


REFLECTION

What is alternative, complementary, and integrative medicine?

¿Qué es la medicina alternativa, complementaria e integrativa?

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Abstract

The concept of alternative medicine was created by Western medicine to differentiate conventional medicine from medical practices such as traditional Chinese medicine and acupuncture, homeopathy, neural therapy, osteopathic and chiropractic medicine, Ayurvedic medicine, and indigenous traditional medicine, which also have philosophical, scientific, and therapeutic foundations. Unfortunately, over time, the belief that alternative medicine encompasses all medical practices that are not part of conventional medicine has gained ground, causing many inaccuracies and controversies.

Medicine arose from the need for human self-preservation, with health defined as a state of complete well-being and disease as a loss of this state. Over the course of history, various approaches have appeared and some of them have developed into medical systems. Conventional medicine was structured in the West based on existing medical reasoning and focused on modifying disease, resulting in marked conceptual differences with existing medical treatment systems that focused on the individual and on modifying disease processes.

All medical systems have had an impact in various social fields. Likewise, trends and strategies aimed at integrating conventional medicine with other medical systems such as electroacupuncture according to Voll, homotoxicology, electromagnetic polar balance, anthroposophy, sintergenetics, and biophotonics have also emerged. It is now considered that the aim of medicine is to integrate and complement knowledge from different medical approaches within the concept of a single medicine. Taking this into account, this paper aims to clarify the concepts of the different forms of medicine, propose some definitions, and offer a definition of alternative, complementary, and integrative medicine.

Resumen

El concepto de medicina alternativa fue creado por la medicina occidental para identificar prácticas médicas diferentes a la medicina convencional, tales como la medicina tradicional china y acupuntura, la homeopatía, la terapia neural, la medicina osteopática y quiropráctica, la medicina ayurveda y la medicina tradicional indígena, que también tienen fundamentos filosóficos, científicos y terapéuticos. Desafortunadamente, con el tiempo se estableció la creencia de que la medicina alternativa comprende todas las prácticas médicas que no son parte de la medicina convencional, lo que ha causado muchas inexactitudes y controversias.

La medicina surgió como una necesidad de auto preservación del ser humano que considera a la salud como bienestar completo y a la enfermedad, como pérdida de esta condición. A lo largo de su evolución han emergido diversas racionalidades y algunas de ellas se han convertido en sistemas médicos. La medicina convencional se estructuró en Occidente, fundamentada en racionalidades médicas existentes para la época y enfocada en modificar la enfermedad, lo que resultó en marcadas diferencias conceptuales con sistemas de tratamiento médico ya existentes que se centraban en el individuo y en modificar los procesos de la enfermedad.

Todos los sistemas médicos han tenido un impacto en diversos campos sociales. Asimismo, han surgido tendencias y estrategias de integración de la medicina convencional con otros sistemas médicos como la electroacupuntura de Voll, la homotoxicología, el balance polar electromagnético, la antroposofía, la sintergética y la biofotónica. Actualmente se considera que el objetivo de la medicina es integrar y complementar conocimientos de diferentes racionalidades médicas dentro del concepto de una sola medicina. Teniendo en cuenta lo anterior, el objetivo del presente artículo es clarificar los conceptos de las diferentes formas de medicina, plantear algunas definiciones al respecto, y proponer una definición de medicina alternativa, complementaria e integrativa.

Introduction

The term alternative medicine has its origins in the West to differentiate the practices of conventional medicine from other forms of medicine that have emerged throughout the history of mankind. This distinction was specifically made in 1978 at the International Conference on Primary Health Care in Alma-Ata, where all forms of medicine were taken into account in order to develop fundamental standards for health care legislation, training, and implementation for all nations.¹

Following this conference, the World Health Organization (WHO) issued several documents in which it attempted to define what was initially referred to as “alternative medicine.” For example, in the document “WHO traditional medicine strategy 2002-2005,” it states that: “the terms ‘complementary’ and ‘alternative’ (and sometimes also ‘non-conventional’ or ‘parallel’) are used to refer to the broad set of health care practices that are not part of a country’s own tradition, or not integrated into its dominant health care system.”²

In addition, according to the National Center for Complementary and Integrative Health (NCCIH), complementary and alternative medicine is a set of systems, practices and products that are not considered part of conventional or Western medicine, and the boundaries separating complementary and alternative medicine from conventional medicine are not absolute, so, over time, complementary and alternative medicine practices will become widely accepted.³ Furthermore, the NCCIH individually defines the terms “alternative medicine” as the use of non-conventional methods instead of conventional medicine, “complementary medicine” as the simultaneous use of non-conventional approaches and conventional medicine, and “integrative medicine” as the integrated use of conventional and non-conventional approaches to medicine.³

Similarly, the document “WHO Traditional Medicine Strategy 2014-2023” presents the following definitions of traditional and complementary/alternative medicine:⁴

“The terms ‘complementary medicine’ or ‘alternative medicine’ refer to a broad set of health care practices that are not part of that country’s own tradition or conventional medicine and are not fully integrated into the dominant health-care system. They are used interchangeably with traditional medicine in some countries.”

“Traditional medicine has a long history. It is the sum total of the knowledge, skill, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness.”⁴

The purpose of these definitions was to provide an inclusive overview of the different forms of medicine, but the idea that alternative or complementary medicine was any practice that was not classified as conventional or Western medicine was erroneously disseminated. As a result, many practices that were not part of any type of medicine or any medical system and that were undertaken by people who were not qualified or did not belong to any medical system were considered alternative medicine, which, in turn, caused enormous confusion and suspicion towards the term.

This situation was aggravated by the fact that many individuals and organizations with commercial interests saw the opportunity to generate income by offering products and treatments that were not part of any traditional medical system under the guise of what was called “alternative medicine,” creating an even worse conceptual chaos. As a conse-

quence, from the perspective of Western medicine, there was a legitimate suspicion and caution regarding what was being defined as alternative or complementary medicine.

In view of the abovementioned, the objective of this article is to clarify the concepts of the different forms of medicine, propose some definitions, and offer a definition of alternative, complementary, and integrative medicine.

General considerations on medicine

Medicine is a unique science and is defined as the art of healing. It is considered an art because of the special relationship between the physician and patients, and a science, because decisions about the treatment of patients must be based on knowledge.^{5,6}

The history of medicine dates back to the very beginning of humankind and arises from its need to find solutions to deal with adverse health conditions. Therefore, medicine as a discipline evolved in four different ways: 1) with spontaneous interventions based on the instinct to protect; 2) empirically by undertaking actions and using methods in similar circumstances, in which a positive response was obtained; 3) based on magical or mythological thought; and 4) based on technical or scientific knowledge, where processes and results are subject to rigorous scientific methods and verification, respectively. Also, four evolutionary stages of medicine have been described, namely, paleontological or primitive medicine, the medicine of extinct archaic cultures, the medicine of existing archaic cultures, and western, technical or scientific medicine, which emerged in ancient Greece based on the observation and analysis of earlier evolutionary stages.^{5,6}

Moreover, in its constitution, WHO defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”⁷

It is now known that in order to practice medicine, in any of its forms, it is necessary to consider the human being as a member of a social structure, both in terms of health and disease, at three levels of existence: 1) the anatomical or morphological level, which refers to the material-structural level; 2) the biochemical and molecular level, which involves chemical reactions and microstructures; and 3) the biophysical level, made up of non-material aspects that govern the behavior of the physical, emotional, and mental dimensions.^{8,9}

The existence of every individual begins from the moment of conception and involves inherited factors and a biological program whose primary function is to maintain vital conditions; from that moment on, acquired factors begin to interact. Disease is the result of inherited factors viewed as predispositions and acquired factors that modify the structure of the biological program. Both inherited and acquired factors can be physical, emotional, or mental.¹⁰

Any disease has an impact on the individual as a whole, causing biophysical, atomic, molecular, biochemical, cellular, tissue, organic, general and functional phenomena, which are manifested in the physical, emotional and mental dimensions and that, depending on the severity of involvement, can range from minor ailments to complex diseases.¹¹ Moreover, these manifestations are individual, so it can be said that there are diseases as well as sick people.¹²

Disease always involves alterations of the individual's biological self-preservation program and, therefore, healing implies the restoration of this program.¹³⁻¹⁵ Likewise, as an individual process, every disease has a beginning, a development and an end point, and produces clinical manifestations.¹⁶

Therapeutics, according to Schmiedeberg's initial approach, is a part of medicine that deals with the treatment of diseases and, therefore, comprises the study of different

curative agents and their rational and scientific use to cure or alleviate sick patients.¹⁷ Additionally, when establishing a treatment, it is necessary to bear in mind the Hippocratic postulates, namely: 1) do no harm, 2) symptoms are not the disease, and 3) the objective of medical interventions is to help individuals to heal themselves.¹⁸

Complex medical systems

Some authors have proposed criteria that medical systems must meet in order to be considered complex medical systems:

1. An understanding of human morphology that identifies a body structure with a shape and an organization.
2. Vital dynamics that support the organizational expression of all bodily structures using appropriate communication systems and defining the necessary actions for preserving life.
3. A medical doctrine that addresses the concepts of health and disease (including their origins or causes) in order to propose possible modifications to achieve a state of health.
4. A diagnostic system that makes evident the existing alterations in the individual, as well as their characteristics and states, attempting to establish the causes of such alterations.
5. A treatment system that provides appropriate therapeutic interventions aimed at reestablishing the natural organization of the biological system.^{19,20}

These criteria are valid for both conventional or traditional medicine and the various alternative approaches to medicine.^{21,22} However, there are important differences between complex medical systems that need to be clearly established and these are described below:

Conventional or Western medicine focuses on disease, and therapeutic interventions (mainly pharmacological, surgical, and molecular, but some may be biophysical) are intended to modify the outcome of the disease process. These interventions, through feedback mechanisms, can also lead to modifications in the processes that cause the disease.^{23,24} On the other hand, other complex medical systems that have been termed as alternative or complementary medicine focus on the processes that cause the disease or directly on the individual. In addition, in these medical systems, therapeutic interventions are based on biophysical aspects and mainly aim to modify the structure of the individual or the processes that caused the disease, thereby modifying the disease outcome.²⁵⁻²⁷

Social impact of alternative and complementary medicine

In recent decades, medical systems classified as alternative and complementary medicine have had an increasing social impact. For example, it has been reported that in the United Kingdom the use of homeopathy, flower essences and herbal medicine increased by 41% between 1992 and 1996,²⁸ that between 20% and 70% of the population in Eastern Europe and Australia uses alternative medicine, and that one out of every three inhabitants in the United States uses alternative medicine.²⁸⁻²⁹ Furthermore, according to the WHO, at least 70% of the world's population has resorted to alternative medicine at least once in their lifetime. Similarly, other studies, such as a systematic review that included 26 research papers conducted in 13 countries reported that on average 31.4% (range: 7% to 64%) of cancer patients used alternative medicine.²⁸ In addition, several studies have documented the use of alternative medicine in oncology patients.³⁰

Other social impact derived from this form of medicine is reflected in the fact that most medical schools in the United States offer alternative medicine training programs, that the Federation of State Medical Boards developed and established guidelines for the use of alternative and complementary medicine in medical practice,²⁸ and that nearly 1 500 articles on this subject are published annually in Medline.²⁸ It is also worth noting that there has recently been a greater integration of conventional clinical practice with long-established medical systems such as traditional Chinese medicine.³¹

Evolution of the different conceptions of medicine

Throughout the evolution of the different conceptions of medicine, the existence of both specific medical systems and systems integrating such systems has been recognized.^{32,33} Specific medical systems that meet the criteria for complex medical systems include Western or conventional medicine, traditional Chinese medicine and acupuncture, homeopathy, neural therapy, osteopathic and chiropractic medicine, Ayurvedic medicine, naturopathic medicine, and traditional indigenous medicine.³⁴⁻³⁶

Traditional Chinese medicine and acupuncture

This is one of the oldest medical systems and is based on the recognition of integrated and coordinated communication systems in which the concepts of Yin and Yang are considered a manifestation of the wholeness of the parts, the polarities that command biological information, the complementary aspects of unity, and the preparatory processes that occur in the organism. Furthermore, this medical system is based on the idea of five elements (fire, water, wood, metal and earth) that are the manifestation of a relationship between the macrocosm of the universe and the microcosm of the individual, in which individual functionality depends on laws of dominance and counter-dominance. This system also believes in the existence of fundamental substances such as Chi, blood, essence, and bodily fluids, which are related to the organs (Zang) and viscera (Fu) through a biological organization maintenance process affecting the individual, as well as the existence of biological circuits composed of eight aspects (external and internal, cold and heat, defect and excess, yin and yang).³⁷⁻⁴³

In traditional Chinese medicine, disease arises as a result of disturbances in the harmony of these biological circuits and, therefore, therapeutic interventions are aimed at correcting such disturbances. Therapeutic interventions rely on the use of needles, moxas, digito-pressure, massages, therapeutic exercises, medicinal plants, dietary guidelines, and lifestyle changes.^{44,45}

Regarding the effectiveness of these interventions, several academic papers report good therapeutic results derived from the use of traditional Chinese medicine and acupuncture.⁴⁶⁻⁴⁹

Homeopathy

Homeopathy is a complex medical system that emerged in the West based on the principle of similarity. It was developed by Samuel Hahnemann (1755-1843), a conventional physician who was looking for alternative treatment options for his patients when he realized that while some substances caused certain clinical manifestations in healthy patients, they improved symptoms in sick patients with similar clinical manifestations. Following an observation and experimentation process with different substances,

Hahnemann identified and clearly described the effects of each of these substances, thus leading to the first homeopathic medicines, which have been improving in terms of effectiveness and safety over time.⁵⁰⁻⁵⁴

Homeopathy is based on the observation of an individual's characteristics and the evaluation of such characteristics in the context of the disease process in order to identify similar information contained in homeopathic medicines and, in this way, choose a single medicine or a group of medicines to treat the symptomatology. In this way, homeopathy seeks to establish an interaction between the individual and the processes that cause the disease and, thus, modify the outcome of the disease.⁵⁰⁻⁵⁴

According to what has been reported in the literature, the use of homeopathy has shown positive results.⁵⁵⁻⁵⁸

Neural therapy

The German physicians Walter and Ferdinand Huneke conducted research on local anesthetics in 1925 and discovered that, by using these agents to relieve the discomfort caused by local lesions, other symptomatic manifestations apparently unrelated to the site of application of the anesthetic were also cured. Subsequently, the term "interference field" began to be consolidated as a bodily injury that can cause a variety of manifestations, even at a distance, and the explanation for this was based on the alteration of signals through the nervous system, which was the most widely known biological communication system at the time, giving rise to the name "neural therapy." At first, the therapeutic action of local anesthetics was thought to be based on their ability to stabilize cell membranes due to their mechanism of action on sodium channels. However, over time, other mechanisms of action of these anesthetics have been identified, as well as other biological communication systems that have made it possible to explain various manifestations of interference fields.⁵⁹⁻⁶¹

Neural therapy views disease as an emergent process caused by the organism, so it pursues the implementation of self-eco-organizing strategies as a response to interference fields. Thus, by means of a detailed review of medical records and a thorough physical examination, interference fields are identified and micro-doses of local anesthetics are administered there, followed by monitoring of the symptomatology through careful observation of the patient's clinical behavior. The decision to perform new interventions will depend on the results of clinical observation, in order to establish whether or not the patient shows improvement.⁶²⁻⁶⁴ Finally, regarding its effectiveness, several studies have reported satisfactory results with the use of neural therapy.⁶⁵⁻⁷²

Osteopathic and chiropractic medicine

Osteopathy and chiropractic have their origins in the approaches of Andrew Taylor Still (1828-1917) and David Daniel Palmer (1845-1913), respectively. Both forms of traditional medicine are based on the body's communication systems, the coordination between the body's structure and function, the musculoskeletal phenomena that cause disturbances at a distance, and the disturbances that can be caused by these musculoskeletal phenomena.^{73,74}

Osteopathy and chiropractic are governed by the following principles: the conception of the body as a biological whole, self-healing processes, and vascular and neuronal interaction as the fundamental principle of functional maintenance.^{75,76}

In both osteopathy and chiropractic, therapeutic strategies aim to identify musculo-skeletal disorders and treat them with specific procedures in order to generate local and distant changes that allow modifying the results of the diseases.^{77,78}

Finally, according to what has been reported in the literature, the use of these forms of alternative medicine has shown positive results.⁷⁹⁻⁸⁵

Ayurvedic Medicine

Ayurvedic medicine is a medical system based on the knowledge of life, the physical, emotional and mental integration of the individual, the harmony of the macrocosm with the microcosm, the human being as a result of what he/she builds, and health as a result of the individual's lifestyle. Therapeutic strategies are based on lifestyle guidelines, the implementation of healthy living habits, the practice of activities such as meditation, exercise, yoga and massage, the use of medicinal plants, and changes in eating habits; it should be pointed out that these interventions vary from one individual to another.^{86,87}

The primary goal of Ayurvedic medicine is to identify alterations in the individual's code of life to make interventions leading to changing the outcome of the disease(s) affecting the individual.⁸⁸

Regarding the evidence of the usefulness and effectiveness of Ayurvedic medicine, several studies have reported positive results of interventions based on this type of alternative medicine.⁸⁹⁻⁹³

Naturopathic Medicine

Naturopathic medicine is based on the body's ability to maintain an optimal state of health as long as it is in harmony with nature. The fundamental focus of naturopathy is to maintain health, rather than to fight disease. Thus, to maintain health, it is necessary to live in harmony with the air, sunlight, water, soil, food (natural foods), and plants, exercising outdoors, and living in conditions free of emotional stress. Naturopathic medicine conceives disease as the lack of harmony between human beings and nature, so the recovery of health, understood as the recovery of this harmony, is achieved by using different elements of nature that are necessary for the proper functioning of the different biological systems.⁹⁴⁻⁹⁸

Similar to the preceding forms of alternative medicine, multiple studies report that the use of naturopathy has shown favorable results in the management of several diseases.⁹⁹⁻¹⁰¹

Traditional indigenous medicine

This type of medicine requires special attention as this phenomenon is still practiced in certain parts of the world inhabited by indigenous communities who preserve ancestral precepts regarding their conception of health and illness, and whose medicinal practices have positive results within these communities.¹⁰²⁻¹⁰⁵

As suggested by the descriptions given above, the term alternative medicine does not simply refer to the use of any therapeutic strategy that is not considered part of conventional medicine, but to the use of other medical systems that have their own historical and social foundations and for which a proper knowledge of that system is required.

Integrative medicine

Due to a greater recognition and use of these forms of alternative medicine worldwide, several initiatives have emerged to integrate these complex medical systems both with each other and with traditional medicine, and this is commonly referred to as integrative medicine.¹⁰⁶⁻¹⁰⁸

Integrative medicine involves a well-founded, organized and prioritized practice of the different forms of medicine, therefore it is necessary to have knowledge and training in each of the medical systems to be integrated. This integration process could be achieved in healthcare centers with healthcare professionals trained in each of the complex medical systems to be integrated, which would allow for a multidisciplinary assessment of patients.¹⁰⁷⁻¹⁰⁸

Regarding the professional training of the members of these multidisciplinary integrative medicine teams, two options are considered: the individual training of the members in one of the medical systems to be integrated or their training in well-structured interdisciplinary training programs.

Some examples of integration of different traditional medicine approaches include electroacupuncture according to Voll, homotoxicology, anthroposophy, electromagnetic polar balancing, synergetics, and biophotonics.¹⁰⁹ All of these are briefly described below:

Electroacupuncture according to Voll

Electroacupuncture according to Voll was initially developed in 1953 by the German physician Reinhold Voll, who succeeded in integrating an electrophysiological strategy using the dermatron, an instrument that allows measuring the biological structures of the organism through acupuncture channels to identify alterations in the resistance of the circuits and, in this way, establish the factors associated with pathological manifestations (diseases). Furthermore, this integrative system of medicine uses homeopathy based on the complexity approach to identify drugs that can be used to treat the patient's symptomatology. Electroacupuncture according to Voll integrates knowledge from various forms of alternative medicine such as traditional Chinese medicine and acupuncture, homeopathy, Ayurvedic medicine, neural therapy, neurofocal dentistry, among others, and from various branches of conventional medicine such as epidemiology, physiology, biochemistry, pharmacology, immunology, molecular biology, among others.¹¹⁰⁻¹¹²

Homotoxicology

This integrated medical system was developed by Hans Herich Reckeweg, a German pharmacologist and toxicologist who proposed a conception of disease based on the principles of toxicology, understanding all disease as a consequence of the organism's response to the presence of a factor that behaves as a toxin in the broadest sense of the term. This toxin was dubbed homotoxin because it interacts, endogenously or exogenously, with the human being, and such interaction triggers a chain of progressive reactions in the body that first affect the humoral level, then the interstitial level, and finally the cellular level. Based on homeopathy, a therapeutic intervention is designed according to the identified disease and its course (individual manifestations) to eliminate the factors that cause it, favor the defensive processes of the organism, and reestablish the proper functioning of the biological programs of self-maintenance and self-preservation of health.¹¹³⁻¹¹⁷

Anthroposophy

This medical system was conceived by the Austrian philosopher Rudolf Steiner and structured by the Dutch physician Ita Wegman. Anthroposophy takes into account the physical, emotional, mental and spiritual aspects of the individual and uses therapeutic interventions of both conventional and alternative medicine, ancestral medicine, naturopathy, phytotherapy, physical exercise, implementation of healthy lifestyle habits, and principles of traditional Chinese medicine.^{118,119}

Electromagnetic polar balance

This system of integrative medicine was developed by Dr. Francisco Ríos and contemplates the integration of traditional medicine with various forms of alternative medicine to achieve a comprehensive understanding of the individual and their health status. The conceptual basis of electromagnetic polar balance is the electromagnetic structure of the human being, which includes the concept of polarities, and disease is understood as the result of alterations in the electromagnetic fields that govern the functioning of the human structures. A therapeutic intervention involves the use of filters that utilize colors of the light spectrum and some geometric figures to generate electromagnetic information that, according to the laws of quantum physics, interact with the organic structure generating regulation processes in the biological communication systems.¹²⁰⁻¹²²

Synergetics

This is a medical system developed by the Colombian physician Jorge Carvajal that integrates conventional medicine, molecular biology, biophysics, Ayurvedic medicine and auricular medicine. Through therapeutic interventions based on the use of biocircuits, bioresonators, chromotherapy, filters, morphic archetypal resonators, soft lasers, magnets and autonosodes, the aim is to reestablish the biological programs of the organism.^{123,124}

Biophotonics

This medical system, created by the English physician Keith Mason, integrates Ayurvedic medicine with conventional medicine, biophysics, photonics, and various forms of alternative medicine. In biophotonics, using mathematical calculations based on the principles of numerology, individuality codes are set for each patient, which in turn are used to define the therapeutic strategies to be employed.¹²⁵⁻¹²⁷

Conclusions

The term alternative medicine was coined in the West to differentiate conventional medicine from other forms of medicine that have emerged throughout human history. However, this definition has led to an erroneous perception of alternative medicine as any practice that is not categorized as conventional medicine, resulting in a great deal of confusion and conceptual controversy. In fact, the term alternative medicine refers to the proper practice, i.e., with appropriate training and knowledge, of other complex medical systems that have their own historical and social grounds.

In this sense, the main objective of medicine should be to integrate the different medical approaches in an integrative medicine that includes conventional medicine as a therapeutic option. Similarly, it is possible to consider that complementary and integrative alternative medicine comprise the scientific and orderly use of various complex medical systems that, by having different conceptions of the human being and their own methods of diagnosis and treatment, allow the development and implementation of therapeutic strategies aimed at maintaining the biological stability of the patient. These complex medical systems fulfill the fundamental mission of medicine: to cure and preserve health, therefore, they are not mutually exclusive, but rather complementary.

Furthermore, in Colombia, complementary and integrative alternative medicine can only be practiced by physicians with postgraduate training in the form or forms of alternative medicine they wish to integrate into their conventional medical practice.¹²⁸

Finally, it should be noted that the following methods and substances widely promoted in the media as alternative medicine are not part of alternative and complementary medicine: multivitamins, hormonal products, “detox” drinks, over-the-counter homeopathic medicines, immune system stimulants, magnetic fields of indiscriminate use, weight loss “treatments” without scientific evidence, among many others.

Conflicts of interest

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References

1. Conferencia Internacional sobre Atención Primaria de Salud. Atención primaria de salud. Ginebra: Organización Mundial de la Salud; 1978 [cited 2021 Oct 30]. Available from: <https://bit.ly/3RxxUvh>.
2. Organización Mundial de la Salud (OMS). Estrategia de la OMS sobre medicina tradicional 2002-2005. Ginebra: OMS; 2002 [cited 2020 Sep 26]. Available from: <https://bit.ly/3Hv3wgF>.
3. National Center for Complementary and Integrative Health. Complementary, Alternative, or Integrative Health: What's In a Name. Bethesda: National Institutes of Health [updated 2020 Oct; cited 2020 Oct 5]. Available from: <https://bit.ly/3WWFFfu>.
4. Organización Mundial de la Salud (OMS). Estrategias de la OMS sobre medicina tradicional 2014-2023. Ginebra: OMS; 2013 [cited 2020 Sep 26]. Available from: <https://bit.ly/3WX8MiV>.
5. Laín-Entralgo P. Historia de la Medicina. Barcelona: Editorial Masson S.A.; 2006.
6. Kernohan RJ. Primitive medicine. *Ulster Med J*. 1961;30(1):23-8.
7. Organización Mundial de la Salud (OMS). Cómo define la OMS la Salud. Ginebra: OMS [cited 2020 Sep 26]. Available from: <https://bit.ly/3Hx9u0C>.
8. Goldman L, Schafer AL. Approach to medicine, the patient and the medical profession: Medicine as a learned and humane profession. In: Goldman L, Schafer AL. *Goldman-Cecil Medicine*. 25th ed. Philadelphia: Elsevier; 2015. p. 1-5.
9. Laín-Entralgo P. Conocimiento científico del hombre. In: Laín-Entralgo P. *Historia de la Medicina*. Barcelona: Editorial Masson S.A.; 1998. p. 418-63.
10. García D. Antropología médica. In: Laín-Entralgo P. *Historia Universal de la Medicina*. Tomo VII. Barcelona: Salvat Editores; 1976. p. 113-9.

11. Kaku M. El Futuro de la Medicina. In: Kaku M. la física del futuro. Barcelona: Editorial Random House Mondadori S.A.; 2011. p. 173-242.
12. Jameson JL, Fauci AS, Kasper DL, Hauser SL, Longo DL, Loscalzo J. The Practice of Medicine. In: Jameson JL, Fauci AS, Kasper DL, Hauser SL, Longo DL, Loscalzo J. Harrison's Principles of Internal Medicine. 20th ed. New York: McGraw-Hill; 2018. p. 2-8.
13. Laín-Entralgo P. El diagnóstico médico. Barcelona: Salvat; 1982.
14. Sánchez-González MA. Evolución biológica y enfermedad. In: Sánchez-González MA. Historia de la Medicina y Humanidades Médicas. 2nd ed. Barcelona: Elsevier; 2012. p. 3-15.
15. Laín-Entralgo P. Hacia una terapéutica general antropológica. In: Laín-Entralgo P. Historia Universal de la Medicina. Tomo VII. Barcelona: Salvat; 1976. p. 232-5.
16. Kumar V, Abbas AK, Aster JC. Pathologic Basis of Disease. 9th ed. Philadelphia: Elsevier; 2015
17. Schmiedeberg O. Grundriss der Pharmakologie in Bezug auf Arzneimittellehre und Toxikologie. Leipzig: Verlag von F.C.W. Vogel; 1902.
18. Laín-Entralgo P. La medicina hipocrática. In: Laín-Entralgo P. Historia Universal de la Medicina. Tomo II. Barcelona: Salvat; 1985. p. 104-5.
19. Tesser CD, Luz MT. Racionalidades médicas e integralidade. Ciênc. saúde coletiva. 2008;13(1):195-206. <https://doi.org/ccvcwc>.
20. Urrego-Mendoza DZ. Abordaje de la Medicina Alternativa como sistema médico complejo en la Universidad Nacional de Colombia. Rev. Fac. Med. 2010;58(2):155-6.
21. Otani MA, Barros NF. A Medicina Integrativa e a construção de um novo modelo na saúde. Cien Saude Colet. 2011;16(3):1801-11. <https://doi.org/bfb8ck>.
22. Meyer S, Gortner L, Larsen A, Kutshcke G, Gottschling S, Gräber S, *et al.* Complementary and alternative medicine in pediatrics: a systematic overview/synthesis of Cochrane Collaboration reviews. Swiss Med Wkly. 2013;143:w13794. <https://doi.org/gbdc4j>.
23. Peset JL. Terapéutica y farmacología en el romanticismo. In: Laín-Entralgo P. Historia Universal de la Medicina. Tomo V. 1st ed. Barcelona: Salvat; 1976. p. 331-5.
24. Parker A, McCaffery I, Patterson S. Examining molecular biology in humans. BioTechniques. 2009;46(5):358-60. <https://doi.org/bj7vz9>.
25. Dossey L, Swyers JP. Unifying threads among the alternative medical systems. In: National Institutes of Health. Alternative Medicine - Expanding Medical Horizons: A Report to the National Institutes of Health on Alternative Medical Systems and Practices in the United States (NIH publication). Washington D.C.: U.S. Government Printing Office; 1995. p. 39-41.
26. Longacre M, Silver-Highfield E, Lama P, Grodin M. Complementary and alternative medicine in the treatment of refugees and survivors of torture: a review and proposal for action. Torture. 2012;22(1):38-57.
27. Kanherkar RR, Stair SE, Bhatia-Dey N, Mills PJ, Chopra D, Csoka AB. Epigenetic Mechanisms of Integrative Medicine. Evid Based Complement Alternat Med. 2017;2017:4365429. <https://doi.org/f9wdgj>.
28. Shirwaikar A, Govindarajan R, Rawat AK. Integrating complementary and alternative medicine with primary health care. Evid Based Complement Alternat Med. 2013;2013:948308. <https://doi.org/gb6npt>.
29. Klein SD, Torchetti L, Frei-Erb M, Wolf U. Usage of Complementary Medicine in Switzerland: Results of the Swiss Health Survey 2012 and Development Since 2007. PLoS One. 2015;10(10):e0141985. <https://doi.org/f78mm4>.
30. Lopez G, Liu W, McQuade J, Lee RT, Spelman AR, Fellman B, *et al.* Integrative Oncology Outpatient Consultations: Long-Term Effects on Patient-Reported Symptoms and Quality of Life. J Cancer. 2017;8(9):1640-6. <https://doi.org/jvnx>.
31. Anderson BJ, Jurawanichkul S, Kligler BE, Marantz PR, Evans R. Interdisciplinary Relationship Models for Complementary and Integrative Health: Perspectives of Chinese Medicine Practitioners in the United States. J Altern Complement Med. 2019;25(3):288-95. <https://doi.org/jvnx>.
32. Singer J, Adams J. Integrating complementary and alternative medicine into mainstream health-care services: the perspectives of health service managers. BMC Complement Altern Med. 2014;14:167. <https://doi.org/gb3w87>.
33. Edwards E. The role of complementary, alternative, and integrative medicine in personalized health care. Neuropsychopharmacology. 2012;37(1):293-5. <https://doi.org/bfc99s>.
34. Urrego-Mendoza DZ, Beltrán-Dussan EH, Marilletti A, editors. La medicina alternativa: una visión desde los sistemas médicos complejos. Bogotá D.C.: Universidad Nacional de Colombia; 2011.
35. Trivieri Jr. L, Anderson JW, editors. Alternative Medicine: The Definitive Guide. 2nd ed. San Mateo (CA): Celestial Arts; 2002.
36. Mayo Clinic. Mayo Clinic Book of Alternative Medicine. 2nd ed. Birmingham, Alabama: Oxmoor House; 2010.
37. Marié E. Compendio de medicina china. 3rd ed. Madrid: Editorial EDAF S.A.; 2001.
38. Ángel MA. Yin y Yang: una visión desde la filosofía china. In: Urrego DZ, Vega JA, editors. La medicina tradicional china: un abordaje desde los sistemas médicos complejos. Bogotá D.C.: Universidad Nacional de Colombia; 2013. p. 29-36.

39. Plazas E. Los cinco elementos. In: Urrego DZ, Vega JA, editors. *La medicina tradicional china: un abordaje desde los sistemas médicos complejos*. Bogotá D.C.: Universidad Nacional de Colombia; 2013. p. 37-46.
40. Moreno CP. Las sustancias fundamentales. In: Urrego DZ, Vega JA, editors. *La medicina tradicional china: un abordaje desde los sistemas médicos complejos*. Bogotá D.C.: Universidad Nacional de Colombia; 2013. p.:47-66.
41. Maciocia G. *The Foundations of Chinese Medicine: A Comprehensive Text*. 3rd ed. Philadelphia: Elsevier; 2015.
42. Hernández L, Zang Fu. Órganos internos. In: Urrego DZ, Vega JA, editors. *La medicina tradicional china: un abordaje desde los sistemas médicos complejos*. Bogotá D.C.: Universidad Nacional de Colombia; 2013. p. 467-144.
43. González ME, Avilés S. Historia clínica en medicina tradicional china y acupuntura. In: Urrego DZ, Vega JA, editors. *La medicina tradicional china: un abordaje desde los sistemas médicos complejos*. Bogotá D.C.: Universidad Nacional de Colombia; 2013. p. 467-144.
44. Hoang T. Su Wen. Madrid: Editorial Dilema; 2003.
45. Córdoba MP, Urrego DZ. Una Introducción a la Medicina Tradicional China. In: Urrego DZ, Vega JA, editors. *La medicina tradicional china: un abordaje desde los sistemas médicos complejos*. Bogotá D.C.: Universidad Nacional de Colombia; 2013. p. 17-28.
46. Lin D, De La Pena I, Lin L, Zhou SF, Borlongan CV, Cao C. The neuroprotective role of acupuncture and activation of the BDNF signaling pathway. *Int J Mol Sci*. 2014;15(2):3234-52. <https://doi.org/f5vdzb>.
47. Yao W, Yang H, Yin N, Ding G. Mast cell-nerve cell interaction at acupoint: modeling mechanotransduction pathway induced by acupuncture. *Int J Biol Sci*. 2014;10(5):511-9. <https://doi.org/f54429>.
48. Beltaief K, Grissa MH, Msolli MA, Bzeouich N, Fredj N, Sakma A, *et al*. Acupuncture versus titrated morphine in acute renal colic: a randomized controlled trial. *J Pain Res*. 2018;11:335-1. <https://doi.org/gnhdhh>.
49. Woo HL, Ji HR, Pak YK, Lee H, Heo SJ, Lee JM, *et al*. The efficacy and safety of acupuncture in women with primary dysmenorrhea: A systematic review and meta-analysis. *Medicine (Baltimore)*. 2018;97(23):e11007. <https://doi.org/gn94qg>.
50. Resch G, Gutman V. *Scientific Foundations of Homeopathy*. Germany: Barthel & Barthel Publishing; 1987.
51. Bellavite P, Conforti A, Piasere V, Ortolani R. Immunology and homeopathy. 1. Historical background. *Evid Based Complement Alternat Med*. 2005;2(4):441-52. <https://doi.org/dtz9mn>.
52. Hahnemann S. *Organon of Homeopathic Medicine. The Classic Guide Book for Understanding Homeopathy - the Fifth and Sixth Edition Texts, with Notes*. USA: Pantianos Classics; 2018
53. Dei A. Hormesis and Homeopathy: Toward a New Self-Consciousness. *Dose Response*. 2017;15(4):1559325817744451. <https://doi.org/jvzr>.
54. Avilés JC. *Prontuario de homeopatía y terapias biológicas (Estudios y Documentos)*. Madrid: Editorial EDAF; 1996.
55. Banerjee A, Chakrabarty SB, Karmakar SR, Chakrabarty A, Biswas SJ, Haque S, *et al*. Can homeopathy bring additional benefits to thalassemic patients on hydroxyurea therapy? Encouraging results of a preliminary study. *Evid Based Complement Alternat Med*. 2010;7(1):129-36. <https://doi.org/bbp934>.
56. Frenkel M, Mishra BM, Sen S, Yang P, Pawlus A, Vence L, *et al*. Cytotoxic effects of ultra-diluted remedies on breastcancer cells. *Int J Oncol*. 2010;36:395-403.
57. Grimaldi-Bensouda L, Abenhaim L, Massol J, Guillemot D, Avouac B, Duru G, *et al*. Homeopathic medical practice for anxiety and depression in primary care: the EPI3 cohort study. *BMC Complement Alternat Med*. 2016;16:125. <https://doi.org/f8kzvz>.
58. Pannek J, Pannek-Rademacher S, Jus MS, Wöllner J, Krebs J. Usefulness of classical homeopathy for the prophylaxis of recurrent urinary tract infections in individuals with chronic neurogenic lower urinary tract dysfunction. *J Spinal Cord Med*. 2019;42(4):453-9. <https://doi.org/jvzs>.
59. Beltrán EH, Urrego DZ. Un Sistema Médico denominado Medicina Neuralterapéutica. In: Beltrán EH, Vega JA, editors. *Medicina Neuralterapéutica: un abordaje desde los sistemas médicos complejos*. Bogotá D.C.: Universidad Nacional de Colombia; 2013. p. 29-49.
60. Frank BL. Neural therapy. *Phys Med Rehabil Clin N Am*. 1999;10(3):573-82.
61. Toscano de la Torre F, Pinilla-Bonilla LB. Los principios de la terapia neural desde los fundamentos del nervismo hasta la neurociencia actual. *Revista Salud UIS*. 2012;44(2):57-65.
62. Cardozo AM, Pinilla LB, Andrade LE. Replanteamiento del concepto de enfermar desde la evolución y emergencia. In: Beltrán EH, Vega JA, editors. *Medicina Neuralterapéutica: un abordaje desde los sistemas médicos complejos*. Bogotá D.C.: Universidad Nacional de Colombia; 2013. p. 73-102.
63. Dosh M. *Manual of Neural Therapy According to Huneke*. 2nd ed. New York: Thieme; 2006.
64. Segura PR, Beltrán EH. Diseño de un modelo de historia clínica para terapia neural acorde con la reglamentación actual en Colombia. In: Beltrán EH, Vega JA, editors. *Medicina Neuralterapéutica: un abordaje desde los sistemas médicos complejos*. Bogotá D.C.: Universidad Nacional de Colombia; 2013. p. 125-155.

65. Egli S, Pfister M, Ludin SM, Puente de la Vega K, Busato A, Fischer L. Long-term results of therapeutic local anesthesia (neural therapy) in 280 referred refractory chronic pain patients. *BMC Complement Altern Med*. 2015;15:200. <https://doi.org/f7g5c8>.
66. Gurevich MI, Chung MK, LaRiccia PJ. Resolving bulimia nervosa using an innovative neural therapy approach: two case reports. *Clin Case Rep*. 2017;6(2):278-82. <https://doi.org/c9vm>.
67. Fischer L. Pathophysiologie des Schmerzes und Neuraltherapie. *Praxis (Bern 1994)*. 2003;92(48):2051-9. <https://doi.org/c3s8xn>.
68. Barbagli P, Bollettin R. Terapia del dolore articolare e periarticolare del ginocchio con anestetici locali (neuralterapia sec. Huneke). *Risultati a breve a lunga distanza. Minerva Anestesiol*. 1998;64(1-2):35-43.
69. Atalay NS, Sahin F, Atalay A, Akkaya N. Comparison of efficacy of neural therapy and physical therapy in chronic low back pain. *Afr J Tradit Complement Altern Med*. 2013;10(3):431-5. <https://doi.org/gh3v>.
70. Mermod J, Fischer L, Staub L, Busato A. Patient satisfaction of primary care for musculoskeletal diseases: a comparison between Neural Therapy and conventional medicine. *BMC Complement Altern Med*. 2008;8:33. <https://doi.org/fpw7wh>.
71. Ruiz-Mejía A, Beltrán-Dussán EH, Morales-Hernández LA, Pinilla-Bonilla LB. Neural therapy approach in a hospitalized patient with acute stress disorder. *Case Report. Case Reports*. 2020;6(1):25-32. <https://doi.org/jvzt>.
72. Lóriz-Peralta O, Raya-Rejón A, Pérez-Morales D, Girona-Amores A, Vinyes-Casajona, Puente de la Vega-Costa K. Estudio de intervención sobre el dolor subagudo y crónico en atención primaria: una aproximación a la efectividad de la terapia neural. *Atención Primaria*. 2011;43(11):604-10. <https://doi.org/d7zcfj>.
73. Orenstein R. Andrew Taylor Still and the Mayo brothers: convergence and collaboration in 21st-century osteopathic practice. *J Am Osteopath Assoc*. 2005;105(5):251-4.
74. D'Alessandro G, Cerritelli F, Cortelli P. Sensitization and Interoception as Key Neurological Concepts in Osteopathy and Other Manual Medicines. *Front Neurosci*. 2016;10:100. <https://doi.org/jvzv>.
75. Senzon SA. Constructing a philosophy of chiropractic: evolving worldviews and premodern roots. *J Chiropr Humanit*. 2011;18(1):10-23. <https://doi.org/b2chv3>.
76. Fahlgren E, Nima AA, Archer T, Garcia D. Person-centered osteopathic practice: patients' personality (body, mind, and soul) and health (ill-being and well-being). *PeerJ*. 2015;3:e1349. <https://doi.org/f3pnsz>.
77. Licciardone JC, Kearns CM, Crow WT. Changes in biomechanical dysfunction and low back pain reduction with osteopathic manual treatment: results from the OSTEOPATHIC Trial. *Man Ther*. 2014;19(4):324-30. <https://doi.org/gn9mx7>.
78. Pagé I, Nougrou F, Dugas C, Descarreaux M. The effect of spinal manipulation impulse duration on spine neuromechanical responses. *J Can Chiropr Assoc*. 2014;58(2):141-8.
79. Thomas E, Cavallaro AR, Mani D, Bianco A, Palma A. The efficacy of muscle energy techniques in symptomatic and asymptomatic subjects: a systematic review. *Chiropr Man Therap*. 2019;27:35. <https://doi.org/ggmb7>.
80. Lanaro D, Ruffini N, Manzotti A, Lista G. Osteopathic manipulative treatment showed reduction of length of stay and costs in preterm infants: A systematic review and meta-analysis. *Medicine (Baltimore)*. 2017;96(12):e6408. <https://doi.org/gjkmws>.
81. Licciardone JC, Aryal S. Clinical response and relapse in patients with chronic low back pain following osteopathic manual treatment: Results from the OSTEOPATHIC Trial. *Man Ther*. 2014;19(6):541-8. <https://doi.org/gn9mx9>.
82. Cerritelli F, Martelli M, Renzetti C, Pizzolorusso G, Cozzolino V, Barlafante G. Introducing an osteopathic approach into neonatology ward: the NE-O model. *Chiropr Man Therap*. 2014;22:18. <https://doi.org/gf429m>.
83. Walkowski S, Singh M, Puertas J, Pate M, Goodrum K, Benencia F. Osteopathic manipulative therapy induces early plasma cytokine release and mobilization of a population of blood dendritic cells. *PLoS One*. 2014;9(3):e90132. <https://doi.org/gnb3wb>.
84. Peterson CK, Mühlemann D, Humphreys BK. Outcomes of pregnant patients with low back pain undergoing chiropractic treatment: a prospective cohort study with short term, medium term and 1 year follow-up. *Chiropr Man Therap*. 2014;22(1):15. <https://doi.org/jvzw>.
85. Cuthbert SC, Rosner AL. Conservative chiropractic management of urinary incontinence using applied kinesiology: a retrospective case-series report. *J Chiropr Med*. 2012;11(1):49-57. <https://doi.org/jvzx>.
86. Prasher B, Gibson G, Mukerji M. Genomic insights into ayurvedic and western approaches to personalized medicine. *J Genet*. 2016;95(1):209-28. <https://doi.org/jvzz>.
87. Sharma H, Chandola HM, Singh G, Basisht G. Utilization of Ayurveda in health care: An approach for prevention, health promotion, and treatment of disease. Part 2--Ayurveda in primary health care. *J Altern Complement Med*. 2007;13(10):1135-50. <https://doi.org/cnzqmr>.
88. Rao RV. Ayurveda and the science of aging. *J Ayurveda Integr Med*. 2018;9(3):225-32. <https://doi.org/jvz2>.
89. Prasher B, Negi S, Aggarwal S, Mandal AK, Sethi TP, Deshmukh SR, *et al*. Whole genome expression and biochemical correlates of extreme constitutional types defined in Ayurveda. *J Transl Med*. 2008;6:48. <https://doi.org/cj2khf>.

90. Kessler CS, Dhiman KS, Kumar A, Ostermann T, Gupta S, Morandi A, *et al.* Effectiveness of an Ayurveda treatment approach in knee osteoarthritis - a randomized controlled trial. *Osteoarthritis Cartilage*. 2018;26(5):620-30. <https://doi.org/gdhxt7>.
91. Payyappallimana U, Venkatasubramanian P. Exploring Ayurvedic Knowledge on Food and Health for Providing Innovative Solutions to Contemporary Healthcare. *Front Public Health*. 2016;4:57. <https://doi.org/gp3nwn>.
92. Xiao D, Singh SV. z-Guggulsterone, a constituent of Ayurvedic medicinal plant *Commiphora mukul*, inhibits angiogenesis in vitro and in vivo. *Mol. Cancer Ther*. 2008;7(1):171-80. <https://doi.org/dgvxn7>.
93. Farooqui AA, Farooqui T, Madan A, Ong JH, Ong WY. Ayurvedic Medicine for the Treatment of Dementia: Mechanistic Aspects. *Evid Based Complement Alternat Med*. 2018;2018:2481076. <https://doi.org/gdnsxp>.
94. Bauer B. *Naturopathy*. In: Mayo Clinic. *Mayo Clinic Book of Alternative Medicine*. 2nd ed. Birmingham, Alabama: Oxmoor House; 2010.
95. Fleming SA, Gutknecht NC. *Naturopathy and the primary care practice*. *Prim Care*. 2010;37(1):119-36. <https://doi.org/d7xntw>.
96. Cody GW. *Naturopathic Medicine*. *Integr Med (Encinitas)*. 2019;18(4):34-5.
97. Bradley R, Harnett J, Cooley K, McIntyre E, Goldenberg J, Adams J. *Naturopathy as a Model of Prevention-Oriented, Patient-Centered Primary Care: A Disruptive Innovation in Health Care*. *Medicina (Kaunas)*. 2019;55(9):603. <https://doi.org/jvz4>.
98. Snider P, Zeff J. *Unifying Principles of Naturopathic Medicine. Origins and Definitions*. *Integr Med (Encinitas)*. 2019;18(4):36-9.
99. Myers SP, Vigar V. The State of the Evidence for Whole-System, Multi-Modality Naturopathic Medicine: A Systematic Scoping Review. *J Altern Complement Med*. 2019;25(2):141-68. <https://doi.org/jvz5>.
100. Ahmad A, Ginnebaugh KR, Li Y, Padhye SB, Sarkar FH. Molecular targets of naturopathy in cancer research: bridge to modern medicine. *Nutrients*. 2015;7(1):321-34. <https://doi.org/f6x5nw>.
101. Lederer AK, Schmucker C, Kousoulas L, Fichtner-Feigl S, Huber R. *Naturopathic Treatment and Complementary Medicine in Surgical Practice*. *Dtsch Arztebl Int*. 2018;115(49):815-21. <https://doi.org/jvz6>.
102. Guerra F. *Aztec Medicine*. *Med Hist*. 1966;10(4):315-38. <https://doi.org/gfkqkm>.
103. Foley R. Indigenous narratives of health: (re)placing folk-medicine within Irish health histories. *J Med Humanit*. 2015;36(1):5-18. <https://doi.org/jvz7>.
104. Kankpeyeng BW, Nkumba SN, Insoll T. Indigenous cosmology, art forms and past medicinal practices: towards an interpretation of ancient Koma Land sites in northern Ghana. *Anthropol Med*. 2011;18(2):205-16. <https://doi.org/bwmbwh>.
105. Langdon EJ, Garnelo L. Articulation between health services and “indigenous medicine”: Anthropological reflections on policies and reality in Brazil. *Salud Colect*. 2017;13(3):457-70. <https://doi.org/jvz8>.
106. Baars EW, Hamre HJ. Whole Medical Systems versus the System of Conventional Biomedicine: A Critical, Narrative Review of Similarities, Differences, and Factors That Promote the Integration Process. *Evid Based Complement Alternat Med*. 2017;2017:4904930. <https://doi.org/gbq2t6>.
107. Rackel D, Minichiello V. *Integrative Medicine*. 5th ed. Philadelphia: Elsevier; 2012.
108. Madsen C, Vaughan M, Koehlmoos TP. Use of Integrative Medicine in the United States Military Health System. *Evid Based Complement Alternat Med*. 2017;2017:9529257. <https://doi.org/gbmsgc>.
109. Beltrán E. *La enfermedad, el enfermo y la medicina*. In: Urrego-Mendoza DZ, Beltrán-Dussan EH, Maillet A, editors. *La medicina alternativa: una visión desde los sistemas médicos complejos*. Bogotá D.C.: Universidad Nacional de Colombia; 2011.
110. Werner F, Schuldt H, Voll R. *Electro-acupuncture Primer*. Uelzen: Medizinisch Literarische Verlagsgesellschaft mbH; 1979.
111. Leonhardt. H. *Fundamentals of Electroacupuncture according to Voll: An Introduction*. Uelzen: Medizinisch Literarische Verlagsgesellschaft mbH; 1980.
112. Sancier KM. The effect of qigong on therapeutic balancing measured by Electroacupuncture According to Voll (EAV): a preliminary study. *Acupunct Electrother Res*. 1994;19(2-3):119-27. <https://doi.org/jvz9>.
113. Reckeweg HH. *Homotoxicología. Enfermedad y curación con terapias antihomotóxicas*. Baden Baden: Aurelia-Verlag; 1992.
114. Schmid F, Rimpler M, Wemmer U. *Medicina antihomotóxica*. Baden-Baden: Aurelia Verlag-Menaco; 1997.
115. Heine H. *Homotoxicología. Una síntesis de las orientaciones médicas basadas en las ciencias naturales*. Baden: Aurelia-Verlag; 1998.
116. Payán JC. *Homotoxicología. La Importancia del Proceso*. In: Payán JC. *La Medicina Biológica un Compromiso con la vida*. 2nd ed. Bogotá D.C.: Fondo Editorial Fundación Homeopática Alemana; 2004. p. 131-50.
117. Smit A, O’Byrne A, Van Brandt B, Bianchi I, Kuestermann K. *Introduction to Biorregulatory Medicine*. New York: Thieme Medical Publishers; 2009.
118. Hamre HJ, Kiene H, Ziegler R, Tröger W, Meinecke C, Schnürer C, *et al.* Overview of the Publications From the Anthroposophic Medicine Outcomes Study (AMOS): A Whole System Evaluation Study. *Glob Adv Health Med*. 2014;3(1):54-70. <https://doi.org/ggjhrm>.

119. Hamre HJ, Glockmann A, Heckenbach K, Matthes H. Use and Safety of Anthroposophic Medicinal Products: An Analysis of 44,662 Patients from the EvaMed Pharmacovigilance Network. *Drugs Real World Outcomes*. 2017;4(4):199-13. <https://doi.org/jv2d>.
120. Balance Polar Electromagnético. Barcelona: Instituto Policlínico SEOUL; [cited 2023 Feb 28]. Available from: <https://bit.ly/3EK4x42>.
121. Siegel A, Joung P. Polarity Therapy. Healing with Life Energy. London: Masterworks International; 2006.
122. Marčan M, Pavliha D, Kos B, Forjanič T, Miklavčič D. Web-based tool for visualization of electric field distribution in deep-seated body structures and planning of electroporation-based treatments. *Biomed Eng Online*. 2015;14(Suppl 3):S4. <https://doi.org/gb9jqh>.
123. Carvajal-Posada JI. Contextos de Sintergética. Medellín: Editorial Viavida; 2002.
124. Carvajal-Posada JI. Medicina con Alma. España: Madrid: Ediciones I; 2012.
125. Mason K. Medicine for the Twenty-First Century: The Key to Healing with Vibrational Medicine. London: Element Books Ltd.; 1992.
126. Giacometti G, Ferreri C, Sansone A, Chrysostomos C, Marzetti C, Spyratou E, *et al*. High predictive values of RBC membrane-based diagnostics by biophotonics in an integrated approach for Autism Spectrum Disorders. *Scientific Reports*. 2017;7:9854. <https://doi.org/gbwqhq>.
127. Ferraresi C, Parizotto NA, Pires de Sousa MV, Kaippert B, Huang YY, Koiso T, *et al*. Light-emitting diode therapy in exercise-trained mice increases muscle performance, cytochrome c oxidase activity, ATP and cell proliferation. *J Biophotonics*. 2015;8(9):740-54. <https://doi.org/f3qm9m>.
128. Colombia. Ministerio de Salud Pública. Resolución 2927 (julio 27): Por la cual se reglamenta la práctica de terapias alternativas en la prestación de servicios de salud, se establecen normas técnicas, científicas y administrativas y se dictan otras disposiciones. Bogotá D.C.: Diario Oficial 43358; agosto 10 de 1998 [cited 2023 Feb 28]. Available from: <https://bit.ly/3y1Vaso>.