Short Communication
Published: 30 Apr, 2018

Journal of Family Medicine Forecast

A Brief History of Medical Education*

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Short Communication

Medical education defined as an art with scientific principle. It described as a form of learning where by knowledge, skills and attitudes of a generation transferred from one generation to the next, through teaching, training, research and practice.

The process of education should allow changes in thoughts, feelings and actions of the apprentice and provide them with the general knowledge and skills in a specific branch of science.

Medical education is unique in that unlike many other branches of science, technology, literature and art, it deals with human life and wellbeing, requiring distinctive knowledge, skills and behavior.

In ancient times, with limited knowledge of medicine, students would start by assisting physicians as their understudy. After several years of observation and apprenticeship, they would eventually replace their mentors, as the new replacement doctor.

The more famous and well-known doctors would train several dozen students simultaneously and these students would proudly publicize their apprenticeship with these physicians. For many centuries, the skill of medicine was truly an "art"; and its effectiveness was on the psychology of the patient and the way in which physicians handled them. For thousands of years, this type of practice continued and since there was no basis of measuring the expertise of the practitioner, many quacks and charlatans impersonated physicians and in some instances, more successful than the "real" physicians were.

In 1862, themid-19th Century, Louis Pasteur discovered bacteria, and Koch introduced "the Kochpostulates" of the causative relationship between microbes and disease. This is when medicine began to turn into a science [1,2] with a knowledge of basic sciences, medicine turned into a full "science". In early 20th Century, many reports from educationists, foundations, and task forces criticized this system of medical education for its lack of emphasis on scientific knowledge, biologic understanding, clinical judgment and skills on scientific grounds.

This evolution in medicine created the institution of medical teaching as a science.

The history of medical education goes back several thousand years to the era of ancient Greeks, Persians and Romans, when official schools for training physicians were established.[3]In early 16th Century, many European universities established medical schools. The well-known, Persian physician and philosopher, Avicenna, compiled *The Canon of Medicine,* which was the sole medical text for centuries. It set the standards for medicine in Europe and in the Islamic world and was used as a standard medical textbook through the 18th century in Europe [3]. In the United States the first medical school was established in the Pennsylvania in 1756, and within 150 years over 150 medical schools was established in the North America (US and Canada) [4,5].

In 1910, Flexner completed a prominent report about medical education, which changed the philosophy and the pattern of medical education in the United States. It addressed the need for improvement in the quality of medical education, starting with medical school recruitment and the content of basic science curricula, ultimately improving medical education, admissions policies and procedures. This in turn affected medical education throughout the world. His emphasis was on scientific based medicine and based on his report, a number of medical schools disqualified and forced to close [6,7].

The creation of a standardized examination for medical school admission was the initial step. The Medical College Admission Test (MCAT) was developed in 1928 [8], an examination designed to improve attrition rates [9].

During this process and evolution of medical education, the emphasis placed on basic sciences,

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Received Date: *04 Apr 2018*
Accepted Date: *25 Apr 2018*
Published Date: *30 Apr 2018*

Citation: *Ronaghy H. A Brief History of Medical Education*. J Fam Med Forecast. 2018; 1(1): 1007.*

ISSN 2643-7864

where by clinical sciences and patient care, largely put aside.

In the early 1960's,research on molecular biology became the primary objective of most medical schools in Western countries and patient care further pushed aside. This pattern also ensued in those countries with scientific ties with the West.

Following the introduction of government care in the United States, the medical faculties were under a great deal of pressure to generate income for the university-affiliated hospitals. This had practically pushed aside the teaching of clinical medicine and bedside skills. The main emphasis shifted toward tertiary care, specialty medicine, and the performance of surgeries and high-tech procedures, with the intention of generating the most revenue for the institutions. Professors in these areas were role models for their students and the tendency was toward subspecialty training. In particular, procedures and technology-oriented practice became the aim of the medical graduates. The training of primary care, public health and family practice physicians largely ignored, and the power of finance overcame the compassionate care for the patient.

The qualifications for entering an academic position required specialty and subspecialty training, as well as board certification in those very narrow fields of medicine. The natural consequence of these changes affected all levels of medical education, all over the world.

The "Art of Medicine" had lasted for many centuries. However, the "Science of Medicine" was not long lasting, and for the past few decades, the "Business of Medicine" has become the primary goal of many medical institutions. Universities were obliged to compete with the "Market" in the ever-increasing crowded "for profit" medical establishments. Most other free market economies of Europe, despite their free enterprise system, publicly chose to administer systems of medical care. Despite mounting criticism from some of the providers and a fraction of the public, all health measures in Western European countries and Canada were far cheaper and the health parameters remained superior in those countries with a free enterprise system of health care, i.e., the USA. It is unfortunate that most developing countries followed the US health care system. Indeed these systems based on "disease care", rather than "healthcare", and mainly motivated by profit.

Any reform in medical care and education will not be achieved in isolation. It relates to other societal norms. Where a society is based on free markets, the health care of that society will also be based on free market values.

Medical profession and education seems to be in an endless state of discontent. From the early 1900s to the present, tens of reports from foundations, educational organizations, and professional task forces have criticized medical education forits emphasis on scientific knowledge over biologic understanding, clinical reasoning, practical skills, and the development of character, compassion, and integrity.

It raises the question of how this situation arose and what should be done about it? The challenge in medical education over the past century is to create and implement more humanistic goals for professional medical education: to transmit knowledge, skills, and attitude with compassion toward human dignity for the medical profession.

Within 15 years of issuing his report, Flexner had completely changed his belief that the scientific aspects of medicine within the medical curricula outweighed the social and humanistic aspects of the profession. He wrote in 1925, *"Scientific medicine in America, young, vigorous and positivistic is today sadly deficient in cultural and philosophic background."* There is no doubt he would be disappointed to see the extent to which his modified view of 1925 still holds very true [10].

The moral duty of the educational planners in medicine requires that the design of curricula for students and residents is designed in a way to acquire a crucial set of professional values and qualities, by which the willingness to put the needs of the entire community first and to put an emphasis on Family and Community Medicine. Professional values should continuously emphasized and re-enforced in the course of medical education. This wills not accomplished only through lectures and courses, but also through role modeling, setting examples of dedication, storytelling, and interacting with the health care environment. However, the values systems are becoming increasingly difficult for medical students, residents and fellows to discern; the obvious conclusions they will draw, as they witness first-hand the struggle of uninsured or underinsured working people. The observation of gross inequalities to acquire health care, obvious differences in the use of luxurious technologies in diverse health care settings creates a major conflict for the learner.

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