Integrative Medicine: A Health Paradigm of the Future

Armando Cáceres*

Universidad de San Carlos de Guatemala, Universidad Galileo, and Laboratorios de Productos Naturales Farmaya, Guatemala.

Abstract

Integrative medicine is a medical approach for health and healing which integrates mainstream therapies (conventional), with traditional, complementary and alternative medicines (CAM). It is intended to support those therapies with defined procedures with safety and efficacy so it is considered evidence-based, but with a holistic and preventive approach. Since late 20th century the interaction of therapists and techniques lead to the recognition of this integrative concept. It is classified into five categories or domains: Alternative medical systems (Ayurveda, Chinese, Kempo), natural products or biological therapies (phytotherapy, trophotherapy, aromatherapy, zootherapy), main-body medicine (yoga, meditation, hypnotherapy), body manipulation practices (chiropractic, massage, shiatsu, lymphatic drainage) and movement-energy therapies (qi gong, reiki, tai chi quan). This approach is expanding among leading universities and is being articulated with conventional medicine for improving public and private health systems worldwide, increasing available therapies from cultural, economic and ecological points of view. It is expected that this concept will lead modern health approach for patients satisfaction, improving health care systems in developing countries and providing fair access to health and beauty by everybody.

Keywords: Alternative medicine, Complementary medicine, Holistic approach, Traditional medicine, Biological therapies

Introduction

Integrative medicine is a medical approach for health and healing which integrates conventional mainstream therapies, with traditional, complementary and alternative medicines (CAM). It is intended to support those therapies with defined procedures with safety and efficacy so it is considered evidence-based, but with a holistic and preventive approach. Since late 20th century the interaction of therapists and techniques lead to the recognition of this integrative-holistic concept. It is classified into five categories or domains: Alternative medical systems, natural products or biological therapies, main-body medicine, body manipulation practices and movement-energy therapies.

This Keynote address is aimed to define the concept of integrative medicine from a comprehensive point of view and present an overview of the therapies involved in this holistic medical approach. It is not intended to be a systematical review nor a state of the art, but it is an updated review stressing the main concepts of these therapies and the global trend in the clinical management of this health paradigm of the future.

Conventional, Complementary, Alternative and Integrative Medicine

Conventional medicine (allopathic, modern, official) is the medicine practiced by medical associated professions, including physiotherapists, psychologist, nurses, pharmacists and laboratory personnel. It receives the official support by government and academic authorities and developed in a commercial framework of great industrial consortia and patents, and exerts a hegemonic attention in public health. It is characterized by use of modern diagnostic and treatment technologies, is based on evidence of security, it encourages super specialization of the professionals, support disintegration of the health-disease concept, creating some difficulties and barriers.\(^1,2\)

Complementary and Alternative Medicines (CAM). These terms include systems, practices, products and therapist used to treat as an alternative (disjunctive A or B) or as a complement (to hegemonic conventional medicine), generally applied independently and it has been described a high heterogeneity and inconsistent definitions.\(^3\) It requires from both therapist tolerance and acceptance. Conventional in one culture might be alternative in another, and it can be associated with sociodemographic determinants.\(^4\)

Integrative Medicine. Concept that combines conventional with traditional and CAM for which security and efficacy are evident; it is expanding worldwide and and deserves by academics and authorities.\(^5,6\) It pretends a holistic view patient-disease-treatment and combines an articulation-action among therapies for an integral benefit of the patient.\(^6,4\) is considered to be the "medicine
of the future." Since 1991 the National Center for Complementary and Alternative Medicine (NCCAM), transformed in 2014 into the National Center for Complementary and Integrative Health (NCCIH), tried to unify all the concepts, and classified Integrative Medicine in five complex categories or domains: Alternative medical systems, biological therapies, energy based therapies, body manipulation, and focus on mind-body.

**Alternative Medical Systems**

This domain includes practically all traditional medicines, as well as those therapies with alternative concepts of disease and treatment.

*Ayurveda* (In Sanskrit -science of life) is an ancient healing art which explain the functional aspects of the organism (movement, transformation and growth) which are governed by the three biological humors (*vata* (space/air), *pitta* (fire/water) and *kapha* (water/earth)). It integrates prevention with the healing components, such as herbs, minerals, vegetarian diet, exercise (yoga), massage, attitudes and therapists, and is actively coexisting with modern medicine in India and other countries.13,14

*Chinese Traditional Medicine* is based on 5000 of practice according to the popular saying “Excellence is from experience”, integrated with Western medicine since 1950.15 It believe that health is the balance of *yin-yang* through *qi* flow, disease appear when *qi* flow is dispersed or stagnant or disruption of equilibrium of the “fundamental substances” [*qi* (energy), *xue* (blood and nutrition), *jing* (essence storage and inherited), *shen* (spirit and *jin ye* (fluids)]. Diagnosis integrate the use of tongue, acoustic sound and pulse.16 It relates the eight causal principles to complex intervention therapies, including acupuncture, moxibustion, herbs, massage, cupping, reflexology, *tai chi quan*, and others.17

*Traditional Medicine in Latin America* refers to the medical knowledge of the original settlers of the Americas which astonished the Spanish. This system the most relevant aspects have been described for Aztec,16,17 Maya,18 and Inca groups.19 Nevertheless, these medicines were pursued by the Spanish conquerors. They have survived in a resilient manner to our days, demonstrating acceptance by the present populations even in the case of cancer and diabetes.20,21 The legacy of the ancestral medicine excels the use of local medicinal plants,24-28 traditional midwives,29-30 although their legal status in Latin America is uncertain.31

*Homeopathy and Homotoxicology.* Initially formulated by Hahnemann 200 year ago based on the principle of similitude, experience in healthy man, minimal dose and unitary remedy, and now it is used worldwide with potential benefits for public health, particularly for least-developed countries.32-34 Therapy is based on diluted drugs whose action is explained by water memory and high dilutions of crystal theories, now some degree of credibility has being built by clinical evidence.35,36 In 1952, Reckeweg proclaims the homotoxicologic principles based on the accumulation of homotoxins in six progressive stages treated with homeopathic drugs, demonstrating positive clinical findings with some failures.37,38

*Other traditional medicines.* Several traditional medicines have been developed from different cultural settings, particularly in Asia.39 Unani or Islamic medicine, originated in the Greek culture, later adapted, documented and disseminated by the Arabs, is now considered traditional to India, Egypt, Syria, Iran and Persia, stressing that balance should be maintained between mind and body using medicinal plants and diet.39 Siddha born in the south of India includes drugs such as herbs and minerals, therapist are supposed to possess supernatural powers and reach a diagnosis through complex procedures involving tongue, eyes, urine and pulse.40 Kampo is a complex and individualized Japanese traditional medicine based on Chinese and Korean medicine using Chinese and native plants, as well as macrobiotics, reiki and shiatsu.41 Naturopathy, an eclectic practice of health care based on the healing power of nature that is effective in a range of complex chronic conditions and is rapidly expanding worldwide.42

**Biological Therapies**

The oldest system of healing by the ancestral cultures, mainly based on the local biodiversity and the interaction with socio-cultural settings. Traditional information is being validated by in vitro, in vivo clinical procedures using conventional and innovative procedures.44-46

*Phytotherapy* is the most commonly used biological therapy worldwide, particularly for its traditional use, accessibility and relatively low toxicity, demonstrating an important involvement of researchers at a multidisciplinary approach, and significant increase in the acceptance by the population.47-50 Validation processes are multiple, control processes important for quality production, and clinical trials increasing for safe and efficacy, but it must be avoided the “allopathization of phytotherapy”.51

*Trophotherapy and nutraceuticals* are the preventive and curative method through healthy food and diet, looking for an organic regeneration of the body by regular or functional food or in a pharmaceutical presentation as a supplement,52,53 particularly in the management of chronic diseases and associated co-morbidities.54 In recent years it has been stressed the regular consumption of soy, berries and cruciferous for its chemopreventive properties.55

*Aromatherapy* is the clinical use of essential oils by olfactory or dermal application, although some reviews demonstrated that evidence is still not fully convincing.56 Recent research evidence is provided about mechanism of action and new developments,57 as well, as clinical evidence in handling diverse nervous ailments,58 chronic rheumatic pain,59 and for patients with palliative care needs.60

*Zootherapy* is the use of animals and their product
for therapeutic purposes, used since very ancient times by diverse civilizations. It includes the clinical use of insects (Entomotherapy), dolphin-assisted therapy (Bototherapy), horses (Hyponotherapy), animal assisted-therapy, Toxicotherapy with terrestrial and marine venoms, and bee hive products (Apitherapy), including honey, propolis, royal jelly and venom.

Other therapies: Other important biological therapies include the use of organs (Organotherapy or Ototherapy) or cells (Cellular therapy) for restoration of function and diverse health benefits, using cells or organs in homeopathic doses of nosodes, isopathic and sarcodes, or translating this information into clinical application with modern manufacturing technologies. This therapies also include other treatments using natural ways, particularly the use of water (Hydrotherapy use of water in different forms), Balneotherapy, the use of balneary and spa in healing processes of pain, management of osteoarthritis, fibromyalgia, and multiple sclerosis; Pelotherapy, the use of clay in topical applications.

Energy-Based Therapies

Acupuncture. This is a traditional therapy developed in Asia, and currently accepted by western countries, based on the body distribution of energy flow through acupoints and meridians; it has demonstrated to be very effective in the clinical management of acute and chronic pain, essential hypertension, chronic obstructive pulmonary disease, in contraposition to pharmacological treatment that have demonstrated serious side effects. Basic research has moved from simple analgesia to physiological function of the brain. Application of needles or moxibustion has demonstrated effectiveness in the handling of insomnia.

Tai chi and qigong are important body energy activation procedures, synchronized with rhythmic exercises following the principle of qi regulation for harmonizing mind and body for self-healing, particularly in acute and chronic pain, although at times it is considered insufficiently regulated and there are difficulties in confirming the real potential for health and disease treatment.

Foot reflexology is a diagnostic and therapeutic technique based on facilitating energy flow by applying pressure to massage in specific foot sites which reflects an homunculus, identifying at least four categories of effects related to the stages of sleep, and has demonstrated to be effective in improving quality of life in cancer patients, decreasing anxiety and pain, as well as other health problems.

Ozonotherapy is a therapy used for more than 150 years, consisting in the administration of ozone (O3) in order to inactivate microorganisms, stimulate mitochondria and oxygen metabolism and activate the immune system. Clinical evidence demonstrated effectiveness in the management of diabetes and chronic oxidative stress, multidrug resistant bacteria without antimicrobials, lumbar disk herniations, systemic sclerosis, and various dental disease.

Other therapies. Since this domain is based on the energy flow, other therapies are applied, like Heliotherapy (use of sun and other light radiations for systemic or topical therapies), Magnetotherapy (effect of magnetic fields in healing, i.e. enhancing effectiveness of breast cancer therapy, tendon regeneration, and chronic obstructive pulmonary disease), and Chromotherapy (color as a therapeutic option, because it is not challenged by proportion-shape-line-texture therapies and contribute significantly in the treatment of psychological trauma).

Physical Manipulation Therapies

The techniques that involve physical manipulation are ancient healing procedures known to many cultures as bone setter or similar, but the technification and academic literature based on clinical evidence are relatively new.

Osteopathy and chiropractic. They are therapies relatively similar, at times undifferentiated by the patient, but with differences in physical manipulative techniques; the first initiated by Still and the later by Palmer, with an approach that they are better than drugging. Both techniques are now working on evidenced-based approach with positive characteristics, collaborating with conventional doctors, and receiving patients acceptance in the treatment of diverse pains.

Massage, reiki, shiatsu. Are manual therapies that prevent or correct mechanical derangements in association with muscles and skeleton, with benefits in short and long term, they have grown significantly. Regular use of massage might improve performance in athletes, but also the motor development of premature newborns, and is effective when palliative care is needed.

Reiki was originally developed in Tibet, improved in Japan and recently introduced in Europe and the United States, based on energy transfer from healer to patient to equilibrate and induce integral wellbeing, it has been successfully used on quality of life in cancer patients. Shiatsu is a holistic massage technique with thumb and hand pressure in acupoints, it has been demonstrated to be effective and applied by a therapist in refractory pain.

Lymphatic drainage. Draining process of accumulated fluid in malignant tissue by applying directed massage for improving fluid transport and wastes elimination, in order to activate lymphoid system and dispose of organic wastes. It has demonstrated efficacy in handling sentinel node procedure for prostate carcinoma, head and neck cutaneous melanoma, and total knee arthroplasty.

Neural therapy. Based on Pavlov investigations, it was originally developed in Germany by Huneke and others, it is now being spread worldwide for its significant efficiency in neurologic treatment. It is designed to neutralize irritations and repair dysfunctions of the autonomic nervous system by injection treatment of lidocaine to.
stimulate healing, it is effective in treatment of chronic pain, multiple sclerosis and fibromyalgia.

**Mind-Body Manipulation Therapies**

Intervention on person's mental, physical or emotional state will influence body changes, particularly in the management of chronic pain and other ailments. Manipulations are multiple, like yoga, biofeedback, cognitive behavior, meditation, hypnotherapy, pray, and others. Successful applications include menopausal transition, autism, posttraumatic stress disorder, musculoskeletal pain, hearth failure, and helpful for people living with HIV.

Yoga and meditation. Yoga is an ancient Indian therapy based on undergoing to a “yoke” for balancing the body and mind through positions and stretching's in order to heal or transcend to a higher level for pediatric and medical conditions, including a very ample spectrum of diseases. It is particularly useful in handling ailments in which obesity plays a significant role, improving quality of life in elderly breast cancer patients, and as effective therapy of cardiovascular disease, and chronic low back pain. In association with yoga or not, mindfulness meditation showed efficient results when used in substance abuse disorders and preventive relapse, other intervention such as relaxation with or without aromatherapy are also useful, particularly in handling fatigue in patients undergoing hemodialysis, as well as as transcendental meditation in prevention and treatment of cardiovascular diseases.

Bach floral remedies. It is a healing system developed by the homeopath Edward Bach to utilize 38 flower remedies for subjective and emotional problems and pain by the principle of self-healing. The clinical use is based on seven disharmonized stages in which the florals reestablish equilibrium. Some clinical evidence has been provided in the case of attention deficit hyperactivity, several psychological problems and pain, and external use in the treatment of carpal tunnel syndrome, with relative good acceptance in Latin American countries.

Musicotherapy. Music is usually recognized as a healing therapy for emotional diseases, providing comfort beyond entertainment as suggesting usefulness in psychiatric disorders and mental health. Clinical evidence has demonstrated successful management of depression, chronic pain, dementia, as well as helping in the handling of anxiety, treatment of substance use patients, and chronic renal patients.

**Conclusions**

Conventional allopathic medicine covers up to 30% of the population in developed countries, but in developing countries and traditional societies worldwide, CAM and Integrative Medicine is the main resource available, due to the rapidly increasing prices of allopathic medicine and the beliefs expected in the society for "natural healing". It is evident that the diverse therapies organized in the five domains of Integrative Medicine are growing worldwide and all are looking for an approval according to evidence-based protocols, although “allopathization” of these therapies should be avoided. It is concluded that a deep insight on Integrative Medicine is needed from the academic, public health, commercial and governmental point or view for a fair and compromised approach for the benefit of all.

**Acknowledgements**

The author wishes to thank the support by professors and students of University of San Carlos and Galileo University at undergraduate and graduate level for helping in literature review and discussion of different therapies. The support by the National Council for Science and Technology (grant ComunicaCTI 23-2018) to organize the I National Congress of Integrative Medicine held in Guatemala in 2018 helped to consolidate the information gathered in different instances and organize a comprehensive way to look into Integrative Medicine.

**Competing Interests**

None

**References**

Cáceres
http://www.ijpni.org

ijms1961578


Moran RN, Hauth JM, Rabena R. The effect of massage on acceleration and sprint performance in track & field athletes.


© 2019 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.