strategies, and admission to the bachelor's degree program.⁸

Currently, community medicine and health sciences curricula are implemented in different universities of the country using different strategies. Of course, the main framework of goals and fields of study is specified in the National General Medicine Program, but the details, including specific goals and educational strategies along with teaching and assessment methods, are not clearly stated and standardized.

There are dozens of family and community medicine departments in the United States and Canada. The choice of universities was based on access to published papers and reports. Therefore, the selected universities were the University of Toronto, the University of Wisconsin-Madison, and the Morehouse School of Medicine in Atlanta.

In this study, we decided to compare the public health and community medicine curriculum for general medicine courses in Iranian universities with selected universities in North America to reach a proposed conclusion through which to evaluate the implementation of the curriculum and student progress more accurately.

Materials and Methods

This comparative descriptive study was conducted using the Bereday model. A literature review and website search was conducted using a systematic search in MEDLINE, SCOPUS, CINAHL, EBSCO, and Web of Science databases and the websites of the relevant universities and departments in Iran and North America universities. Keywords used include community medicine, social medicine, undergraduate medicine, community based medical education, service learning, longitudinal integrative curriculum, community health, social determinants of health, rural health education, public health education, medical school.

In comparative studies with the Bereday approach, the steps are as follows⁹:

(A) Description, (B) Interpretation, (C) Juxtaposition and (D) Comparison.

(A) Description: In this step, the researched phenomena are described based on the evidence and information obtained from different sources. This stage includes taking notes and preparing sufficient findings for the next steps.

(B) Interpretation: This step includes the review of information that is described in the previous step.

(C) Juxtaposition: In this step, the information obtained in steps A and B are classified and put together, and a framework is provided to prepare the way for the next steps.

(D) Comparison: The research issue in this step is examined and compared in terms of similarities and differences.

The data obtained from each university, including program objectives, expected competencies of students, educational strategies, teaching methods and techniques, program duration, course content, program presentation at educational levels, student evaluation methods, program structure, and educational areas are compared and finally, the application of these results in our country was examined. In this study, primary ethical considerations such as confidentiality of information from sources and honesty in reporting the findings of curricula were considered.

Results

In this study, the community medicine and public health curricula at the University of Toronto in Canada and the Universities of Wisconsin-Madison and Morehouse School of Medicine in the United States were extracted and compared with the community medicine curriculum in Iran. For this purpose, records and publications, and reports in the field of CBME, public health education, and community medicine for medical students were used.

Iran Universities of Medical Sciences

Community medicine departments have been set up in medical schools in most universities in Iran since 1986, when the concepts of community health in medical education were introduced. Community medicine specialists and other disciplines related to health and medical sciences provide theoretical, clerkships, and internship courses in community medicine to medical students at all levels of general medicine in these departments, according to the latest version of the National General Medicine Program of Iran³ approved in 2017.

These theoretical courses, which are presented through lectures, group work, project work, and questions and answers in most universities, are the basis for community medicine courses, including a one-month community and family medicine clerkships and a one-month internship.

During the community and family medicine clerkships, students are expected to communicate appropriately with clients, patients, staff, and other health team members, and demonstrate the characteristics of appropriate professional behavior in their interactions. The purpose of this course is to understand the structure, function, and relationship of the components of the health system and primary health care. In this regard, a student is expected to be able to perform reproductive health services, adolescent health, and middle-aged and elderly care at the first level, as well as observe and perform activities in the fields of health education, environmental, occupational, oral, and school health, immunization, and disease prevention and screening.³

In this course, students work in urban and rural

health centers, and in addition to receiving theoretical knowledge in the classes and workshops of the community medicine department, they perform their individual and group assignments in the mentioned centers. Teaching methods include field training, group discussion in classes, and interactive lectures. In the internship, the goal is to acquire management skills, risk assessment, health program analysis, problem analysis in the health system, approaching the patient with priority given to social and cultural factors and prevention and rational prescription.

Proposed educational fields in the internship course, in addition to urban and rural health centers, are preventive and family medicine clinics and health centers in the province and the district.

Assessment in both clerkships and internships includes written exams, oral exams in the field, logbook assessments, and structured objective practical tests that vary from university to university.³ (Table 1)

The University of Toronto, Canada

The Department of Family and Community Medicine at the University of Toronto in Canada is the largest department of Community and Family Medicine in North America. This department has an important and effective position in general medicine education. Integrated learning and creating a balance between education in the community and the hospital is one of the goals of this department. Students' first contact with this department is in their first year of medicine through meetings between first-year students and family physicians working at the primary health care delivery system. The purpose of these meetings is to familiarize students with the position and duties of a family physician. After these meetings, first-year students will attend urban and rural centers alongside a family physician for a week. This stage of education in the first year of medical school is called observership. In the second year, students experience providing primary care in community centers and become closely acquainted with the duties of family physicians and visit patients with the physician. This stage is called Family Medicine Longitudinal Experience. Students visit centers and family medicine for 2 months, four days in the afternoon, 40 to 60 minutes away from the college.

In the third year, the core-clerkship stage, team-based learning is used, and students provide services practically and directly in the community. Students are in these centers for 6 weeks, along with other professions and in an interprofessional environment. At the same time, students attend the Rural Ontario Medical Program in various rural areas to learn about health services provided to local village residents and to work with a family physician.

In the fourth year, students can attend elective courses in urban and rural centers for 13 weeks.¹⁰

Assessment methods include weekly quizzes, assignments related to course objectives with feedback, the Objective Structured Clinical Exam (OSCE), forms and

checklists for professionalism assessment, presentation evaluation, rethinking, and preparing a portfolio.¹⁰

Another successful experience at the University of Toronto is the use of the Longitudinal Integrative Curriculum (LIC) approach, which aims to meet the needs of patients and communities, to build teamwork skills, and to integrate care based on needs, justice and personalized care of clients and evidence-informed performance. Among the goals of this course, in addition to responding to the personal needs of patients, medical students advocate for patient needs outside the clinical environment, participate in promoting community health, are actively involved with health staff, and demonstrate leadership skills in professional practice.¹¹

Educational strategies for the LIC at the University of Toronto include student-centered, problem-based learning, community-based, integration, and electiveness.

In this course, teaching methods and techniques are based on the spiral curriculum model, which is a concept that starts from the first year and continues until the last year with changes in the level and depth of learning. For example, descriptive epidemiology is offered in the first year, analytical epidemiology in the second year, and clinical epidemiology in the third and fourth years. Another example is basics and principles of health services in the first year, a project around the topics of care and health services in the second year, quality improvement and patient safety projects in the third year, and basics of payment and management systems in the fourth year.¹¹

The duration of the program is half a day a week in year 1, half a day in year 2, 15 half days in year 3 and one week in year 4. The main subjects of this course include the concepts of health and disease, social determinants of health, epidemiology, vital statistics, epidemic response, evidence-based medicine, ethics, cultural competencies, professionalism, and physician-patient communication.

This program continues longitudinally and is integrated from the first year to the end of the general medicine period, as it is designed and implemented as a spiral curriculum.

University of Wisconsin-Madison, United States

The University of Wisconsin-Madison is located in Madison, the capital of Wisconsin, in the United States. It is one of the oldest universities in the United States that has published a report on public health and community medicine education and social determinants of health.¹² In the Department of Community and Family Medicine, the purpose of teaching is to familiarize medical students to acquire the skills of combining cultural, social, and psychological concepts for clinical decision making. Another goal of this program is to acquaint medical students with how to identify problems and social solutions of specific demographic groups and health education. This department has the goal of training physicians with accountability and leadership skills in the community by

integrating theoretical courses and training in the field. The University of Wisconsin emphasizes integration strategies, problem-based education, and community-based education implemented through teamwork, seminars, interactive lectures, and community education.

While attending health care centers in cities and villages, students also attend home visits with community health nurses.¹² This program is presented in three 90-minute theory training sessions and a 4-week rotation in rural and urban centers. One of the duties of students is conducting a complete interview with social, economic, cultural history, and health education.

This course is one of the main courses for medical students and is a required, not an elective course, offered in the third year of medicine with the aim to influence students by social, economic, health literacy, and cultural factors on illness and social determinants of health. Students participate in group sessions one day a week. The 4-week community medicine course includes community-based practical experience (home visits, work in charitable clinics, community health education, and in-depth interviews with patients about social history).

Medical preparation includes 20 minutes of brainstorming on a hypothetical patient and the distribution of cards containing Kleiman questions to examine the social, cultural, environmental, economic, and psychological aspects of the disease, followed by a short lecture on useful resources and how to access them.¹³

During the community-based experience, students attend charitable clinics and visit patients with a social history approach, presenting their reports in the form of seminars at the same health center and a community clinic with the presence of professors, students, and clinic staff. In addition, a home visit with a community health nurse is done to get acquainted with the psychological, social and environmental needs of patients and to identify environmental and social risk factors. This experience focuses on health assessment training and support, especially for women and children.

Community medicine lecture sessions are held using team-based learning, interactive lectures, individual rethinking, and discussions and seminars.

Student assessment, in addition to how to attend, is portfolio-based, along with, presenting seminars and student reports.¹⁴

Another initiative taken by the University of Wisconsin for community-based education was the TRIUMPH (Training Urban Medicine and Public Health) project in 2005. In line with social responsiveness, the medical school was renamed the School of Medicine and Public Health, focusing on promoting health and disease prevention with a focus on the population. Elimination of health inequalities is currently one of the missions of this university complex.¹⁵

The goal of the TRIUMPH program is to train physicians who are responsible leaders in the community

and can provide health equity to people in different urban areas. In this program, students perform social and clinical activities in urban communities. The program is provided by a faculty member and a health professional at service centers. Students in the third and fourth years rotate in this department. Areas of Milwaukee where the

population does not have adequate insurance coverage and where infant mortality is high, especially in Black families, is covered by the program.

The theoretical framework of this program is reasoned action theory, based on attitudes and mental norms that shape the future behavior and decisions of individuals. The

Table 1. Comparing the different aspects of social medicine curriculum in Universities of North America and Iran

Country	Expected goals and capabilities
United States	<ul style="list-style-type: none"> - Developing the skill of integration cultural, social, and psychological aspects for clinical decision making - Familiarity of medical students with how to recognize the problems and social solutions of specific demographic groups and health education - Training doctors who are responsible leaders in society and can provide justice in health for people in different urban areas. - Developing the skill of using public health approaches when caring for individuals and communities and analyzing health problems in disadvantaged communities
Canada	<ul style="list-style-type: none"> - Familiarity with the position and job duties of the family physician - Meeting the needs of patients and communities - Developing teamwork skills and integrated care based on needs - Providing justice and personalized care for clients - Evidence-informed performance
Iran	<ul style="list-style-type: none"> - Understanding the structure, performance, and relationship of components of the health system and primary health care - Familiarity with the principles of health services - Application of epidemiology in clinical and managerial decision making - Use of statistical methods in clinical research and health system - Application of evidence-based medicine in clinical decision making - Application the concepts and principles of preventive medicine and behavioral interventions in controlling diseases and their risk factors
Strategies, methods, and educational techniques	
United States	Integration, problem-based education, community-based education, teamwork, seminar presentation, interactive lectures, home visit, service learning, LIC, early exposure
Canada	Integration, early exposure, LIC, community-based education, team-based education, interprofessional education, student-centered, problem-based education, electiveness
Iran	Community-based education, early exposure, interactive lectures, small group work, field training
Program duration, course content, and program presentation at education level	
United States	Three 90-minute training sessions and a 4-week rotation in urban and rural centers in the third year Content includes introduction to community medicine, practical experience including visits to charities and clinics, health education, social, environmental, economic, and psychological aspects of illness, health equity, community needs assessment and community diagnosis, prioritization, and presentation of health interventions.
Canada	From the first to the last year of medical school, the first year for a week in health centers as an observer, in the second year, visit with a doctor, the third year, team and practical and interprofessional training in health and rural centers, the fourth year, elective 13 weeks in urban and rural areas. The duration of the program is half a day a week in year 1, half a day in year 2, 15 half a day in year 3 and one week in year 4. Course content: Concepts of health and disease, social determinants of health, epidemiology, vital statistics, response to epidemics, evidence-based medicine, ethics, cultural competencies, professionalism, physician-patient communication
Iran	Theoretical training on the principles of health services, epidemiology, statistics and research methods, and epidemiology of diseases from the first to the fourth year, but separately and without any connection in class and in the form of lectures Clerkship and internship training in years 5 and 7 one month in urban and rural health for each
Assessment methods of students, program structure, and educational fields	
United States	Assessment: Student attendance, portfolio, seminar presentation and reports. Educational field: Health service centers in cities and villages with community health nurses ,Home visits, charity clinics, presence in urban areas with deprived and uninsured residents, community medicine department. Structure: theory of reasoned action.
Canada	Assessment: Weekly quizzes, assignments related to the objectives of the course, OSCE, professional ethics assessment, presentation evaluation, rethinking, portfolio. Education fields: urban and rural centers. Structure: longitudinal throughout the course.
Iran	Assessment: Multiple choice is written tests at the end of each semester for theoretical courses, use of logbook, practical tests in the field, structured, objective tests Educational fields: Urban and rural health centers Structure: Traditional

LIC, Longitudinal Integrated Curriculum; OSCE, Objective Structured Clinical Examination.

curriculum seeks to build skills in three interrelated areas: clinical, health, and social medicine. Students participate in seminars and rounds in the humanities every two years. They also attend intensive 2-week courses in years 3 and 4. They spend half a week providing clinical services and community projects.^{16,17}

Morehouse School of Medicine

Morehouse School of Medicine is located in Atlanta, Georgia. The Department of Community and Family Medicine has presented a detailed report on service learning for medical students.

The use of public health approaches when caring for individuals and communities and analyzing health problems in disadvantaged communities is one of the main goals of this department.

The training required to achieve these goals begins in the first year of entering medical school. According to the designers and presenters of this program, early exposure to the community can make students' attitudes toward primary care disciplines such as family medicine more positive and create a comprehensive approach to medicine in students.¹⁸

In this program, medical students are introduced to community health needs assessment tools and participate in small groups, group discussions, assignments, lectures, and seminars to report on their activities.

Students prepare a list of health problems in disadvantaged areas and provide an action plan. The approach to community problems is similar to the patient approach in clinical medicine. Evidence-based medicine, evidence search, and article critique are also among the topics of this course.¹⁹

Discussion

In this descriptive comparative study, objectives, expected competencies, educational strategy, learning and teaching methods, assessment methods, and educational areas of community medicine curriculum in general medicine in Iran with three selected schools in North America that had a report or article on community-based education using the Bereday model.

In interpreting the results, it can be said that one of the advantages of medical universities in Iran for offering community medicine courses and education in the field is the integration of education with the provision of health services in medical universities and health services such that students provide services in the same organization where they study. Having a community medicine department in most medical universities as well as in the medical school that is one of the main departments of the school²⁰ is another advantage of community-based education in Iranian universities. In addition, another point that makes the community medicine departments and topics related to community medicine in the medical universities of Iran important is the evolution

and innovation packages in medical education such that an accountable and equity-based education package emphasizes the training of graduates in recognizing the needs of society.¹⁶

In addition, another point that makes community medicine departments and topics related to community medicine in the country's medical universities important is the "Transformation and Innovation Packages in Medical Sciences Education" in the country, in which the "Accountable and Equity-Oriented Education Package" that emphasizes educating graduates by recognizing the needs of society.²¹

Another superior document that has a particular emphasis on the educational fields in the community and the implementation of a general medicine program and attention to the expected capabilities in medical school planning is the basic standards document of general medicine in Iran, which emphasizes education in the field and community-based education as basic standards of general medicine in various areas of the curriculum.²²

The strengths of community-based education and field education in Iran are due to these superior documents, and the importance and priority of community medicine departments in these documents is that, compared to other countries, there may be no such integration of the medical education system with the service delivery system. Another strength in the community medicine curriculum in general medicine in Iran is field education and community-based education and the presence of students in urban and rural health centers during clerkship and internship. Having about 10 theoretical units throughout the general medicine course and 6 practical units in the clerkship and internship can be a form of longitudinal integration of community medicine in the general medicine course; however, these courses are all theoretical up to the clerkship and they do follow a spiral structure, such as is seen in the University of Toronto curriculum.¹¹ In a spiral curriculum, content gradually becomes more complex and functional over time and at higher levels. Learning new content is related to previous content, and students' ability increases over time. In other words, in the spiral curriculum, the medical student thinks like a doctor from the first day.²³ A spiral curriculum was implemented at the University of Toronto, in which epidemiological topics are first presented in a basic and descriptive manner, and it is analytical epidemiology in higher levels and clinical epidemiology in clinical groups.²⁴

One of the major differences or weaknesses of the community medicine curriculum in Iran is the lack of early exposure. Early exposure has been applied in some Iranian universities, such as the Shahid Beheshti University of Medical Sciences, in the form of general medicine reforms.²⁵ Following the implementation of the new general medicine course program, in the form of a medical etiquette course, medical students have had early exposure to the hospital environment and health centers

since 2017; however, this exposure is limited to short visits to health centers and familiarity with activities and in this case the service provision is not even observed. One of the weaknesses of the community medicine curriculum in Iran compared to those in North America is the lack of a longitudinal and integrated community medicine curriculum from the first to the last year.

In reviewing the community medicine curriculum at three universities in North America, much emphasis has been placed on education in rural fields with the presence of students in rural areas and the provision of services to small towns and villages under the supervision of a physician.¹¹⁻¹⁹

Although the presence of students in urban and rural centers is one of the main programs of interns, factors such as the lack of permanent presence of supervisors in the centers, lack of students in rural areas, inadequate training and sometimes lack of training of general practitioners and health care workers and health workers in regarding the teaching and evaluation of medical students, and the short period of student presence in the village is less efficient and has resulted in some dissatisfaction among students.^{26,27}

The content of theoretical courses and the time of their offering do not differ much among the universities of Toronto, Wisconsin, and the Morehouse School of Medicine. In American universities,¹⁷⁻¹⁹ much attention is given to acquiring skills in assessing community health needs, prioritizing problems, and providing solutions to problems that are carried out by students in the form of longitudinal projects. Although these skills are taught during internships in some medical schools in Iran, because attendance in community medicine departments is summarized in a short period of one month and is not a longitudinal program, needs assessments and health interventions do not continue and are seen by students only in the form of a series of class assignments.

In some medical universities of Iran, in addition to the topics and workshops mentioned in the general medicine curriculum, topics such as quality improvement, preventive medicine, and behavior change interventions, such as quitting smoking, are also taught.²⁸

Fields of community medicine education in Iranian universities of medical sciences include health houses, urban and rural health centers, city and provincial health centers, centers affiliated with the city health centers such as Behavioral Diseases Counseling Center, Tuberculosis Control and Prevention Center, and, in some universities, municipal health houses and welfare centers and factories.²⁹⁻³²

The diversity of fields in medical universities in Iran is more significant than in the North American universities, but the time spent in these fields is much shorter than in other universities. Although the duration of the clerkship and internship is four weeks for each, the time to attend the fields and perform all the expected activities is short.

At the University of Toronto, the duration of participation in community fields is 13 weeks in the whole course,¹¹ while in Wisconsin and Morehouse the duration is four weeks.¹³

Regarding educational strategies and methods in Iran, lecturing and holding workshops at the beginning of the course and training in the field during the course are most often used.³⁰⁻³⁶ There is no longitudinal integration of social medicine education into the course as in a spiral curriculum. Education in prevention and family medicine clinics is possible in universities with more community medicine residents than other universities.³⁰⁻³⁶

While the education fields in the community in North America are in health centers alongside family physicians,¹¹⁻¹³ in Iran family physicians in health centers are used as tutors and health center physicians do not get the necessary and continuous training to train medical students. At the University of Toronto, home visits with a community health nurse are regular programs for students; in Iran, there is a sporadic visit to the village with a health worker (Behvarz), and there is no home visit program. Interprofessional education with the participation of specialists in various fields in primary care centers in Toronto helps students acquire interdisciplinary visiting skills and recognition of their position as a physician in the health system, while there is no such training in community medicine departments in Iran except in some journal clubs or reporting sessions.

The community approach to diagnosing and treating patients involves paying attention to social, cultural, and environmental factors in the patient's history and treatment and social prescribing. Social health and the role of non-governmental organizations (NGOs) and charities in solving social and economic problems of clients are trained at the University of Wisconsin and at King's College, London. Social Prescribing is a method of referring patients to non-clinical care, including social work and NGOs and charities.³⁷ Despite the existence of charities with long histories and esteemed reputations in Iran, the process of social prescribing and educational programs to familiarize students with charities and NGOs is not yet institutionalized in the educational system and is not implemented systematically in the Iranian context.

At the Northwestern University School of Medicine in Chicago, medical students and faculty work with NGOs in disadvantaged areas. In this program, NGOs that are more familiar with the people and their social and economic situation introduce the neighborhoods that need help and health interventions to the university team and help equip and provide health services to the people of the area. Students from different levels of basic, preclinical, and clinical sciences participate in this program. Basic and preclinical science students triage and assess clients and households, and clinical students provide treatment and gain training for clinical problems.³⁸

The use of learning aids such as checklists based on

learning objectives or reflective journals or logbooks is reported in various universities worldwide. Portfolios and rethinking journals are tools used in assessment that ask students to reflect on their observations and findings. Students express their experiences, and meanwhile, they learn from describing their experiences and rethinking them. It can be very instructive when proper feedback is given by faculty members.³⁹

The use of logbooks has been reported in various Iranian universities, but the process of reflection and proper use of portfolios and reflective journals is not used systematically, whereas portfolios and peer-reviewed journals and feedback to students are employed in the Department of Community and Family Medicine at the University of Toronto.¹¹ Assessment methods in Iranian universities are limited to written and oral exams and field exams and logbook reviews.

Although the goals and capabilities of community medicine courses in the national curriculum emphasize the development of skills in the social view of health and disease in medical students, there is currently no systematic and recorded social history and social prescription and the use of tools to apply these views in Iranian universities. The use of community health assessment tools is one of the most widely used tools in educating medical students in the social fields, reported at Canadian universities and some Iranian universities.

In Iran, despite the existence of the Health Information system and other systems of various organizations, no program has yet been designed and implemented for undergraduate students to practically assess the needs of society. It is also located in the vast majority of universities in Iranian medical schools, and the community medicine department is one of the basic standards for the establishment of the medical school.

Despite the integration of medical education with health services, the relationship between health houses and health centers with educational departments such as community medicine is not the same as the relationship between hospital wards and clinical training departments in hospitals, because community medicine departments have no executive or managerial role in health centers and only work as educators and supervisors. In some universities, such as Isfahan, the doctors of the health center are the faculty members of the social medicine departments, and the center is at the disposal of the community medicine department in terms of management and administration, and even accountability.³¹ However, if educational health centers are established with the management of community medicine departments in all universities, it can help the education promotion in the community.

Limitations of the study

The current study was a descriptive comparative study to compare the community medicine curriculum in general

medicine courses in different universities. The choice of universities was based on access to material published in their articles and websites. One of the limitations of the study was inadequate access to resources on how the programs are implemented and the goals and strategies in universities whose websites were incomplete or whose reports did not contain all the dimensions studied.

This study was conducted only on the available documents and evidence and the authors did not conduct interviews or surveys of various stakeholders on how to implement the program.

Conclusion

Regarding community-based teaching methods, it seems that a combination of the methods mentioned in the study results is better than one or two methods—for example, small group training, project presentation, and practical experience in the field.

In addition, general health and social medicine education for medical students should be participatory and interprofessional, and cross-sectoral participation strategies should be involved in its presentation.

In addition, education in the community should be long-term and with a sustained relationship between the student and families and communities. This means that education in the community cannot be offered in a single, short period of one or two months, but the student's contact with families and the community covered should be longitudinal and include once a week or every two weeks throughout the course.

Therefore, using teaching-learning methods such as problem-based education, team-based learning, field training, training through community projects, training in general medicine health centers, and longitudinal and integrated training during the general medicine course are crucial. In this regard, training of educators, faculty members and social medicine specialists and other fields related to public health to transfer concepts and skills using the above methods, as well as evaluating students with outcome-based methods, is also very important. Assessment of students in practical and mental skills through using a logbook, portfolio, reflective journal, seminar and project presentation, and on-site evaluation are among the proposed assessment methods.

Objectives, strategies, teaching and learning methods, student assessment methods, and community-based learning areas are all designed to train graduates who have competencies to meet the health needs of the community.

In research, medical graduates must apply analysis, use data, search for sources, critically evaluate evidence, and make evidence-based decisions.

In clinical medicine with a community-oriented approach, the general medicine graduate takes a more comprehensive view of the patient and in addition to prioritizing aspects of disease prevention, also acquires skills in educating patients to change behavior.

Ethical approval

The proposal of this paper was approved by the Shahid Beheshti Medical Sciences University with the ethical code: IR.SBMU.SME.REC.1399.083.

Competing interests

There are no competing interests

Authors' contributions

Concept designed by MA and TC. Information collected by MA. Information interpreted by MA and TC.

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