Published Researches in Medical Education in Iran

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Abstract

Introduction. In order to improve planning, educational methodology, and evaluation in medical education, well-proportioned, exact and prospective programs are needed. Without doubt, the main changes in medical education programs have resulted from researches performed in this area during the last decades.

Revision of medical education in Iran began by the Cultural Revolution Council by order of Imam Khomeini in 1981. The medical group of the Council revised the aims and plans of medical education and suggested a unified Ministry of Health and Medical Education.

Methods. Searching in the National Medical Papers Collection performed across two periods, (1979 till 1993 and 1994 till 1998) showed that 9981 papers have been published during 20 years; more than half of them belong to the last five years and 83% to the last 10 years. Articles related to research in medical education were extracted and their sources and studied subjects were categorized.

Results. Fifty-six papers were published during the studied 20 years period; 64 percent of these articles were presented within the last 5 years. The frequency of papers was higher in the fields of "Aim and planning" and "Student".

Discussion. Research development in medical education needs special planning in which the importance of research and its role in self-improvement, independency and country development are defined. It should use existing abilities in order to grow creative powers in a suitable way. The resources of such reforming activity are available in Education Development Centers of the Universities of Medical Sciences in Iran.

Key words. Research, Medical Education, Iran

Introduction

Information and knowledge have been already concerned as the main factors of development in the 21st century; the societies who spread the knowledge borders with increasing public education, promotion of research and application of science, would be more developed; and the ones not do so, would increase their distance from the technology and scientific developments (1). Communities that spread the result of investigations and scientific developments will usually increase their economic strength. They will access to developed technology, perfect political formations and social welfare with a high standard (2). Evidently, it is resulted from well-proportioned, exact and prospective programs. The period of individual activities in research to achieve important scientific success has largely finished. Nowadays, scientific developments need harmonized widespread and well-planned national programs (3).

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Although, medical education had been in process for centuries, Flexner's 1910 report about "Education Development" was a turning-point. Formational activities in medical education began in Buffalo University in the late 1950s. First Education Development Centers (EDCs) were first established in Case-Western Reserve University, Virginia Medical School, and Illinois University in 1958-59(4). Then EDCs were established in other medical universities.

In order to improve planning, educational methodology, and medical education evaluation, World Health Organization (WHO) established and seriously supported several EDCs in eight countries in 1972. EDCs were established in 72 medical universities in the USA and Canada during 1970s & 1980s. Then medical schools in Europe, South-America, Asia, Oceania and Africa took efforts to establish EDCs (4).

Researches in Medical Education Research in medical education is a systematic analytical study on teaching and learning, and includes scientific analysis and interpretation of all stages, such as context, input, process, and outcome. These kinds of research findings affect the education procedure in directions of knowing how medical students and graduates learn; how knowledge should be taught, evaluated and selected; and how their education period is organized and performed. Ultimately, researches in medical education would result in improving patient care (5).

In the end of the last century, exact studies were performed on the nature, situation and findings of medical education research. They showed that the numerous studies were limited, local and sporadic, and their aim was to resolve the problems of a ward, hospital or a school minimally. Often researches were uncontrolled using field-based action method and less experimental design. They concentrated more on the process and less on the content and outcome that are the most important aims of education (6,7).

There are two kinds of leading methods in medical education research:

1. Biomedical research: Experimental design e.g.: problem solving skill.
2. Holistic research: In order to show concepts of the events and not to suggest some laws for guiding medicine (8). This is a kind of qualitative researches derived from social sciences and anthropology.

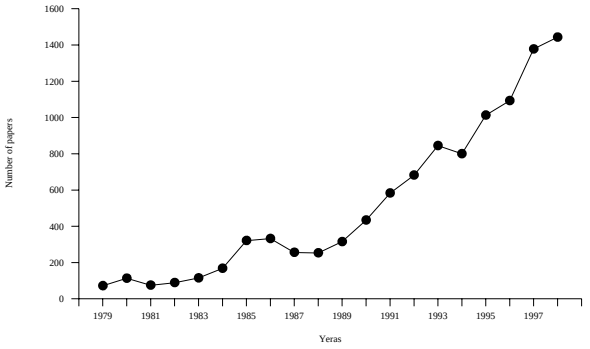
Which one should be dominant? It is a very discussable question but it is better to know that each one studies a certain aspect of medical education, (9) and both are essential for development of the science.

Although, research in medical education began 50 years ago, propounding education theories and new methods, development of informal, formal and individual learning, continuous education and personnel continuous development have been raised during last 2 decades while studies in medical education developed in all aspects (10).

Establishing and developing EDCs in numerous medical universities of the world and development of MSc and PhD courses in medical education have been worthy efforts in

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spreading of researches. By searching in Index Medicus, 4403 papers with the title word of "Medical Education" have been published since 1981 till 1999 in creditable journals. About 37906 papers had some subjects about it in the text. Annual separation of findings showed published papers rose in medical education during last two decades (Fig. 1).



Reference: Natonal medical sciences papers list (Iranian Index Medicus), (15)

Fig. 1: Number of published medical papers in the journals published in Iran 1979-1998

Medical Education in Iran. Revision of medical education began by Cultural Revolution Council according to Imam Khomeini's order in 1981. The medical group of the council revised the aims and plans of medical education and suggested a unified Ministry of Health and Medical Education. After the ministry was formed, the organization developed further and universities of medical sciences were established in all provinces and the number of student admissions increased (11).

Clinical residency and fellowship courses as well as MSc and PhD courses in basic sciences developed in the beginning of 1990s. Further development of postgraduate education had a main role in the extension of research in various fields of basic sciences, epidemiology and clinical sciences (12).

Organizational culture in Iranian universities has been changed during last twenty years, with more focus on instruction than research. Education and investigation has been focused more on teaching and learning philosophy using other countries' experiences (3); whereas, every correct education and investigation system should try to raise human knowledge while performing the process of teaching and learning. This is seen obviously in medical education. The quick rise in the number of medical universities accompanied with increasing student admissions in all medical branches was of the most important educational efforts during the 1980s. It had positive outcomes by responding community needs to medical manpower that was deplorable till the first of 1980s(13).

There has been a quick development in research activities, specially applied research during the 1980s and 1990s but it has been slower than accelerated development of medical education.

Methods

Searching in the National Medical Papers Collection performed across two periods, (1979 till 1993 and 1994 till 1998) revealed that 434, 1340, 2950, and 5267 papers were published in the first, second, third, and fourth five years periods after revolution, respectively (14,15). So 9981 papers have been published during 20 years but more than half of them belong to the last five years and 83% to the last 10 years (fig.2). About 88% of the papers were in Farsi and 12% in English (English journals published in Iran). About 73% of the papers were original articles, 12% review articles, 14.5% case reports and 0.5% editorial articles.

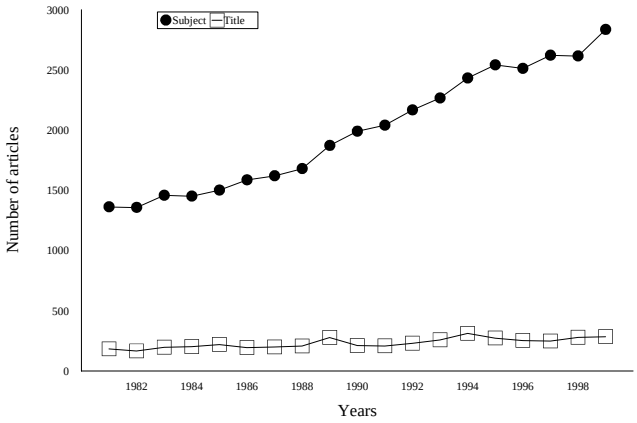


Fig. 2: Number of articles in which medical education was as a title or subject published in creditable international journals, 1981-1999

Table 1. Category of published papers about medical education in Iranian scientific journals, 1979- 1998*

Categories	Numbers	Percent
History of Medication	3	5
Aims and Planning	14	25
Resources and Management	2	4
Faculty	1	2
Student	19	34
Process	3	5
Evaluation	4	7
Outcome	3	5
CME	7	13
Total	56	100

Results

Table 1 shows the classification of papers about medical education in the scientific journals published in Iran from 1979 to 1998. The total number of published papers was 56 during last 20 years and 64% of them have been published in the last five years. "Pajoohesh Dar Pezeshki", "Andisheh va Raftar Quarterly", and "Daru va Darman" Journals have published the most of medical education papers (Table 2). In the 1980s, research in medical education had been mostly about generalities of education, educational planning, students' attitude in cultural and social affairs and various aspects of medical education (16). In addition, some papers were published about continuing medical education (CME) after parliamentary ratification (14). These papers were based more on personal experiences, review of foreign literature, professors', students' and personnel's attitudes and they were less analytical and experimental (17).

Table 3 shows the titles of published abstracts in The Third National Congress of Medical Education (1998). The papers presented in this congress were more about teaching methods, i.e. problem based solving, students' and professors' attitudes on various educational problems, and educational evaluation, such as students' exams. There were many similar and repeated researches. About 66% of all the papers belonged to medicine, nursing and midwifery (Table 4). Although papers had included new aspects of aims and planning, teaching methods, evaluation, holistic medicine education and innovations (9), they were more cross-sectional and case-control studies and less cohort or experimental ones.

Table 2. Medical Scientific Journals in which medical education papers are published (1979-1998).

Journal name	Number	percent
Pajouhesh Dar Pezeshki (Sh. Beheshti)	10	18
Andisheh va Raftar	8	14
Daru va Darman	7	12
Asrar (Sabzevar University)	4	7
Pajouhesh Dar Olumeh Pezeshki (Isfahan)	3	5
Hamadan University of Medical Sciencess	3	5
Gillan University of Medical Sciences	3	5
Medical Council Journal	2	4
Tibb va Tazkieh	2	4
Tehran University of Medical Sciences	2	4
Yazd Uneversity of Medical Sciences	2	4
Journal of Isfahan Medical School	2	4

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Urmia University of Medical Sciences	2	4
Others	6	10

Comparison of published papers during 20 years (1979-1998) with presented papers in The Third National Congress of Medical Education showed a rise in the number of researches and investigators have noticed new aspects of research in this field (Fig. 3).

Table 3. Category of 130 abstract titles published in The Third National Congress of Medical Education (Isfahan- 1998)

Categories	Number	Percent
Aims and planning	3	5
Resources and Management	14	25
Faculty: Attitude 13, Evaluation 9	2	4
Student: Attitude 18, Evaluation 10	1	2
Process (Including teaching methods)	19	34
Evaluation: Exams 10, Others 9	3	5
Outcome	4	7
CME	3	5
Research in Education	7	13
Total	56	100

Table 4. Category of 130 Papers published in The Third National Congress of Medical Education according to each discipline (Isfahan- 1998)

Discipline	Number	Percent
Medicine	54	42
Nursing and Midwifery	31	24
Health	3	2
Nutrition	3	2
Pharmacy	2	1
Dentistry	1	1
Para-medicine	1	1
General	35	27

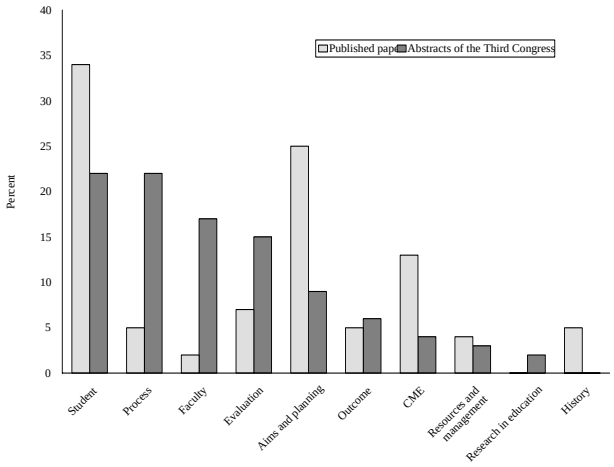


Fig. 3: Comparison of published papers in medical education (1979- 1998) and abstracts of the Third National Congress of Medical Education (Isfahan 1998)

Discussion

Quantitative and qualitative development of researches in medical education indebted to several factors; some are related to the development of research in the country particularly in medical sciences and some are specified to medical education. These factors are:

Manpower for Research. Great rise in admissions, and developing residency, fellowship, MSc and PhD courses in the last two decades resulted in yearly graduation of 4500-6000 medical doctors (MDs), 700- 1800 specialists and sub-specialists and 300-750 MScs and PhDs during recent years (13). It has caused the development of researchers in medicine and improved the quantity and quality of theses in various fields of medicine.

There was more than a three times rise in the number of faculty members in the universities of medical sciences during last 10 years. Their attendance in short period courses of medical education in creditable universities of the world began from late 1980s, when few of faculty members succeeded to take the master degree in medical education.

Medical education MSc course started in Shaheed Beheshti University of Medical Sciences for the first time in Asia and the Middle East in 1993. It has had 3 groups of graduates till now. Similar courses started in Iran and Isfahan universities of medical sciences last year.

Educational Development Centers (EDCs). EDCs have been established and developed in the world since 40 years ago. One of the eight centers established by World Health Organization (WHO) in 1970s located in Shiraz University in 1972. Its main duty was to improve curricula, teaching methodology, and educational research in the East Mediterranean countries. It was very active in 1970s and the beginning of 1980s and presented worthy educational services. Development of EDCs began in 1980s by establishing EDC in Shaheed Beheshti University of Medical Sciences. It was recognized as a collaborator of East Mediterranean Region Office (EMRO) of WHO, and founded a Master course in medical education within the country. Now, the great majority of the medical universities have EDCs which are the main sources of planning and performing researches in medical education.

Research Workshops. The first Research Methodology Workshop (RMW) carried on in Shaheed Beheshti University of Medical Sciences and the Office of vice-Minister for research in Ministry of Health and Medical Education 10 years ago, concurrently. More than 400 RMWs and numerous workshops on writing of medical papers and methodology and advanced RMWs have been carried on till now. These workshops played an important part in the development of research projects and scientific publications in recent years.

Research in education is necessary in every society in all branches from preschool period to specialty & sub-specialty courses. Research development in medical education needs special planning in which research importance and its role in self-improvement, independency and country development are defined. It should use existing abilities in order to grow creative powers in a suitable way. This is available in the Universities of Medical Sciences by the effort of EDCs.

EDCs should provide facilities and motivate students and faculty members to do research in medical education just as their educational affairs. EDCs should be active in basic researches that could be performed in “Education”, “Social Sciences” and “Psychology” departments of the universities of non-medical sciences. However, they should act like clinical departments that perform curative-health services along with education and research activities. This will be facilitated if EDCs determine research priorities in medical education cooperatively with other departments and clinical wards .They also should provide enough support for performing them. Such researches in medical education should be performed according to:

1- Curative-hygienic and social existing needs including prevalence of the diseases and mortality causes.
2- Occupational needs such as medical information, laws limitations and ethics.
3- Individual needs which may be changeable according to the above mentioned two items.

This article tried to arrest readers’ mind only to the importance of research in medical education. Evidently, suggesting elaborate proposals need more attempts in this field. We suggest performing local researches to determine the problems of medical education in details by a national intention.

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