

The development of approaches to healing through the ages

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INTRODUCTION

One of the characteristics of *Homo sapiens* is his tendency to heal diseases. According to archaeological evidence, the need to relieve the intensity of pain is as old as the desire to explore new tools. Like hard flint used to make knives and axes, drugs in nature rarely occur in their most applicable form. Active ingredients and medicinal components must be first collected, processed and prepared to be inserted into a curative form (1).

Introduction to the development of ideas about drugs, methods of healing and evolution of the profession increase the ability of medical professionals to respond to the challenges that arise with the expansion of their professional roles.

Healing through history

In the Stone Age, healing developed spontaneously and instinctively by observing birds and beasts. The first attempts to relieve pain involved things directly available to man such as cold water, leaves, soil and mud. Although the healing methods of cave people were undeveloped, many drugs are still used in the same form as they were available to prehistoric man (2).

In the Neolithic period, medicinal plants were known and used as food, spices, or spells. Through trial and error, folk knowledge about medicinal characteristics of certain natural substances developed. When healers were faced with a disease, they dealt with it in the context of their understanding of the world around them, full of good and evil spirits. Healing consisted of the use of beneficial remedies with supernatural significance attributed to them. Magicians and wizards used magical substances to defeat diseases. Preparation of magical beverages was among the duties of the tribal healer and shamans kept it secret. They prepared medicines and served as a link

between the material and spiritual world. Shamans were responsible for all supernatural things in the tribe, so they made diagnoses and determined the treatment of serious or chronic diseases. Although primitive people discovered only a small number of efficacious medications, the concept of the possible impact of external force on body functions must be considered as one of the greatest human achievements. Holistic approach to healing has taken over many techniques from Shamanism, such as visualization, altered state of consciousness, hypnotherapy, meditation, positive conception and stress reduction (2, 3).

Traditional Chinese medicine offers a detailed health care system with a wide range of applications – from prevention and health maintenance to diagnosis and treatment of acute and chronic disorders. Methods are focused on the rational use of internal and external energies, employing diets, herbal treatments, acupuncture and breathing techniques (2, 3).

Ayurveda (ayush life, veda knowledge) is a complete system of healing that appeared in India in the 2nd millennium BC. Its purpose is to provide people with guidelines for diet and lifestyle in order to remain healthy and to improve sick people's health. Healing includes herbal treatments (including cinnamon and cardamom), massage, meditation and exercises for posture and breathing, for maintenance and improvement of health. Ayurveda is concerned with the interrelationship of individuals' health and the quality of their social life. It is a holistic and sophisticated system where body functions through the interaction of vital energy, its tissues and excreted products (3).

In ancient Egypt, treatment showed pharmaceutical advancement, with more dosage forms and more complex formulas. Egyptian medical texts reflect a close relationship between supernatural and empirical treatment. Recommended recipes usually began with prayers or incantations. Herbal remedies were the basic means of healing, with laxatives and enemas as the most important ones. There were individuals specializing in the collection, preparation and selling of drugs, similarly to the curative practice in Mesopotamia (3).

Illyrians practiced religious, magical medicine and psychotherapy. They believed in a number of gods. Medaurus was the Illyrian god of healing and deities Bindus and Thana were protectors of water sources. Illyrians applied hydrotherapy combined with physiotherapy (3).

Thracians believed in their own Thracian gods. Asclepius was the god of medicine. They were experienced in religious medicine, methods of treatment and had the first medical facilities (3).

The earliest records of Ancient Greece contain the word *pharmakon* that meant both 'remedy' and 'poison'. In the *Odyssey*, Homer (800 BC) expressed respect for the wisdom of Egyptian physicians, illustrating the flow of antic knowledge much earlier than the written word. Early Greek physicians described by Homer, called *demiourgoi*, made progress in that they diagnosed natural reasons for diseases (but they did not rule out supernatural healing in combination with empirical medicine).

Some people, suffering persistent pain, traveled to the temple of the god Asclepius. They slept in the temple hoping that at night they would be visited by Asclepius or his daughter Hygeia, who carried a magic snake and a jug with curative medication. Rational tradition in Greek medicine, as evidenced by Homer, was processed and included in the contents of the literature associated with the name of Hippocrates of Cos (425 BC). Benefiting from findings of previous natural philosophers such as Thales (590 BC), Anaximander (550 BC), Parmenides (470 BC) and Empedocles (450 BC), Hippocratic physicians formed their rational explanation of disease. This was achieved by establishing a hypothetical relationship between the environment and humanity through connecting the four elements, air, soil, fire and water, with the four major fluids in the body: black bile, blood, yellow bile and phlegm (mucous liquor). Trained Greek physicians (iatroi) who followed Hippocrates prioritized diet and lifestyle changes over the use of drugs. If these conservative methods gave no results, Greek physicians prepared their own drugs or would leave a prescription to family members to prepare and apply them. Healing was based on the laws of similarities (2, 3).

The health culture of the ancient Macedonian state was folk-empirical. However, Macedonian kings showed great interest in its improvement and development. Under the influence of medicine of previous nations, they maintained that their protectors were the same gods that handed over their supernatural power of healing to the priests, who treated sick people in temples dedicated to Asclepius. Treatment involved psychotherapy, diet, fasting, hot baths and massage. Drugs of plant origin were applied and operations were performed to relocate broken bones and dislocated joints. Alexander's Medical School in Alexandria saved ancient Greek medicine from a century long stagnation caused by the appearance of dogmatism. Influenced by the medical thought of the Egyptians and Oriental Asian peoples, the development of natural, rational scientific medicine of Hippocrates continued successfully, with notable additions of anatomical, physiological, toxicological and surgical knowledge (3).

Being a militant people pursuing their conquering goals, the ancient Romans lagged behind other nations in the sphere of healing. Their science and medicine were less developed. They, however, showed great interest in the discovery and use of mineral waters for medical purposes. A number of spas were known at that time: Katlanovo spa, Kosovrasti and Banjishite spas near Debar, Kezhovica spa near Stip, Bansko spa near Strumica, etc. The Roman period is important for health legislation, which regulated public hygiene and sanitation objects (4, 5, 6).

Ancient medicine reached its peak with Galen and later recorders were mainly compilers and commentators of his work, rather than original thinkers. The impact of Galen's teaching was so profound among medical practitioners that the basis of his medical approach – balance of the four bodily fluids via various drugs – mixed with folklore and superstition led people to devise their own treatment of diseases. This medical approach was especially appreciated in the western part of the Roman Empire. Galen worked in Rome in the second century of our era and his knowledge and

writings made the humoral system of medicine predominant over the following 1500 years. Discarding the conservative use of drugs of the orthodox Hippocratic physician, Galen created an elaborated system, through which he tried to balance the body fluids of a sick man by the use of drugs with expected opposite effects. For example, in treating an outer inflammation, a Galen's follower would probably apply cucumber or a cold and moist folk drug, or perhaps the same Galen's follower would try to cause bleeding, the preferred treatment for eliminating the excess of blood that caused the disease. Besides practicing bleeding, Galen introduced the use of poly-pharmaceutical preparations, which would be called »shotgun recipes« today. He thought that, from the complex mixture of substances, the patient's body would extract those needed to reestablish proper humoral balance (2, 3).

The Middle Ages made no changes in the ways of medical treatment. As many methods of treatment moved away from practical experiences, mysticism and superstition became more prominent, so that Byzantine medicine was a pale and distorted image of Greek-Roman medicine. Church became the cultural stabilizing force in the emergence of local feudalism that replaced the centralized government system. Rational drug therapy disappeared and was replaced by church teaching, which preached that sin and disease were closely related. Monasteries became centers of healing, both spiritual and physical, because they were not considered to be essentially different (2, 3).

At the beginning, Arabs fully accepted the authorship of the then known medical manuscripts. However, with the growth of their culture, Islamic medical scholars such as Rhazes (860–932 AD) and Avicenna (980–1063 AD) completed the works dealing with medicine. Arab invasions brought new drugs and spices into the centers of learning. In addition, Arab physicians rejected the old idea that bitter tablets were the most potent ones. Instead, they made a huge effort to make their dosage forms more attractive and tasteful by coating the pills with silver and using syrups. These new, more sophisticated drugs demanded more complicated preparation. During that period, classic scientific and medical knowledge resumed prevalence in Europe by way of Arab culture (2, 3).

For a significant change in drug use to appear, this educational approach had to be overcome and it had to approach the dubious monitoring methodology. Such drastic changes occurred in the experimental period now called the Renaissance. The Renaissance was the ripe time to overthrow the old Galen's concepts of diseases and drugs. New and unknown drugs were arriving from distant lands. Tremendous incentives for these early studies were the discoveries of new drugs in newly discovered countries. As Galen did not know all the diseases of the then known world, so Dioscorides (40–90 AD) and his Arab associates did not know all the drugs. Tobacco, quinine, alder buckthorn and ipecacuanha were among the newly discovered drugs from the new world. Galenic physicians, who developed a system of balancing body fluids by using drugs with opposite characteristics, could not explain the efficiency of quinine against malaria. Besides its curative effect on malarial fever, quinine also

showed a weaker effect in various states accompanying fever. After satisfying the demand for religious books (bibles, hymns, etc.), a new field of interest appeared among printers – publication of medical and pharmaceutical works, which abounded in detailed illustrations. As regards medicine, this trend was best represented by Andres Vesalius' work on anatomy (1514–1564 AD). Although critical of the progress of medicine, almost modern, precise works of Vesalius and Fuchs did not affect the treatment of diseases as much as the speculative, mystical literary works of the traveling Swiss surgeon who called himself »Paracelsus«. Born as Philippus Aureolus Theophrastus Bombastus von Hohenheim in 1493, this medical insurgent gave a good description of the behaviors of common people, educated physicians, practicing surgeons and alchemists. Paracelsus' struggle against the static ideas of Galen, Avicenna and other traditional authorities opened a window into the complicated mind of the Renaissance. He was one of the proponents of drugs chemically prepared from fresh plants and mineral substances, but still firmly believed that the collection of such substances should be astrologically determined. At the same time, Paracelsus supported the »doctrine of signatures«, based on the belief that God had put his signature on some healing substances, which was then demonstrated by their use in certain diseases. Although Galen could not accept the idea of the existence of a special medication for a certain illness, Paracelsus propagated it as the only truth. However, his efforts for chemically prepared medications stimulated the development of modern pharmaceutical sciences. Chemical processes, especially distillation, allowed the followers of Paracelsus to isolate healing substances from drugs. Also, the effectiveness of some drugs was clarified. They were included into professional medical practice and were documented in medical literature. In that period, preparation of drugs meant great advancement in the history of pharmacy (2, 3).

Chemistry, the necessary tool in science, was used for the preparation of the oldest tools of humankind – medications. Although Paracelsus and his followers criticized pharmacists, they promptly took up the leading positions in chemistry during the 16th century. Over a period of about 300 years, a number of pharmacists made significant discoveries in the chemistry of drugs by isolating many drugs that are still in use and thus made a great contribution to the general knowledge of chemistry. During that period of investigating the newly discovered world, pharmacists studied a much smaller, but equally exciting, world in their laboratories. Approaching this problem in a more modern way, those people wanted to isolate pure, crystalline chemical substances that could be chemically identified and quantified. Medicinal plant preparations, regardless of how carefully they were prepared, showed significant differences in strength due to natural variability of the active ingredients in plants. Discovery of active principles was not an easy task, and it fascinated researchers for a period of nearly 300 years. To search for the ingredients and to separate, characterize and identify them in the simplest plants was as challenging a task as any other research. The new, pure active substances of known potency were quickly adopted by the physicians.

This crisis of opinions incited by those advocating chemical drugs ousted the therapeutic concept of Galenism, which had lasted for almost 1500 years. It led to a period of about 250 years of therapeutic chaos, which lasted until the era of modern pharmacology (2, 3).

Today's methods of treatment

Conventional (Western) medicine (about 200 years old)

Conventional (Western) medicine was founded on the philosophical thought of Rene Descartes (1596–1650), who maintained that mind and body were distinct substances, and on Isaac Newton's (1642–1727) perception of the universe as a large mechanical clock that functions in a linear and sequential way. Conventional (Western) medicine defines health as the absence of disease. It is also influenced by Darwin's theory (2, 3).

Physicians are trained to treat defective body parts using drugs, radiation, surgery or by replacing them. It is better to undertake something than to build individual power of resistance and ability to overcome the disease.

Conventional (Western) medicine successfully manages acute emergency states, traumatic injuries, bacterial infections and some highly sophisticated surgical interventions. Priority intervention involves resisting and overcoming the symptoms of a disease, and not its cause (e.g., application of analgesics, anesthetics, anti-inflammatory drugs, antipyretics, etc.). Since conventional medicine deals with parts and symptoms rather than building the overall operating system, energy, thought and feelings, it does not combat systemic diseases of long duration (e.g., arthritis, cancer, diabetes, heart disease, hypertension, mental illness, etc.).

Modern gene therapy (drugs and vaccines), a newer class of therapeutics, has the potential to prevent, correct or modulate genetic or acquired diseases (2, 3).

Homeopathy (from the Greek: homoios-similar and pathos-feeling)

Homeopathy is a ca. 200 years old therapeutic system developed by the German physician and chemist Samuel Hahnemann (1755–1843). It is based on treating diseases with small amounts of the substance which in larger amounts would give the same disease symptoms. More than 2000 compounds are available for this purpose (2, 3, 7).

Unconventional medicine (the so-called Alternative Medicine)

Primitive pharmaceutical skills have been probably studied by all those who have dealt with unconventional medicine. It is based on the whole system of mental, emotional and spiritual components that should be considered equally for human health. Symptoms of the disease are an expression of the wisdom of the body to heal its imbalances and diseases. The concept of treatment is that an internal healing process exists in each person; time and patience are the main healers (8, 9, 10, 11, 12).

CONCLUSION

There should not be a conflict in the practicing of Western medicine (allopathic or conventional medicine) and unconventional medicine; on the contrary, they should be complementary.

In the case of emergency (e.g., appendicitis), Western medicine should be practiced while unconventional medicine is appropriate for prevention and health maintenance.

ABSTRACT

Introduction of the different methods of healing developed over time increased the ability of medical professionals to meet the challenges that arise with the expansion of their professional roles. Methods of healing of cave people were undeveloped. Methods applied in Chinese medicine are focused on balancing the internal and external energies. Ayurveda represents a holistic and sophisticated system of healing. Egyptian medicinal texts show a close relationship between supernatural and empirical healing. Illyrians applied hydrotherapy and physiotherapy. Thracians had experience in the field of religious medicine and the first medical institutions. Healing in Ancient Greece was based on the law of similarity. Greek physicians associated diet and life adaptations with the use of drugs. Roman sanitary legislation regulated public hygiene and sanitation facilities. Galen made efforts to balance body fluids by using drugs of opposite nature. Rational drug therapy lost ground in the Middle Ages and was replaced by Church teaching. Arab physicians rejected the old idea that a bitter pill acted best; instead, they made their dosage forms tasty and attractive by applying silver or gold plating and using syrups. Paracelsus pioneered with chemically prepared drugs from fresh plants and mineral substances. He used a special drug for each special disease. Great advance in the preparation of drugs was made in the Renaissance. For a period of about 300 years, significant discoveries were made in the chemistry of drugs. Today, gene therapy has the potential to prevent, correct and modulate genetic or acquired diseases

Keywords: healing, history, method, drug, approach

Razvoj pristupa liječenja tijekom vremena

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S a ž e t a k

Uvođenjem različitih metoda liječenja razvijenih tijekom vremena povećala se sposobnost medicinskih stručnjaka da se suoče s izazovima koji proizlaze iz proširenja njihovih profesionalnih uloga. Metode liječenja bile su nerazvijene kod pećinskih ljudi. Metode kineske medicine utemeljene su na održavanju ravnoteže između unutrašnje i vanjske energije. Holistički i sofisticirani sustav liječenja je Ajurveda. Egipatski

medicinski tekstovi pokazuju tijesnu povezanost između natprirodnog i empirijskog liječenja. Iliri su primjenjivali hidroterapiju i fizioterapiju. Tračani su imali iskustva u području religiozne medicine i prvih zdravstvenih institucija. Liječenje kod starih Grka temeljilo se na zakonu sličnosti. Grčki fizičari su povezivali ishranu i životne prilagodbe s upotrebom lijekova. Rimska medicinska regulativa uređivala je javnu higijenu i sanitarne ustanove. Galen se trudio uspostaviti ravnotežu tekućina kod bolesnika upotrebom lijekova suprotnog karaktera. Racionalna terapija lijekovima napušta se u Srednjem vijeku i biva zamijenjena s učenjem crkve. Arapski liječnici su odbacili staru ideju da gorka pilula djeluje bolje; umjesto toga, pripremali su ukusne i atraktivne oblike lijekova sa srebrenom ili zlatnom oblogom i upotrebljavali sirupe. Paracelsus je bio pionir kemijski pripremljenih lijekova iz svježih biljaka i mineralnih supstancija. Koristio je specijalni lijek za svako oboljenje. Tijekom Renesanse napravljen je velik skok u pripravi lijekova. U razdoblju od oko 300 godina zabilježena su značajna otkrića povezana s kemijom lijekova. Današnja genska terapija nastoji spriječiti, ispraviti i modificirati genetska i stečena oboljenja.

Ključne riječi: liječenje, povijest, metoda, lijek, ideja

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