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BIOETHICS IN THE TEACHING OF HUMAN MEDICINE

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Abstract: Objective: To analyze historically the teaching of medicine, its protagonists, foundations, techniques, educational models and socio-economic-cultural context to identify the deterioration of humanistic and ethical medical education in the current crisis of medicine. **Results:** Medical education has a vast history since the origin of Humanity, continuing with the ancient Greco-Roman, Egyptian, pre-Hispanic cultures of Mexico, among others, being at the beginning a magical-empirical and religious orientation (worship of deities with healing powers), up to scientific medicine from the 19th century, the contemporary predominantly clinical in the first half of the 20th century, at the beginning of the second half, it became significantly technified, commercialized and dehumanized, persisting until today. Although in its beginnings it was oriented towards humanism and ethics, this approach was excluded with the positivist biological-scientific model since it was born in the 19th century, thus configuring the so-called "crisis of Medicine or crisis of anti-medicine", which has several edges, perhaps the most important one being the inadequate professional performance of physicians and other health professionals, referring to malpractice and/or lack of ethics and humanism. Bioethics in medical education stands as the answer to the worldwide claim of reversing such condition, by promoting humanism, humanistic and ethical training of health professionals of the 21st century. **Conclusions:** In analogy with Stephen Toulmin's (1982) statement of *"How Medicine saved the life of Ethics"*, Bioethics in medical education can rescue Medicine from its current ethical and humanistic crisis.

Keywords: Bioethics, Human medicine, Medical education, Humanism, Ethics.

INTRODUCTION

"Long is the way of teaching by means of theories;

brief and effective by means of examples"
Seneca (0 B.C. - 65 A.D.)

Throughout its vast historical evolution, the teaching of medicine has followed multiple paths since the origin of mankind: the magical-empirical and religious orientation of ancient cultures (Mesopotamia, Egypt, or Tenochtitlan in pre-Hispanic Mexico, among others), with their demonological and animistic theories (notion that there are demons or spirits that cause disease and death) as the basis of the "art of healing"; natural medicine and the worship of gods with healing powers in ancient Greece and Rome (Asclepius or Aesculapius, 13th century B.C., the main one); the encyclopedism that prevailed in the 13th century B.C.; the encyclopedism that prevailed in the 20th century B.C., the encyclopedism of the 19th century B.C. and the encyclopedism of the 19th century B.C., the main one.C, the main one); the encyclopedism that prevailed in the 18th century and laid the foundations for the emergence of clinical and scientific medicine in the mid-19th century, up to the contemporary medicine of the 20th century, eminently clinical in nature in its first half, highly technified, commercialized and dehumanized from the second half, continuing even in this 21st century.[1, 2, 4, 5]

Although from the beginning medical education was oriented towards humanism and ethics, it was dispensed with by the positivist (bio-scientific) educational model of Medicine that emerged from the Flexner Report at the beginning of the 20th century, thus configuring a significant component of the so-called "crisis of Medicine (or Anti-Medicine)": the inadequate academic training, conduct and performance of health professionals lacking or meager in ethics and humanism. [2, 4, 5]

Hippocrates of Cos (460 B.C.-370 B.C.), considered the "Father of Medicine" and possessed of great humanism, introduced the first ethical concepts and an incipient scientific approach to Greek medicine. His father's tutelary teaching, in keeping with the times, transmitted his initial medical training to him. He instituted the "bedside" method of medical education, and introduced the principles of Clinical Propedeutics, proclaiming that the doctor-patient relationship should be individualized.[1, 4, 6]

The teachings of Hippocrates, contained in his work *Corpus Hippocraticum*, considered the existence of three basic components in medical practice, which are still valid today: [1, 3, 4, 6]

1. The disease: which may present itself differently in each patient, and therefore the most important thing is the patient and not the disease (bioethical and humanistic perspective of medicine).
2. The patient: who must collaborate with his/her physician to define the treatment of his/her disease, complying with the bioethical principle of responsibility in self-care and autonomy.
3. The physician: who must have a humanistic and ethical conduct, professional preparation and sufficient skills to care for the sick, complying with the bioethical principle of Beneficence, with the purpose of:
   a. Achieve your cure, if possible.
   b. Relieve your discomfort, especially pain.
   c. Never do harm (*Primum non nocere*, a Hippocratic aphorism that correlates with the bioethical principle of Non-Maleficence).

Galen of Pergamon is considered, together with Hippocrates, the greatest exponents of ancient medicine and is called the "Prince of Medicine". His ethical paradigm is responsibility and knowledge. He assumed the Hippocratic theory of the four humors (blood, phlegm, yellow bile and black bile) to explain the condition of being healthy or sick: the balance of humors (eucrasia) determines health, while the imbalance (dyscrasia), diseases. [1, 3, 4, 6]

On the other hand, traditional Hindu AyurVeda medicine (900 B.C.) also began as a magical-religious practice, later evolving into an empirical medicine based on observation and experience. It is based on a holistic and integral conception of the individual (*unification of body, mind and spirit*). In addition to the theoretical and practical knowledge of the medical discipline, it teaches the contents of the Koran and the Dahrma (*straight path*), asserting that *"only a man of good manners can be a good doctor or hakim"*. This alternative ancestral medicine, together with Chinese medicine, promotes the study of healing processes based on religion and the naturalistic philosophy that governs its worldview, as well as on ethical values. Both constitute naturalistic and holistic therapeutic systems, focused on treating not only the symptoms of diseases but also their causes, relating aspects such as the mental and emotional state of the patient, their activities, habits or customs, the environment and climatic conditions of the context where they live, among others. [1, 3, 4, 7]

As we can see, since its origins and throughout its legendary path, the teaching of medicine has been impregnated with a strong dose of humanism and ethical values that unfortunately has deteriorated since the last decades of the 20th century worldwide, as part of the so-called crisis of medicine, or rather, crisis of some health professionals in their clinical, research, administrative and educational practice, lacking or depleted of ethics and humanism. [1, 2, 4, 5]

DEVELOPMENT

SOCIO-CULTURAL AND ECONOMIC CONTEXT OF MEDICAL EDUCATION

During the 19th century, the scientific and technological development of clinical and surgical medicine, hospitals and public health was largely conditioned by the economic, social and labor circumstances of the Industrial Revolution (a concept spread in 1845 by Friedrich Engels, one of the founders of scientific socialism). In this period, the awakening of social consciousness was manifested through the struggles of the peoples for the defense of their rights, the workers' movements and the democratic ideas that arose in various countries, including our own. The prevailing philosophical doctrines covered a very wide field: from the Enlightenment (18th century), Medicine went through Idealism and Romanticism to the Positivism of the 19th century (with Auguste Comte 1798-1857, as its maximum representative), which demanded the scientific analysis of discoveries.[1, 2, 3, 8]

The valuable scientific and technological contributions of this period substantially transformed medical practice in multiple areas of Clinical Medicine, whose main characteristics were: [1, 4, 5, 8]

1. Greater precision in diagnosis due to the availability of new instruments and medical equipment, which made it possible to complement the classic physical examination maneuvers (inspection, palpation, percussion and auscultation).
2. Its fragmentation, due to the beginning of multiple medical specialties (Anesthesiology, Physiology, Pharmacology, Bacteriology, Immunology, Gynecology, Obstetrics, Pediatrics, Gastroenterology, Neurology, Psychiatry and Ophthalmology, among others).
3. Orientation towards observation, experimentation, Public Health and Statistics, tending to search more for the causality of the disease in order to achieve its prevention, improve life expectancy of 30-40 years and reduce the high mortality of this era.

Therefore, it can be considered that a true "medical revolution" took place in the 19th century, which gave rise to Modern Medicine or Scientific Medicine, mainly during the second half of the century. Furthermore, this century also saw the beginning of the institutionalization and professionalization of Medicine, as evidenced by the founding of medical groups, hospital institutions and research institutes, especially in Europe (such as Guy's Hospital and Medical School in Edinburgh, Scotland; the Pasteur Institute in Paris, France, among others) and the United States (the Johns Hopkins Hospital in Baltimore, Maryland and the Mayo Clinic in Rochester, Minnesota). [1, 4, 5, 8]

At the international level, the most transcendental events and contributions of the 19th century that changed the course of the History of Medicine in the areas of Clinical, Surgery, Scientific Research and Public Health were: 1. The microbial theory of infectious diseases (1870-1875), which gave rise to Bacteriology, 3. The evolutionary theory of the origin of species (1858), 4. The advent of anesthesia (1844-1847), 5. The beginning of asepsis and antisepsis (1870), 6. The invention of specialized medical instruments and equipment (stethoscope in 1819, X-ray in 1895), 7. The identification of diseases (Parkinson's, 1817; Hodgkin's, 1832), 8. The discovery of new drugs and therapeutic procedures (aspirin, 1899; plaster bandages, 1852), 9. The creation of models of social security in health (Bismarck Report, 1883) and 10. Other revolutionary changes (beginning of Health Councils and Programs, Preventive Medicine, Public Health, Experimental Medicine, among others). [1, 4, 8]

The structure of contemporary societies, from the second half of the 20th century and into this 21st century, is identified with the paradigm of the so-called *"Globalization or global village"*, related to the trend towards worldwide economic, political, technological, social and cultural integration among countries, companies, institutions and individuals, which emerged with the advent of new information and communication technologies (ICTs) in the 1970s, driven by advances in information technology and telecommunications. This model of global integration, the flagship of the contemporary era, is linked to the expansion of neoliberal capitalism, which in developing countries (such as those of Latin America) has generated greater poverty, inequality and social inequity, as well as loss of human values and cultural identities, while in developed countries there has been an increase in wealth, better quality of life, greater power of multinational corporations, greater access to information, technology, education and health, among others. Neoliberalism has also encouraged excessive consumerism, affecting people's mental and emotional health, such as anxiety, depression and devaluation. [9, 10]

Likewise, although a positive impact has been observed with the use of certain digital technologies (some programs and video games) that promote mental exercise by activating neuronal circuits, reducing anxiety and improving cognitive functions and sleep, their excessive and inappropriate use has caused addictive behaviors, social and family isolation, deterioration of emotional and social intelligence, attention deficit disorders, alterations in brain development and sleep, among other alterations.[11]

Likewise, with the explosive development of ICTs and the rise of globalization, the new Digital or Informatics Era emerged, flourishing new paradigms such as the Information Society (UNESCO, 2005; Trilla J., 2005), the Knowledge Society, the Digital Society and the Risk Society (Beck U., 1986), which associated with the mercantilism of education and knowledge, extended to medical education and its professional practices. [9, 10, 12]

The Information Society is characterized by the value given to data or information using information technology, from its search, organization, storage and application in various areas of human activity, work and daily life. On the other hand, the Knowledge Society, which has not yet been developed, aims to form communities in which citizens work collaboratively, through the use of ICTs, to manage, build and apply knowledge to solve local problems, with a global vision, critical sense and ethical commitment (applying universal values such as responsibility, honesty, equity and respect). This approach is called "Socioformation", and aims to achieve the integral formation of people, to contribute to social restructuring, socioeconomic development and sustainable development of communities or societies.[13, 14]

On the other hand, the German sociologist Ulrich Beck proposed in 1986 that contemporary societies have become a "Risk Society", exposed to imminent dangers of all kinds, in which human beings find themselves in a completely contaminated and insecure environment that continually threatens their existence.[15, 16]

As a characteristic, these paradigms are identified by a significant diversity and pluralism of their members, as well as multiplicity in their ideologies, interests and needs; hence, higher education and health systems worldwide are in a constant period of change, transition and innovation. [17]

In his book *Bioethics and Medicine*, Dr. Fernando Lolas Stepke states: "*Diversity, plurality and multiplicity, in themselves, are not evils. They are very good goods. What those who hold*

and build formal knowledge, and therefore the official knowledge of Medicine, do with them and of them, is what should concern us ."[18]

In this context, the neoliberal globalized economy, which advocates high competitiveness in the formation of human capital to meet the demands of the labor market, ignoring ethics, humanitarianism and the values inherent to the medical profession, allowed the mercantilist health care model to be introduced in the doctor-patient relationship, turning the latter into a client and the doctor into a merchant. This created favorable conditions for the development of Defensive Medicine, eminently technified, with cold, distant health care focused on the excessive use of clinical laboratory studies, molecular biology and imaging, frequently violating the bioethical and legal norms of medical practice, such as abandonment, absenteeism, disinterest, malpractice, mistreatment, discrimination, etc. [9, 19]

All of the above is part of the unfortunate "crisis of medicine", or rather, the crisis of physicians themselves (and other health personnel) in their professional lives, identified as the dehumanization of medicine.[19]

MEDICAL EDUCATION

During most of the 20th century, the dominant model of medical education emerged from the Flexner Report, elaborated by a research group led by the American educator Abraham Flexner (1866-1959) on the characteristics and educational plans of medical training institutions in the USA and Canada, which was published in 1910. Among its main characteristics it is observed: [20, 21]

1. Biological reductionism: constituted as a positivist model (biomedical or scientific-biological), focused on the disease.
2. Basic - clinical separation: 2:2:2 academic plan with a clear division between an initial period of 2 years for the teaching of basic sciences, followed by two years of clinical sciences and ending with the last 2 years for the learning of clinical practices.
3. Creation of laboratory internships (for basic subjects) and hospital clinical internships.
4. Minimized or absent humanistic and ethical formation of students.

The philosophical foundation of the flexnerian (biologist or scientistic) model is the body-mind dichotomy that emerged with the positivism of the 19th century, having influenced medical education and praxis but also scientific research, privileging the body over the mind and everything else. According to this paradigm, the disease causes that only part of your body does not function normally, so it only focuses on healing the body and not the person, in its holistic and integral dimension: the "Being a person". [20, 21]

In Mexico, the legacy of the Flexner Report is still in force in several educational institutions, such as the Faculty of Medicine and Surgery of the Universidad Autónoma Benito Juárez de Oaxaca (UABJO), where the 2001 Study Plan for the Bachelor's Degree in Medical Surgery, updated in 2013, has been accredited by the Mexican Council for the Accreditation of Medical Education (COMAEM, A.C.) on three occasions (the last one in 2021, with validity at national and international level until 2026). Its design is structured in 5 formative areas: Basic, Clinical, Public Health, Humanistic and Integration; of these, the Humanistic Area stands out (absent in previous curricula, the last one dating from 1976), which comprises 5 curricular semester subjects (representing 10.41% of a total of 56, and 20 credits of the total of 774) distributed longitudinally in the 5 school years of the career: History and Philosophy of Medicine (1st year), Medical Anthropology and Psychology (2nd year), Humanistic Medicine (4th year) and Bioethics Practices (5th year). [22]

Since its beginnings, medicine has emerged as a humanistic discipline, framed in professional ethics and the formation of values, so that comprehensive medical education implies that the curricula of the medical career, together with the scientific-technological and procedural learning of the discipline, should include an area of humanistic and ethical training. For this reason, various international and national educational organizations and institutions have issued documents to guide curricular reforms towards this guideline, such as the World Federation of Medical Education (Basic Medical Education WFME, Global Standards 2020), which established the incorporation of three domains in the curricular content of medical careers: [23]

1. Basic biomedical sciences: fundamental to the understanding and application of clinical sciences.
2. Clinical sciences and skills development: include the knowledge and professional competencies required by the student to assume with responsibility the care of their patients.
3. Social and behavioral sciences: relevant to the local and cultural context, including principles of professional practice and ethics.

Likewise, in 2008, the Mexican Association of Medical Schools and Faculties, Civil Association (AMFEM, A.C.) of Mexico presented the *"Perfil por Competencias del Médico General Mexicano"*, an educational model based on seven professional competencies: [24]

1. Mastery of general medical care,
2. Mastery of the scientific basis of medicine,
3. Methodological and instrumental capacity in sciences and humanities,
4. Mastery of ethics and professionalism,
5. Proficiency in the quality of medical care and teamwork,
6. Proficiency in community care,
7. Capacity to participate in the health system.

He further emphasizes that "*it is indispensable for every general practitioner to master them and to verify compliance with them by means of valid and reliable instruments*"[24] .

In order to verify the impact of the subjects of the Humanistic Area in the achievement of the professional competencies of Domain 4 related to the ethical formation and professionalism of the graduates of the Bachelor's Degree in Medical Surgeon of our institution, we carried out a research project whose results show that for the development of universal human values: [25]

1. The family is the most important space.
2. Formal school education, from the basic level (Pre-primary, Primary and Secondary) to the upper secondary level (Baccalaureate or High School), and even higher education tends to decrease.
3. In higher education, the faculty of the Faculty of Medicine and Surgery from the 1st to the 5th year of the Medical Surgeon career is the one who contributes most to its development, although without achieving the level of the family environment, while in the Clinical Integration Area (Undergraduate Internship, which corresponds to the 6th year of the Bachelor's Degree in Medicine) and Social Service (corresponding to the 7th year), it is the direct contact with patients. [25]

Also, in a previous research, we observed that for the humanistic and ethical formation of medical graduates: [26]

a. The different areas and subjects of the educational process of the future physicians contribute, not only the Humanistic Area.
b. Both academic activities in the classroom and concrete clinical practice (direct relationship with patients and health personnel in hospital institutions) are relevant.

c. Significantly influences the attitude and behavior of teachers.

It follows from the above that the educational value of the attitude, conduct and professional and personal actions of teachers should be emphasized. Therefore, we should be aware of the transcendental educational work of conduct as teachers, which is clearly reflected in various codes of ethics and medical deontology (Article 63.2: *"The teaching physician should take advantage of any circumstance in the course of medical practice to inculcate ethical values and knowledge of this code in students. He/she must be aware of the formative value of his/her exemplarity and that every medical act has an ethical component"*[14] .

Similarly, it is necessary to update the selection criteria for admission and teacher evaluation, as well as to give due importance to the hidden curriculum, whereby students incorporate behavioral patterns from those of their teachers/tutors, beyond the contents of the formal curriculum .[15]

On the other hand, student evaluation must be essentially formative, to observe whether the objectives of the educational program were achieved, but also to assess the quality and efficiency of the teachers' teaching strategies. Accordingly, evaluation should be permanent and continuous, based on pre-established criteria. Injustices in evaluation not only violate ethics, but also cause a regrettable loss of moral authority of teachers with students .[15]

The humanistic and ethical component of medical education requires subjects in this area, such as Bioethics, which promotes the development of values such as respect, responsibility, empathy, compassion, solidarity, justice, honesty, honesty, humility and altruism, among others. Also the communication skills necessary to establish trusting relationships, ethical and respectful treatment with patients and their families. [27, 28, 29]

Consequently, the current teaching of medicine with a bioethical dimension implies a double commitment for teachers. Firstly, to ensure their own professional and human ethical development and that of their students. Secondly, in addition to theoretical-practical cognitive learning, skills and abilities in the mastery of procedures and disciplinary, information and communication technology, they need to develop a bioethical culture. The latter would make it possible to show attitudes and values that promote knowledge and understanding of the family, social, cultural, economic and political environment, care for the environment and biodiversity, and especially a commitment to comprehensive and holistic patient care, giving priority to the person over the disease. [30, 31]

BIOETHICS IN MEDICAL EDUCATION

Humanistic and ethical training correlates with the study of the Humanities, where socio-humanistic sciences such as Philosophy, Anthropology, Sociology, Ethics, Law and Bioethics converge, the study of which has historically been related to education in terms of the development of attitudinal learning in university educational programs.[29, 31]

Bioethics, conceived as the science that studies human behavior in the field of life sciences and health, its field of action extends to scientific research, care and protection of the environment and biodiversity, health care, survival of Humanity, education and institutions. This new science opens the way for us to reorient the teaching of medicine towards a new paradigm, centered on the "Being" of the human person, respecting his or her life, dignity, freedom, human rights and universal ethical values.[29, 31] The following documents at the international level, among others, support this:

1. The "Four Pillars of Education" for the 21st century: learning to be and learning to live together (UNESCO, 1994). [32]

2. Declarations of the World Medical Association (WMA 1999, and Moscow 2005): on the teaching of Universal Human Rights and Ethics as curricular courses in medical schools worldwide.

3. Universal Declaration on Bioethics and Human Rights (UDBHR, UNESCO 2005): article 23, referring to Education, training and information in Bioethics.[33]

4. Basic Medical Education Program (World Federation of Medical Education, WFME 2020): indicator 2.3 Teaching Medical Ethics.[23]

To achieve the above, Bioethics should be considered inherent, explicitly, to every educational process or act in the curricular plans and programs of study, and also required in the profile of the teaching staff, and not only implicitly and informally (*"hidden curriculum"*), or even worse, be absent, a condition that still prevails in some institutions. [31, 34]

There are situations to be avoided, in which teachers most frequently incur, generating significant ethical conflicts related to bioethical principles oriented to teaching work, (T. Beauchamp and J. Childress 1979, D. Gracia 2000, C. Galindo 2009, E. Sgreccia, 2013), among them: [29, 34, 35, 36]

- Trying to impose your own principles and values on students, violating their freedom and the principle of autonomy so that they can make their own decisions, as well as the principle of respect and tolerance, which avoids manipulation.
- Privilege outstanding students and marginalize those who are lagging behind, thus violating the principle of justice, non-discrimination, equity and solidarity (or subsidiarity).
- Assessing the development of attitudes and values, the ethical and humanistic conduct of students based on their own moral convictions, which produces biased results in the evaluation of attitudinal learning. This affects the principle of respect, beneficence, justice and tolerance.
- To ignore the fundamental responsibility as a teacher: to procure the integral formation of all students, failing to comply with the principle of beneficence, understood here as *"everything that the teacher does for and for the good of his students"*, thus constituting the maximum bioethical manifestation of the educational process, representing the ethical and humanistic commitment of the physician-teacher.
- Manifesting unethical behavior patterns. Affecting with their example the principle of non-maleficence, beneficence, responsibility and sociability.

CONCLUSIONS

- El rescue of the Humanities as the axis of medical education and university life in general, will only be possible by joining efforts at the institutional level between faculty and students, to achieve the integration and linkage between the various scientific knowledge of the medical sciences with the humanistic sciences.
- La Bioethics in the teaching of Medicine, should become a transforming and transdisciplinary tool, aimed at ensuring that students develop as fundamental learning to assume their profession with a holistic and integrative bioethical dimension, to make their medical practice a scientific, personalized and socially committed activity, but above all humanistic and ethical, which privileges the "human person" and life in general, respecting bioethical principles as well as universal human rights and values.

- Para teaching ethical behavior that results in the development of humanitarianism, universal human values and attitudinal professional competencies of students is not enough to include curricular courses on Bioethics, nor is it enough for teachers to know its foundations, norms and principles; it is essentially necessary to set an example, reflect on the educational work and internalize its meaning, which will allow us to recognize the successes and mistakes in order to provide feedback for teaching practice. The objective is to achieve a favorable change in medical education that will have an impact on the formation of a bioethical culture in the entire university community and society as a whole.
- El challenge is that our teaching work reflects the decision, the commitment and the testimony that what has been expressed above is feasible. Will we accept it? Let us hope so, because in analogy with Stephen Toulmin's (1982) statement[37] of "How Medicine saved the life of Ethics", we could speak of Bioethics in medical education saving Medicine from its current crisis of humanism, humanitarianism and ethics.

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